

Sorin ȘTEFĂNUȚ

The Hornwort and Liverwort Atlas of Romania

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The Hornwort and Liverwort Atlas of Romania

I dedicate this first edition

to *MIRCEA OLTEAN* (31.03.1931-08.02.2002)

- Romanian algologist

and to *RICHARD WALLFISCH* (05.05.1914-02.03.2008)

- autodidact Romanian hobby bryologist

Sorin Ștefănuț

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First edition

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INTRODUCTION

Started in 1994 and being inspired by the realisations of the Romanian bryologist Simeon Ștefan Radian, my bryological studies were focused especially on hornworts and liverworts, under the guidance of professors Ioan Cristurean, Simona Mărgăritescu and Gheorghe Dihoru, and continued with the doctoral thesis "Taxonomical and ecological research on the liverworts (Marchantiophyta) from Romania", supervised by Mircea Oltean and Marin Falcă, resulting in a large volume of field data regarding the distribution of these species in Romania, included in the present Atlas.

The Hornwort (Anthocerotophyta) and Liverwort (Marchantiophyta) Atlas of Romania could not be compiled without the efforts of several researchers, during more than 200 years, from Romania and other countries, professionals or amateurs, who published during this time hundreds of scientific papers concerning bryophyte species from Romania, and collected thousands of samples that are now deposited in different herbariums spread across the globe.

A special support in the realisation of this Atlas was received from my colleagues. From Paulina Anastasiu, Dan Cogălniceanu, Gina Cogălniceanu, Simona Mihăilescu, Mihaela Paucă-Comănescu, Adriana Jalbă, Claudia Nicolae, Marilena Onete, Oliviu Pop, Cristina Fiera, Nicoleta Șerpoi, Kinga Öllerer I received important bryophytic material collected in different parts of the country. Gavril Negrean and Richard Wallfisch processed some of the chorological data. Elena Oltu helped in the processing of the collected material. Kinga Öllerer arranged some of the data and helped with the English translation. I am grateful to all these colleagues for their contribution, which became part of this Atlas.

I would also like to thank all the foreign specialists, especially R. Schumacker, T.L. Blockeel, J. Váňa who helped in determining or confirming the determinations of the collected material, Anna Ganeva, R. Ochyra, Beáta Papp, T. Pócs, M. Sabovljević, Andrea Sass-Gyarmati and others who sent me the requested bibliographical materials.

In the following editions of this Atlas I intend to introduce illustrations for each species, some of these data being already gathered; a small sample is presented on the covers of this book.

For sure this work does not include all the information that is available, complete literature and herbarium data, and it is definitely not perfect, but with the help of your much appreciated contribution, comments, suggestions it can only improve. Thank you in advance for this participation.

Sorin Ștefanuț

Bucharest
December 2008

BRYOLOGICAL RESEARCHES IN ROMANIA

The knowledge about bryophytes has very old routes in Romania, these can be found also in some of the names given for hornworts (*Anthoceros - lepra lupului pătat, cornețel*), liverworts (*Marchantia - mușchiul de fântână, fierea-pământului, coada rândunicii, colbează, funuces* or *triercii*) or mosses (*Sphagnum – coada mâței de baltă*).

The first studies about bryophytes in Romania were done in the beginning of the 19th century. In this starting period for the Romanian bryology, the first published contributions were lists or enumerations in botanical papers or in papers dedicated especially for the study of cryptogams.

The first paper in which we can find information on liverwort and moss species from Romania is: “*Enumeratio stirpium magno Transsylvaniae Principatui*” by **Baumgarten J.C.G.** from 1846, published posthumously by Fuss M. (Baumgarten 1846:1-236). An older contribution, but for which there was no possibility to find any connection with the citation of Romanian bryophytes is “*Enumeratio plantarum Galiciae & Bucowinae*”, published in 1835 by Zawadzki A.

The first publication of specialty, regarding the cryptogams from the Arpașului Valley, Făgăraș Mountains, appeared in 1853, by the author **Ludwig Ritter von Heufler**, in which also the first figures of some Romanian liverworts were published (Heufler 1853: plate IV) (Fig. 1). In the **second half of the 19th century** several publications have appeared in Romania in which hornwort, moss or liverwort species are mentioned. In this period the following authors have published: **Schur F. (1852, 1853, 1858, 1866, 1885)**, **Heufler L. (1853)**, **Juratzka J. (1859, 1860, 1862, 1863)**, **Pančić J. (1861)**, **Hampe E. (1861)**, **Knauer B. (1863)**, **Müller B. (1863)**, **Hoffmann U. (1864)**, **Fuss M. (1864-1869, 1872, 1878)**, **Barth J. (1868, 1871, 1877, 1883)**, collected mosses and liverworts from the Vlădeasa Massive, but these data were not published - 1892:34), **Grecescu D. (1869, 1876a, 1876b, 1880)**, **Simonkai L. (1872, 1878, 1890, 1892, 1893)**, **Schimper W.Ph. (1876)**, **Brândză D. (1876a, 1876b, 1883)**, **Venturi G. (1880)**, **Kanitz A. (1881)**, **Demeter K. (1884-1886, 1888)**, **Hazslinszky F. (1866, 1868, 1885)**, **Csató J. (1885, 1894)**, **Breidler J. (1890a, 1890b)**, **Mágócsy-Dietz A. (1892)**, **Pax F. (1896, 1898)**, **Péterfi M. (1896-1900)**, **Loitlesberger K. (1898, 1900)**, **Zahlbruckner A. (1900)**.

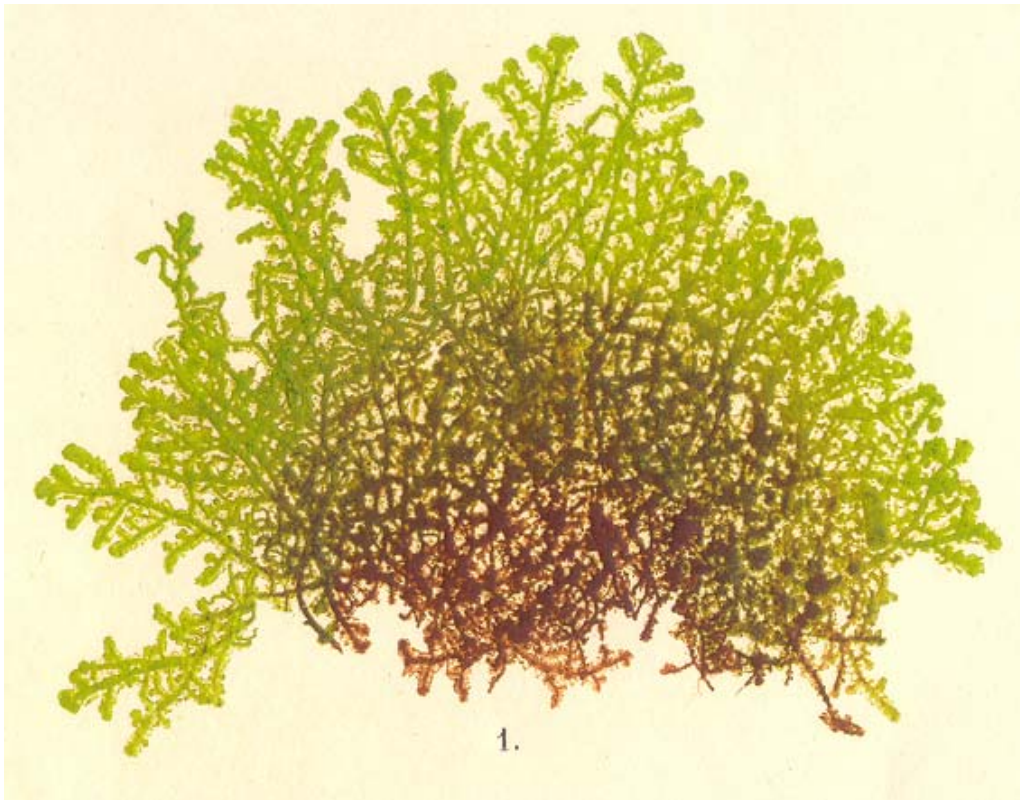


Fig. 1. *Porella platyphylla* (Heufler 1853: Pl. IV, Fig. 1).

The beginning of the 20th century is dominated by the Romanian bryologist Simeon Ștefan Radian, who describes the genus *Bucegia*, with the species *B. romanica*, from the Cerbului Valley in the Bucegi Mountains, the species being confirmed by Schiffner V. in 1903 and Müller K. in 1906. Because of the author's special flair, the correctitude with which he described this species and because of the fact that it was included in the work of reference entitled "Die Lebermoose Deutschland, Österreich u. d. Schweiz mit Berücksichtigung der übrigen Länder Europas" (Müller 1906-1911), *Bucegia romanica* Radian remained untouched by the later attempts of some bryologists for renaming the species (as *Radiania rumænica* or *Bucsecsia*).

After obtaining his diploma in natural sciences in 1894, Radian immediately started his bryological studies in the Bucegi Mountains. In 1901 he published two synthesis works for that period regarding the bryophytes from Romania (Radian 1901a, Radian 1901b), together with a list of mosses collected by Popovici A. Bâznoșanu from Stâncă-Ștefănești, Botoșani county (Procopianu-Popovici 1901:27, annex). In 1903, he described the species *Bucegia romanica* in the paper entitled "Sur le Bucegia nouveau genre d'Hépatiques a Thalle". In 1915 and 1920 the contributions III and IV to the Romanian liverwort flora were published, where liverwort species are cited for the first time, some of them confirmed by us after 89 years since the first publication (*Asterella gracilis*), some still unfound (*Riccia warnstorffi*). In 1922 he presented the work entitled "Anatomia aparatului vegetativ de la *Bucegia romanica* Radian" (The anatomy of the vegetative apparatus of *Bucegia romanica* Radian) in order to obtain the doctoral title, this being the first doctoral thesis in the domain of bryology in Romania (Radian 1923).

The first half of the 20th century is marked by the apparition of several important bryological publications. In this period the following authors have published: **Degen A. (1901), Röll J. (1902, 1903), Matouschek F. (1903, 1905), Péterfi M. (1901-1904, 1906, 1908-1910, 1918), Györffy I. (1903-1912, 1914-1917), Barth J. (1905), Wolcsánszky J. (1905), Grințescu G.P. (1907), Prodan I. (1907), Schiffner V. (1908), Pax F. (1908), Gusztáv M. (1910), Lilienfeldówna F. (1911), Szurák J. (1912), etc.**

Another Romanian researcher who activated in the field of bryology for 48 years (1924-1972) and who published in this domain about 90 scientific papers in and outside the country was **Constantin Papp**.

Born on the 1st of January 1896, Papp C. has studied at the Faculty of Sciences (botany) of the "Al. I. Cuza" University and also at the Faculty of Medicine (pharmacy), obtaining his diploma certificate both in natural sciences (1921) and in pharmacy (1922). In 1926 he defended his doctoral thesis "Contribuțiuni la studiul briofitelor din Moldova" (Contributions to the study of bryophytes in Moldova), that represents the second doctoral thesis in bryology from Romania.

Most of his publications in bryology are referring to different regions from Moldova (56 titles), but he has also conducted research in Dobrogea, Bucovina, Transylvania, Banat etc.

He studied the bryoflora of the Ceahlău, Rarău, Bucegi and Leaota Mountains, from Cheile Turzii, Cheile Mari ale Bicazului and from Cumpătul.

A special merit of prof. Papp C. in the field of bryology is represented by the publication of the first guide for cryptogams, "Plante vasculare cuprinzând și chei dichotomice pentru determinarea până la genuri a briofitelor din împrejurimile orașului Iași" (Vascular plants, containing also dichotomous keys for the determination till the genus of the bryophytes from the surroundings of the city of Iași) (Papp & Răvărău 1938), "Flora pentru determinarea briofitelor cunoscute în Moldova dintre Carpați și Prut" (Flora for the determination of bryophytes known in Moldova, between the Carpathians and the Prut River) (Papp 1943), "Briofitele din Republica Socialistă România (determinator)" (The bryophytes from the Romanian Socialist Republic - guide) (Papp 1967a) (Mititelu & Barabaș V. 1971:913).

Papp C. collaborated at the editing of the *Exsiccatae* and the *Schedae* from Romania (Cluj, Iași, Constanța, Bacău), he determined and verified the bryological materials from geobotanical works. He organized the Botanical Department of the University in Iași, a collection with a rich bryological material (Ștefureac 1973a:467-472; Ștefureac 1973e:664-667).

The most prolific Romanian researcher in the domain of bryology was **Traian I. Ștefureac**, who in 1940 defended his doctoral thesis entitled "Cercetări sinecologice și sociologice asupra briofitelor din Codrul Secular Slătioara (Bucovina)" (Sinecological and sociological studies on the bryophytes from the Slătioara Ancient Forest (Bucovina) (Ștefureac 1941), the first doctoral thesis in the field of bryophyte cenology from Romania (Plămadă 1987a:335-337).

During his 52 years of activity he published over 110 papers in the field of bryology in the specialty journals from Romania and outside the country. Between his published works there are several synthesis works with monographic character, such as: "Studii briologice în unele formațiuni de vegetație

din România (sărături, sfagnete, păduri)” (Bryological studies in some vegetation formations from Romania (saltings, sphagnumherbosa, forests) (Ștefureac 1969a), “Conspectul briofitelor din Dobrogea” (The epitome of the bryophytes from Dobrogea) (Ștefureac, Mihai & Pascal 1970), “Conspectul briofitelor din Moldova” (The epitome of the bryophytes from Moldova) (Ștefureac & al. 1973), “Conspectul briofitelor din Bucovina” (The epitome of the bryophytes from Bucovina) (Ștefureac & al. 1981) etc.

In the domain of palynology, he published a paper on the particularities of the hornwort, liverwort and moss spores, (Ștefureac 1971d:21-42), and also other papers in collaboration (Ștefureac, Ploaie P. & Ploaie G. 1971: 75-79; Ștefureac, Ploaie G. & Ploaie P. 1979: 279-286).

Ștefureac T. was member of the IAB (International Association of Bryologists), of GTCBE (Groupe de Travail pour la Cartographie du Bryophytae de l'Europe) and reviewer at “Revue Bryologique et Lichénologique”. Also, prof. Ștefureac T. coordinated several doctoral theses at the botanical department of the Biology Faculty – University of Bucharest (Cristurean I., Dihoru Alexandrina, Dihoru G., Eftimie Elena, Mihai G., Plămadă E. etc).

Studies on the muskegs in Romania were conducted especially by **Pop Emil** (13.04.1897-14.07.1974), whose contribution to the knowledge on the distribution of bryophytes in Romania is very important. He cited 267 bryophyte species in his papers (32 liverworts and 235 mosses). He had a significant contribution to the chorology of the glacial relict *Odontoschisma sphagni* (Dicks.) Dumort. (Ștefureac 1976b:1017-1018; Ștefureac 1979b:183-188; Boșcaiu 1999; Boșcaiu, Toniuc & Purdelea 1999).

Bryological researches in Transylvania were conducted by **Péterfi M.**, author of several works, in which also a new species for Romania is published: *Geocalyx graveolens*. Also in Transylvania, **Borza A., Györffy I., Nyárády E.I., Nyárády A., Soó R.** and others analyzed and published materials collected from different sites. An important contribution to the knowledge of Transylvanian bryoflora was that of **Boros Á. and Vajda L.**, who published several papers in which they list an important number of new species for Romania.

During the 20th century, important contributions to the knowledge of the Romanian bryoflora had also some foreign bryologists, such as: **Debreczy Z., Degen A., Düll R., Grolle R., Hargitai Z., Herzog T., Igmány J., Jakucs P., Járαι-Komlódi Magda, Karczmarz K., Kazimierz R., Mickiewicz J., Muñoz J., Müller K., Novotný I., Ochyra R., Orbán S., Pax F., Podpěra J., Pócs T., Sass-Gyarmati Andrea, Schiffner V., Schuster R.M., Simon T., Szepesfalvi J. and Váňa J.**

Mihai Gheorghe studied the bryoflora of Moldova, especially in the Bașeului valley, but he also had an important contribution to the bryoflora of Dobrogea, Muntenia and even Transylvania. In 1983 he published the list of liverworts from Romania, completed by Dihoru G. (1986:98) with the following taxa: *Marsupella emarginata* subsp. *aquatica* (under *M. aquatica*), *Marchantia paleacea*, *Scapania compacta* and *S. brevicaulis* (under *S. degenii*).

Mohan Gheorghe, a disputed bryologist, published about several species, among which also the liverworts *Marchantia paleacea* and *Scapania compacta*, of which presence in Romania has been infirmed especially by Plămadă E. (Plămadă 1979b:379-382; Plămadă 1992:223-235, + annex 422-487).

Dihoru Gheorghe had an important contribution to the bryoflora of Dobrogea, Siriu and Cozia Mountains, he published several papers on nomenclature. His name is also connected to a new species for Romania, *Scapania paludosa*. During his research at the Institute of Biology in Bucharest, he mapped the species from the *Anthocerotaceae* and *Pelliaceae* families.

Lungu Lucia conducted research on and published the bryophyte of peatbogs from the Neagra Boștenilor valley and contributed to the knowledge of the *Orthotrichum* genus.

Plămadă Emanoil has an important contribution to the knowledge of bryoflora from Romania, publishing several new species: *Pleurocladula albescens* var. *islandica*, *Kurtzia pauciflora*, *Tritomaria polita*, *Cephalozia elegans* and *Scapania glaucocephala*, the latter one being a wrongly identified species.

For this domain, important contributions had also the following researchers: Eftimie Elena, Pascal P., Páll Ș., Barabaș Victoria, Wallfisch R. etc.

In the last five years, several papers regarding the bryoflora of Romania were published, a new moss species was described, *Dicranum transsylvanicum* (Lüth 2002: 17-21), and **Goia Irina** has defended her doctoral thesis entitled „Brioflora de pe substrat lemnos din bazinul superior al Arieșului. Studii briotaxonomice, corologice, ecologice și cenologice” (The woody substrate bryoflora from the superior

basin of the Arieş river. Bryotaxonomical, chorological, ecological and coenological studies) (Goia 2001).

In Romania, karyological studies have been realized by Eftimiu (1933) on *Bucegia romanica*, Tarnavschi (1941) on Buxbaumiales, Ştefureac (1957b) on *Poytrichum norvegicum* and on *Oligotrichum hercynicum* (Ştefureac 1962c).

The most important bryophyte collections can be found in the herbaria from Bucharest (BUC, with over 22.000 samples, of which over 4.000 are liverworts; BUCA, around 20.000 de samples, of which over 5.000 are liverworts), Cluj (CL), with over 65.000 samples, of which over 6.500 are liverworts and Iaşi (I), with over 3.000 samples (Ştefureac 1978c:565).

The bryophytes were described in several systematic botany and geobotany contributions, in which hornworts, liverworts and mosses were approached (Iacobescu 1920; Zitti 1946:205-219; Guşuleac 1947-1948:486-549; Buia 1948:2-51; Papp 1956b:7-84; Morariu 1960:360-371; Paucă A. 1963:88-90; Morariu 1965:359-368; Buia, Nyárady E.I. & Răvăruţ 1965:105-116; Răvăruţ & al. 1967:311-318; Ştefureac 1970e:30).

Different liverwort classification systems were presented and proposed for acceptance (Ştefureac 1970e:28-29), and in some botanical papers only the words *mosses* (Livescu 1970:271; Nemeş & Lungoci 1972:275) or *bryophyte* appear (Ştefureac 1972d:56; Ştefureac 1975d:53).

Evocations of the botanists who have published or collected bryophytes from Romania were done during the years by:

Baumgarten Johann Christian, 07.04.1765-29.12.1843 (Mititelu & Aniţei 1999:141); **Schur Ferdinand**, 18.02.1799-12.1878 (Mititelu & Aniţei 1999:146); **Fuss Michael**, 05.10.1814-17.04.1883 (Mititelu & Aniţei 1999:142); **Hazslinszky Frigyes**, 06.01.1818-18.11.1896 (Mititelu & Aniţei 1999:142,143); **Barth Jósef**, 19.10.1833-29.07.1915 (Borza 1915:116-119); **Simonkai Lajos**, 09.01.1851-02.01.1910 (Mititelu & Aniţei 1999:146); **Pax Ferdinand**, 26.10.1858-02.03.1942 (Mititelu & Aniţei 1999:145); **Degen Árpád**, 1866-1934 (Mititelu & Aniţei 1999:142); **Radian Simeon Ştefan**, 12.04.1871-18.04.1958 (Ştefureac 1958d:55-58; Ştefureac 1958e:231-232, Pl.IV); **Péterfi Márton**, 01.02.1875-30.01.1922 (Györffy 1922a:117-128; Borza 1923a:1-13; Ştefureac 1976a: 315-321; Nuţu 1978:331-332); **Prodan Iuliu** (Ştefureac 1971b:11-18); **Boros Ádám**, 1900-1973 (Borosné Kenyeres & Orbán 1976:107-119); **Lilienfeldówna F.**, *Hepaticae Poloniae exsiccatae* (I. Nr. 1-50) (Györffy 1911d:358); **Pop Emil**, 13.04.1897-14.07.1974 (Boşcaiu 1999:24-29; Boşcaiu, Toniuc & Purdelea 1999:44-49); **Papp Constantin**, 01.01.1896-17.08.1972 (Ştefureac 1973a:467-472; Ştefureac 1973e:664-667); **Soó Rezső**, 01.08.1903-10.02.1980 (Mititelu & Aniţei 1999:146); **Ştefureac I. Traian**, 18.04.1908-04.10.1986 (Plămadă 1987a:335-337; Dihoru G. 1987a: 87-90; Ionescu & Cristurean 1987:86-87).

GENERAL METHODOLOGY

The mapping method

In order to map the liverworts and hornworts from Romania, the **HEPATICE 2008** software was elaborated, in concordance with the existing literature on the mapping of the Romanian flora: Ștefureac, Zahariadi & Dihoru (1971:101-111), Oltean & Ștefănuț (2002:101-108), Ștefănuț & al. (2003:243-248), Ștefănuț & al. (2004:79-84) and Mihăilescu S. & Ștefănuț (2004b:108-112).

The methodology that represented the base of this software was published in detail in: Oltean & Ștefănuț 2002:101-108 and Ștefănuț & al. 2004:79-84. The chorology program was used also for the mapping of high plants: Fabaceae (Ștefănuț & Sanda 2008).

For the Hungarian and German locality names we used the historical dictionary of localities from Transylvania (Suciu 1967; Suciu 1968; Szabó M. A. & Szabó M. E. 1992). A part of this data has been processed by Negrean G., Öllerer Kinga and Wallfisch R.

Data regarding the Maramureșului Mountains by Mohan (1998), overtaken after Boros Á. & Vajda L. (1969), who, in their turn, cited the works of Boros Á. (1941b), Deyl M. (1940), Domin K. (1930), Igmandy J. (1944), Smarda J. (1936, 1938, 1944) and Suza J. (1925, 1933) were excluded because the cited localities represent the territory of Ukraine, with one exception: the Șerban Mountain from the Pop Ivan Mountains.

The chorology data from the works of Mohan G. were taken over with skepticism, due to the fact that these data are suspect, since some common species fall out widely from their ecological distribution zone, while rare species appear frequently in certain zones; these were marked on the maps with (○).

The work of Papp C. from 1967, „Briofitele din Republica Socialistă România (determinator)” (The Bryophytes from the Romanian Socialist Republic - guide) was not taken into consideration, since the localities mentioned in the text do not appear in all the cases in the cited publications, and for certain species the synonymy has been considered, which leads to great confusions. For example, the species *Mannia androgyna* appears under *Grimaldia dichotoma*, instead of the species *Mannia pilosa*. *Mannia androgyna* is a Mediterranean species and its distribution does not include Romania, on the other hand, *M. pilosa*, cited previously in the localities indicated by Papp, does not appear at all in this publication. The same confusion has been created also for *Asterella gracilis*, which does not appear in the guide, and is substituted with *A. saccata* (under „*Fimbriaria fragans*”).

The distribution of the species in Europe was realized according to Düll 1983, Schumacker & Váňa 2000, 2005 and Söderström, Urmi & Váňa 2002, 2007.

The bibliography was realized after Boros (1944c:1-74), Ștefureac, Mihai & Pascal (1970:537-543), Ștefureac & al. (1973:29-236), Ștefureac & Pascal (1981:537-543), Mohan (1998:394-418) and by checking over 10000 botanical publications from Romania and outside the country, out of which over 1800 publications of specialty were selected.

The nomenclature of the hornwort and liverwort species is in concordance with the latest publications in this field (Grolle & Long 2000; Crandall-Stotler & Stotler 2000; Renzaglia & Vaughn 2000; Schumacker & Váňa 2000, 2005; Söderström, Urmi & Váňa 2002, 2007; Sabovljević & Natcheva 2006).

The classification of the hornwort species was done according to Renzaglia & Vaughn (2000); for the liverworts the classification from Crandall-Stotler & Stotler (2000) was adopted, with modifications.

The species lists for hornworts and liverworts is based on the chorology data and the previously published lists, especially by Mihai (1983), Düll (1983), Grolle & Long (2000), Söderström, Urmi & Váňa (2002, 2005), Söderström, Urmi & Váňa (2002, 2007), Ștefănuț (2004d, 2004i), Sabovljević & Natcheva (2006), to which later corrections and additions were done.

The names of the authors are according to the author list from „Authors of plants names” (Brummitt & Powell 1992 eds.).

The list of synonyms was done according to Dihoru G. (2001), Koperski & al. (2000), Müller (1906-1911, 1912-1916, 1954, 1957), Schuster (1966, 1969, 1974, 1980, 1992a, 1992b), Schumacker & Váňa (2000, 2005), Stotler & Crandall-Stotler (1977) and Warnstorf (1903).

Abbreviations used in the text

† - disappeared from that locality (only in cases for which we have data on the disappearance of the habitat);

? – uncertain presence in Romania (if the sign appears for a species) or in that locality (if the sign appears at the locality);

! – material seen in field, but unpublished or unenclosed in the BUCA herbarium, *det.* Ștefănuț S.

e – erroneous citation

vf. – top;

s – sterile;

fer – fertile;

Hth – thallose hemicryptophytes

Hh – Hepatic hydrophytes

HCh – Hepatic chamaephytes

♀ - female plant; ♂ - male plant; ♀♂ - monoic plant

The abbreviations of countries or regions indicated at the distribution of the species in Europe was done after Söderström, Urmi & Váňa 2002, and are the followings: Ad – Andorra, Al – Albania, At – Austria, Az – Azores, Ba – Bosnia-Herzegovina, Bg – Bulgaria, Bl – Balearics, Br – Great Britain (excl. Northern Ireland), By – Belarus, Ca – Northern Caucasus, Ch – Switzerland, Cm – Crimea, Cn – Canary Islands, Co – Corsica, Ct – Crete, Cz – Czech Republic, De – Germany, Dk – Denmark, Ee – Estonia, Es – Spain, Fi – Finland, Fl – Franz Josef Land (Russia), Fo – Faeroe Islands, Fr – France, Gr – Greece, Hr – Croatia, Hu – Hungary, Ie – Ireland (incl. Northern Ireland), Is – Island, It – Italy, Ka – Kaliningrad area, Kz – Kazakhstan, Lt – Lithuania, Lu – Luxembourg, Lv – Latvia, Ma – Madeira, Me – Montenegro, Md – Moldova, Mk – Macedonia, Mt – Malta, Nl – Netherlands, No – Norway, Po – Poland, Pt – Portugal, Rc – Central Russia, Re – Eastern Russia, Rn – Northern Russia, Ro – Romania, Rs – Southern Russia, Rw – North-western Russia, Sa – Sardinia, Sb – Serbia, Sc – Sicily, Se – Sweden, Si – Slovenia, Sj – Svalbard, Sk – Slovakia, Tu – Turkey, Ua – Ukraine.

Cited or consulted herbaria

For the herbaria codes the following website was used „Search Index Herbariorum. Part I: The Herbaria of the World” (<http://sciweb.nybg.org/science2/IndexHerbariorum.asp>).

BP – The Herbarium of the Hungarian Museum of Natural Sciences, Budapest, Hungary.

BRHE – Bryophyta Regni Hungariae Exsiccata, Editata a Sectione Botanica Musei Nationalis Transsilvanici

BUC - The Herbarium of the University of Bucharest, Faculty of Biology, Romania.

BUCA - The Romanian Academy Herbarium, Bucharest Institute of Biology, Romania.

CL - The „Babeș-Bolyai” University Herbarium, Cluj-Napoca, Romania.

CSH – Cumpătu Station Herbarium, Sinaia, Romania.

FMDE – Flora Moldaviae et Dobrogeae Exsiccata

FRE – Flora Romaniae Exsiccata

FH – The Harvard University Herbarium. U.S.A. Massachusetts, Cambridge

H.A.T.R. – Hep. Alp. Transsylv. Roman, Loitlesberger K.

Herb. Boros – The personal herbarium of the Hungarian bryologist Boros Á.

Herb. Váňa - The personal herbarium of the Czech bryologist Váňa J.

HIPBC – The Herbarium of the Pedagogical Institute, Bacău, Romania.

I – The Herbarium of the Faculty of Biology, Iași, Romania.

JE - The Herbarium of the Friedrich-Schiller University. Jena, Germany.

KRAM – Herbarium of the Polish Academy of Science. Krakow, Poland.

LE - Herbarium of V. L. Komarov Botanical Institute, Saint Petersburg, Russia.

M – Herbarium Botanische Staatssammlung. München, Germany.

OP - The Herbarium of the Silesian Museum. Opava, Czech Republic.

PHHM – The Herbarium of the Natural Sciences Museum, Ploiești

PRC – The Herbarium of the Charles University. Prague, Czech Republic.

S – The Herbarium of the Swedish Museum of Natural History. Stockholm, Sweden.

Krypt. Exs. - *Kryptogamas Exsiccatas*, editata a Museo Paletino Vindobonensi, Viena, Austria.

SIB - The Herbarium of the Brukenthal Museum from Sibiu, Romania, with the following collections: *HF* – Fuss M. Herbarium; *HNFT* – Herbarium Normale Florae Transsylvaniae; *HG* – Gündisch F. Herbarium; *SCHUR* – Schur F. Herbarium

Smets – The personal herbarium of the Belgian bryologist Ludo Smets, Belgium.

W – The Herbarium of the Natural Sciences Museum from Vienna, Austria.

Abbreviations for the territorial-administrative units of Romania

AB – Alba County; **AG** – Argeş County; **AR** – Arad County; **B** – Bucharest City; **BC** – Bacău County; **BH** – Bihor County; **BN** – Bistriţa-Năsăud County; **BR** – Brăila County; **BT** – Botoşani County; **BV** – Braşov County; **BZ** – Buzău County; **CJ** – Cluj County; **CL** – Călăraşi County; **CS** – Caraş-Severin County; **CT** – Constanţa County; **CV** – Covasna County; **DB** – Dâmboviţa County; **DJ** – Dolj County; **GJ** – Gorj County; **GL** – Galaţi County; **GR** – Giurgiu County; **HD** – Hunedoara County; **HR** – Harghita County; **IF** – Ilfov County; **IL** – Ialomiţa County; **IS** – Iaşi County; **MH** – Mehedinţi County; **MM** – Maramureş County; **MS** – Mureş County; **NT** – Neamţ County; **OT** – Olt County; **PH** – Prahova County; **SB** – Sibiu County; **SJ** – Sălaj County; **SM** – Satu Mare County; **SV** – Suceava County; **TL** – Tulcea County; **TM** – Timiş County; **TR** – Teleorman County; **VL** – Vâlcea County; **VN** – Vrancea County; **VS** – Vaslui County.

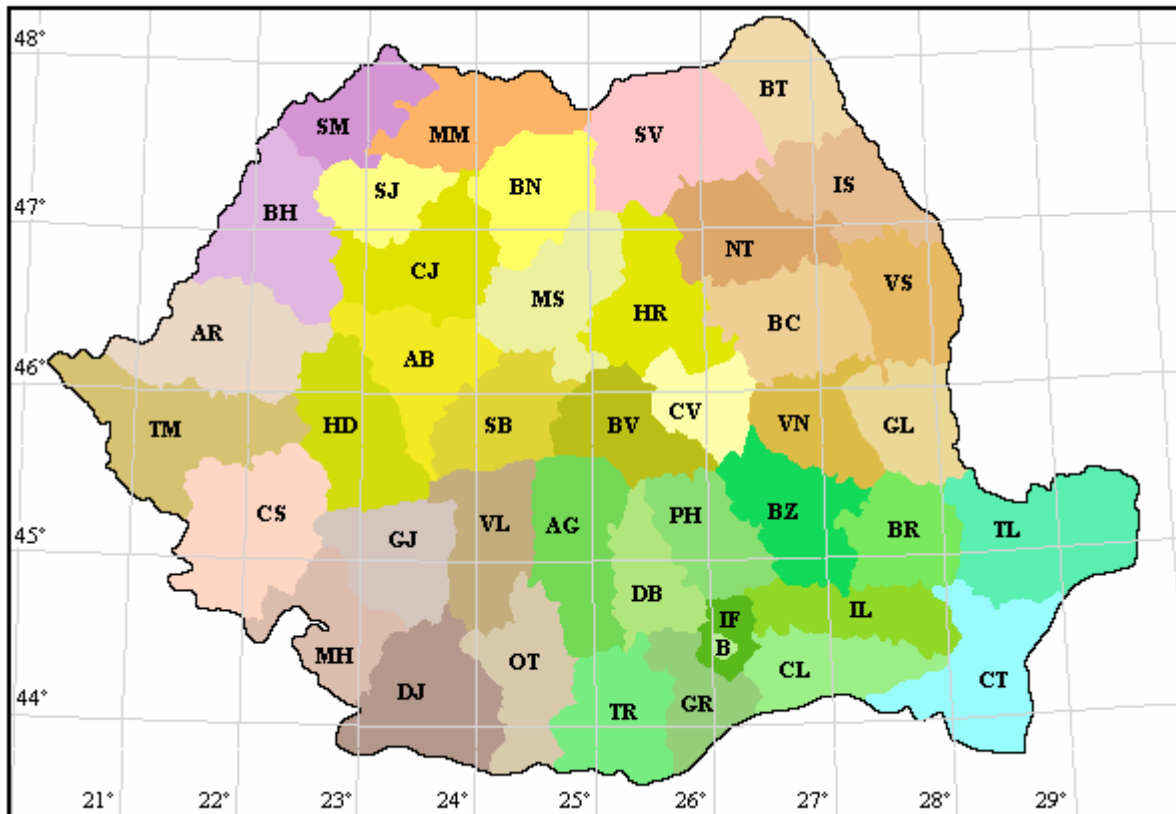


Fig. 2. The territorial-administrative units of Romania.

The presentation of the methodology and the program used for mapping

The Hornwort and Liverwort Atlas of Romania was conceived in order to satisfy the stringent necessity of concentrated information for botanists and conservationists implicated in flora and vegetation research and also in their management.

In addition, the atlas can contribute to the evaluation of the species in the field for the:

- Knowledge regarding the dispersion and the temporal dynamics in the chorology of all plant species from the country (rare, frequent and common; in decline or expansive; autochthones or naturalized);
- Evaluation of the inclusion in the "rare" category of the taxa considered accordingly, with consequences on their inclusion or re-inclusion in this category;
- Estimation of the value of the floristic biodiversity indicators ("species richness") and its variation in the field.

At international level, it contributes to the satisfaction of the obligations of principle taken by Romania after adopting the international conventions regarding the conservation of biological diversity (especially the Bern Convention) and also to the connection with other similar works (finished or in preparation) at the Central-European level.

The necessity of a synthesis in the form of an atlas results naturally from the strong development of botanical research, especially after the Second World War, but in the same time is a natural follow-up of some important synthesis works, with monographic character, regarding the country's flora and vegetation.

The chorological map of plant species from Romania has various antecedents represented in several scientific papers (published in periodicals), that treat the chorology of certain species or genera, and also in an abandoned activity, that took place during the '70s, regarding the chorology of the species from the Carpathian flora. In the realization of this work several, sine qua non conditions were imposed in order to assure the harmonization with similar publications and even a standardization of the nomenclature used internally.

The cartographical distribution of the information was represented, based on the geographical coordinates system, in a grid of 6' latitude / 10' longitude (species distribution mapping system for Central Europe). The nomenclature of the geocodes can be applied only on the territory of Romania (Fig. 3), but it can be easily modified and adapted for the Central-European or even the European geo-political dimensions.

A particular performance of the software permits, for the first time, the visual presentation of the taxa's chorology on 34 cartographical bases at the 1:6.000.000 scale, that represent:

- The administrative-territorial division of Romania;
- The hypsometric map;
- 1st order morphostructural units;
- 2nd order morphostructural units;
- 3rd order morphostructural units;
- The multiannual average temperature per year;
- The multiannual average temperature in January;
- The multiannual average temperature in April;
- The multiannual average temperature in July;
- The multiannual average temperature in October;
- The multiannual average amplitude;
- The relative humidity;
- Average sunshine length;
- Multiannual average precipitations per year;
- Multiannual average precipitations during the cold season;
- Multiannual average precipitations during the warm season;
- Average number of days with precipitations over 0.1 mm;
- Number of days with snow layer;
- The major hydrographic basins, rivers from Romania;
- The latitudinal zonation of the vegetation;
- The altitudinal zonation of the vegetation;

- The muskegs from Romania;
- The floristic provinces of Romania;
- The floristic provinces and districts of Romania;
- The bioregions of Romania;
- Area of Pedunculate Oak forests;
- Area of Long-thorned and Pubescent Oak forests;
- Area of Turkey- and Hungarian Oak forests;
- Area of Sessile Oak and the Sessile Oak in mixture deciduous forests;
- Area of Beech forests;
- Area of Beech in mixture with coniferous trees forests;
- Area of Spruce forests;
- The *GEOCOD* mapping system for Romania;
- The climatic map.

Data on Romania's natural setting have been synthesized from *Atlasul geografic al României* – Romania's Geographical Atlas (Badea L. & al. 1979), *Geografia României, vol.I - Geografia fizică* (Badea L. & al. 1983) – Romania's Geography, 1st volume - Physical Geography and *Carpații Sud-Estici de pe teritoriul R.P. Romîne. Studiu de geografie fizică cu privire specială la relief* (Mihăilescu V. 1963) The South-Eastern Carpathians from the territory of the Romanian Popular Republic. Physical geography study with special emphasis on the relief.

The present version of the Atlas is based on the analysis of over 10.000 de recordings (stocked in Microsoft Office Access 2000 files), derived from a rich bibliographical material and from the materials comprised in the herbaria of different universities, museums and research institutes from Romania.

In order to permit a fast succession of the completion versions, together with the development of the resource database with the acquisition of data from written sources, the *Atlas* is conceived and presented electronically (the *HEPATICE 2008* software).

The software includes several facilities, being developed through:

- standardized introduction of new recordings in the database by allowing the access to databases that contain information regarding the accepted nomenclature for species (standard list) and for the counties and localities from Romania (over 70.000 placename recordings);
- adding the option of multiple selection, up to three species, and the representation of their chorology on a single map;
- representation of the chorology on several grid systems (UTM, geographical) and facilitation of data conversion from one system to another;
- creating a compatibility with the mapping system used for *Atlas Florae Europaeae*;
- adding the option of visualizing species distributions on maps with 1: 1.000.000, 1: 50.000 and 1: 25.000 scale, for the data that have information on the position up to second;
- realization of distribution maps for small surfaces, on maps with 1: 50.000 and 1: 25.000 scale;
- adding the possibility of measuring distances, on the maps with 1: 50.000 and 1: 25.000 scale;
- the software also has an application for the inventory of consulted bibliography and realization of a citing nomenclature, in order to avoid double-citing;
- correlation of distribution data with the used cartographic base. In this way, in the database information can be stocked on the colors utilized for the maps, which correspond to certain climatic, ecological zones etc., depending on the distribution points of the species. Later this information can be used for the representation of distribution species on each type of map.
- adding the possibility of realizing biodiversity maps, by overlap the distribution maps for all species, their quantification and visualization on the map by using preset marks, according to the necessities. We have allocated the presence groups by correlation with the IUCN criteria, starting from one species per reporting unit, and then 2-5 species/unit, 6-10 species/unit etc.

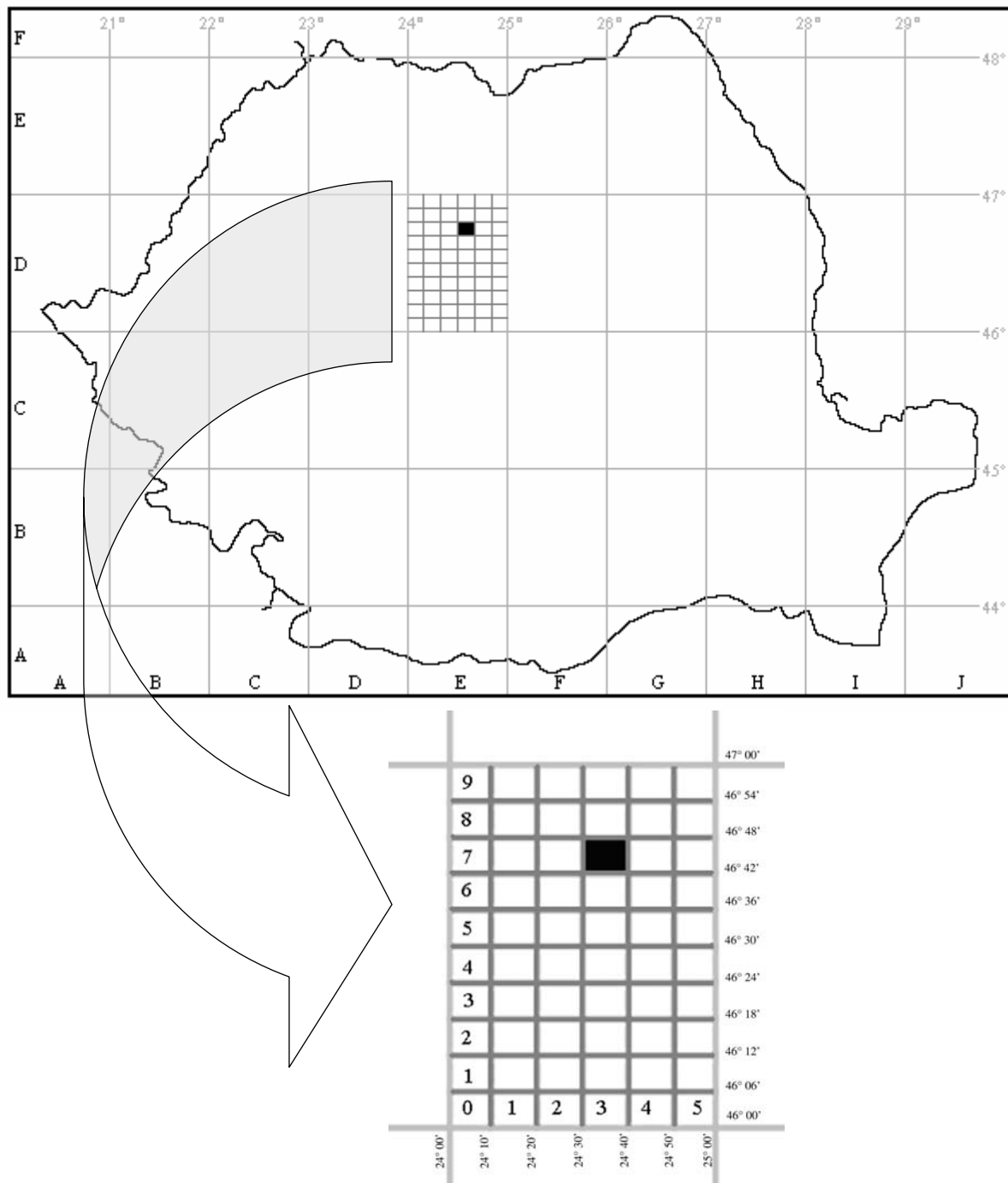


Fig. 3. The *GEOCOD* mapping system. The marked geocode is DE73 and is situated between the coordinates 46° 36' - 46° 42' N and 24° 30' - 25° 40' E.

Special cartographic supports

For the representation of the chorology of the Romanian hornwort and liverwort species, a special cartographic support has been realized by overlap several maps: the map of average multiannual precipitations per year, the map of average precipitations per year, the hypsometrical map and the map of multiannual average temperatures for January. After the overlapping of these maps a new map was obtained on which the following 17 climatic zones appear (Fig. 4):

- I** – superior alpine zone: over 2200 m altitude, annual mean temperatures under -2°C and precipitations over 1400 mm per year;
- II** – inferior alpine zone: 2000-2200 m altitude, annual mean temperatures of -2-0°C and precipitations of 1300 mm per year;

- III – superior subalpine zone: 1700-2000 m altitude, annual mean temperatures of 0-2°C and precipitations of 1200 mm per year;
- IV – inferior subalpine zone: 1500-1700 m altitude, annual mean temperatures of 2-4°C and precipitations of 1100 mm per year;
- V – superior montane zone: 1000-1500 m altitude, annual mean temperatures of 4-6°C and precipitations of 1000 mm per year;
- VI – inferior montane zone: 750-1000 m altitude, annual mean temperatures of 6-8°C and precipitations of 800 mm per year;
- VII – the zone with annual mean temperatures of 8-9°C and precipitations of 800 mm per year;
- VIII – the zone with annual mean temperatures of 8-9°C and precipitations of 700 mm per year;
- IX – the zone with annual mean temperatures of 8-10°C and precipitations of 600 mm per year;
- X – the zone with annual mean temperatures of 10-11°C and precipitations of 600 mm per year;
- XI – the zone with annual mean temperatures of over 11°C and precipitations of 600 mm per year;
- XII – the zone with annual mean temperatures of 10-11°C and precipitations of 500 mm per year;
- XIII – the zone with annual mean temperatures of over 11°C and precipitations of 500 mm per year;
- XIV – the zone with annual mean temperatures of 9-11°C and precipitations of 400 mm per year;
- XV – the zone with annual mean temperatures of over 11°C and precipitations of 400 mm per year;
- XVI – the zone with annual mean temperatures of over 11°C and precipitations under 400 mm per year;
- XVII – the zone with annual mean temperatures of over 11°C, average temperatures for January of 0°C and over 0°C and precipitations under 400 mm per year.

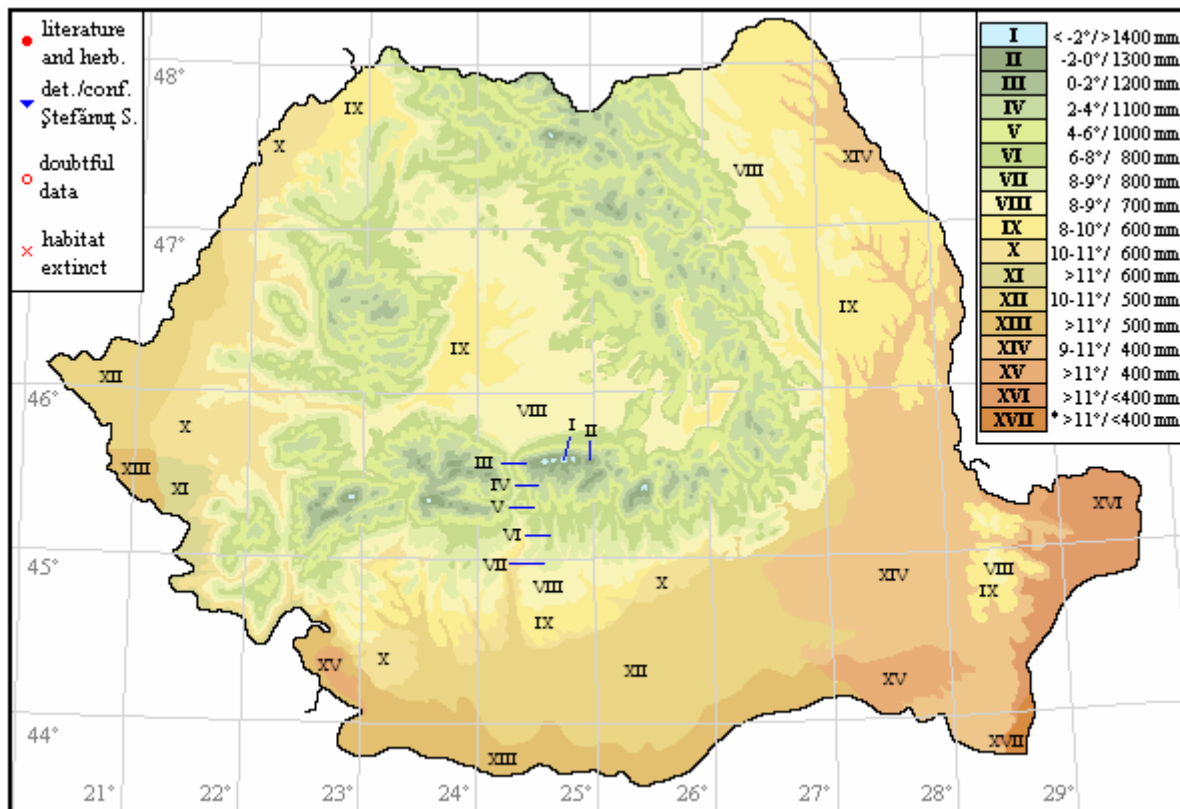


Fig. 4. The climatic map used for the representation of the chorology of hornworts and liverworts in Romania (Ștefănuț S.).

For the zones 1-6 it was possible to make a correlation between the altitude and the climatic zones, for the other zones, 7-17, a differentiation appeared in function of the continentality degree, therefore, the zones from the west and southwestern areas of the country, have similar temperatures with those in the south-eastern parts of the country, but the precipitations are much higher, especially in the south-west of the country, where the climate has strong sub-Mediterranean influences.

In the above left corner of the map the signs used for the different information groups are shown (*literature and herbaria*, *det./conf. Ștefănuț S.*, as *doubtful data* and *habitat extinct*).

THE HORNWORT AND LIVERWORT SPECIES OF ROMANIA

The Hornworts and Liverworts list of Romania include 215 species (4 hornworts species and 211 liverworts species). Until 1900, only 122 hornworts and liverworts species were reported for Romania (Table 1). With time, the number of hornworts and liverworts species reported for Romania rose to 151 species in 1967, 192 species in 1983, 198 species in 1998, 203 species in 2006 to 206 species in 2007 (Table 2).

In the last decade were published 15 new taxa to Romania:

1. *Anthoceros agrestis* (Ștefănuț 2004d);
2. *Blepharostoma trichophyllum* subsp. *brevirete* (Ștefănuț 2004i);
3. *Cephaloziella baumgartneri* (Smets 2003);
4. *Cephaloziella integerrima* (Bálint & Orbán 2002);
5. *Cephaloziella massalongi* (Jakab 2000a);
6. *Cephaloziella spinigera* (Lindb.) Warnst. (Jakab 1999);
7. *Conocephalum salebrosum* (Szweykowski, Buczkowska, Odrzykoski 2005),
8. *Frullania parvistipula* (Ștefănuț 2004c);
9. *Haplomitrium hookeri* (Ștefănuț 2000a);
10. *Lophozia opacifolia* (Ștefănuț 2004a);
11. *Lophozia silvicola* (Bakalin 2005);
12. *Marsupella commutata* (Ștefănuț 2004e);
13. *Pallavicinia lyellii* (Ștefănuț 2003a);
14. *Pleurocladula albescens* var. *albescens* (Ștefănuț 2000b);
15. *Scapania gymnostomophila* Kaal. (Ștefănuț 2008a).

Table 1. The number of hornwort and liverwort species published to Romania for periods of 50 years.

Period	Number of species
1801-1850	41
1851-1900	81
1900-1950	49
1951-2000	34
2001-2008	10
1801-2008	215

Table 2. The number of hornwort and liverwort species published for Romania.

Publication	Number of species					
	Hornworts	Liverworts	Total species	Confirmed	Synonyms	Rejected
Papp 1967a	2	158	160	151	7	2
Mihai 1983a	3	197	200	192	4	4
Mihai, Pascal & Costică 1998	3	207	210	198	6	6
Schumacker & Váňa 2000	2	191	193	190	0	3
Söderström, Urmi & Váňa 2002	3	192	195	193	0	2
Schumacker & Váňa 2005	4	189	193	192	0	1
Sabovljević & Natcheva 2006	4	203	207	203	0	4
Söderström, Urmi & Váňa 2007	3	207	210	206	0	4
HORNWORT AND LIVERWORT ATLAS OF ROMANIA, 2008	4	211	215	215	-	-

New subspecies of *Leiocolea bantriensis*

Among the bryophytes collected from Lăptici Peatbog, Bucegi Massif, I found some unusual liverworts, which has characters close to *Leiocolea bantriensis* (Hook.) Jörg. subsp. *bantriensis*, *L. rutheana* (Limpr.) Müll. Frib. var. *rutheana* and *L. rutheana* var. *laxa* (Schiffn. ex Burrell) Paton.

Based on the presence of hairs on underleaves lamina has been described a new subspecies of *Leiocolea bantriensis*:

Leiocolea bantriensis (Hook.) Jörg. subsp. ***wallfischii*** Ștefănuț, subsp. nov.

Diagnosis. Subspecies subsp. *bantriensis* similis, differens, autem, pro eo foliis late, amphigastria ad laminae cum capillus adaxiali crebis.

Type. ROMANIA, Southern Carpathians, Bucegi Massif, Lăptici Peatbog, 1470 m alt., coord. 45°22'26"N / 25°26'23"E, 28 July 2005, leg. Ștefănuț S., BUCA B5209 - holotype.

Leiocolea bantriensis subsp. *wallfischii** is a gregarious liverwort, grows in large tufts, sometimes scattered among mosses, robust, light to deep green, with age become reddish brown or fuscous. Plants 3–4 mm wide × 4–8 cm long. Steam 350–400 μm in diameter, erect. Antical cortical cells 20–28 μm wide. Rhizoids numerous, long, pale brownish. Leaves quite imbricate, widely spreading, broadly ovate-reniform, dorsally convex, wider than long, ca. 2 mm wide × 1.6 mm long, ca. 1.2 × as wide as long, very obliquely inserted, leaves on lax shoots with postical end of insertion line decurrent. Leaves bilobed, sinus rounded, leaf cells averaging 32–38 μm, apex of leaf lobes 1–2-celled or rounded. Underleaves very large, to 0.5–1.2 mm long, usually 2–3-fid and lobes ciliate (Fig. 5a). Underleaves lamina with long hairs, from a few uniseriate cells to over 10 uniseriate cells long (Fig. 5b).

Dioicous. Plants with young perianths. Antheridia missing. Asexual reproduction lacking.

Ecology: aquatic, epigeaic, acidophytic, hydrophytic, photo-sciophytic; boreal-mountain; Hch.

This subspecies grows in the water drainage from Lăptici Peatbog ditch, Bucegi Massif, Romania, along with *Sanionia uncinata* (Hedw.) Loeske and *Fissidens taxifolium* Hedw. On the edge of ditch grows *Sphagnum* spp., *Preissia quadrata* and below *Scapania paludicola* and *Aneura pinguis*.

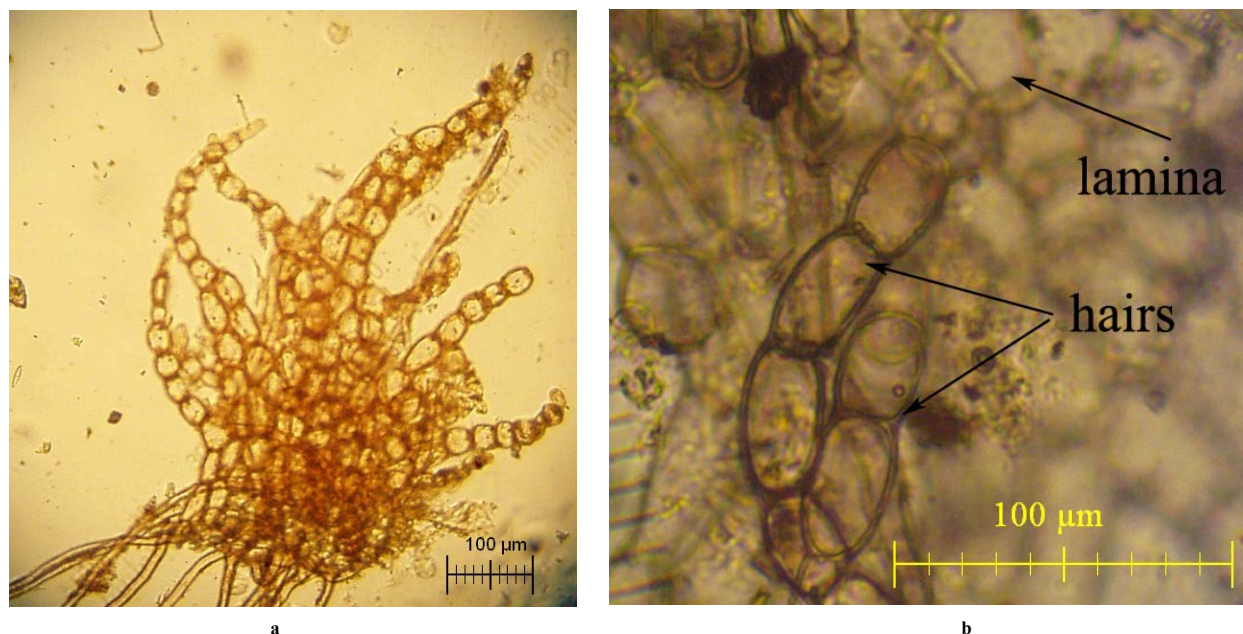


Fig. 5. *Leiocolea bantriensis* (Hook.) Jörg. subsp. *wallfischii* Ștefănuț, subsp. nov. a) underleaf, b) adaxial face of underleaf lamina with hairs.

*The name of *wallfischii* is derived from the romanian bryologist Richard Wallfisch (1914-2008).

THE HORNWORT AND LIVERWORT CLASSIFICATION FOR ROMANIA

ANTHOCEROTOPHYTA

(hornworts)

Class Anthocerotopsida Howe

Order Anthocerotales Limpr.

Family Anthocerotaceae Dumort.

Genul *Anthoceros* L.

Genul *Phaeoceros* Prosk.

MARCHANTIOPHYTA

(liverworts)

Class Marchantiopsida Stotler et Stotl.-Crand.

Subclass Marchantiidae Engl.

Order Marchatiales Limpr.

Suborder Marchantiineae H. Buch ex Schljakov

Family Aytoniaceae Cavers

Genul *Asterella* P. Beauv.

Genul *Mannia* Opiz

Genul *Reboulia* Raddi

Family Conocephalaceae Müll. Frib. ex Grolle

Genul *Conocephalum* Hill

Family Lunulariaceae H. Klinggr.

Genul *Lunularia* Adans.

Family Marchantiaceae (Bisch.) Lindl.

Subfamily Marchantioideae R.M. Schust.

Genul *Marchantia* L.

Genul *Preissia* Corda

Subfamily Bucegioideae R.M. Schust.

Genul *Bucegia* Radian

Family Monosoleniaceae Inoue

Genus *Peltolepis* Lindb.

Family Cleveaceae Cavers

Genus *Athalamia* Falconer

Genus *Sauteria* Nees

Suborder Corsiniineae R.M. Schust. ex Schljakov

Family Corsiniaceae Engl.

Genus *Corsinia* Raddi

Order Ricciales Schljakov emend. Stotler et Stotl.-Crand.

Family Oxymitraceae Müll. Frib. ex Grolle

Genus *Oxymitra* Bisch. ex Lindenb.

Family Ricciaceae Reichenb.

Genus *Riccia* L.

Genus *Ricciocarpos* Corda

Family Targioniaceae

Genus *Targionia* L.

Class Jungermanniopsida Stotler et Stotl.-Crand.

Subclass Metzgeriidae Barthol.-Began

Order Haplomitriales H. Buch ex Schljakov

Family Haplomitriaceae Dedecek

Genus *Haplomitrium* Nees

Order Blasiales (R.M. Schust.) Stotler et Stotl.-Crand.

Family Blasiaceae H. Klinggr.

Genus *Blasia* L.

Order Fossombroniales Schljakov emend. Stotler et Stotl.-Crand.

Suborder Fossombroniineae R.M. Schust. ex Stotler et Stotl.-Crand.

Family Fossombroniaceae Hazsl.

Genus *Fossombronia* Raddi

Suborder Pelliineae R.M. Schust. ex Schljakov emend. Stotler et Stotl.-Crand.

Family Pelliaceae H. Klinggr.

Genus *Pellia* Raddi

Order Metzgeriales Schljakov emend. Stotler et Stotl.-Crand.

Suborder Pallaviciniineae R.M. Schust. emend. Stotler et Stotl.-Crand.

Family Pallaviciniaceae Mig.

Genus *Pallavicinia* Gray

Genus *Moerckia* Gottsche

Suborder Metzgeriineae R.M. Schust. ex Schljakov

Family Aneuraceae H. Klinggr.

Genus *Aneura* Dumort.

Genus *Riccardia* Gray

Family Metzgeriaceae H. Klinggr.

Genus *Apometzgeria* Kuwah.

Genus *Metzgeria* Raddi

Subclass Jungermanniidae Engl. emend. Stotler et Stotl.-Crand.

Order Lepicoleales Stotler et Stotl.-Crand.

Suborder Ptilidiineae R.M. Schust.

Family Ptilidiaceae H. Klinggr.

Genus *Ptilidium* Nees

Suborder Lepidolaenineae R.M. Schust.

Family Trichocoleaceae Nakai

Genus *Trichocolea* Dumort.

Order Jungermanniales H. Klinggr. emend. Stotler et Stotl.-Crand.

Suborder Herbertineae R.M. Schust.

Family Pseudolepicoleaceae Fulford et J. Taylor

Genus *Blepharostoma* (Dumort.) Dumort.

Suborder Lophocoleineae Schljakov

Family Geocalyceae H. Klinggr.

Genus *Chiloscyphus* Corda

Genus *Geocalyx* Nees

Genus *Harpanthus* Nees

Genus *Lophocolea* (Dumort.) Dumort.

Family Plagiochilaceae (Jörg.) Müll. Frib. et Herzog

Genus *Pedinophyllum* (Lindb.) Lindb.

Genus *Plagiochila* (Dumort.) Dumort.

- Suborder** Lepidoziineae R.M. Schust.
Family Calypogeiaceae (Müll. Frib.) Arnell
Genus *Calypogeia* Raddi
Family *Lepidoziaceae* Limpr.
Genus *Bazzania* Gray
Genus *Kurzia* G. Martins
Genus *Lepidozia* (Dumort.) Dumort.
Suborder Cephaloziineae Schljakov
Family Cephaloziaceae Mig.
Genus *Cephalozia* (Dumort.) Dumort.
Genus *Cladopodiella* H. Buch
Genus *Nowellia* Mitt.
Genus *Odontoschisma* (Dumort.) Dumort.
Genus *Pleurocladula* Grolle
Family Cephaloziellaceae Douin
Genus *Cephaloziella* (Spruce) Schiffn.
Suborder Antheliineae R.M. Schust. ex Stotler et Stotl.-Crand.
Family Antheliaceae R.M. Schust.
Genus *Anthelia* (Dumort.) Dumort.
Suborder Jungermanniineae R.M. Schust. ex Stotler et Stotl.-Crand.
Family Lophoziaceae Cavers¹
Genus *Anastrepta* (Lindb.) Schiffn.
Genus *Anastrophyllum* (Spruce) Steph.
Genus *Barbilophozia* Loeske
Genus *Gymnocolea* (Dumort.) Dumort.
Genus *Jamesoniella* (Spruce) F. Lees
²**Genus** *Leiocolea* (Müll. Frib.) H. Buch
Genus *Lophozia* (Dumort.) Dumort.
Genus *Tritomaria* Schiffn. ex. Loeske
Family Jungermanniaceae Rchb.
Genus *Jungermannia* L.
Genus *Mylia* Gray
Genus *Nardia* Gray
Family Gymnomitriaceae H. Klinggr.
Genus *Gymnomitrium* Corda
Genus *Marsupella* Dumort.
Family Scapaniaceae Mig.
Genus *Diplophyllum* (Dumort.) Dumort.
Genus *Scapania* (Dumort.) Dumort.

Order Porellales (R.M. Schust.) Schljakov emend. Stotler et Stotl.-Crand.
Suborder Porellineae R.M. Schust.
Family Porellaceae Cavers
Genus *Porella* L.
Suborder Jubulineae (Spruce) Müll. Frib.
³**Family** Frullaniaceae Lorch
Genus *Frullania* Raddi
Family Lejeuneaceae Casares-Gil
Genus *Cololejeunea* (Spruce) Schiffn.
Genus *Lejeunea* Lib.

Order Radulales (R.M. Schust.) Stotler et Stotl.-Crand.
Family Radulaceae (Dumort.) Müll. Frib.
Genus *Radula* Dumort.

THE HORNWORT AND LIVERWORT CHECK-LIST FOR ROMANIA

Anthocerotophyta

1. *Anthoceros agrestis* Paton
2. *Anthoceros punctatus* L. ⁴
3. *Phaeoceros carolinianus* (Michx.) Prosk. ⁵
4. *Phaeoceros laevis* (L.) Prosk. ⁶

Marchantiophyta

5. *Anastrepta orcadensis* (Hook.) Schiffn.
6. *Anastrophyllum hellerianum* (Nees ex Lindenb.) R.M. Schust.
7. *Anastrophyllum michauxii* (F. Weber) H. Buch
8. *Anastrophyllum minutum* (Schreb.) R.M. Schust. var. *weberi* (Mart.) Kartt.
9. *Anastrophyllum saxicola* (Schreb.) R.M. Schust. ⁷
10. *Aneura pinguis* (L.) Dumort.
11. *Anthelia julacea* (L.) Dumort.
12. *Anthelia juratzkana* (Limpr.) Trevis.
13. *Apometzgeria pubescens* (Schrank) Kuwah.
14. *Asterella gracilis* (F. Weber) Underw. ⁸
15. *Asterella lindenbergiana* (Corda ex Nees) Arnell
16. *Asterella saccata* (Wahlenb.) A. Evans
17. *Athalamia hyalina* (Sommerf.) S. Hatt.
18. *Barbilophozia attenuata* (Mart.) Loeske
19. *Barbilophozia barbata* (Schmidel ex Schreb.) Loeske
20. *Barbilophozia floerkei* (F. Weber et D. Mohr) Loeske
21. *Barbilophozia hatcheri* (A. Evans) Loeske
22. *Barbilophozia kunzeana* (Huebener) Müll. Frib.
23. *Barbilophozia lycopodioides* (Wallr.) Loeske
24. *Barbilophozia quadriloba* (Lindb.) Loeske
25. *Bazzania flaccida* (Dumort.) Grolle
26. *Bazzania tricrenata* (Wahlenb.) Lindb.
27. *Bazzania trilobata* (L.) Gray
28. *Blasia pusilla* L.
29. *Blepharostoma trichophyllum* (L.) Dumort. subsp. *brevirete* (Bryhn et Kaal.) R.M. Schust. ⁹
Blepharostoma trichophyllum (L.) Dumort. subsp. *trichophyllum*
30. *Bucegia romanica* Radian
31. *Calypogeia azurea* Stotler et Crotz
32. *Calypogeia fissa* (L.) Raddi
33. *Calypogeia integristipula* Steph.
34. *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
35. *Calypogeia neesiana* (C. Massal. et Carestia) Müll. Frib.
36. *Calypogeia sphagnicola* (Arnell et J. Perss.) Warnst. et Loeske
37. *Calypogeia suecica* (Arnell et J. Perss.) Müll. Frib.
38. *Cephalozia ambigua* C. Massal.
39. *Cephalozia bicuspidata* (L.) Dumort. var. *bicuspidata*
Cephalozia bicuspidata (L.) Dumort. var. *lammersiana* (Huebener) Breidl.
40. *Cephalozia catenulata* (Huebener) Lindb.
41. *Cephalozia connivens* (Dicks.) Lindb.
42. *Cephalozia lacinulata* J.B. Jack ex Spruce
43. *Cephalozia leucantha* Spruce
44. *Cephalozia loitlesbergeri* Schiffn.
45. *Cephalozia lunulifolia* (Dumort.) Dumort.

46. *Cephalozia pleniceps* (Austin) Lindb.
47. *Cephaloziella baumgartneri* Schiffn.¹⁰
48. *Cephaloziella divaricata* (Sm.) Schiffn.
49. *Cephaloziella elachista* (J.B. Jack ex Gottsche et Rabenh.) Schiffn.
50. *Cephaloziella elegans* (Heeg) Schiffn.
51. *Cephaloziella hampeana* (Nees) Schiffn.
52. *Cephaloziella integerrima* (Lindb.) Warnst.
53. *Cephaloziella massalongi* (Spruce) Müll. Frib.¹¹
54. *Cephaloziella rubella* (Nees) Warnst.
55. *Cephaloziella spinigera* (Lindb.) Warnst.¹²
56. *Chiloscyphus pallescens* (Ehrh. ex Hoffm.) Dumort. var. *pallescens*
Chiloscyphus pallescens (Ehrh. ex Hoffm.) Dumort. var. *fragilis* (A. Roth) Müll. Frib.
57. *Chiloscyphus polyanthos* (L.) Corda var. *polyanthos*
Chiloscyphus polyanthos (L.) Corda var. *rivularis* (Schrad.) Gottsche et al.
58. *Cladopodiella fluitans* (Nees) H. Buch
59. *Cololejeunea calcarea* (Lib.) Schiffn.
60. *Cololejeunea rossettiana* (C. Massal.) Schiffn.
61. *Conocephalum conicum* (L.) Dumort.
62. *Conocephalum salebrosum* Szweyk., Buczkowska & Odrzykoski
63. *Corsinia coriandrina* (Spreng.) Lindb.¹³
64. *Diplophyllum albicans* (L.) Dumort.
65. *Diplophyllum obtusifolium* (Hook.) Dumort.
66. *Diplophyllum taxifolium* (Wahlenb.) Dumort.
67. *Fossombronia pusilla* (L.) Nees
68. *Fossombronia wondraczekii* (Corda) Lindb.
69. *Frullania dilatata* (L.) Dumort.
70. *Frullania fragilifolia* (Taylor) Gottsche et al.
71. *Frullania jackii* Gottsche
72. *Frullania parvistipula* Steph.¹⁴
73. *Frullania tamarisci* (L.) Dumort.
74. *Geocalyx graveolens* (Schrad.) Nees
75. *Gymnocolea inflata* (Huds.) Dumort. subsp. *inflata*
Gymnocolea inflata (Huds.) Dumort. subsp. *acutiloba* (Schiffn.) R.M. Schust. et Damsh. ex
Söderström et Váňa
76. *Gymnomitrium concinnatum* (Lightf.) Lindb.
77. *Gymnomitrium corallioides* Nees
78. *Haplomitrium hookeri* (Sm.) Nees
79. *Harpanthus flotovianus* (Nees) Nees
80. *Harpanthus scutatus* (F. Weber et D. Mohr) Spruce
81. *Jamesoniella autumnalis* (DC.) Steph.
82. *Jungermannia atrovirens* Dumort.
83. *Jungermannia borealis* Damsh. et Váňa¹⁵
84. *Jungermannia caespiticia* Lindenb.
85. *Jungermannia confertissima* Nees
86. *Jungermannia exsertifolia* Steph. subsp. *cordifolia* (Dumort.) Váňa
87. *Jungermannia gracillima* Sm.
88. *Jungermannia hyalina* Lyell
89. *Jungermannia leiantha* Grolle
90. *Jungermannia obovata* Nees
91. *Jungermannia polaris* Lindb.
92. *Jungermannia pumila* With.
93. *Jungermannia sphaerocarpa* Hook.
94. *Jungermannia subelliptica* (Lindb. ex Kaal.) Levier
95. *Jungermannia subulata* A. Evans¹⁶
96. *Kurzia pauciflora* (Dicks.) Grolle

97. *Leiocolea badensis* (Gottsche) Jörg.
 98. *Leiocolea bantriensis* (Hook.) Jörg.
 Leiocolea bantriensis (Hook.) Jörg. subsp. *wallfischii* Ștefănuț, subsp. nov.¹⁷
 99. *Leiocolea collaris* (Nees) Schljakov
 100. *Leiocolea gillmanii* (Austin) A. Evans
 101. *Leiocolea heterocolpos* (Thed. ex Hartm.) H. Buch
 102. *Leiocolea turbinata* (Raddi) H. Buch
 103. *Lejeunea cavifolia* (Ehrh.) Lindb.
 104. *Lepidozia reptans* (L.) Dumort.
 105. *Lophocolea bidentata* (L.) Dumort. var. *bidentata*
 Lophocolea bidentata (L.) Dumort. var. *rivularis* (Raddi) Warnst.
 106. *Lophocolea heterophylla* (Schrad.) Dumort.
 107. *Lophocolea minor* Nees
 108. *Lophozia ascendens* (Warnst.) R.M. Schust.
 109. *Lophozia bicrenata* (Schmidel ex Hoffm.) Dumort.
 110. *Lophozia excisa* (Dicks.) Dumort.
 111. *Lophozia incisa* (Schrad.) Dumort.
 112. *Lophozia longidens* (Lindb.) Macoun
 113. *Lophozia longiflora* (Nees) Schiffn.
 114. *Lophozia obtusa* (Lindb.) A. Evans
 115. *Lophozia opacifolia* Culm. ex Meyl.¹⁸
 116. *Lophozia silvicola* H. Buch¹⁹
 117. *Lophozia sudetica* (Nees ex Huebener) Grolle
 118. *Lophozia ventricosa* (Dicks.) Dumort.
 119. *Lophozia wenzelii* (Nees) Steph.
 120. *Lunularia cruciata* (L.) Lindb.²⁰
 121. *Mannia fragrans* (Balb.) Frye et L. Clark
 122. *Mannia pilosa* (Hornem.) Frye et L. Clark
 123. *Mannia triandra* (Scop.) Grolle
 124. *Marchantia polymorpha* L. subsp. *polymorpha*
 Marchantia polymorpha L. subsp. *montivagans* Bischl. et Boisselier²¹
 Marchantia polymorpha L. subsp. *ruderalis* Bischl. et Boisselier
 125. *Marsupella boeckii* (Austin) Kaal.
 126. *Marsupella brevissima* (Dumort.) Grolle
 127. *Marsupella commutata* (Limpr.) Bernet²²
 128. *Marsupella emarginata* (Ehrh.) Dumort. subsp. *emarginata*
 Marsupella emarginata (Ehrh.) Dumort. subsp. *aquatica* (Lindenb.) Meyl.
 129. *Marsupella funckii* (F. Weber et D. Mohr) Dumort.
 130. *Marsupella ramosa* Müll. Frib.
 131. *Marsupella sphacelata* (Gieseke ex Lindenb.) Dumort.
 132. *Marsupella sprucei* (Limpr.) Bernet.
 133. *Metzgeria conjugata* Lindb.
 134. *Metzgeria furcata* (L.) Dumort.
 135. *Metzgeria violacea* (Ach.) Dumort.
 136. *Moerckia blyttii* (Moerch) Brockm.
 137. *Moerckia hibernica* (Hook.) Gottsche
 138. *Mylia anomala* (Hook.) Gray
 139. *Mylia taylorii* (Hook.) Gray
 140. *Nardia geoscyphus* (De Not.) Lindb.
 141. *Nardia insecta* Lindb.
 142. *Nardia scalaris* Gray
 143. *Nowellia curvifolia* (Dicks.) Mitt.
 144. *Odontoschisma denudatum* (Mart.) Dumort.
 145. *Odontoschisma sphagni* (Dicks.) Dumort.
 146. *Oxymitra incrassata* (Brot.) Sérgio et Sim-Sim

147. *Pallavicinia lyellii* (Hook.) Carruth.²³
148. *Pedinophyllum interruptum* (Nees) Kaal.
149. *Pellia endiviifolia* (Dicks.) Dumort.
150. *Pellia epiphylla* (L.) Corda
151. *Pellia neesiana* (Gottsche) Limpr.
152. *Peltolepis quadrata* (Saut.) Müll. Frib.
153. *Plagiochila asplenioides* (L. emend. Taylor) Dumort.
154. *Plagiochila porelloides* (Torr. ex Nees) Lindenb.
155. *Pleurocladula albescens* (Hook.) Grolle var. *albescens*
Pleurocladula albescens (Hook.) Grolle var. *islandica* (Nees) Söderström et Váňa
156. *Porella arboris-vitae* (With.) Grolle
157. *Porella baueri* (Schiffn.) C.E.O. Jensen
158. *Porella cordaeana* (Huebener) Moore
159. *Porella platyphylla* (L.) Pfeiff.
160. *Preissia quadrata* (Scop.) Nees
161. *Ptilidium ciliare* (L.) Hampe
162. *Ptilidium pulcherrimum* (Weber) Vain.
163. *Radula complanata* (L.) Dumort.
164. *Radula lindenbergiana* Gottsche et C. Hartm.
165. *Reboulia hemisphaerica* (L.) Raddi
166. *Riccardia chamaedryfolia* (With.) Grolle
167. *Riccardia incurvata* Lindb.
168. *Riccardia latifrons* (Lindb.) Lindb.
169. *Riccardia multifida* (L.) Gray
170. *Riccardia palmata* (Hedw.) Carruth.
171. *Riccia bifurca* Hoffm.
172. *Riccia canaliculata* Hoffm.²⁴
173. *Riccia cavernosa* Hoffm.²⁵
174. *Riccia ciliata* Hoffm.
175. *Riccia ciliifera* Link ex Lindenb.
176. *Riccia crystallina* L. emend. Raddi²⁶
177. *Riccia fluitans* L.
178. *Riccia frostii* Austin
179. *Riccia glauca* L. var. *glauca*
Riccia glauca L. var. *ciliaris* Warnst.
180. *Riccia gougetiana* Durieu et Mont.
181. *Riccia papillosa* Moris
182. *Riccia sorocarpa* Bisch.
Riccia sorocarpa Bisch. var. *heegii* Schiffn.
183. *Riccia warnstorffii* Limpr. ex Warnst.
184. *Ricciocarpos natans* (L.) Corda
185. *Sauteria alpina* (Nees) Nees
186. *Scapania aequiloba* (Schwägr.) Dumort.
187. *Scapania apiculata* Spruce
188. *Scapania aspera* Bernet et M. Bernet
189. *Scapania brevicaulis* Taylor²⁷
190. *Scapania calcicola* (Arnell et J. Perss.) Ingham
191. *Scapania compacta* (Roth) Dumort.²⁸
192. *Scapania crassiretis* Bryhn²⁹
193. *Scapania curta* (Mart.) Dumort.
194. *Scapania cuspiduligera* (Nees) Müll. Frib.³⁰
195. *Scapania gracilis* Lindb.³¹
196. *Scapania gymnostomophila* Kaal.³²
197. *Scapania helvetica* Gottsche
198. *Scapania irrigua* (Nees) Nees

199. *Scapania mucronata* H. Buch
 200. *Scapania nemorea* (L.) Grolle
 201. *Scapania paludicola* Loeske et Müll. Frib.
 202. *Scapania paludosa* (Müll. Frib.) Müll. Frib.
 203. *Scapania scandica* (Arnell et H. Buch) Macvicar
 204. *Scapania subalpina* (Nees ex Lindenb.) Dumort.
 205. *Scapania uliginosa* (Sw. ex Lindenb.) Dumort.
 206. *Scapania umbrosa* (Schrad.) Dumort.
 207. *Scapania undulata* (L.) Dumort.
 208. *Scapania verrucosa* Heeg
 209. *Targionia hypophylla* L.³³
 210. *Trichocolea tomentella* (Ehrh.) Dumort.
 211. *Tritomaria exsecta* (Schmidel) Loeske
 212. *Tritomaria exsectiformis* (Breidl.) Loeske
 213. *Tritomaria polita* (Nees) Jörg.³⁴
 214. *Tritomaria quinquedentata* (Huds.) H. Buch
 215. *Tritomaria scitula* (Taylor) Jörg.

NOTES

¹Crandall-Stotler B. & Stotler R.E., in Shaw & Goffinet 2000, include the Lophoziaceae family in Jungermanniaceae (Crandall-Stotler & Stotler 2000). In the Atlas the Lophoziaceae family was kept.

²We kept the genus *Leiocollea* separately from the genus *Lophozia*, in according to Söderström, Urmi & Váňa (2002, 2007).

³In Crandall-Stotler & Stotler 2000, the *Frullania* species were kept in the family Jubulaceae; we maintained separately the Frullaniaceae and Jubulaceae families.

⁴*Anthoceros punctatus* L. (that includes the species *Anthoceros agrestis* and *A. punctatus*) was published from Broșteni, Suceava County, det. Proskauer J.M. (Müller 1957:1317) and under *Aspiromitus punctatus* (L.) Schljakov (Schuster 1992b:759). The previous citations of the species *Anthoceros punctatus* have to be checked. According to Söderström, Urmi & Váňa 2002:35, in Romania only the species *A. agrestis* is present, identified by us in the samples collected by Papp C. and included in FRE under *A. punctatus*.

⁵*Phaeoceros carolinianus* (Michx.) Prosk. was identified recently from the Piatra Craiului National Parc, near Zărnești, Brașov County [BUCA B2801, B2802 and B2803] (Ștefănuț 2004d:28). The only previous citation is from 1931, noted from Broșteni, Suceava County (Tarnavschi 1931, 1931b).

⁶*Phaeoceros laevis* (L.) Prosk. needs confirmation. The samples identified under this name might be *Phaeoceros carolinianus* (Michx.) Prosk.

⁷The last citation of the species *Anastrophyllum saxicola* (Schrad.) R.M. Schust. dates from 1866 (Schur 1866).

⁸The only citation of the species *Asterella gracilis* (F. Weber) Underw. dates from 1915 (Radian 1915) and was confirmed by us in 2004 [BUCA B948-B952] (Ștefănuț 2004h:15-16), 2005 [BUCA B3260, B3298] and 2006 [BUCA B3497].

⁹*Blepharostoma trichophyllum* (L.) Dumort. subsp. *brevirete* (Bryhn et Kaal.) R.M. Schust. was not included in the list published in 2004 (Ștefănuț 2004d), but it was identified later, in fertile state, among the samples collected from Bucegi Mountains - Hornul Mare, Brașov County, 2300-2310 m alt.

¹⁰*Cephaloziella baumgartneri* Schiffn. was recently published by Smets L. from Grohot, Bulzești de Sus, Hunedoara County [BR; Smets 7692] and Gârda de Sus, Alba County [CL; Smets 8616, 8672], conf. Plămadă E. (Smets 2003:59-60).

¹¹*Cephaloziella massalongi* (Spruce) Müll. Frib. was recently published by Jakab G. from the Harghita Mountains (Jakab 2000a:87-89, Fig.1).

¹²*Cephaloziella spinigera* (Lindb.) Warnst. was recently published by Jakab G. from Săpâncioara, Maramureș County (Jakab 1999:55).

¹³*Corsinia coriandrina* (Spreng.) Lindb. published from Romania, Cernei Valley, sub *C. marchantioides* (Müller 1954:404, fig.93), was not included in the list of Mihai G. (1983) or the annotations of Dihoru G. from 1986.

¹⁴*Frullania parvistipula* Steph. was recently published from Romania, Cheile Mari ale Dâmboviței, Argeș County, *leg. & det.* Ștefănuț S., *conf.* Schumacker R. [BUCA B943, B944] (Ștefănuț 2004c:110-111).

¹⁵*Jungermannia borealis* Damsh. et Váňa was cited by Schumacker & Váňa (2000:70) and Söderström, Urmi & Váňa (2002:19), mentioned from Romania only under *J. karl-muelleri* Grolle (Mihai G. 1983:32; Dihoru G. 2001a:128), part of this being synonym also with *J. pumila* With.

¹⁶*Jungermannia subulata* A. Evans was published from Romania, Harghita County, Vlăhița [W] (Grolle & Váňa 1969:312) and from Alba County, Valea Lungă (Grolle & Váňa 1969:312; Váňa 1973b:406), not included in the list of Mihai G. (1983) or the annotations of Dihoru G. from 1986.

¹⁷*Leiocolea bantriensis* (Hook.) Jörg. subsp. *wallfischii* Ștefănuț, subsp. nov. was collected in 2005 and 2006 from the Lăptici Peatbog, Bucegi Natural Park.

¹⁸*Lophozia opacifolia* Culm. ex Meyl. was recently published as new species for Romania, from the Bucegi Mountains, Hornul Mare, Brașov County, *leg. & det.* Ștefănuț S., *conf.* T.L. Blockeel [BUCA B945] (Ștefănuț 2004a:63).

¹⁹*Lophozia silvicola* H. Buch - Romania, in forest, *without localization*, 07.1900, *leg.* Schmidt A. [LE] (Bakalin 2005; Söderström, Urmi & Váňa 2007:324);

²⁰The presence of the species *Lunularia cruciata* (L.) Lindb. at Grota cu Aburi, Caraș-Severin County, the only place where the species can be found in nature, was confirmed by us in 2004 [BUCA B2970, B2971].

²¹*Marchantia polymorpha* L. subsp. *montivagans* Bischl. et Boisselier was published from Romania as *Marchantia polymorpha* L. var. *alpestris* Nees or *M. alpestris* Nees.

²²*Marsupella commutata* (Limpr.) Bernet was published recently as new species for Romania, from the shore of Lake Urlea, Făgăraș Mountains, *leg. & det.* Ștefănuț S., *conf.* T.L. Blockeel [BUCA B947] (Ștefănuț 2004e:306) and Baba Mare Mountain, Bucegi Massif, *leg. & det.* Ștefănuț S. (Ștefănuț 2007a:103).

²³*Pallavicinia lyellii* (Hook.) Carruth. was published recently as new species for Romania, from Arpașu de Sus, Sibiu County [BUCA B931] (Ștefănuț 2003a:71-78).

²⁴*Riccia canaliculata* Hoffm. was not included in the 2004 list (Ștefănuț 2004d), but it was identified in the paper of Simonkai L. (1893:359), mentioned from Arad County, under „*Ricciella fluitans* var. *canaliculata* Hoffm.”.

²⁵*Riccia cavernosa* Hoffm. was not included in the 2004 list (Ștefănuț 2004d), but it was identified in the paper of Schuster R.M. (1992b:487-489), who mentioned that *R. crystallina* auct., non L. emend. Raddi, from the papers of Warnstorff C. (1903) and Müller K. (1906-1911; 1954), belong to the species *R. cavernosa*. We considered that the species published under *R. crystallina* L., from Ostrovul Moldova Veche, Caraș Severin County, might be *R. crystallina* L. emend. Raddi (Ștefureac & Mihai 1967:14), and all citations published under *R. crystallina* L. are referring to *R. cavernosa*.

²⁶ It is possible that all species cited under *Riccia crystallina* L. are actually *R. cavernosa*.

²⁷*Scapania brevicaulis* Taylor (published by Ștefureac T. under *Scapania degenii* Schiffn. ex Müll. Frib.) (Ștefureac 1958a:109).

²⁸*Scapania compacta* (Roth) Dumort. was published by Mohan G. from Ciucaș Mountains, Zăganul Mountain, Roșu Mountain and the valley of the Ursului brook (Mohan 1990b:42), and from the Doftana Valley and Păltinoasei Valley, Prahova County [PHHM 7783/3873] (Mohan 1971a:9; Mohan 1988b:107). Later, the liverwort was excluded from the List of Hornworts and Liverworts from Romania (Plămadă & Dumitru 1998b:68; Söderström, Urmi & Váňa 2002:32; Dihoru G. 2004:169; Ștefănuț 2004d:38). In 2006 I checked the herbarium samples from the Museum of Natural Sciences from Ploiești and found no specimens of this species!

²⁹*Scapania crassiretis* Bryhn, excluded from the List of Hornworts and Liverworts from Romania (Ștefănuț 2004d:38), was reintroduced following the consultation of the paper written by Loitlesberger K. (1898), who cited the species from the Făgăraș Mountains, Negoiu Peak, alt. 2200 m.

³⁰*Scapania cuspiduligera* (Nees) Müll. Frib. is cited from Romania by Müller K. (Müller 1957:934) and Schuster R.M. (Schuster 1974:355) from the Transylvanian Alps, probably after Loitlesberger K. and Pax F., under *S. rupestris* Dumort., from the Bucegi Mountains, but synonym with *S.*

aequiloba (Loitlesberger 1898:193; Pax 1908:130,316). The species appears in the paper of Düll R. (1983) and is included in the list from 2002 (Söderström, Urmí & Váňa 2002:32). The presence of the species in Romania was confirmed in 2007 from the Bucegi Massif, *leg. & det.* Ștefănuț S. (Ștefănuț 2007a: 103).

³¹*Scapania gracilis* was published by Ștefureac T. from the din Codrul Secular Slătioara old growth forest, Rarău Mountain, under „*Scapania gracilis* Kaal.” (Ștefureac 1941:1155,1272; Ștefureac 1942b:91; Ștefureac 1969a: Tab.16; Papp 1969b:188). The presence of this species in Romania requires further confirmation.

³²*Scapania gymnostomophila* Kaal. was recently published as new species for Romania, from the Bucegi Massif, Caraiman Mountain, Prahova County [BUCA B3722, B3723] (Ștefănuț 2008a:234).

³³*Targionia hypophylla* L. was not included in the 2004 list (Ștefănuț 2004d). The species was cited by Pančić (1861), from Caraș-Severin County, Rusca Montană (Pančić 1861:94; Györfly 1908d:262).

³⁴*Tritomaria polita* (Nees) Jörg. was published for the first time for Romania in 1977 by Plămadă E. (1977b:115), from Făgăraș Mountains. The species was identified in fertile state from the Valea Doamnei circus glacier, Făgăraș Mountains [BUCA B2001, B2093, B2094] (Ștefănuț 2001:129).

THE REJECTED TAXA FROM THE LIST OF HORNWORTS AND LIVERWORTS FROM ROMANIA

1. *Calypogeia arguta* Nees et Mont. published as new for Romania by Dihoru G. (after Smets L.), but unconfirmed by Smets L. (Dihoru G. 2001a:115; Ștefănuț 2004d:38).
2. *Fossombronia foveolata* Lindb. is mistakenly included by Dihoru G. in the list of synonyms (Dihoru G. 2001a:119; Ștefănuț 2004d:38).
3. *Gymnomitrium crenulatum* Gottsche ex Carrington published as new for Romania by Dihoru G. (after Smets L.), but unconfirmed by Smets L. (Dihoru G. 2001a:120; Ștefănuț 2004d:38).
4. *Jungermannia jenseniana* Grolle published by Degen A. sub *J. pusilla*, but reviewed by Váňa J. as *J. confertissima* Nees (Degen 1914:217; Váňa 1974:37; Dihoru G. 2001a:124; Ștefănuț 2004d:38).
5. *Lophozia elongata* Steph., was published as *Lophozia excisa* (Dicks.) Dumort. var. *cylindracea* (Dumort.) Müll. Frib. synonym to *Lophozia elongata* Steph. (Mihai, Pascal & Costică 1998; Ștefănuț 2004d:38).
6. *Mannia androgyna* (L.) A. Evans, a Mediterranean species, was mistakenly included in the guide book of Papp C., instead of *M. pilosa*. The citations of the species by Papp C. (Papp 1967a:9), under *G. dichotoma*, from the Bucegi Mountains, Cerbului Valley, Bucoșiu Mountain and Făgăraș Mountains (probably Piatra Craiului), are referring to the species *Mannia pilosa*, cited from these localities, which is missing from the work of Papp. The species is also cited by Mohan (1998), from Arad County, Stâncă Șoimului (Șoimușului), after Hazslinszky 1885, but this liverwort is not present in the cited paper. From an ecological perspective, the distribution area of the species *Mannia androgyna* does not include Romania.
7. *Marchantia paleacea* Bertol., published by Mohan & Pârvu C. from Prahova County, Bâlbăitoarea Swamp, Tătaru Mountain, on the left bank of the Bâlbăitoarea brook, was not found in the subsequent researches done by Dihoru G. from 9.07, 20.10.1981 (Mohan & Pârvu 1975:595; Dihoru G. 1984c:81; Mohan 1988b:116; Plămadă & Dumitru 1998b:67; Dihoru G. 1998:241; Ștefănuț 2003b:231). Mediterranean species with unnatural presence in Romania (Plămadă & Dumitru 1998b:67; Dihoru G. 1998:241; Ștefănuț 2004d:38).
8. *Metzgeria lindbergii* Schiffn. (sub *Metzgeria simplex* Lorb. ex Müll. Frib.) mistakenly included in the list of hornworts and liverworts from South-East Europe (Sabojlević & Natcheva 2006:174).
9. *Metzgeria temperata* Kuwah., published by Pócs in 2006 and reviewed in 2007 as *M. violacea* (Ach.) Dumort. (Pócs 2006:9-24; Sass-Gyarmati, Goia & Pócs 2007:13; Sass-Gyarmati, Goia & Pócs 2008:121,122).
10. *Nardia breidlerii* (Limpr.) Lindb. was reported from Romania but without localities and specimens (based on Düll 1983), and has been rejected until specimen is found. Perhaps the report was based on Ștefureac's paper, referring to the Alps (Ștefureac 1955:601).

11. *Porella obtusata* (Taylor) Trevis., mistakenly included in the list of hornworts and liverworts from South-East Europe (Sabojlević & Natcheva 2006:174).
12. *Porella platyphylloidea* (Schwein.) Lindb. cited in Europe is *Porella platyphylla* (L.) Pfeiff. (Mihai, Pascal & Costică 1998; Ștefănuț 2004d:38).
13. *Scapania glaucocephala* (Taylor) Austin was reported from Romania, but without localities and specimens, and has been rejected until specimen is found (Düll 1983; Söderström, Urmi & Văna 2002, 2007). The samples of *Scapania glaucocephala* (Taylor) Austin were checked by Düll R. Western European arctic-alpine species, extremely rare, with distribution in Germany (Bayerische Alpen, Allgäuer Alpen), N. Russia, Norway and Sweden (Frey & al. 2006:100). The samples from Cluj County, Morii Valley, on sandy-clayey soil, as *Scapania glaucocephala*, leg. & det. Plămadă E. were wrongly identified (Plămadă 1967:470).
14. *Scapania praetervisa* Meyl., published by Jakab G. as new for Romania, from Covatar Waterfall, near Săpânța, Maramureș County, 900 m alt., 15-21.06.1997 (Jakab 1999:55). Arctic-alpine species, requires further confirmation.

THE AREAS INVESTIGATED

The Atlas includes my research conducted during 1995-2008 in over 200 localities across Romania. In Fig. 6 is represented the distribution of areas investigated (the blue circle). An important support in the realisation of this Atlas came from my colleagues: Paulina Anastasiu, Dan Cogălniceanu, Gina Cogălniceanu, Simona Mihăilescu, Mihaela Paucă-Comănescu, Adriana Jalbă, Claudia Nicolae, Marilena Onete, Oliviu Pop, Cristina Fiera, Nicoleta Șerpoiu and Kinga Öllerer from which I received several specimens collected from the field (the red circle).

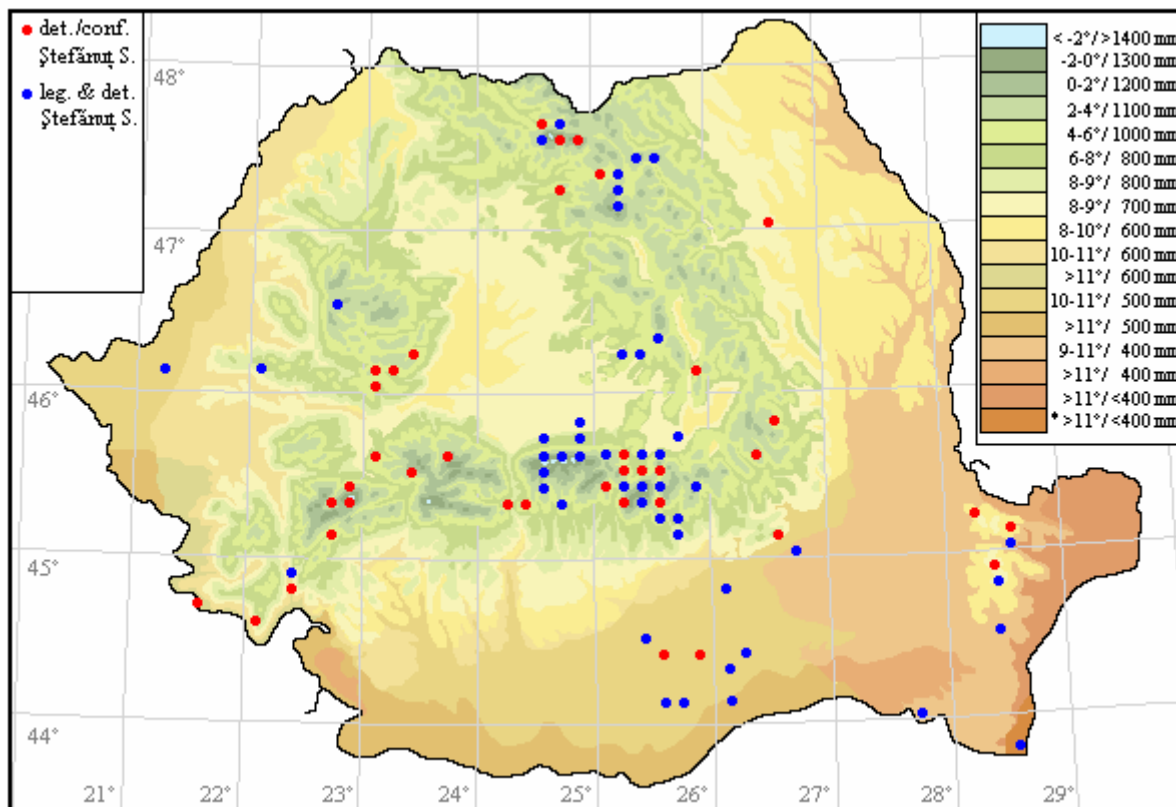


Fig. 6. The distribution of areas investigated.

THE CHOROLOGY OF HORNWORT AND LIVERWORT SPECIES FOR ROMANIA

The distribution of hornworts in Romania

Anthoceros agrestis Paton

Syn.:

- *Anthoceros crispulus* auct.
- *Anthoceros multifidus* auct.
- *Anthoceros punctatus* auct., non L.
- *Anthoceros punctatus* var. *cavernosus* Gottsche & al.
- *Aspiromitus punctatus* Steph. emend. Rink subsp. *agrestis* (Paton) R.M. Schust.

First citation for Romania: Ștefănuț 2004d.

Ecology: epigeaic, moderately acidophytic-subneutrophytic, mesophytic, photophytic; circumpolar; Hth.

Herbaria and Exsiccatae: BUCA, PHHM, FRE

Distribution in Europe: Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Sa, Sc, It, Mk, Ro, Ct, Ee, Lt, Ua, Rn, Rw, Rc, Az, Ma, Cn.

Distribution in Romania:

Neamț County, Tâmpeschi, Războieni Commune, in forest, on clayey soil, in stubble field, 370 m *alt.*, 25.07.1948, *leg. & det.* Papp C., sub *A. punctatus*, *rev.* Ștefănuț S. [FRE 3043; BUCA B1000, B1001] (Papp 1960a:120; Borza, Gergely & Rațiu O. 1968:522; Ștefureac & al. 1973:140; Ștefănuț 2004d:27,28); between „Peste-Recea” Forest and Unghiu-Tâmpeschi Forests, 370 m *alt.*, 25.07.1948, *leg. & det.* Papp C., sub *A. punctatus*, *rev.* Ștefănuț S. [PHHM 627435](Papp 1959b:563; Borza, Gergely & Rațiu O. 1968:522; Ștefureac & al. 1973:140).

Anthoceros punctatus L.

Syn.:

- *Anthoceros constans* Lindb.
- *Anthoceros husnotii* Steph.
- *Anthoceros longicapsulus* Steph.
- *Anthoceros punctatus* auct., p.p.
- *Anthoceros punctatus* var. *husnotii* (Steph.) Zodda
- *Anthoceros stableri* Steph.
- *Aspiromitus punctatus* Steph. emend. Rink subsp. *punctatus* (L.) Schljakov

First citation for Romania: Fuss 1878.

Popular name: lepra lupului pătat, cornețel (Papp 1972:113).

Moldova (Ștefureac & al. 1973:140).

Muntenia (Mohan 1988b:98).

Ecology: epigeaic, acidophytic-subneutrophytic, moderately hygrophytic, photophytic; circumpolar; Hth.

Herbaria and Exsiccatae: SIB

Distribution in Europe: Ie, Br, Fr, Nl, Be, De, Pt, Es, Co, Sa, Sc, It, Si, Ro, Al, Ct, Ua, Az, Ma, Cn.

Distribution in Romania:

Suceava County, Broșteni, Neagra Valley, along with *Phaeoceros carolinianus*, *leg.* Tarnavschi I., *det.* Proskauer J.M. (Müller 1957:1317; Papp 1967a:6; Schuster 1992b:759).

? - **Prahova County**, Teleajen Valley, (Mohan 1990a:23).

? - **Iezer-Păpușa Mountains**, Iezer Valley, Bătrâna Valley (Mohan 1990a:23).

Alba County, Valea Largă, 2.09.1876, *leg. & det.* Barth J. [SIB HF 1466](Fuss 1878:651; Barth 1880:121; Hazslinszky 1885:25; Drăgulescu 1983:56); Mănărade (Barth 1880:121); Blaj (Barth 1880:121).

Bihar County, Holod and Beiuș, 120-250 m *alt.* (Péterfi M. 1908:279; Ștefureac 1975b:310; Ștefureac 1986f:191).

Anthoceros sp.

? - **Maramureș**, (Ștefureac 1971f:13).

Hunedoara County, Săcărîmb, Certeju de Sus, under Haitău-Săcărîmb Hill, *leg.* Ștefureac T. (Ștefureac 1956a:242).

***Phaeoceros carolinianus* (Michx.) Prosk.**

Syn.:

- *Anthoceros incrassatus* Schiffn.
- *Anthoceros japonicus* Steph.
- *Anthoceros koreanus* Steph.
- *Anthoceros laevis* fo. *tenuis* Nees
- *Anthoceros laevis* subsp. *carolinianus* (L.) R.M. Schust.
- *Anthoceros laevis* subsp. *carolinianus* (Michx.) Prosk.
- *Anthoceros laevis* var. *carolinianus* (Michx.) Lindb.
- *Anthoceros laevis* var. *major* Aust.
- *Anthoceros miyoschianus* Steph.
- *Anthoceros moldavicus* Tarnav.
- *Anthoceros reticulatus* Steph.
- *Anthoceros subcostatus* Steph.
- *Carpoceros carolinianus* Dumort.
- *Phaeoceros laevis* (L.) Prosk. fo. *carolinianus* (Michx.) R.M. Schust.
- *Phaeoceros laevis* (L.) Prosk. subsp. *carolinianus* (Michx.) Prosk.

First citation for Romania: sub *Anthoceros moldavicus*, Tarnavschi 1931a.

Moldova, sub *Anthoceros moldavicus* (Papp 1943:649).

Ecology: epigeaic, acidophytic-subneutrophytic, mesophytic, photo-sciophytic; circumpolar, Hth.

Herbaria and Exsiccatae: BUCA, S

Distribution in Europe: Is, No, Dk, Se, Fi, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Ro, Ee, Lv, Lt, Ua, Rw, Rc, Az, Ma, Cn.

Distribution in Romania:

Suceava County, Broșteni, Neagra Valley, 625 m *alt.*, 23.07.1931, sub *Anthoceros moldavicus* [S B20585](Tarnavschi 1931a:96-97; Tarnavschi 1931b:176; Papp 1943:649; Gușuleac 1947-1948:496; Buia 1948:19; Papp 1956b:24; Buia, Nyárady E.I. & Răvăruț 1965:107; Țopa & Lazăr 1966:224; Ștefureac 1978d:161; Dihoru G. 1984a:73).

Piatra Craiului National Park, below to "La Bărc", BV, 45°34'37"N / 25°16'23"E, 750 m *alt.*, 20.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2801], 22.08.2003 [BUCA B2802, B2803] (Ștefănuț 2004d:28; Ștefănuț & Pop O.G. 2006:72).

***Phaeoceros laevis* (L.) Prosk.**

Syn.:

- *Anthoceros beltrani* Casares-Gil
- *Anthoceros curnowii* Steph.
- *Anthoceros laevis* L.
- *Anthoceros laevis* L. subsp. *laevis* L.
- *Carpoceros laevis* Dumort.

First citation for Romania: *without locality*, sub *Anthoceros*, Baumgarten 1846.

Moldova, sub *Anthoceros* (Papp 1943:649; Ștefureac & al. 1973:139).

Muntenia (Mohan 1988b:99).

Ecology: epigeaic, rarely epilithic, acidophytic, neutrophytic to slightly basiphytic, mesophytic, sciophytic; circumpolar, Hth.

Herbaria and Exsiccatae: SIB

Distribution in Europe: Ie, Br, Fr, Pt, Es, Bl, Co, Sa, Sc, It, Ro, Bg, Al, Gr, Ct, Lv, Rw, Az, Ma, Cn.

Distribution in Romania:

Suceava County, Suceava and in vicinity (Knauer 1863; Ștefureac & Pascal 1981:475); Cârlibaba, Țibău (Pascal & Mititelu 1971; Pascal 1973; Ștefureac & Pascal 1981:475).

Bistrița-Năsăud County, Șanț Commune, Măgura Ilvei Commune, Leșu Commune, 1983-1984 (Mohan & Hodoroga 1986:210).

Neamț County, Bistrița Monastery, sub *Anthoceros* (Papp 1934a:193); Neamț Monastery, *leg.* Brândză M., sub *Anthoceros* (Radian 1922b:189); Neamț Monastery, on clayey soil, 07-08.1921, 1923, *leg.* Brândză M., *det.* Ștefureac T., sub *Anthoceros* (Ștefureac 1942a:5); Cernegura Mountain, Sterghinosu Valley, 400-550 m *alt.*, 08.1955, 08.1959, sub *Anthoceros* (Lungu 1963a:242-244).

? - **Prahova County,** Doftana Valley between Trăistieni and Tesila, 850 m *alt.*, sub *Anthoceros* (Mohan 1981:99); Teleajen Valley, (Mohan 1990a:23).

? - **Iezer-Păpușa Mountains,** Iezer Valley, Dâmbovița Valley (Mohan 1990a:23).

Giurgiu County, Căscioarele Forest, sub *Anthoceros* (Șerbănescu I. 1959b:513).

? - **Argeș County,** Argeș Valley (Mohan 1990a:23).

Mureș County, Sighișoara (Schur 1866:869; Fuss 1878:651).

Sibiu County, Sibiu, sub *Anthoceros* [SIB SCHUR 4550](Schur 1866:869; Fuss 1878:651; Hazslinszky 1885:25; Gündisch 1977:45; Drăgulescu 2003:7).

Lotrului Mountains, Rudaru, 08-09.1954, sub *Anthoceros* (Ștefureac, Popescu & Lungu 1959:8,22,36).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526; Lungu 1963a:243).

Hunedoara County, Baia de Criș, Țebea, 400 m *alt.*, sub *Anthoceros* (Péterfi M. 1908:279).

Caraș-Severin County, Rusca Montană, sub *Anthoceros* (Pančić 1861:94; Hazslinszky 1885:25).

Arad County, Calvaria Mountain near Săvârșin, sub *Anthoceros* (Simonkai 1872:66; Simonkai 1893:359; Fuss 1878:651; Hazslinszky 1885:25).

Cluj County, between Ciucea and Negreni, 400 m *alt.*, sub *Anthoceros* (Péterfi M. 1908:279; Ștefureac 1975b:312).

Bihor County, Aleșd, Pădurea Neagră, sub *Anthoceros* (Simonkai 1890a:129).

The distribution of liverworts in Romania

Anastrepta orcadensis (Hook.) Schiffn.

Syn.:

- *Anastrepta orcadensis* fo. *attenuata* Nees
- *Anastrepta orcadensis* var. *elongata* Schiffn.
- *Jungermannia orcadensis* Hook.
- *Jungermannia orcadensis* var. *attenuata* Nees
- *Mesophylla orcadensis* (Hook.) Dumort.

First citation for Romania: Ștefureac 1936.

Maramureș (Ștefureac 1979c:59).

Bucovina (Müller 1954:713).

Muntenia (Mohan 1988b:102).

Ecology: epilithic-humicolous, acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Fo, No, Se, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, Es, It, Ro, Ua.

Distribution in Romania:

Maramureș Mountains, Puzdra Peak, 1700-1800 m *alt.* (Boros & Vajda 1967:219; Plămadă 1973a:378).

Rodna Mountains, Ineu, Crestele Găgii, Tăul Mare, 2000 m *alt.* (Ștefureac 1942b:87-94; Boros 1951:373; Müller 1954:713; Ștefureac 1963b:89); Ineu Peak, Crestele Găgii, 1800 m *alt.* (Ștefureac 1945:174; Boros 1951:373; Müller 1954:713; Plămadă 1973a:378); Pietrosul Borșei, north-western slope, 2280 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:389; Ștefureac 1967b:308; Ștefureac 1968:304; Plămadă 1973a:378; Ștefureac 1977c:167; Ștefureac 1983g:177,181); Iezerul Pietrosului, 08.2005, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3205]; Ineu, 08.2005, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3206].

Giupalău Mountain, Giupalău, on east-north-eastern slope, 22.08.1936 (Ștefureac 1936:297; Ștefureac 1963b:89); Piciorul Pietrii, 1700 m *alt.*, sub fo. *attenuata* Nees (Ștefureac 1942b:87-94; Dihoru 1987:88); Giupalău Peak, north-eastern slope, 1600 m *alt.*, the end of „Piciorul Giupalăului” Ridge, 1700 m *alt.*, 08.1943 (Ștefureac 1945:174,175; Plămadă 1973a:378); at border of forest with *Pinus mugo* and *Empetrum nigrum*, 1750 m *alt.*, 20.06.1936 (Ștefureac 1958a:108).

Rarău Mountain, Codrul Secular Slătioara, 1250 m *alt.*, 06-07.1936-1940 (Ștefureac 1941:1153,1246,1271,1272,1298,1302; Ștefureac 1958a:110-111; Ștefureac 1963b:89; Ștefureac 1965c:63; Ștefureac 1965f; Ștefureac 1969a:137; Papp 1969b:188; Plămadă 1973a:378; Ștefureac & Pascal 1981:479; Plămadă 1987b:336; Plămadă 1988:197); Codrul Secular Slătioara, Ion’s Brook, Plaiul Todirescu, 1000 m *alt.* (Ștefureac 1942b:87-94); Codrul Secular Slătioara, Ion’s Brook, in spruce forest, 1000-1100 m *alt.* (Ștefureac 1945:174); Pietrele Doamnei, SV, 47°26'48"N / 25°34'05"E, 25.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3746].

Harghita Mountains, Căpâlnița (Boros 1951:373; Müller 1954:713; Plămadă 1973a:378).

? - **Ciucaș Mountains**, Groșoarele Peak, Bratocea Peak (Mohan 1990b:40).

Bucegi Massif, on north-western slope and south-western slope between Piatra Arsă and Jepii Mari, 1958 (Ștefureac 1963b:90,101,102, Fig.4a-d; Ștefureac 1969a:138; Ștefureac 1972c:105; Plămadă 1973a:378; Ștefureac 1986f:190,191).

Făgăraş Mountains, Cârțișoara Valley towards Bâlea Lake, 1500-2000 m *alt.* (Boros & Vajda 1967:219; Plămadă 1973a:378; Drăgulescu 2003:11).

Cindrel Mountains, Cotorești, 1750 m *alt.* (Gündisch 1977:48; Drăgulescu 2003:11); Foltea Peak, 14.10.1957, *leg.* Gündisch F., *det.* Ștefănuț S. [BUCA B5485].

Retezat Mountains, Gemenea Valley near Casa laborator, on soil, 1964-1971 (Plămadă 1973a:378, Fig.2a-e; Plămadă 1993:49); Gemenele, 19.06.2005, *leg.* Cogălniceanu D., *det.* Ștefănuț S. [BUCA B3190].

Anastrophyllum hellerianum (Nees ex Lindenb.) R.M. Schust.

Syn.:

- *Cephalozia helleri* Lindb.
- *Crossocalyx hellerianus* (Nees ex Lindenb.) Meyl.
- *Diplophylleia helleriana* (Nees ex Lindenb.) Trevis.
- *Diplophyllum hellerianum* (Nees ex Lindenb.) Dumort.
- *Isopaches hellerianus* (Nees ex Lindenb.) H.Buch
- *Jungermannia helleriana* Nees ex Lindenb.
- *Jungermannia verruculosa* Lindb.
- *Jungermannia verruculosa* var. *compacta* Lindb.
- *Jungermannia verruculosa* var. *helleri* Lindb.
- *Lophozia helleriana* (Nees ex Lindenb.) Macoun
- *Prionolobus hellerianus* (Nees ex Lindenb.) Schiffn.
- *Sphenolobus hellerianus* (Nees ex Lindenb.) Steph.
- *Sphenolobus hellerianus* var. *compacta* (Lindb.) Schiffn.

First citation for Romania: Loitlesberger 1898.

Moldova, sub *Crossocalyx* (Ștefureac & al. 1973:145).

Muntenia, sub *Crossocalyx* (Mohan 1988b:102).

Ecology: lignicolous, acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Sb, Ro, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re.

Distribution in Romania:

Giupalău Mountain, Giupalău Secular Forest, SV, 1200 m *alt.*, 13.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3675, B3678, B3696, B3697, B3699] (Ștefănuț 2007b:429); Giupalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg.* & *det.* Ștefănuț S. [BUCA B3945, B3958].

Rarău Mountain, Rarău Mountain, SV, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3769] (Ștefănuț 2007b:429).

Neamț County, Neamț Monastery, on rotten wood, 07-08.1923, *leg.* Brândză M., *det.* Ștefureac T., sub *Sphenolobus* (Ștefureac 1942a:4; Ștefănuț 2007b:429).

? - **Harghita County**, Lacul Roșu, sub *Sphenolobus* (Bálint & Orbán 2006:474).

? - **Ciucaș Mountains**, Ciucaș Peak, Roșu Mountain, Zăgan Mountains, sub *Crossocalyx* (Mohan 1990b:41).

Baiului Mountains, Piscul Câinelui, sub „*Jungermannia helleri*” (Loitlesberger 1898:195; Pax 1908:129; Boros & Vajda 1967:219).

Cluj County, Răcățău, Someșul Rece Valley, 700 m *alt.*, *leg.* & *det.* Vajda L., sub *Crossocalyx* (Boros & Vajda 1967:220; Plămadă 1985b:41).

Anastrophyllum michauxii (F. Weber) H. Buch

Syn.:

- *Diplophyllum michauxii* (F. Web.) Warnst.
- *Jungermannia densa* Nees
- *Jungermannia michauxii* F. Web.
- *Lophozia michauxii* (F. Web.) Macoun
- *Sphenolobus michauxii* (F. Web.) H. Buch

First citation for Romania: Schur 1866.

Romania (Müller 1954:751; Schuster 1969:727).

Maramureș (Ștefureac 1979c:59).

Bucovina (Müller 1954:751; Schuster 1969:727).

Muntenia (Mohan 1988b:102).

Transylvania, sub *Lophozia* (Pax 1908:129; Müller 1954:751).

Ecology: epigeaic, humicolous, saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain-subalpine; Hch.

Herbaria and Exsiccatae: BUCA,

Distribution in Europe: No, Se, Fi, De, Po, At, Cz, Sk, Hu, It, Si, Hr, Ba, Ro, Bg, Ua, Rn.

Distribution in Romania:

Maramureş County, Săpânta (Boros 1951:372).

Țibleş Mountains, Arcer Peak, Țibleş Peak, 1984-1985 (Mohan 1988a:20).

Suceava County, Coşna at Preluca Ulmului, 1200 m *alt.*, sub *Jungermannia* (Breidler 1890a:150; Pax 1908:129; Ştefureac 1986f:192); Breaza, 3.06.1910, Poiana Stampei, 17.05.1910, Izvorul Alb, 14.05.1910, sub *Sphenolobus* (Lilienfeldówna 1911:732); Cristişor-Neagra Broştenilor, Borcut Meadow, spruce forest, on soil and rotten wood (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:93); ♀ - Poiana Stampei Peatbog, SV, 47°20'33"N / 25°11'14"E, 920 m *alt.*, 28.07.2007, *leg. & det.* Ştefănuţ S. [BUCA B3799], ♂ - [BUCA B3800].

Giuralău Mountain, Poiana Iţcani Reserve, 880-920 m *alt.*, 1946-1957 (Ştefureac 1969a: Tab.16); Giuralău Secular Forest, 1210 m *alt.*, 11.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3673]; Giuralău Secular Forest, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3640, B3644, B3662, B3674, B3706]; ♀ - Giuralău Secular Forest, 1210 m *alt.*, 11.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3692]; ♀ - Giuralău Secular Forest, 1200 m *alt.*, 13.10.2006, *leg. & det.* Ştefănuţ S. [BUCA B3631]; ♂ - Giuralău Secular Forest, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3683]; Giuralău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 19.09.2007, *leg. & det.* Ştefănuţ S. [BUCA B3881]; ♂ - Giuralău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ştefănuţ S. [BUCA B3946].

Rarău Mountain, Rarău, 14.05.1910, Pietrele Doamnei, 15.05.1910, sub *Sphenolobus* (Lilienfeldówna 1911:732); Rarău, 14.05.1910, *leg. & det.* Wycieczka Z. (Ştefureac 1969a:139); Codrul Secular Slătioara, 880-900 m *alt.*, sub *Sphenolobus* (Ştefureac 1941:1155,1284, Tab.9; Ştefureac 1969a: Tab.16; Papp 1969b:188; Ştefureac 1986f:193); Rarău, 1350 m *alt.* (Ştefureac 1969a: Tab.16); ♀ - Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ştefănuţ S. [BUCA B3758], ♂ - [BUCA B3759, B3765], s - [BUCA B3767, B3771].

Bârgău Mountains, Cucureasa Reserve, Coşna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphideturum pellucidae* (Barkman 1958) Maurer 1961 (Ştefureac, Mihai & Pascal 1976:36, Tab.1).

Hăşmaş Mountains, *fer* - Hăghimaş, sub *Sphenolobus* (Schiffner 1914:306).

Harghita Mountains, Harghita Spa (Boros 1951:372).

Ciucaş Mountains, Zăgan Mountain, Roşu Mountain (Mohan 1990b:40).

Piatra Mare Mountain, „Şapte Scări” Waterfall, Tamina Waterfall, 1100-1500 m *alt.* (Boros & Vajda 1967:220).

Cristianul Mare Mountain, Cristianul Mare, *leg. & det.* Vajda L. (Boros & Vajda 1967:220).

Bucegi Massif, *fer* - Mălăieşti Valley, ♂ - Bucşoiu, 08-09.1911, sub *Sphenolobus* (Degen 1914:217); Bucşoiu Mountain, 1400-1500 m *alt.* (Boros & Vajda 1967:220).

Piatra Craiului Mountains, *fer* - Crăpătura Valley, Plaiul Foi, 1000-1600 m *alt.* (Boros & Vajda 1967:220; Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:72); ♀ - Crăpătura Pietrei Craiului, BV, 45°33'44"N / 25°15'51"E, 1100 m *alt.*, 21.08.2003, *leg. & det.* Ştefănuţ S. [BUCA B2790], 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ştefănuţ S. [BUCA B2776], s - [BUCA B2695, B2707, B2718], on wood [BUCA B2748], on soil, 45°33'35"N / 25°15'46"E, 1250 m *alt.*, 22.08.2003, *leg. & det.* Ştefănuţ S. [BUCA B2751], 45°33'37"N / 25°15'48"E, 1200 m *alt.*, 22.08.2003, *leg. & det.* Ştefănuţ S. [BUCA B2747] (Ştefănuţ & Pop O.G. 2006:72,73); ♂ - Marele Grohotiş, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ştefănuţ S., sub *Barbilophozia attenuata*, rev. Ştefănuţ S. [BUCA B2648] (Ştefănuţ & Pop O.G. 2006:73).

Iezer-Păpuşa Mountains, Bratia Valley, 1200 m *alt.*, sub *Jungermannia* (Loitlesberger 1898:195; Mohan 1978b:335,342).

Făgăraş Mountains, Arpaş Mountain, *leg. & det.* Heufler L.R., sub *Jungermannia* (Schur 1866:871; Fuss 1878:656; Hazslinszky 1885:65; Drăgulescu 2003:11); *fer* - Cârţişoara Valley, 800-1550 m *alt.* (Boros & Vajda 1967:220).

Cindrel Mountains, Cibinului Gorges, Găuşoara, Bătrâna, Beşineu, 900-1850 m *alt.* (Boros & Vajda 1967:220; Gündisch 1977:48; Drăgulescu 2003:11); Păltiniş, 1000-1500 m *alt.* (Gündisch 1977:48; Drăgulescu 2003:11).

Alba County, Izbuclul Ponorului (Boros & Vajda 1974:6); Gârda Valley – on right slope, on tract Cobleş-Scărişoara, on rotten wood (Goia 2001:64); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89); Cetăţile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ştefănuţ S. [BUCA B3844, B3873], ♀ - [BUCA B3849].

Cluj County, Someșul Rece Valley and Drăgan Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:220; Plămadă 1985b:41).

Bihar County, *fer* – Vlădeasa Mountain, 1500-1700 m *alt.*, 11.06.1901, *leg.* Györffy I., sub *Sphenolobus* (Schiffner 1909a:27,31).

***Anastrophyllum minutum* (Schreb.) R.M. Schust. var. *weberi* (Mart.) Kartt.**

Syn.:

- *Anastrophyllum minutum* var. *grandis* (Gottsche ex Lindb.) R.M. Schust.
- *Cephalozia rigida* Lindb.
- *Cephalozia saccatula* (Lindb.) Schiffn.
- *Diplophyllia minuta* (Schreb.) Crantz
- *Diplophyllum gypsophilum* (Wallr.) Loeske
- *Diplophyllum minutum* (Schreb.) Dumort.
- *Eremonotus minutus* (Schreb.) R.M. Schust.
- *Jungermannia bicornis* F. Weber & D. Mohr
- *Jungermannia gypsophila* Wallr.
- *Jungermannia minuta* Schreb.
- *Jungermannia minuta* var. *rigida* (Gottsche ex Lindb.) Kaal.
- *Jungermannia rigida* (Lindb.) Lindb.
- *Jungermannia saccatula* Lindb.
- *Jungermannia treviranii* Huebener
- *Jungermannia weberi* Mart.
- *Lophozia minuta* (Schreb.) Schiffn.
- *Sphenolobus minutus* (Schreb.) Berggr.
- *Sphenolobus minutus* fo. *gemmaipara* Jack.
- *Sphenolobus minutus* var. *cuspidatus* Kaal.
- *Sphenolobus minutus* var. *grandis* (Gottsche ex Lindb.) Jørg.
- *Sphenolobus rigidus* (Lindb.) Müll. Frib.
- *Sphenolobus saccatula* (Lindb.) Müll. Frib.

First citation for Romania: Heufler 1853.

Bucovina (Müller 1954:722).

Muntenia, sub *Sphenolobus* (Mohan 1988b:105).

Transylvania (Müller 1954:722).

Ecology: epigeic, humicolous, saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, CL, PHHM, SIB

Distribution in Europe: Sj, Is, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Hr, Sb, Ro, Bg, Lv, Nz, Fl, Rn, Rw, Rc, Re.

Distribution in Romania:

Maramureș County, Vaser Valley, sub *Jungermannia* (Hazslinszky 1885:65); Gutâi Mountains, *leg.* Demeter K. & *det.* Jack J., sub *Sphenolobus minutus* fo. *gemmaipara* [CL](Igmándy 1943:55,56); Săpânța Valley, 800 m *alt.*, *leg. & det.* Boros Á., sub *Sphenolobus* (Boros & Vajda 1967:220; Jakab 1999:51); Sighet, Negru Peak, 1250 m *alt.*, *leg. & det.* Boros Á., sub *Sphenolobus* (Boros & Vajda 1967:220); Șerban Mountain, *leg. & det.* Boros Á., sub *Sphenolobus* (Boros & Vajda 1969:414); Șipot Waterfall, Tăul lui Dumitru Peatbog, 1200 m *alt.*, 15-21.06.1997, Văratec Mountain, 16-18.10.1998, sub *Sphenolobus* (Jakab 1999:55).

Toroioaga Mountain, Toroioaga, 1600 m *alt.*, *leg. & det.* Boros Á., sub *Sphenolobus* (Boros & Vajda 1967:220).

Rodna Mountains, Pietrosul Rodnei, sub *Jungermannia* (Hazslinszky 1866:152; Hazslinszky 1868:138; Hazslinszky 1885:65); Ineu Peak, 2200 m *alt.*, sub *Jungermannia* (Breidler 1890a:150); Galați Mountain, 2000 m *alt.*, sub *Diplophyllum* (Matouschek 1905:80,81); Rodna Mountains, sub *Lophozia minuta* (Pax 1908:129); Galați Mountain, sub *Sphenolobus* (Schiffner 1914:306); Ineu, 1942, *leg. & det.* Boros Á., sub *Sphenolobus* (Györffy 1943d:321); Pietrosul Rodnei, north-western slope, 2260-2290 m *alt.*, 8-9.08.1948, sub *Sphenolobus* (Ștefureac 1952a:389-391, Tab.1; Ștefureac 1968:304; Ștefureac 1983g:177); Pietrosul Borșei, Piciorul Moșului, on rocks, 1600 m *alt.*, sub *Sphenolobus* (Ștefureac 1958a:108); Ineu, sub *Sphenolobus* (Györffy 1943d:321; Ștefureac 1952a:392); Rodnei Mountains (Ștefureac 1963c:170); Corongiș, *leg. & det.* Péterfi M., sub *Sphenolobus* (Boros & Vajda 1967:219); Ineu Peak, 2100-2280 m *alt.*, *leg. & det.* Boros Á., sub *Sphenolobus* (Boros & Vajda 1967:219); Negruleasa Peak, 1800 m *alt.*, *leg. & det.* Nyárády E.I. & Nyárády A., sub *Sphenolobus* (Boros & Vajda 1967:219); Galați Mountain, 1700-2000 m *alt.*, *leg. & det.* Boros Á., sub *Sphenolobus* (Boros & Vajda 1967:219); Pietrosul Borșei, „Turnu Roșu”, 1680 m *alt.*, *leg. & det.* Coman A., sub *Sphenolobus* (Boros & Vajda 1967:219-220); Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2208].

Suceava County, Coșna at Preluca Ulmului, 1200 m *alt.*, Vatra Dornei, 800 m *alt.*, Poiana Stampei at Ascuțit Peak, sub *Jungermannia* (Breidler 1890a:150); Tătarca Valley, on forest track, on soil, *conf.* Mihai G. (Pascal 1970a:198; Pascal & Mititelu 1971; Ștefureac & Pascal 1981:481); Cristișor-Neagra Broștenilor, Borcut Meadow, in brush, on soil and rotten woods, sub *Sphenolobus* (Lungu 1973b:72; Lungu 1981c:92).

Giupalău Mountain, Piciorul Pietrii, 1700 m *alt.*, sub fo. *cuspidata* (Ștefureac 1942b:91); Poiana Ițcani Reserve, 920 m *alt.*, 1946-1957, sub *Sphenolobus* (Ștefureac 1969a: Tab.16); Giupalău Peak, 47°26'03"N / 25°29'02"E, 1853 m *alt.*, 12.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3504, B3609, B3610]; Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3950], ♀ - [BUCA B3957].

Rarău Mountain, Pietrele Doamnei, 15.05.1910, sub *Sphenolobus* (Lilienfeldówna 1911:732); Codrul Secular Slătioara, 900-1600 m *alt.*, sub *Sphenolobus* (Ștefureac 1941:1155,1183,1263, 1271,1272, Tab.5, Fig.15; Ștefureac 1969a: Tab.16; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve, sub *Sphenolobus* (Ștefureac & Raclaru 1978:196).

Bârgău Mountains, Piatra Fântânele, Măgura Calului, Muncel Peak, Tomnatec Peak, Heniu Mare Peak, 1983-1984, sub *Sphenolobus minutus* (Mohan & Hodoroga 1986:212);

Căliman Mountains, Piciorul Iancului, on humus, 1981-1984, sub *Sphenolobus minutus* incl. var. *cuspidatus* (Mihai 1984b:255; Mihai 1985:95-97).

Hășmaș Mountains, Oii Valley, on rotten wood, 12.08.1953 (Bircă & Mihai 1963:127); Piatra Ascuțită, 1600-1700 m *alt.*, *leg. & det.* Boros A., sub *Sphenolobus* (Boros & Vajda 1967:219);

Harghita Mountains, Piatra Colibei, 19.06.1999, sub *Sphenolobus* (Jakab 2000a:88); Vermet Valley, 1050-1250 m *alt.*, 2.07.2000, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bălint L. & Csizi K. (Bălint & Orbán 2003:14; Bălint & Orbán 2006:471).

Ciucaș Mountains, Bratocea above Muntele Roșu Hut, 1600 m *alt.*, sub *Sphenolobus* (Boros & Vajda 1967:219); Bratocea Peak, Ciucaș Peak, Chirușca Mountain, Roșu Brook Valley, sub *Sphenolobus* (Mohan 1990b:38,42); Zăgan Mountain, PH, 45°29'39"N / 25°58'33"E, 1850 m *alt.*, 4.07.2004, *leg. & det.* Ștefănuț S., sub *A. saxicola*, rev. Ștefănuț S. [BUCA B3046, B3048].

Brașov County, Codlea, *leg. & det.* Vajda L., sub *Sphenolobus* (Boros & Vajda 1967:219).

Piatra Mare Mountain, Piatra Mare, *leg. & det.* Vajda L., sub *Sphenolobus* (Boros & Vajda 1967:219).

Cristianul Mare Mountain, Cristianul Mare, 1700-1800 m *alt.*, sub *Sphenolobus* (Boros & Vajda 1967:219).

Gârbova Massif, Azuga Valley, on rocks, 1967-1970, sub *Sphenolobus* (Lungu & Ștefureac 1970:5).

Prahova County, Doftana Valley, Secăria Valley, sub *Sphenolobus* [PHHM 7783/3873](Mohan 1971a:8; Mohan 1971b:47).

Bucegi Massif, Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2043, B2090].

Piatra Craiului Mountains, Brâna Caprelor, BV, 2000 m *alt.*, *leg.* Pop O., 23.05.2002, *det.* Ștefănuț S. [BUCA B2817] (Ștefănuț & Pop O.G. 2006:73).

Făgăraș Mountains, Arpaș Valley, subalpine zone, sub *Jungermannia minuta* (Heufler 1853:50-51; Fuss 1854:20; Schur 1866:871; Fuss 1878:656; Hazslinszky 1885:65; Drăgulescu 2003:11); Arpașel Valley, 1000 m *alt.*, sub *Sphenolobus* (Pócs 1958:108); Arpaș Mountain towards Podragu Lake, 1800 m *alt.*, *leg. & det.* Vajda L., sub *Sphenolobus* (Boros & Vajda 1967:219); the glacial ring from Doamnei Valley, SB, 45°36'07"N / 24°36'28"E, 2130 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2404]; Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg.* Ștefănuț S. & Ștefănuț Mirela, *det.* Ștefănuț S. [BUCA B2068], 45°35'42"N / 24°50'25"E, 2194 m *alt.* [BUCA B2400] (Ștefănuț 2002:190; Ștefănuț & Ștefănuț M. 2003:80); Urlea Lake, BV, 45°35'42"N / 24°50'28"E, 2200 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S., sub *A. saxicola*, rev. Ștefănuț S. [BUCA B3045].

Sibiu County, Prejba, sub *Jungermannia minuta* [SIB SCHUR 4850](Schur 1866:871; Fuss 1878:656; Hazslinszky 1885:65; Gündisch 1977:49; Drăgulescu 2003:11).

Cindrel Mountains, Păltiniș, 1400 m *alt.*, *leg. & det.* Vajda L., Râul Mare Valley, sub *Sphenolobus* (Boros & Vajda 1967:219; Gündisch 1977:49; Drăgulescu 2003:11); Jujbea, 2100 m *alt.*, sub *Sphenolobus* (Gündisch 1977:49; Drăgulescu 2003:11).

Parâng Mountains, Repedea Valley, 08-09.1954, sub *Sphenolobus* (Ștefureac, Popescu & Lungu 1959:9,16,19,20,31,34, Tab.6).

Retezat Mountains, near Casa laborator Gemenele, 1750 m *alt.*, 30.07.1966, *leg.* Plămadă E., sub *Sphenolobus* (Ștefureac 1969a:136; Plămadă 1985a:52); Gemenea Valley near Casa laborator, in forest, on stones, 1964-1971, sub *Sphenolobus minutus* var. *cuspidatus* (Plămadă 1973a:378, Fig.1a-d); Păpușa Peak, 18.08.2004, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3061].

Mureș County, Lunca Bradului, *leg.* & *det.* Demeter K., sub *Sphenolobus* [CL](Igmándy 1943:56; Boros & Vajda 1967:219).

Alba County, Scărișoara, *leg.* & *det.* Péterfi M. (Boros & Vajda 1967:219); Cucurbăta Mică, 1400 m *alt.*, sub *Diplophyllum* (Péterfi M. 1908:277; Goia 2001:64); Drăghița Valley, on beech, 750 m *alt.*, 20.08.94, *ass.* *Anomodonto-Leucodontetum* Wisn. 1930 (Goia 1998:257, Tab.7; Goia 2001:64); Arieșul Mic Basin (Goia & Schumacker 2000:92); Drăghița Valley, 750 m *alt.*, 28.08.1994, *ass.* *Anomodonto-Leucodontetum* (Goia 2000:120, Tab.8); Morii Valley, on rotten wood (Goia 2001:64); Arieșul Mare Basin (Goia & Schumacker 2002:86); Drăghița Valley, 20.08.1994, *ass.* *Homalothecium sericeiporelletum platyphyllae* Størmø 1938 (Goia & Schumacker 2003:60, Tab.2); Cetățile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3850].

Cluj County, Drăgan Valley at Tranișu and Lunca Vișagului, 600-700 m *alt.*, Someșul Rece Valley, *leg.* & *det.* Vajda L. (Boros & Vajda 1967:219).

Gilău Mountains, in common spruce forest, sub *Sphenolobus* (Plămadă 1985b:40).

Bihor County, Iad Valley between Remetea and Bulz, sub *Sphenolobus* (Boros 1942a:33; Boros & Vajda 1967:219).

Anastrophyllum saxicola (Schrad.) R.M. Schust.

Syn.:

- *Diplophyllum saxicolum* (Schrad.) Dumort.
- *Jungermannia saxicolus* Schrad.
- *Lophozia saxicola* (Schrad.) Schiffn.
- *Sphenolobus saxicola* (Schrad.) Steph.

First citation for Romania: Schur 1866.

Obs. Wrong quoted from Cluj, sub *Sphaenolobus* (Papp 1967a:16). In Mohan's papers (Mohan 1998:41), this species is also wrong quoted from Cislăchioara (Hazslinszky 1885:64) and Pop Ivan Mountain (Boros & Vajda 1969:414).

Ecology: epilithic, acidophytic, xerophytic, photophytic; circumpolar, arctic-alpine; Hch.

Distribution in Europe: Is, No, Se, Fi, Br, De, Po, At, Cz, Sk, It, Ro, Lv, Rn, Rw, Re.

Distribution in Romania:

Făgăraș Mountains, Cârțișoarei Mountains, on rocks (Schur 1866:872; Fuss 1878:656; Hazslinszky 1885:64; Drăgulescu 2003:11).

Anastrophyllum sp.

Rodna Mountains, Pietrosul Borșei, north-western slope, 2280 m *alt.*, 8-9.08.1948, sub *Sphenolobus* (Ștefureac 1952a:389-391, Tab.1).

Aneura pinguis (L.) Dumort.

Syn.:

- *Aneura latissima* Spruce
- *Aneura pinguis* var. *lobulata* Nees
- *Jungermannia pinguis* L.
- *Riccardia latissima* (Spruce) Schiffn.
- *Riccardia pinguis* (L.) Gray

First citation for Romania: Baumgarten 1846.

Romania, without locality, sub *Blasia* (Baumgarten 1846:232; Fuss 1878:652).

Carpathians, sub *Riccardia* (Pax 1908:128).

Moldova, incl. sub *Riccardia* (Papp 1943:652; Ștefureac & al. 1973:141).

Muntenia (Mohan 1988b:113).

Transylvania, *leg.* & *det.* Baumgarten J.C.G., sub *Jungermannia* [SIB HF1499](Drăgulescu 1983:57).

Herbaria and Exsiccatae: BUCA, PHHM, SIB, FRE

Ecology: epigeic, basiphytic, hygro-hydrophytic, photo-sciophytic; circumpolar; Hth.

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Ct, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, Az, Cn.

Distribution in Romania:

Maramureş County, Poienile de sub Munte (Warnstorff 1895b:143; Pax 1908:128).

Botoşani County, the bogs near to Cişmăneşti, frequent, sub *Riccardia* (Mihai 1969a:197).

Suceava County, Breaza, 3.06.1910 (Lilienfeldówna 1911:731); the marsh from Drăgoiasa, 1020-1030 m *alt.*, 1959, *leg.* Ştefureac T. (Ştefureac 1962b:71); the marsh from Drăgoiasa, 1020 m *alt.*, 22.06.1960-1962, incl. sub *Riccardia* (Ştefureac & Cristurean 1963:231; Ştefureac, Cristurean & Gruia 1963:914; Ştefureac 1967b:312); Drăgoiasa, 1200 m *alt.* (Ştefureac 1967c:104); Răchitişul Mare, ass. *Carici flavae-Cratoneuretum filicini* Kovács-Felföldy (1958)1960 emend. Soó (1961)1962 subass. *cochlearitosum* Ştefur. 1972, sub *Riccardia* (Ştefureac 1972a:186); the bog from Neagra Broştenilor Meadow, sub *Riccardia*, ass. *Cratoneuretum filicino-commutati* (Kuhn 1937) Oberd. 1977 (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981b:417, Tab.2; Lungu 1981c:90).

Rarău Mountain, Codrul Secular Slătioara, 820-1400 m *alt.* (Ştefureac 1941:1153,1245, Tabs.3,7,9; Ştefureac 1969a: Tab.16; Papp 1969b:188; Ştefureac 1986f:193); between Dealul Colbului and Pietrele Doamnei, 1520 m *alt.*, 27-28.08.1949, 27.08.1950, sub *Riccardia* (Ştefureac 1951a:59,65,66); Plaiul Todirescu-Slătioara Reserve, sub *Riccardia* (Ştefureac & Raclaru 1978:196).

Iaşi County, below Repedea, 7.10.1891, *leg.* Vlădescu M. (Radian 1915:195; Papp 1929:555; Papp & Eftimie 1963:105); Repedea and Bârnova forests (Papp 1939a:353); Repedea-Bârnova Forest Massif, on soil (Papp & Eftimie 1963:108).

Vaslui County, Buneşti and Avereşti, on wet soil, 1966-1969, sub *Riccardia* (Plămadă & Viţalariu 1971:166).

Harghita County, Vlăhiţa (Olohfalu), 20.07.1901 (Barth 1905:12); Vărşag, on Vărşag Brook bank, 1958-1962, sub *Riccardia* (Páll 1963b:16).

Harghita Mountains, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Asău Valley - riverhead, 1300 m *alt.*, 16.08.2001, Mic Valley, 1050-1150 m, 16.08.2001, Borsáros 650 m *alt.*, 6.04.2001, Luci Meleche forest, 1050 m *alt.*, 13.08.2001, Cucu Mountain, 1550 m *alt.*, 15.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:466).

? - **Neamţ County**, Agapia, sub *Riccardia* (Ştefureac & al. 1973:141).

? - **Bacău County**, Zboina, sub *Riccardia* (Ştefureac & al. 1973:141).

Buzău County, s - Malul Alb, Pătărlagele Village, 360 m *alt.*, 1980-1982 (Dihoru G. 1983:3).

Braşov County, Hărman, 18-19.09.1960, *leg.* & *det.* Ştefureac T. (Ştefureac & Ţeculescu 1963:169, Tab.2; Ştefureac 1979d:118,120); Prejmer, 09.1976, Stupini, Hărman, sub *Riccardia* (Ştefureac 1979d:118-120); Hărman Peatbog (Ularu & Heltmann 1994:153, Tab.6); Strâmba Valley, 13.09.2006, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3597]; ! - Hărman Peatbog, 1997, *leg.* & *det.* Ştefănuţ S.

Gârbova Massif, Azuga Valley, on soil, 1967-1970, sub *Riccardia* (Lungu & Ştefureac 1970:5).

Prahova County, Doftana Valley, sub *Riccardia* [PHHM 7777/3873](Mohan 1971a:7; Mohan 1971b:45; Mohan 1990a:24); Teleajen Valley, (Mohan 1990a:24); Pucheni Moşneni, Româneşti (Dihoru A. 1994:3); ♂ - Brebului Gorges, 26.04.2006, *leg.* & *det.* Ştefănuţ S. [BUCA B3406], ♀ - [BUCA B3407]; ♂ - Prahova Valley, 459 m *alt.*, 27.04.2006, *leg.* & *det.* Ştefănuţ S. [BUCA B3405]; Valea Largă, 14.05.2008, *leg.* & *det.* Ştefănuţ S. [BUCA B4001]; ! - Breaza Gorges, 15.05.2008, *leg.* & *det.* Ştefănuţ S.

Bucegi Massif, Sinaia, Peleş Valley at Waterfall, 4.08.1868, *leg.* & *det.* Grecescu D., sub *Marchantia aquatica* (Grecescu 1869:311,312; Grecescu 1880:65,67; Radian 1901a:135,136,138,139; Radian 1915:195); Bucşoiu, sub *Riccardia* (Degen 1914:216); Cerbului Valley, 7.06.1896, *leg.* Moisescu N. (Radian 1915:195); Jepii Valley at Buşteni, 9.08.1903, Ialomiţa Valley above Hermitage, 11.08.1903 (Radian 1915:195); Lăptici Peatbog, 1500 m *alt.*, 1946 (Ştefureac 1949c:692; Pop E. 1960:349; Godeanu S. 1970:45); Ialomiţa Valley, sub *Riccardia* (Ştefureac 1972c:101); Dorului Valley-Blana Mountain, Nucet Mountain, Lăptici Mountain, sub *Riccardia* (Ştefureac 1972c:101); ♂ - Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg.* & *det.* Ştefănuţ S. [BUCA B3244, B3255], ♀ - [BUCA B3245, B3254]; ♀ - Peştera Hermitage, DB, 45°23'17"N / 25°26'26"E, 1540 m *alt.*, 7.09.2006, *leg.* & *det.* Ştefănuţ S. [BUCA B3574, B3576].

Piatra Craiului Mountains, Prăpăstii, 1000 m *alt.*, 10.08.1921, *leg.* & *det.* Péterfi M. [FRE 513] (Borza 1925b:84; Borza & Nyárady E.I. 1940:9; Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:73); Râie's Valley, 1280 m *alt.*, *leg.* Beldie A., *det.* Ştefureac T., sub *Riccardia* (Beldie 1952:1008; Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:73); Gura Râului, BV, 45°33'03"N / 25°17'56"E, 860 m *alt.*, 7.07.2003, *leg.* & *det.* Ştefănuţ S. [BUCA B2730, B2753] (Ştefănuţ & Pop O.G. 2006:73).

Argeş County, Rucăr (Loitlesberger 1898:196; Radian 1915:195; Ştefănuţ & Pop O.G. 2006:73); Boteni, 06.1891, *leg.* Vlădescu M. (Radian 1915:195); Căndeşti, 06.1891, *leg.* Vlădescu M. (Radian 1915:195); Văleni Hermitage, 10.08.1891, *leg.* Vlădescu M. (Radian 1915:195).

Dâmboviţa County, Corbii Ciungi, *det.* Ştefureac T. (Botoşăneanu & Negrea 1962:101); Corbii Ciungi, 6.05.1998, *leg. & det.* Ştefănuţ S. [BUCA B3375, B3376].

Făgăraş Depression, ♀ - Lacul Tătarilor Peatbog, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 30.10.2004, *leg. & det.* Ştefănuţ S. [BUCA B3313].

Sibiu County, Sibiu, incl. sub *Riccardia* [SIB SCHUR 4549](Schur 1866:869; Fuss 1878:652; Hazslinszky 1885:33; Gündisch 1977:46; Drăgulescu 2003:8); Gura Râului, 1300-1400 m *alt.*, sub *Riccardia* (Gündisch 1977:46; Drăgulescu 2003:8).

Alba County, between Vidra and Neagra, 700 m *alt.* (Péterfi M. 1908:268).

Mureş County, Sighişoara (Schur 1866:869; Fuss 1878:652; Hazslinszky 1885:33; Györfly 1917a:167).

Căpăţânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ştefureac, Popescu & Lungu 1955:526).

Cluj County, Southern Ciucea on Surduc Valley, 300-400 m *alt.* (Péterfi M. 1908:268; Boros 1942a:34); Surduc Valley, 400 m *alt.*, sub var. *lobulata* (Péterfi M. 1908:268); Dobrin Mountain (Péterfi M. 1918:61); Turda, Băile Sărata. *Obs.* uncertain identification (Todor 1947:41); the peatbogs from spring and upper course of Someşul Rece, incl. Muntele Mare and Dobrin (Pop E. 1960:397).

Gilău Mountains, Răcăţău, 14.04.1916, *leg.* Györfly I. & Péterfi M. (Györfly 1924b:37).

Bihar County, Peştiş, 350 m *alt.* (Péterfi M. 1908:268).

Anthelia julacea (L.) Dumort.

Syn.:

– *Anthelia julacea* var. *gracilis* (Hook.) Nees

– *Jungermannia julacea* L.

– *Jungermannia julacea* var. *gracilis* Hook.

First citation for Romania: Schur 1866.

Romania (Smith A.J.E. 1990:89; Frey & al. 2006:67).

Transylvania (Pax 1908:130).

Ecology: epilithic-epigaic, acidophytic-mesobasiphytic, hygrophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, SIB

Distribution in Europe: Sj, Is, Fo, No, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, It, Ro, Nz, Rn.

Distribution in Romania:

Rodna Mountains, Pietrosul Rodnei, sub *Jungermannia* (Hazslinszky 1866:152; Hazslinszky 1868:137; Hazslinszky 1885:51); Galaţi Mountain, 2000 m *alt.* (Matouschek 1905:80); Rodnei Mountains (Pax 1908:130).

Bucegi Massif, Gaura Glacial Ring, BV, 45°26'22"N / 25°26'24"E, 2250 m *alt.*, 8.07.1999, *leg. & det.* Ştefănuţ S. [BUCA B2430].

Făgăraş Mountains, Piciorul Vârtopului and Arpaşul Mare, sub *Jungermannia* (Schur 1866:871; Fuss 1878:655; Hazslinszky 1885:51; Drăgulescu 2003:9); Ciortea Mountain, on soil, 28.08.1868, *leg. & det.* Barth J., sub *Jungermannia* [SIB HF 1543](Fuss 1878:655; Hazslinszky 1885:51; Drăgulescu 1983:57; Drăgulescu 2003:9).

Retzat Mountains, Zănoaga Glacial Ring, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

Anthelia juratzkana (Limpr.) Trevis.

Syn.:

– *Anthelia juratzkana* var. *elata* Schiffn.

– *Anthelia nivalis* Sw. ex Lindb.

– *Jungermannia juratzkana* Limpr.

– *Jungermannia nivalis* Sw. ex F. Web. & D. Mohr

First citation for Romania: Loitlesberger 1898.

Transylvania, sub *A. nivalis* (Pax 1908:130).

Muntenia (Mohan 1988b:101,102).

Ecology: epigaic, calciphylous, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, SIB, FRE

Distribution in Europe: Sj, Is, Fo, No, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, Es, It, Si, Hr, Mk, Ro, Bg, Ua, Nz, Fl, Rn, Re, Ca.

Distribution in Romania:

Rodna Mountains, below Ineu Peak, on bank of Lala Lake, 1920 m *alt.*, 14.08.1924, *leg. & det.* Mühlendorf A. [FRE 509] (Borza 1925b:84; Borza & Nyárády E.I. 1940:9; Boros & Vajda 1967:218; Ștefănuț 2007b:430); Ineu, *leg. & det.* Felföldy L., Péterfi M., Boros Á. (Györffy 1943d:321; Soó 1944b:75; Ștefureac 1952a:392; Boros & Vajda 1967:218); Rodnei Mountains (Ștefureac 1963c:168, 170); Pietrosul Borșei, north-western slope, 2260 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:391, Tab.1; Boros & Vajda 1967:218); Galați Peak, *leg. & det.* Boros Á. (Boros & Vajda 1967:218); Laptelui Peak, *leg. & det.* Boros Á. (Boros & Vajda 1967:218); Pietrosul Mare, 2150 m *alt.*, 19.07.1977, Buhăiescu Mare, 2080 m *alt.*, 24.07.1967, Gărgălău, 2080 m *alt.*, 19.07.1982, Anieșul Mare, 2100 m *alt.*, 15.08.1982, Galați, 2100 m *alt.*, 18.07.1982, ass. *Soldanello hungaricae-Ranunculetum crenati* Coldea 1985 (Coldea 1985a:102, Tab.1); Gărgălău Peak, 2050 m *alt.*, 19.07.1982, Omul Peak, 2060 m *alt.*, 20.07.1982, Anieșul Mare Peak, 2050 m *alt.*, 15.08.1982, ass. *Salicetum herbaceae* Br.-Bl. 1931, Pietrosul Mare Peak, 2150 m *alt.*, 17.07.1977, Rebra Peak, 2080 m *alt.*, 24.07.1976, Ineu Peak, 2100 m *alt.*, 17.08.1982, Anieșul Mare Peak, 2060 m *alt.*, Gărgălău Peak, 2100 m *alt.*, 19.07.1982, ass. *Soldanello hungaricae-Ranunculetum crenati* Coldea 1985, Piciorul Galațiului, 1740-1750 m *alt.*, 18.07.1982, Galați Glacial Ring, 1800 m *alt.*, 22.09.1982, Corongiș Peak, 1680 m *alt.*, 28.07.1982, ass. *Nardo-Gnaphalietum supini* Bartsch 1940 (Coldea 1990:56,57,59,63, Tabs.18,19,23); Ineu Glacial Ring, BN, 47°31'37"N / 24°53'36"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2422].

Căliman Mountains, Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m *alt.*, 26.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3731] (Ștefănuț 2007b:430).

? - **Ciucaș Mountains**, Bratocea Peak, Tigăile Mari Culm, Stâncoasă Culm, Bratocea Culm, Piatra Laptelui Culm, Ursului Brook Valley (Mohan 1990b:40).

Bucegi Massif, Omu Peak, 2400 m *alt.* (Loitlesberger 1898:195; Radian 1901a:139; Boros & Vajda 1967:218); Ialomița Valley, 1960 m *alt.*, ass. *Salicetum herbaceae*, 1931, *leg. & det.* Domin K. (Domin 1933:29); Coștila Mountain, "Valea Albă", 2300 m *alt.*, *leg.* Cretzoiu P., 25.08.1940, *det.* Ștefureac T. [FRE 509b] (Borza 1943:61); Bucșoiu Saddle, 2420 m *alt.*, Șaua Mare above Țigănești towards Gaura, 2320 m *alt.*, the Saddle between Gaura and Mălăiești, 2390 m *alt.* (Ștefureac 1955:558-560, Tab.2; Ștefureac 1991:114); in alpine zone, ass. *Anthelietum juratzkanae* Krajina 1933 (Pușcaru D. & al. 1956:60,149; Ștefureac 1973g:361; Popescu A. & Sanda 1993b:195,201); Bucegi, 1950-2350 m *alt.* (Ștefureac 1963b:99); north-western part of the Massif, 1900-2350 m *alt.* (Ștefureac 1972c:103); Gaura Glacial Ring, BV, 45°26'46"N / 25°26'37"E, 2250 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2505], 45°26'22"N / 25°26'24"E, 2250 m *alt.* [BUCA B2250, B2885] (Mihăilescu & Ștefănuț 2000a:13,14); The glacial rings of Ialomița Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2322], 45°26'13"N / 25°27'05"E, 2250 m *alt.* [BUCA B2112]; Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2092, B2195], 45°26'56"N / 25°26'31"E, 2310 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3140]; Mălăiești Glacial Ring, BV, 45°27'05"N / 25°27'07"E, 2275 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2503], 45°27'06"N / 25°27'04"E, 2260 m *alt.* [BUCA B2256], 45°27'07"N / 25°27'02"E, 2225 m *alt.* [BUCA B2265], 45°27'04"N / 25°26'51"E, 2100 m *alt.* [BUCA B2118, B2232-B2234]; Dorului Valley, PH, 45°21'51"N / 25°28'37"E, 1830 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3218]; Babele Mountain, PH, 45°24'38"N / 25°28'36"E, 2140 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3554].

Făgăraș Mountains, Negoiu Mountain, 2000-2200 m *alt.*, 1897 (Loitlesberger 1898:195; Boros & Vajda 1967:218; Drăgulescu 2003:9); Negoiu (Ștefureac 1949c:707; Drăgulescu 2003:9); Bălea Lake, 2000 m *alt.* (Boros & Vajda 1967:218,224); Podragu Lake, 2000 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:218); Podragu Valley, 1800-2000 m *alt.* (Vajda 1975:120); Bălea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2880]; Capra Lake, AG, 45°36'00"N / 24°37'44"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2166], 45°36'01"N / 24°37'48"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2514], 45°36'01"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2384], 45°36'00"N / 24°37'46"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2377], 45°36'02"N / 24°37'50"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B0955]; Urlea Lake, BV, 45°35'42"N / 24°50'28"E, 2200 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2496], 45°35'43"N / 24°50'29"E, 2195 m *alt.* [BUCA B2113] (Ștefănuț 2002:190).

Cindrel Mountains, Cindrel, 2200 m *alt.*, *det.* Ștefureac T. (Gündisch 1977:47; Drăgulescu 1992:55; Drăgulescu 2003:9); Iezerul Mare, Frumoasa Peak [SIB HG] (Drăgulescu 1992:55; Drăgulescu 2003:9).

Parâng Mountains, Cârja, 2100 m *alt.*, Cârja and Mândra, 2500 m *alt.* (Pócs 1958:109; Boros & Vajda 1967:218).

Retezat Mountains, Retezat, *leg.* Péterfi M., sub *A. nivalis* (Györfy 1924b:37; Boros & Vajda 1967:218); Păpușa Peak, 18.08.2004, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3058].

Apometzgeria pubescens (Schrank) Kuwah.

Syn.:

– *Jungermannia pubescens* Schrank

– *Metzgeria pubescens* (Schrank) Raddi

First citation for Romania: Baumgarten 1846.

Moldova, sub *Metzgeria* (Papp 1943:653; Ștefureac & al. 1973:142).

Muntenia (Mohan 1988b:113,114).

Transylvania, sub *Metzgeria* (Pax 1908:128).

Ecology: epilithic, corticolous, calcicolous, mesophytic, sciophytic; circumpolar; mountain; Hth. Characteristic to *Symphyto-Fagetalia* Tăuber 1987, *Hieracio transsylvanici-Fagion* Tăuber 1987, *Hypno-Polypodietaum*, in *Fagetalia*, *Neckeretum crispae* Ștefur. 1941.

Herbaria and Exsiccatae: BUCA, PHHM, SIB, FRE, H.A.T.R.

Distribution in Europe: No, Se, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Ua, Rn, Ca.

Distribution in Romania:

Țibleș Mountains, Arcer Peak, Dosul Obcinei, Dealul lui Vlad, Păltiniș Peak, 1984-1985, sub *Metzgeria* (Mohan 1988a:16).

Suceava County, Fundul Moldovei, 3.06.1910, sub *Metzgeria* (Lilienfeldówna 1911:731); Pietra Țibău, 1000 m *alt.*, 11.09.1923, *leg.* Mühlendorf A., sub *Metzgeria* [FRE 309] (Borza 1924:40; Borza & Nyárady E.I. 1940:11; Pascal 1970b:112); Cârlibaba, 1967, sub *Metzgeria* (Ștefureac & Pascal 1970a:246); Codreava, Stâni Valley, Tolovan Mountain, between Iacobeni and Argestru, Bistrița Aurie Valley, sub *Metzgeria* (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:477); Criștișor-Neagra Broștenilor, Borcut Meadow, on *Acer pseudoplatanus* trunk, sub *Metzgeria* (Lungu 1973b:72; Lungu 1981c:90); Barnarului Gorges, sub *Metzgeria* (Pascal & Seghedin 1977:141).

Rarău Mountain, Pietrele Doamnei, 1600 m *alt.*, sub *Metzgeria* (Braidler 1890a:148; Pax 1908:128); Rarău, 14.05.1910, Pietrele Doamnei, 15.05.1910, sub *Metzgeria* (Lilienfeldówna 1911:731); Codrul Secular Slătioara, 850-1500 m *alt.*, sub *Metzgeria* (Ștefureac 1941:1154,1171,1245,1263,1270,1276,1302, Tabs.1,5,8); Codrul Secular Slătioara, 20.07.1938, sub *Metzgeria* (Ștefureac 1973c:141, Fig.10b); Codrul Secular Slătioara, Rarău Peak, sub *Metzgeria* (Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve, sub *Metzgeria* (Ștefureac & Raclaru 1978:196).

Bistrița-Năsăud County, Râpa Mare, Pietra Corbului, Monari, 1980-1981, sub *Metzgeria* (Mohan & Hodoroga 1983:51).

Bărgău Mountains, Secu Brook, Strâmba Valley, Leșului Valley, Muncel Peak, Măgura Calului, Șanț Commune, 1983-1984, sub *Metzgeria* (Mohan & Hodoroga 1986:211).

Stânișoara Mountains, Tarnița Peak, on calcareous rocks, 1974, sub *Metzgeria* (Pascal & Toma M. 1977:42).

Ceahlău Mountain, Ocolașul Mic, sub *Metzgeria* (Papp 1925c:156; Papp 1934b:74; Zanoschi 1970:279; Manoliu & al. 1998:337); the northern slope of Toaca Peak and Panaghia Peak, ass. *Dryadetum octopetalae* Csürös et al. 1956 *salicetosum retusae* Zanoschi 1972, 1810-1890 m *alt.*, 31.08.1969, *det.* Mihai G., sub *Metzgeria* (Zanoschi 1972:225, Tab.1); Ceahlău, ass. *Tortello-Ctenidietum mollusci* (Gams 1927) Stodiek 1937, *Neckero-Anomodotetum viticulosi* (Wisn. 1929) Philippi 1965 subass. *homalothecietosum philippeani* Ștefur. 1941, subass. *leucodontetosum*, *Neckeretum complanatae* (Hiliter 1925) Peciar 1965 (Mihai 1987b: Tabs.2,3,4).

Neamț County, Cernegura Mountains, Sterghinosu Brook Valley, 400-550 m *alt.*, sub *Metzgeria* (Lungu 1963a:242-243).

Giurgeu Mountains, Bicz Gorges, sub *Metzgeria* (Papp 1942b:524); Oii brook Valley, ass. *Neckeretum crispae* Ștefur. 1941, Bicz Gorges, 1978, 1979, sub *Metzgeria*, ass. *Tortello-Ctenidietum* (Gams 1927) Stodiek 1937 (Mihai 1981a:17,18, Tabs.3,5).

Harghita Mountains, Stâncilor Peak, sub *Metzgeria* (Schiffner 1914:304); Stâncilor Peak, sub *Metzgeria* (Degen 1930:975); Mic Valley, 1050-1150 m, 16.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:469).

Nemira Mountains, Nemira, on siliceous rocks, sub *Metzgeria* (Barabaş V. 1974:31); on vertical slope of rocks, 1970-1977, sub *Metzgeria* (Mihai & Barabaş V. 1978:115); Nemira Mountains, 1600 m *alt.*, Slănic and Uz brooks vales, 660 m *alt.*, sub *Metzgeria* (Barabaş V. 1982b:61,67, Tab.17).

Bacău County, Cheşcheş Culm, on beech, 2.05-8.11.1971, sub *Metzgeria* (Ştefureac & Barabaş V. 1972:77).

Ciucaş Mountains, Berii Brook Valley, Caprei Brook Valley, Roşu Mountain, Cucului Mountains, Tigăile Mici Culm, Şuviţelor Culm, Piscul Chiruşca (Mohan 1990b:45).

Braşov County, Predeal, 1200 m *alt.*, 6.07.1897, *leg. & det.* Loitlesberger K., sub *Metzgeria* [H.A.T.R. 19](Loitlesberger 1898:196; Radian 1915:196); Pietrele lui Solomon, 780-790 m *alt.*, 20.06.1938, sub *Metzgeria*, ass. *Saxifraga cuneifolia*-*Campanula carpatica* (Zólyomi 1939:82,137, Tab.6); Poarta Valley, Bran, 15.07.1959, *det.* Ştefureac T., sub *Metzgeria* (Racoviţă A. 1960:1113); Tâmpa, 18.06.2006, *leg. & det.* Ştefănuţ S. [BUCA B3525] (Ştefănuţ 2006b:33; Ştefănuţ 2008b:28).

Gârbova Massif, Azuga Valley, Rea Valley, 1967-1970, sub *Metzgeria* (Lungu & Ştefureac 1970:5).

Prahova County, Doftana Valley, sub *Metzgeria* [PHHM 7748/3873](Mohan 1971a:7; Mohan 1971b:45); Sinaia, 20.02.1998, *leg. & det.* Ştefănuţ S. [BUCA B3373, B3374].

Bucegi Massif, Mălăieşti, Jepi Valley, sub *Metzgeria* (Degen 1914:216); Cerbului Valley, *leg.* Moiescu N., 7.06.1896, 11.08.1903, Jepi Valley towards Caraiman, 10.08.1903, 4.07.1914, besides Peştera Ialomiţei Hermitage, 29.07.1904, sub *Metzgeria* (Radian 1915:196); Jepi Valley, on bark tree, 1300 m *alt.*, 27.10.1935, *leg.* Cretzoiu P. & Clement O., sub *Metzgeria* (Papp 1937a:160,163); Peleş Valley, on wet rocks, 08.1920, *leg.* Brândză M., *det.* Ştefureac T., sub *Metzgeria* (Ştefureac 1942a:4); Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m *alt.*, 8.07.1999, *leg. & det.* Ştefănuţ S. [BUCA B2099, B2528](Ştefănuţ 2004a:63; Ştefănuţ 2004g:158); Poiana Coştilei, PH, 45°26'23"N / 25°30'17"E, 3.04.2004, *leg.* Atanasiu Paulina, *det.* Ştefănuţ S. [BUCA B3012, B3013]; Ialomiţa Valley, DB, 45°22'33"N / 25°26'10"E, 1465 m *alt.*, 7.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3587].

Piatra Craiului Mountains, Prăpăstii, 850 m *alt.*, 29.08.1936, sub *Metzgeria*, ass. *Saxifraga cuneifolia*-*Campanula carpatica* (Zólyomi 1939:82,137, Tab.6; Ştefănuţ & Pop O.G. 2006:73); below Brâna de Mijloc a Ciorângii, 1790 m *alt.*, Crăpătura Valley, *leg.* Beldie A., *det.* Ştefureac T., sub *Metzgeria* (Beldie 1952:1008,1013; Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:73); the way towards Vlăduşca Pasture, BV, 45°32'38"N / 25°12'11"E, 1100 m *alt.*, 30.10.2001, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B2835, B2841](Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:73); Crăpătura, 4-8.06.2001, towards Vlăduşca, 21.08.2001, Gura Bârsei, 28.09.2001, *leg.* Pop O., *det.* Ştefănuţ S. (Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:73); Şpirlea Valley, *leg.* Pop O., *det.* Wallfisch R. (Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:73); Marele Grohotiş, AG, 45°30'49"N / 25°11'49"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ştefănuţ S. [BUCA B2573], 45°30'34"N / 25°11'46"E, 1650 m *alt.*, 8.07.2003, *leg. & det.* Ştefănuţ S. [BUCA B2620] (Ştefănuţ & Pop O.G. 2006:73); Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ştefănuţ S. [BUCA B2716, B2897] (Ştefănuţ & Pop O.G. 2006:73); Piatra Mică, BV, 45°33'07"N / 25°15'53"E, 1750 m *alt.*, 10.07.2004, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3038, B3041, B3042] (Ştefănuţ & Pop O.G. 2006:73); Brustureţului Gorges, AG, 45°27'55"N / 25°13'45"E, 950 m *alt.*, 26.07.2004, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B2963] (Ştefănuţ & Pop O.G. 2006:73); Crăpătura Valley, BV, 45°33'37"N / 25°15'48"E, 1200 m *alt.*, 22.09.1996, *leg.* Mihăilescu Simona, *det.* Ştefănuţ S. [BUCA B3156] (Ştefănuţ & Pop O.G. 2006:73).

Leaota Mountain, Deleanu Mountain, 1100-1400 m *alt.*, sub *Metzgeria* (Papp & Diaconescu 1968:386,387); Crovului Gorges, 950 m *alt.*, 22.08.1971, sub *Metzgeria* (Diaconescu F. 1973: Tab.1).

Făgăraş Mountains, Arpaş Valley, in beech forest, sub *Metzgeria* (Heufler 1853:50-51; Fuss 1854:20; Schur 1866:873; Fuss 1878:652; Hazslinszky 1885:32; Drăgulescu 2003:9); Bâlea Lake [SIB] (Drăgulescu 2003:8).

Sibiu County, Bradu, on soil, 3.04.1870, *leg. & det.* Fuss M., sub *Metzgeria furcata*, *rev.* Gündisch F. [SIB HF 1536](Drăgulescu 1983:57; Drăgulescu 2003:8); Măgura, sub *Metzgeria* [SIB SCHUR 4602](Schur 1866:873; Fuss 1878:652; Hazslinszky 1885:32; Gündisch 1977:46; Drăgulescu 2003:8,9).

Cindrel Mountains, Păltiniş, 1000 m *alt.*, Blidărei, 1000 m *alt.*, Runcuri, 1200 m *alt.*, sub *Metzgeria* (Gündisch 1977:46; Drăgulescu 2003:9).

Parâng Mountains, Latorița Valley, on vertical slope of calcareous rocks, 900 m *alt.*, 31.08.1954, sub *Metzgeria* (Ștefureac, Popescu & Lungu 1956a:513, Tab.1); Latorița Valley, Repedea Valley, 08-09.1954, sub *Metzgeria* (Ștefureac, Popescu & Lungu 1959:8,19,22,24,25,27,29,30, Tabs.3,4).

Retezat Mountains, Râu de Mori, sub *Metzgeria* (Schiffner 1914:304); towards Cioaca Peak, sub *Metzgeria* (Páll 1964a:108); Coama Șesele, 12.07.1968, sub *Metzgeria*, ass. *Pterigynandro-Isothecium myuri* Plămadă 1978 (Plămadă 1978:242, Tab.2; Plămadă 1993:54, Tab.4).

Hunedoara County, Bulzeștii de Jos, 500 m *alt.*, sub *Metzgeria* (Péterfi M. 1908:269).

Codru-Moma Mountains, Liliacilor Cave, Ponoarele, on calcareous rocks (Mohan 1996:50; Ardelean 2006:107).

Mureș County, Sighișoara, sub *Jungermannia* (Baumgarten 1844:233; Schur 1866:873; Fuss 1878:652; ; Hazslinszky 1885:32; Györffy 1917a:167).

Poiana Ruscă Mountains, Luncani, sub „*Metzgeria pubescens latiloba*” (Simonkai 1872:66; Fuss 1878:652; Hazslinszky 1885:32).

Alba County, Galbena Valley, 800 m *alt.*, sub *Metzgeria* (Péterfi M. 1908:269); Runc Gorges, 500-850 m *alt.*, ass. *Seslerietum rigidae*, det. Páll Ș., sub *Metzgeria* (Pop I. & al. 1964:216, Tab.3); in the Scărișoara Cave aven, sub *Metzgeria* (Boros & Vajda 1974:4; Goia 2001:52); Arieșul Mic Basin (Goia & Schumacker 2000:91); Arieșul Mare Basin (Goia & Schumacker 2002:86); Morii Valley, Izbuluc Chiobului – Gârda Seacă, on rotten wood (Goia 2001:52); Ordâncușa Valley, 1100 m *alt.*, 11.08.1996, Galbena Valley, 980 m *alt.*, 12.09.1996, ass. *Pterigynandretum filiformis* Hilitzer 1925, Buciniș Valley, 890 m *alt.*, 13.09.1996, ass. *Anomodonto viticulosi-Leucodontetum sciuroides* Wisn. 1930 (Goia & Schumacker 2004: 109,110, Tabs.2,3).

Cluj County, Pietros, 400 m *alt.*, Dealul Mare, 630 m *alt.*, sub *Metzgeria* (Péterfi M. 1908:269); Someșul Cald Valley, sub *Metzgeria* (Boros & Vajda 1974:8); Huza Forest on Filii Mountain, near Chalet (Muntele Mare), on rocks, 700-750 m *alt.* (Plămadă & Coldea 1989b:121).

Bihor County, Peștere, sub *Metzgeria* (Simonkai 1890a:129); Băița, 600-800 m *alt.*, Fânața Cave, 600 m *alt.*, sub *Metzgeria* (Péterfi M. 1908:269); Crișul Repede Defile, on wet rocks, ass. *Phyllitidi-Aceretum* and *Tilio-Fraxinetum*, sub *Metzgeria* (Boros 1942a:31; Boșcaiu & Gergely 1966:103); Iadului Valley between Remetea and Bulz, 350 m *alt.*, sub *Metzgeria* (Péterfi M. 1908:269; Boros 1942a:33).

Bihor Mountains, Someșul Cald, Cetatea Rădesei, on bark, sub *Metzgeria* (Papp 1942a:51); Ponor, 1100 m *alt.*, 08.1999 (Jakab 2000b:66); Someșul Cald Gorges (Goia & Mătase 2001:16); ! - Cetățile Ponorului, AB, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ștefănuț S.

Asterella gracilis (F. Weber) Underw.

Syn.:

- *Asterella ludwigii* auct.
- *Asterella pilosa* (Wahlenb.) Trevis.
- *Fimbriaria gracilis* (F. Web.) Lindb.
- *Fimbriaria ludwigii* auct.
- *Fimbriaria nana* Schleich. ex Lindenb.
- *Fimbriaria pilosa* (Wahlenb.) Taylor
- *Marchantia gracilis* F. Web.
- *Marchantia ludwigii* auct.
- *Marchantia pilosa* Wahlenb.
- *Marchantia tenella* Retz.

First citation for Romania: Radian 1915.

Ecology: epigaeic, calcicolous, mesophytic, sciophytic; circumpolar; arctic-alpine; Hth.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, No, Se, Fi, Fr, Ad, De, Po, Ch, At, Cz, Sk, Es, It, Si, Ba, Mk, Ro, Rn, Re, Ca.

Distribution in Romania:

Bucegi Massif, fer - Cerbului Valley, in apine zone, 28.06.1911, sub *Fimbriaria pilosa* (Radian 1915:192; Radian 1923:10; Mihai 1983a:34; Dihoru G. 2001a:128); ♀♂ - the glacial ring from Cerbului Valley, PH, 11.07.1999, 45°26'18"N / 25°27'33"E, 2150 m *alt.*, *leg.* & *det.* Ștefănuț S. [BUCA B0948-B0952](Ștefănuț 2004h:15-16); the glacial ring from Cerbului Valley, PH, 11.07.1999, 45°26'21"N / 25°27'40"E, 2150 m *alt.*, *leg.* & *det.* Ștefănuț S. [BUCA B2268]; ♀♂ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3260, B3298]; ♀♂ - Babele Mountain, PH, 45°24'46"N / 25°28'43"E, 2195 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3497].

Obs. In the Papp's paper (1967) this species is erroneously quoted as *Fimbriaria fragans* Nees and taken over in Mohan's paper (1998) as *Asterella saccata* (Papp 1967a:10, Fig.25; Mohan 1998:80;

Mohan & Ardelean 1999:29,32; Ștefănuț 2004h:15-16).

Asterella lindenbergiana (Corda ex Nees) Arnell

Syn.:

- *Asterella lindenbergiana* (Corda ex Nees) Lindb.
- *Fimbriaria lindenbergiana* Corda ex Nees

First citation for Romania: Radian 1915.

Muntenia (Mohan 1988b:115).

Ecology: epigaic-humicolous, epilithic, calcicolous, xerophytic, photophytic; circumpolar; Hth.

Herbaria and *Exsiccatae*: BUCA

Distribution in Europe: No, Se, Fi, Fr, De, Po, Ch, At, Sk, It, Si, Ba, Ro, Bg, Ca.

Distribution in Romania:

Bucegi Massif, *fer* - Cerbului Valley, in alpine zone, 4.07.1899, 30.08.1908, 28.06.1911, 6.06.1914, sub *Fimbriaria* (Radian 1915:192; Radian 1923:10); Bucșoiu Mountain, above Mălăiești Hut, 1700-1900 m alt. (Boros & Vajda 1967:217); in superior part of some vales from alpine zone, sub *Fimbriaria* (Ștefureac 1972c:102,104); ♀♂ - Gaura Glacial Ring, BV, 45°26'26"N / 25°26'24"E, 2150 m alt., 45°26'23"N / 25°26'25"E, 2240 m alt., 45°26'49"N / 25°26'35"E, 2250 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2236, B2278, B2442], ♀ - 45°26'26"N / 25°26'24"E, 2150 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2517, B3357], ♂ - 45°26'26"N / 25°26'24"E, 2150 m alt., leg. & det. Ștefănuț S., 8.07.1999 [BUCA B2302], s - 45°26'23"N / 25°26'25"E, 2240 m alt., 45°26'49"N / 25°26'35"E, 2250 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2252, B2492]; ♀ - the glacial ring from Cerbului Valley, PH, 45°26'18"N / 25°27'33"E, 2150 m alt., 11.07.1999, leg. & det. Ștefănuț S. [BUCA B2087]; ♀♂ - Mălăiești Glacial Ring, BV, 45°27'06"N / 25°27'04"E, 2260 m alt., 9.07.1999, leg. & det. Ștefănuț S. [BUCA B2261], s - 45°27'05"N / 25°26'57"E, 2200 m alt., 9.07.1999, leg. & det. Ștefănuț S. [BUCA B2523]; The glacial rings of Ialomița Valley, DB, 45°26'06"N / 25°26'48"E, 2190 m alt., 10.07.1999, leg. & det. Ștefănuț S. [BUCA B3142]; ♀♂ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m alt., 8.09.2005, leg. & det. Ștefănuț S. [BUCA B3258, B3262, B3265], s - [BUCA B3285, B3293, B3297]; ♀♂ - Babele Mountain, PH, 45°24'40"N / 25°28'37"E, 2150 m alt., 7.09.2006, leg. & det. Ștefănuț S. [BUCA B3493]; ♀♂ - Babele Mountain, PH, 45°24'49"N / 25°28'43"E, 2220 m alt., 7.09.2006, leg. & det. Ștefănuț S. [BUCA B3565].

Făgăraș Mountains, below Paltinul Peak, 2250 m alt., 10.07.1946, below Ciortea Peak, on dolomite, 2350 m alt., 15.07.1946, sub *Fimbriaria* (Ștefureac 1949a:291); Râiosu Mountain, Igheabul Văros, sub *Fimbriaria* (Ștefureac 1977d:138); The glacial ring from Doamnei Valley, SB, 45°36'05"N / 24°36'27"E, 2150 m alt., 16.07.2000, leg. & det. Ștefănuț S. [BUCA B2439]; ♀♂ - The glacial ring from Doamnei Valley, SB, 45°36'07"N / 24°36'27"E, 2120 m alt., 16.07.2000, leg. & det. Ștefănuț S. [BUCA B2352], ♀♂ - 45°36'10"N / 24°36'23"E, 2100 m alt., 16.07.2000, leg. & det. Ștefănuț S. [BUCA B2153, B2187], s - 45°36'12"N / 24°36'20"E, 2050 m alt., 16.07.2000, leg. & det. Ștefănuț S. [BUCA B2440] (Ștefănuț 2001:129); The glacial ring from Doamnei Valley, SB, 45°36'10"N / 24°36'23"E, 2100 m alt., 16.07.2000, leg. & det. Ștefănuț S. [BUCA B3321].

Retezat Mountains, Piatra Iorgovanului (Plămadă 1993:49,56).

Asterella saccata (Wahlenb.) A. Evans

Syn.:

- *Asterella fragrans* (Nees) Trevis.
- *Fimbriaria fragrans* (Balb.) Nees
- *Fimbriaria saccata* (Wahlenb.) Ness
- *Fimbriaria umbonata* (Wallr.) Wallr.
- *Hypenantron fragrans* Trevis.
- *Hypenantron saccatum* (Wahlenb.) Trevis.
- *Hypenantron umbonatum* (Wallr.) Trevis.

First citation for Romania: Páll 1963a.

Romania (Ștefănuț 2003b:236, Fig.1; Frey & al. 2006:24).

Ecology: epigaic, basiphytic, xero-mesophytic, sciophytic; circumpolar; mountain; Hth.

Distribution in Europe: Fr, De, Po, Ch, At, Cz, Sk, Hu, Mk, Ro, Re.

Distribution in Romania:

Bihar Mountains, Izbucul Ponorului, on rocks, 2-9.07.1961, sub *Fimbriaria*, conf. Ștefureac T. (Páll 1963a:7; Ștefureac 1975b:312; Ștefănuț 2003b:232, Fig.1).

Athalamia hyalina (Sommerf.) S. Hatt.

Syn.:

- *Athalamia hyalina* (Sommerf.) S. Hatt. var. *suecica* (Lindb.) S. Hatt.
- *Clevea hyalina* (Sommerf.) Lindb.
- *Clevea hyalina* (Sommerf.) Lindb. subsp. *suecica* (Lindb.) Meylan
- *Clevea hyalina* (Sommerf.) Lindb. var. *suecica* (Lindb.) Müll. Frib.
- *Clevea suecica* (Lindb.) Lindb.
- *Grimaldia punicea* Wallr.
- *Marchantia alpina* Myrin ex Hartm.
- *Marchantia hyalina* Sommerf.
- *Sauteria seriata* Lindb.
- *Sauteria suecica* Lindb.

First citation for Romania: Schiffner 1914.

Romania (Müller 1954:373, Fig.381).

Muntenia, incl. sub var. *suecica* Lindb. (Mohan 1988b:115).

Ecology: humicolous-epilithic, calcicolous, mesophytic, scio-photophytic; circumpolar; mountain; Hth.

Herbaria and Exsiccatae: BUCA, BRHE

Distribution in Europe: Sj, No, Se, Fi, Br, Fr, Ad, De, Ch, At, Sk, Hu, Es, Bl, It, Si, Hr, Me, Ro, Bg, Al, Gr, Ct, Ee, Ua, Cm, Rn, Re.

Distribution in Romania:

Maramureş, sub *Clevea* (Ştefureac 1979c:59).

Ceahlău Mountain, above Neagra Forest, 1700 m alt., sub *Clevea hyalina* subsp. *suecica* (Pócs 1958:108; Mihai 1984a:89); in subalpine zone, on rocks, sub var. *hyalina* (Mihai 1984a:89; Ştefureac 1986f:192).

Bucegi Massif, fer - Cerbului Valley, 7.06.1896, leg. Moisescu N., 4.07.1899, 11.08.1903, 30.07.1904, 6.08.1905, 29.08.1911, 5,6.07.1914, Ialomiţa Valley above Peştera Ialomiţei Hermitage, 11.08.1903, Obârşia Ialomiţei towards Omul, 21.06.1897, 11.08.1903, Jepi Valley towards Caraiman, 10.08.1903, leg. & det. Radian S.Ş., sub *Clevea* (Radian 1915:190; Radian 1923:10); Mălăieşti Valley, 2000 m alt. (Pócs 1958:108); Brâna de Mijloc a Caraimanului, sub *Clevea hyalina* var. *suecica* (Ştefureac 1963b:87); Caraiman, incl. var. *suecica* (Ştefureac 1972c:104); Gaura Glacial Ring, BV, 45°26'49"N / 25°26'35"E, 2250 m alt., 8.07.1999, leg. & det. Ştefănuţ S. [BUCA B2447]; The glacial rings of Ialomiţa Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m alt., 10.07.1999, leg. & det. Ştefănuţ S. [BUCA B2318, B2456, B2460, B2465, B2480, B2495, B2516, B2519], 45°26'05"N / 25°26'50"E, 2190 m alt., 10.07.1999, leg. & det. Ştefănuţ S. [BUCA B2275], 45°26'06"N / 25°26'48"E, 2190 m alt., 10.07.1999, leg. & det. Ştefănuţ S. [BUCA B3124], 45°26'07"N / 25°26'57"E, 2205 m alt., 10.07.1999, leg. & det. Ştefănuţ S. [BUCA B3143]; ♂ - Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m alt., 8.07.1999, leg. & det. Ştefănuţ S. [BUCA B3113], s - [BUCA B2512, B3118, B3129], 45°26'55"N / 25°26'35"E, 2300 m alt., 8.07.1999, leg. & det. Ştefănuţ S. [BUCA B2277, B2530]; ♂ - Mălăieşti Glacial Ring, BV, 45°27'22"N / 25°27'19"E, 1940 m alt., 9.07.1999, leg. & det. Ştefănuţ S. [BUCA B2271]; ♀ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m alt., 8.09.2005, leg. & det. Ştefănuţ S. [BUCA B3263, B3281, B3287, B3288, B3292], ♂ - [BUCA B3266, B3269, B3282, B3291]; Babele Mountain, PH, 45°24'40"N / 25°28'37"E, 2150 m alt., 7.09.2006, leg. & det. Ştefănuţ S. [BUCA B3496]; ♀ - Babele Mountain, PH, 45°24'40"N / 25°28'37"E, 2150 m alt., 7.09.2006, leg. & det. Ştefănuţ S. [BUCA B3566]; ♀ - Babele Mountain, PH, 45°24'48"N / 25°28'43"E, 2200 m alt., 7.09.2006, leg. & det. Ştefănuţ S. [BUCA B3562]; ♀ - Babele Mountain, PH, 45°24'48"N / 25°28'43"E, 2210 m alt., 7.09.2006, leg. & det. Ştefănuţ S. [BUCA B3551]; ♂ - Caraiman Mountain, PH, 45°24'42"N / 25°28'37"E, 2129 m alt., 20.07.2007, leg. & det. Ştefănuţ S. [BUCA B3918]; Baba Mare Valley, PH, 45°24'42"N / 25°28'37"E, 2129 m alt., 20.07.2007, leg. & det. Ştefănuţ S. [BUCA B3921]; ♀ - Caraiman, PH, 45°24'40"N / 25°29'21"E, 2100 m alt., 14.07.2008, leg. & det. Ştefănuţ S. [BUCA B3898].

Piatra Craiului Mountains, Curmătura, 1590-2240 m alt., Crăpătura Peak, Muchia Țimbanului ca. 2000 m alt., La Om Peak, 2240 m alt., Westwand, 2140-2220 m alt., above Zăplaz, 1880 m alt., La Lanțuri, 1800 m alt., Ciorânga, 1830 m alt., Vlădușca, 1810 m alt., Ceardacul Stanciului, 1620 m alt., Padina lui Călineț, 1590 m alt., sub *Clevea* (Ştefureac 1951b:254-255; Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:73); Fundul Ciorânga, Brăul Ciorânga, 1710 m alt., Curmătura, 2050 m alt., Padina lui Râie, 1350 m alt., sub *Clevea hyalina* var. *suecica* (Ştefureac 1951b:255; Pócs 1958:108; Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:73); Crăpătura Pietrei Craiului, BV, 45°33'12"N / 25°15'24"E, 1550 m alt., 4-8.06.2001, leg. Pop O., det. Ştefănuţ S. [BUCA B2867] (Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:73); Curmătura Chalet – Curmătura Saddle, 26.06.2001, leg. Pop O., det. Ştefănuţ S.

(Dihoru G. & al. 2003:69; Ștefănuț & Pop O.G. 2006:73); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m alt., 8.07.1998, leg. & det. Ștefănuț S. [BUCA B2607] (Ștefănuț & Pop O.G. 2006:73).

Făgăraș Mountains, Bâlea Lake, leg. Zsák Z., sub *Clevea*, incl. var. *suecica* (Schiffner 1914:303; Györfly & Péterfi M. 1916:22; Ștefureac 1949a:288; Müller 1954:373; Drăgulescu 2003:7); Jgheabul Văros, 2000-2100 m alt., 15.16.07.1946, above Râiosu Peak, on calcareous rocks, 2100 m alt., 17.07.1946, sub *Clevea* (Ștefureac 1949a:291,292; Ștefureac 1977d:138; Drăgulescu 2003:7); The glacial ring Capra, 17.07.2000, leg. & det. Ștefănuț S. (Ștefănuț 2001:129).

Cluj County, Tur Gorges, 500 m alt., 16.10.1914, leg. Györfly J. & Péterfi M., sub *Clevea*, incl. var. *suecica* [BRHE 2](Schiffner 1914:303; Györfly & Péterfi M. 1916:18,22; Györfly & Degen 1916:110; Ștefureac 1949a:288; Müller 1954:373; Páll 1960b:90).

Bihor Mountains, Izbucul Ponorului, on rocks, 2-9.07.1961, sub *Clevea* (Páll 1963a:7; Ștefureac 1975b:312; Ștefureac 1986f:191).

***Barbilophozia attenuata* (Mart.) Loeske**

Syn.:

- *Barbilophozia gracilis* (Schleich. ex DC.) Müll. Frib.
- *Jungermannia attenuata* (Mart.) Lindenb.
- *Jungermannia attenuata* var. *gracilis* Schleich. ex Lindenb.
- *Jungermannia barbata* var. *attenuata* (Mart.) Nees
- *Jungermannia barbata* var. *gracilis* Schleich. ex DC.
- *Jungermannia gracilis* Schleich. ex Heeg
- *Jungermannia quinqueidentata* var. *attenuata* Mart.
- *Lophozia attenuata* (Mart.) Dumort.
- *Lophozia gracilis* Schleich. ex Steph.
- *Lophozia gracilis* var. *eflagellis* Schiffn.
- *Orthocaulis attenuata* (Mart.) A. Evans
- *Orthocaulis gracilis* (Schleich. ex DC.) H. Buch

First citation for Romania: Schur 1866.

Transylvania, sub *Lophozia* (Pax 1908:129).

Ecology: epigeaic, epilithic, saprolognic, acidophytic, meso-hygrophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA,

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Es, It, Si, Sb, Ba, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, Az.

Distribution in Romania:

Maramureș County, Vaser Valley (Pax 1908:129, Goia 2001:53; Goia & Ștefănuț 2004a:33-35, Fig.2).

Harghita County, Harghita Spa, on rotten wood, alt. 1300 m, leg. & det. Boros Á., sub *B. gracilis* (Boros 1951:372; Ștefureac 1969a:139; Goia & Ștefănuț 2004a:33-35, Fig.2; Bálint & Orbán 2006:466).

Făgăraș Mountains, Arpaș Mountain, leg. & det. Heufler L.R., sub *Jungermannia* (Schur 1866:871; Fuss 1878:655; Hazslinszky 1885:53; Drăgulescu 2003:12; Goia & Ștefănuț 2004a:33-35, Fig.2); **Obs.** This species, quoted by Schur F. from Arpaș Mountain according Heufler L.R., but missing in Heufler's paper (Heufler 1853:48-52).

Cindrel Mountains, Oncești, 1700 m alt., Găușoara, 1750 m alt., sub *B. gracilis* (Gündisch 1977:48; Drăgulescu 2003:12; Goia & Ștefănuț 2004a:33-35, Fig.2).

Retezat Mountains, below Custura Peak, sub *B. gracilis* (Páll 1964a:108; Goia & Ștefănuț 2004a:33-35, Fig.2).

Alba County, Scărișoara Cave, 1340 m alt., 11.08.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Ursoaia Saddle, 1270 m alt., 24.08.1996, Iarba Rea Valley, 790 m alt., 25.08.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958 (Goia 2000:112,116, Tabs.2,5); Ursoaia Saddle, Cepelur Valley (Goia 2001:53-55, Figs.8,9; Goia & Ștefănuț 2004a:33-35, Fig.2); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89); Cetățile Ponorului, on rotten woods, 46°33'55"N / 22°42'15"E, 1050 m alt., 3.09.2007, leg. & det. Ștefănuț S. [BUCA B3829, B3833, B3846].

Gilău Mountains, Dobrin, leg. & det. Péterfi M., sub *Jungermannia gracilis* (Györfly 1924b:38; Goia & Ștefănuț 2004a:33-35, Fig.2).

Bihor Mountains, Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m alt., 3.09.2007, leg. & det. Ștefănuț S. [BUCA B3814].

***Barbilophozia barbata* (Schmidel ex Schreb.) Loeske**

Syn.:

- *Barbilophozia barbata* var. *amphigastriata* Müll. Frib.
- *Jungermannia barbata* Schmidel ex Schreb.
- *Jungermannia barbata* var. *schreberi* Nees
- *Jungermannia schreberi* (Nees) Nees
- *Lophozia barbata* (Schmidel ex Schreb.) Dumort.

First citation for Romania: Baumgarten 1846.

Romania (Müller 1954:636).

Bucovina (Müller 1954:636).

Moldova, sub *Lophozia* (Papp 1943:656; Ştefureac & al. 1973:145).

Muntenia (Mohan 1988b:102).

Transylvania, sub *Lophozia* (Pax 1908:129; Müller 1954:636).

Ecology: epilithic, indifferent, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, SIB, FRE

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sc, It, Si, Hr, Sb, Ba, Mk, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Rc, Re, Ka, Ca.

Distribution in Romania:

Maramureş County, Surduc Gorges, sub *Lophozia* (Boros 1943e:144); Covatar Waterfall from Săpânța, 15-21.06.1997, Piatra Sărită, 16-18.10.1998, *leg. & det.* Jakab G. (Jakab 1999:55).

Rodna Mountains, Pietrosul Rodnei, sub *Jungermannia* (Hazslinszky 1866:152; Hazslinszky 1868:138); Iezerle Buhăescu, MM, 47°35'18"N / 24°38'40"E, 1880 m *alt.*, 29.08.1999, *leg. & det.* Ştefănuţ S. (Ştefănuţ 2000a:141).

Țibleş Mountains, Țibleş Peak, Mesteacănu Valley, 1984-1985 (Mohan 1988a:20).

Suceava County, Adam and Eva Mountains, Pojorâta Commune, on rocks (Mihai & Pascal 1973b:156,161).

Rarău Mountain, Codrul Secular Slătioara, sub *Lophozia* (Ştefureac 1941:1154,1276; Papp 1969b:188).

Giurgeu Mountains, Bicaz Gorges, sub *Lophozia* (Papp 1927b:149).

Neamţ County, Măgura Pietricica, sub *Lophozia* (Papp 1937d:235,236); Pietricica, 500 m *alt.*, sub *Lophozia* (Papp 1942b:525).

Harghita Mountains, Stâncilor („Terkö”) Peak, sub *Lophozia* (Schiffner 1914:305); Stâncilor Peak, sub *Lophozia* (Degen 1930:976); Vermet Valley, 1050-1250 m *alt.*, 2.07.2000, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:466).

Harghita County, Vlăhița (Olohfal), 20.08.1901, sub *Jungermannia* (Barth 1905:13); Caşin, sub *Lophozia* (Bálint & Orbán 2006:473).

Nemira Mountains, Nemira Mountain, in common spruce forests, 1450 m *alt.* (Barabaş V. 1974:25); Nemira, on soil, 1970-1977 (Mihai & Barabaş V. 1978:116); Şandru Peak, 1400 m *alt.*, Ciunget Brook, 900 m *alt.* (Barabaş V. 1982b:57,70, Tabs.4,20).

Bodoc Mountains, Malnaş, 23.08.1975, frequent, *det.* Ştefureac T., ass. *Luzulo luzuloides-Fagetum* Zólyomi 1955 (Kovács 1977:244,247; Ştefureac & Kovács 1981:117).

Piatra Craiului Mountains, Prăpăstii, 1000 m *alt.*, 29.08.1936, sub *Lophozia*, ass. *Seslerietum rigidae burcicum* (Zólyomi 1939:113, Tab.1; Ştefănuţ & Pop O.G. 2006:73); towards Padinile Frumoase, BV, 1700 m *alt.*, 7.08.2004, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3003] (Ştefănuţ & Pop O.G. 2006:73).

Argeş County, Great Gorges of Dâmbovița River, 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg. & det.* Ştefănuţ S. [BUCA B2584], 45°23'15"N / 25°11'40"E, 800 m *alt.*, 10.07.2003, *leg. & det.* Ştefănuţ S. [BUCA B2797, B2798] (Ştefănuţ & Pop O.G. 2006:73).

Făgăraş Mountains, Osdola, sub *Jungermannia* (Baumgarten 1846:222; Schur 1866:871; Fuss 1878:655); Poiana Neamţului, sub *Jungermannia schreberi* (Fuss 1878:656; Drăgulescu 2003:12).

Iezer-Păpuşa Mountains, Bratia Valley, 900 m *alt.*, sub *Jungermannia* (Loitlesberger 1898:195).

Sibiu County, Cislădoara, Argintiu Brook, on rocks, 9.06.1868, *leg. & det.* Barth J., sub *Jungermannia barbata* var. *schreberi*, *rev.* Gündisch F. [SIB HF 1521] (Fuss 1878:656; Drăgulescu 1983:58; Drăgulescu 2003:12); Micăsasa, sub *Jungermannia* (Barth 1880:121).

Cindrel Mountains, Prejba Mountain, on rocks, 16.06.1869, *leg. & det.* Barth J., sub *Jungermannia barbata* var. *schreberi*, *rev.* Gündisch F. [SIB HF 1522] (Fuss 1878:656; Drăgulescu 1983:58; Drăgulescu 2003:12); Păltiniş, 1000 m *alt.* (Gündisch 1977:48; Drăgulescu 2003:12); Foltea Peak, SB, 45°36'50"N / 23°46'09"E, 14.10.1957, *leg.* Gündisch F., *det.* Ştefănuţ S. [BUCA B5485].

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub *Lophozia* (Ștefureac, Popescu & Lungu 1955:527,534,541).

Hunedoara County, Porcurea Valley, Almașul Mic de Munte, 10.06.1961, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B3021, B3022, B3492].

Retezat Mountains, Retezat, sub *Jungermannia barbata* var. *schreberi* (Simonkai 1872:67; Fuss 1878:656); Valereasca, alpine zone (Schiffner 1914:305); towards Retezat Peak and Custura Peak, sub *Lophozia* (Páll 1964a:108).

Mehedinți County, Cazane, 200-270 m *alt.*, 11-14.06.1938, ass. *Seslerietum filifoliae* (Zólyomi 1939:141, Tab.7); „Borștița Mică”, Svinița, 250 m *alt.*, 17.06.1945, sub *Lophozia* (Ștefureac 1947a:138); Orșova – Cerna Valley part of Danube Defile, in forest, 1966-1968 (Plămadă 1970c:393); Eșelnița Valley, 90 m *alt.*, ass. *Hypno-Polypodietum* Jko et Pec. 1963 (Schneider-Binder & al. 1970:315, Tab.3).

Domogled Mountain, Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8).

Caraș-Severin County, Grota cu Aburi, 44°54'03"N / 22°25'05"E, 400 m *alt.*, 6.08.2004, *leg.* & *det.* Ștefănuț S. [BUCA B2972].

Alba County, Valea Lungă, *leg.* & *det.* Barth J. (Schur 1866:871; Fuss 1878:655; Barth 1880:121); Arieșul Mare Valley near Lăpuș, 800 m *alt.*, sub *Jungermannia* (Péterfi M. 1908:273; Goia 2001:55); Colții Trascăului (Páll 1960b:90); Valea Lungă, on soil, 3.12.1868, *leg.* & *det.* Barth J., sub *Jungermannia* [SIB HF 1519](Drăgulescu 1983:58); Măgina, near Aiud-Remeți way, below 715 m *alt.*, 18.08.1967, *leg.* & *det.* Plămadă E., ass. *Genisto (tinctoriae)-Quercetum petraeae transsilvanicum* (Gergely 1968:350).

Cluj County, Turzii Gorges, 410 m *alt.*, 8.04.1918, *leg.* & *det.* Péterfi M., sub *Jungermannia* [FRE 1125](Györffy 1924b:38; Borza 1935:7; Páll 1960b:90); Turzii Gorges, 740 m *alt.*, 18.08.1936, sub *Lophozia*, ass. *Seslerietum rigidae praebiharicum* (Zólyomi 1939:119, Tab.2); Southern Ciucea on Surduc Valley, sub *Lophozia* (Boros 1942a:34); Turzii Gorges, in rocks crack, sub *Lophozia* (Papp 1946e:263); Sălicea (Boros 1958:7); Turzii Gorges (Páll 1960b:90); Turzii Gorges (Plămadă & Goia 1994:87).

Vlădeasa Mountains, Zârnei Valley, ass. *Juniperetum nanae* Br.-Bl. 1939 rev. *J. sibiricae* Rațiu 1965 (Rațiu O. & Gergely 1970:234, Tab.2).

Bihar County, between Aleșd and Peștiș, 400 m *alt.*, sub *Jungermannia* (Péterfi M. 1908:273); Sebeș Valley of Crișului Repede Springs, sub *Lophozia* (Ștefureac, Popescu & Lungu 1954:236); Apuseni Mountains (Ștefureac 1975b:310; Ștefureac 1986f:191).

Barbilophozia floerkei (F. Weber et D. Mohr) Loeske

Syn.:

- *Jungermannia barbata* var. *floerkei* (F. Web. & D. Mohr) Dumort.
- *Jungermannia barbata* var. *naumanniana* Nees
- *Jungermannia floerkei* F. Web. & D. Mohr
- *Jungermannia lycopodioides* var. *floerkei* (F. Web. & D. Mohr) Lindb.
- *Jungermannia naumannii* (F. Web. & D. Mohr) Nees
- *Jungermannia neumannii* Nees
- *Lophozia floerkei* (F. Web. & D. Mohr) Schiffn.
- *Lophozia floerkei* fo. *densifolia*
- *Lophozia floerkei* var. *densifolia*
- *Lophozia floerkei* var. *naumanniana* Schiffn.
- *Orthocaulis floerkei* (F. Web. & D. Mohr) H. Buch

First citation for Romania: Loitlesberger 1898.

Romania (Schuster 1969:302).

Transylvania, sub *Lophozia* (Pax 1908:129).

Ecology: epigeaic, acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Sc, It, Si, Sb, Me, Mk, Ro, Bg, Ee, Ua, Fl, Rn, Rw, Re.

Distribution in Romania:

Maramureș County, Toroiaga Mountain and Pop Ivan Mountain (Boros 1951:372); Covatar Waterfall from Săpânța, 15-21.06.1997, Văratec Mountain, Tocila Valley, 16-18.10.1998 (Jakab 1999:53,55).

Suceava County, Țapu Mountain, on rocks, *conf.* Mihai G. (Pascal 1970a:198; Pascal 1973; Ștefureac & Pascal 1981:477; Ștefureac 1986f:194).

Bârgău Mountains, Cârțibavu Mare Valley, Secu Brook, Piatra Fântânele, Arșița Peak, 1983-1984 (Mohan & Hodoroga 1986:212).

Bucegi Massif, Bucegi, 2000 m alt., Strunga, 1700 m alt., sub *Jungermannia* (Loitlesberger 1898:195); Moraru, 2490 m alt., sub *Lophozia floerkei* fo. *densifolia*, ass. *Elynetum myosuroides* (Pușcaru D. & al. 1956: Tab.24); Gaura Glacial Ring, BV, 45°26'22"N / 25°26'24"E, 2250 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2428]; The glacial rings of Ialomița Valley, DB, 45°26'07"N / 25°26'57"E, 2205 m alt., 10.07.1999, leg. & det. Ștefănuț S. [BUCA B2230, B2434]; Babele Mountain, PH, 45°24'40"N / 25°28'32"E, 2150 m alt., 8.09.2005, leg. & det. Ștefănuț S. [BUCA B3273].

Piatra Craiului Mountains, Ascuțit Peak, BV, 2100 m alt., 8.08.2004, leg. Pop O., det. Ștefănuț S. [BUCA B2997] (Ștefănuț & Pop O.G. 2006:73,74).

Făgăraș Mountains, Bâlea Lake, SB, 45°36'17"N / 24°37'07"E, 2040 m alt., 6.07.1998, leg. & det. Ștefănuț S. [BUCA B2182]; The glacial ring from Doamnei Valley, SB, 45°36'05"N / 24°36'27"E, 2150 m alt., 16.07.2000, leg. & det. Ștefănuț S. [BUCA B2170, B2451].

Parâng Mountains, around the peatbog near Câlcescu Lake (Ștefureac 1969a:108).

Alba County, Feneș Gorges, sub *Lophozia floerkei* var. *densifolia* [BUCA B5483] (Papp 1944b:236,238; Papp 1945a:163,168).

Bihor Mountains, Padiș, 1150 m alt., 08.1999 (Jakab 2000b:69).

Barbilophozia hatcheri (A. Evans) Loeske

Syn.:

- *Barbilophozia baueriana* (Schiffn.) Loeske
- *Barbilophozia lycopodioides* var. *hatcheri* (A. Evans) Schljakov
- *Jungermannia baueriana* (Schiffn.) Arnell
- *Jungermannia floerkei* var. *aculeata* Loeske
- *Jungermannia floerkei* var. *baueriana* Schiffn.
- *Jungermannia hatcheri* A. Evans
- *Lophozia baueriana* (Schiffn.) Schiffn.
- *Lophozia floerkei* var. *baueriana* Schiffn.
- *Lophozia hatcheri* (A. Evans) Steph.
- *Lophozia hatcheri* var. *hageni* Kaal.

First citation for Romania: Ștefureac 1936.

Muntenia (Mohan 1988b:102).

Maramureș (Ștefureac 1979c:59).

Ecology: epilithic, acidophytic, mesophytic, sciophytic; circumpolar; mountain-subalpine; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Br, Fr, Nl, Be, Lu, De, Po, Ch, At, Cz, Sk, Pt, Es, Co, Sa, Sc, It, Hr, Sb, Me, Ba, Mk, Ro, Bg, Gr, Ee, Lv, Ua, Nz, Rn, Rw, Re, Ca.

Distribution in Romania:

Rodna Mountains, below Ineu Peak, Tomnatec ridge towards Cușca (Ștefureac 1945:175; Ștefureac 1955:560; Pócs 1958:109; Ștefureac 1963b:90); Iezerlele Buhăescu, MM, 47°35'19"N / 24°38'37"E, 1910 m alt., 29.08.1999, leg. & det. Ștefănuț S. [BUCA B2481] (Ștefănuț 2000b:11-12); Ineu Glacial Ring, BN, 47°31'38"N / 24°53'33"E, 1920 m alt., 26.08.1999, leg. & det. Ștefănuț S. [BUCA B3718].

Țibleș Mountains, Țibleș Peak, Mesteacănu Valley, 1984-1985 (Mohan 1988a:20).

Giupalău Mountain, Giupalău, on east-north-eastern slope, 22.08.1936, sub *Lophozia* (Ștefureac 1936:297; Ștefureac 1963b:90); Piciorul Pietrii, 1700 m alt., sub *Lophozia* (Ștefureac 1942b:91); Giupalău, on north-western slope, 1550 m alt., sub *Lophozia* (Ștefureac 1945:175; Ștefureac 1955:560); Giupalău Peak, SV, 47°26'12"N / 25°29'20"E, 1870 m alt., 12.09.2006, leg. & det. Ștefănuț S. [BUCA B3700].

Căliman Mountains, alpine zone, on rotten wood (Mihai 1968a:204); Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m alt., 26.07.2007, leg. & det. Ștefănuț S. [BUCA B3725].

Harghita Mountains, Ciceu Peak, 1750 m alt. (Pócs 1958:109); Asău Valley, 1000-1100 m alt., 22.10.2000, leg. Bálint L. & Csízi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:466).

Ciucaș Mountains, Tigăile Mari Culm, Tigăile Mici Culm, Ursului Brook Valley, Ciucaș Peak (Mohan 1990b:40).

Bucegi Massif, subalpine zone, 1600-2100 m alt., sub *Lophozia* (Pușcaru E. & al. 1950:15); Bucșoiu Saddle, 2420 m alt., Șaua Mare above Țigănești Valley towards Gaura, 2320 m alt., The Saddle between Gaura and Mălăiești, 2390 m alt., sub *Lophozia* (Ștefureac 1955:559,560, Tab.2; Ștefureac

1986f:190,191; Ștefureac 1991:114); Izvorului Valley, 1920 m *alt.*, ass. *Nardetum strictae rubrae*, Dorului Valley, 1880 m *alt.*, ass. *Nardetum strictae typicum*, sub *Lophozia* (Pușcaru D. & al. 1956: Tab.66); between Bătrâna and Omu, Bucșoiu Saddle and Scara Țigănești, sub *Lophozia* (Ștefureac 1963b:90,101,102, Fig.5a-d); Bătrâna, Bucșoiu, Țigănești, 2300-2400 m *alt.*, sub *Lophozia* (Ștefureac 1972c:104,105); The glacial rings of Ialomița Valley, DB, 45°26'07"N / 25°26'57"E, 2205 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2034]; Babele Mountain, PH, 45°24'40"N / 25°28'32"E, 2150 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3271].

Piatra Craiului Mountains, ♀ - Brusturet Gorges, AG, 45°27'55"N / 25°13'45"E, 950 m *alt.*, 26.07.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2967], ♂ - [BUCA B2968] (Ștefănuț & Pop O.G. 2006:74).

Făgăraș Mountains, Podragu Lake, 2000 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:218); Capra Lake, AG, 45°36'01"N / 24°37'41"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2348, B3154]; Capra Lake, AG, 45°36'01"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2386].

Cindrel Mountains, Păltiniș, 1600 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:218; Gündisch 1977:48; Drăgulescu 2003:12); Cristești, 2200 m *alt.* (Gündisch 1977:48; Drăgulescu 2003:12).

Retezat Mountains, towards Adăpătoarele caprelor negre, sub *Lophozia* (Páll 1964a:108); Retezat National Park Reserve (Plămadă 1976a; Ștefureac 1986f:191); Obârșia Nucșoarei, 1050 m *alt.*, 18.09.2003, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3091]; Tăul Iezilor, 19.06.2005, *leg.* Cogălniceanu D., *det.* Ștefănuț S. [BUCA B3192].

***Barbilophozia kunzeana* (Huebener) Müll. Frib.**

Syn.:

- *Jungermannia colpodes* Taylor
- *Jungermannia floerkei* var. *obtusata* Nees
- *Jungermannia kunzeana* Huebener
- *Jungermannia kunzeana* var. *plicata* (Hartm.) Lindb.
- *Jungermannia kunzei* Lindb.
- *Jungermannia kunzei* var. *plicata* (Hartm.) Lindb.
- *Jungermannia plicata* Hartm.
- *Jungermannia plicata* var. *kunzeana* (Huebener) Hartm.
- *Lophozia kunzeana* (Huebener) A. Evans
- *Lophozia kunzeana* var. *plicata* (Hartm.) Lindb.
- *Orthocaulis kunzeanus* (Huebener) H. Buch
- *Sphenolobus kunzeanus* (Huebener) Steph.
- *Sphenolobus kunzeanus* var. *plicatus* (Hartm.) Warnst.

First citation for Romania: Boros & Vajda 1967.

Romania (Frey & al. 2006:70).

Muntenia (Mohan 1988b:102).

Ecology: humicolous, acidophytic, mesophytic, photophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, Lu, De, Po, Ch, At, Cz, Sk, Es, It, Ro, Bg, Ee, Lv, Lt, Nz, Rn, Rw, Rc, Re, Ka.

Distribution in Romania:

Ciucăș Mountains, Bratocea Mountain above Roșu Mountain Hut, 1650 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:218).

Bucegi Massif, Gaura Glacial Ring, BV, 45°26'49"N / 25°26'33"E, 2270 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3149], 45°26'26"N / 25°26'26"E, 2175 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3483].

Bihor Mountains, Cetățile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:91; Jakab 2000b:67,72); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3855].

***Barbilophozia lycopodioides* (Wallr.) Loeske**

Syn.:

- *Jungermannia barbata* var. *lycopodioides* (Wallr.) Nees
- *Jungermannia lycopodioides* Wallr.
- *Lophozia hatcheri* var. *ciliata* Müll. Frib.
- *Lophozia lycopodioides* (Wallr.) Cogn.
- *Lophozia lycopodioides* var. *obliqua* Müll. Frib.
- *Lophozia lycopodioides* var. *parvifolia* Schiffn.

First citation for Romania: Schur 1866.

Moldova (Ștefureac & al. 1973:145).

Muntenia, incl. var. *parvifolia* Schiffn. (Mohan 1988b:102).

Transylvania, sub *Lophozia* (Pax 1908:129).

Ecology: epilithic, humicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch. Characteristic to *Vaccinio-Piceetalia*.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Br, Fr, Ad, De, Po, Ch, At, Cz, Sk, Pt, Es, Co, It, Si, Hr, Sb, Me, Mk, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Re, Ca.

Distribution in Romania:

Rodna Mountains, Pietrosul Borșei, north-western slope, 2280 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:390,391, Tab.1); Pietrosul Borșei, 2230 m *alt.*, 08.1948, sub *Lophozia* (Ștefureac 1958a:105), western slope, on rocks, 2150 m *alt.*, sub *Lophozia lycopodioides* var. *parvifolia* Schiffn. (Ștefureac 1958a:109); Pietrosul Rodnei, MM, 47°36'33"N / 24°39'11"E, 1500 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2844]; Iezerule Buhăescu, MM, 47°35'19"N / 24°38'37"E, 1910 m *alt.*, 29.08.1999, *leg. & det.* Ștefănuț S. [BUCA B3458].

Ceahlău Mountain, Durău Valley, towards Duruitoarea Waterfall, on soil, in common spruce forest (Mihai 1984a:88; Ștefureac 1986f:192).

Neamț County, Broșteni (Papp 1942b:525).

Nemira Mountains, Cheșcheș Culm, on soil, 2.05-8.11.1971, sub *Lophozia* (Ștefureac & Barabaș V. 1972:76,77; Mihai 1984a:88); Nemira Mountain, on soil, in common spruce forest, 1400 m *alt.* (Barabaș V. 1974:26); Nemira, on humus, 1970-1977 (Mihai & Barabaș V. 1978:116; Mihai 1984a:88).

Ciucaș Mountains, Ciucaș Peak, Zăgan Mountain (Mohan 1990b:41).

Bucegi Massif, Bucegi, sub *Jungermannia* (Schur 1866:871; Fuss 1878:655; Hazslinszky 1885:54); subalpine zone, 1600-2100 m *alt.*, sub *Lophozia* (Pușcaru E. & al. 1950:15); The Saddle between Gaura and Mălăiești, 30.09.1950, 2390 m *alt.*, sub *Lophozia lycopodioides* var. *parvifolia* (Ștefureac 1955:606,607, Tab.3; Ștefureac 1972c:104); Obârșia, 2300 m *alt.*, ass. *Elynetum myosuroides* (Pușcaru D. & al. 1956:71, Tab.24), Scara, 2300 m *alt.*, sub *Lophozia*, ass. *Agrostidetum rupestris* (Pușcaru D. & al. 1956: Tab.27), Vânturiș, 1870 m *alt.*, Dichiu, 1980 m *alt.*, Ialomița Valley, near Bolboci, 1750 m *alt.*, ass. *Nardetum strictae rubrae*, Piciorul Pietra Arsă, 1750 m *alt.*, Lucăcilă, 1940 m *alt.*, ass. *Nardetum strictae typicum*, Furnica, 1900-1985 m *alt.*, Piciorul Pietra Arsă, 1950 m *alt.*, ass. *Nardetum strictae supinae*, sub *Lophozia* (Pușcaru D. & al. 1956: Tab.66); Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3119]; Dorului Valley, PH, 45°21'51"N / 25°28'37"E, 1830 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3214].

Făgăraș Mountains, Arpaș Mountain, Cârțișoara Mountains, sub *Jungermannia* (Schur 1866:871; Fuss 1878:655; Hazslinszky 1885:54; Drăgulescu 2003:12); Cârțișoara Valley, 900 m *alt.*, Arpașului Valley, 1700 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:218-219); Bălea Lake, SB, 45°36'11"N / 24°37'00"E, 2040 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2406]; Capra Lake, AG, 45°36'01"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2405]; Pojorta Valley, BV, 45°38'14"N / 24°53'48"E, 800 m *alt.*, 21.09.2003, *leg. & det.* Ștefănuț S. [BUCA B2914].

Cindrel Mountains, Găușoara, 1750 m *alt.* (Gündisch 1977:48; Drăgulescu 2003:12).

Retezat Mountains, Gemenea Valley (near Casa laborator), 1850 m *alt.*, 26.06.1964, 5.07.1965, Bârlei Valley, 1900 m *alt.*, 31.07.1966, near Tăul Spurcat, 2100 m *alt.*, 6.09.1969, Zlătuia Valley, 1600 m *alt.*, 10.06.1970, car. Ord. *Vaccinio-Piceetalia* (Plămadă 1985a:52, Fig.1; Plămadă 1993:49,56); Zănoaga Lake, Zănoaga Glacial Ring, northern slope, 2200 m *alt.*, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

Alba County, Detunata Mountains, 1055-1100 m *alt.*, *det.* Sass-Gyarmati A. (Sass-Gyarmati, Pócs & Orbán 2005:127).

Bihar Mountains, Stâna de Vale, 1100 m *alt.*, sub *Jungermannia* (Péterfi M. 1908:273; Ștefureac 1975b:313).

***Barbilophozia quadriloba* (Lindb.) Loeske**

Syn.:

- *Barbilophozia quadriloba* var. *glareosa* (Jørg.) Lammes
- *Jungermannia quadriloba* Lindb.
- *Jungermannia quadriloba* var. *glareosa* Jørg.
- *Lophozia quadriloba* (Lindb.) A. Evans

- *Lophozia quadriloba* var. *glareosa* (Jørg.) Bryhn
- *Orthocaulis quadriloba* (Lindb.) H. Buch
- *Sphenolobus quadrilobus* (Lindb.) Steph.

First citation for Romania: Degen 1914.

Ecology: epigaeic, calcicolous, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, No, Se, Fi, Br, Fr, De, Po, Ch, At, Cz, Sk, It, Si, Ro, Lt, Ua, Nz, Fl, Rn, Re.

Distribution in Romania:

Cristianul Mare Mountain, 1700 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:218).

Bucegi Massif, Bucșoiu Peak, 08-09.1911, sub *Lophozia* (Degen 1914:217).

Piatra Craiului Mountains, 1600 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:218; Dihoru G. & al. 2003:69; Ștefănuț & Pop O.G. 2006:74); Pârâul Rece, AG, 45°30'42"N / 25°11'28"E, 1400 m *alt.*, 8.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2650] (Ștefănuț & Pop O.G. 2006:74); Marele Grohotiș, 24.08.2007, *leg.* Pop O.G., *det.* Ștefănuț S. [BUCA B3987].

Bazzania flaccida (Dumort.) Grolle

Syn.:

- *Bazzania deflexa* (Mart.) Steph.
- *Bazzania denudata* auct., non (Torrey) Grev.
- *Bazzania implexa* (Nees) Müll. Frib.
- *Bazzania triangularis* var. *implexa* (Nees) Zahlbr.
- *Herpetium deflexum* var. *implexum* Nees
- *Jungermannia deflexa* var. *flaccida* Lindenb.
- *Mastigobryum tricrenatum* var. *implexum* (Nees) Nees
- *Pleuroschisma tricrenatum* var. *implexum* (Nees) Müll. Frib.

First citation for Romania: Heufler 1853.

Ecology: epigaeic, acidophytic, mesophytic, photophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Fr, Be, De, Po, Ch, At, Cz, Sk, Es, It, Si, Ro, Bg.

Distribution in Romania:

Rodna Mountains, Galați Mountain, 2000 m *alt.*, *B. triangularis* var. *implexa* (Matouschek 1905:80); Pietrosul Borșei, north-western slope, 2280 m *alt.*, 8-9.08.1948, sub *Pleuroschisma tricrenatum* var. *implexum* (Ștefureac 1952a:391, Tab.1; Ștefureac 1968:304; Ștefureac 1983g:177).

Rarău Mountain, Codrul Secular Slătioara, sub *Pleuroschisma tricrenatum* var. *implexa* (Ștefureac 1941:1154,1272).

Făgăraș Mountains, Arpaș Valley, sub *Mastigobryum deflexum* var. *implexum*, subalpine zone (Heufler 1853:50-51); Cârțișoara Valley, 1200 m *alt.*, *leg. & det.* Boros Á., sub *B. denudata* (Boros & Vajda 1967:225); Capra Lake, AG, 45°36'01"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2151].

Cindrel Mountains, Păltiniș, 900-1100 m *alt.*, sub *B. denudata* (Boros & Vajda 1967:225; Gündisch 1977:47; Drăgulescu 2003:10); Bătrâna Mountain, sub *B. denudata* (Boros & Vajda 1967:225);

Cluj County, Someșul Rece Valley, 700 m *alt.*, *leg. & det.* Boros Á., Lunca on Drăgan Valley, 700 m *alt.* (Boros & Vajda 1967:225).

Bazzania tricrenata (Wahlenb.) Lindb.

Syn.:

- *Bazzania deflexa* (Mart.) Steph.
- *Bazzania triangularis* (Schleich. ex Steud.) Lindb.
- *Bazzania tricrenata* var. *deflexa* (Mart.) C. Massal.
- *Bazzania tricrenata* var. *intercedens* (Schiffn.) Jørg.
- *Bazzania tricrenata* var. *minima* (Hook.) Jørg.
- *Bazzania tricrenata* var. *pygmaea* (Nees) Arnell
- *Bazzania tridenticulata* (Michx.) Trevis.
- *Herpetium deflexum* (Mart.) Nees
- *Jungermannia deflexa* Mart.
- *Jungermannia triangularis* Schleich. ex Steud.
- *Jungermannia tricrenata* Wahlenb.
- *Jungermannia trilobata* var. *minima* Hook.
- *Mastigobryum deflexum* (Mart.) Ångstr.
- *Mastigobryum deflexum* Mart. var. *tricrenatum* Nees
- *Mastigobryum deflexum* var. *pygmaeum* (Nees) Gottsche et al.
- *Mastigobryum triangulare* (Schleich. ex Steud.) Steph.
- *Mastigobryum tricrenatum* (Wahlenb.) C. Massal.

- *Pleuroschisma triangulare* (Schleich. ex Steud.) Loeske
- *Pleuroschisma tricrenatum* (Wahlenb.) Dumort.

First citation for Romania: Heufler 1853.

Moldova, sub *Pleuroschisma* (Papp 1943:663).

Transylvania, sub *B. triangularis* (Pax 1908:130).

Ecology: epigeaic, acidophytic, meso-hygrophytic, sciophytic; holarctic-circumboreal; boreal-mountain; Hch.

Herbaria and Exsiccatae: BUCA, CL, SIB

Distribution in Europe: Fo, No, Se, Fi, Ie, Br, Fr, Ad, De, Po, Ch, At, Cz, Sk, Es, It, Si, Hr, Sb, Ba, Mk, Ro, Bg, Al, Ua, Rn, Rc, Re, Ca.

Distribution in Romania:

Maramureş Mountains, sub *Mastigobryum deflexum* (Hazslinszky 1885:43); Şerban Mountain, *leg. & det.* Boros Á. (Boros & Vajda 1969:418).

Maramureş County, Covatar Waterfall from Săpânța, 15-21.06.1997, Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, Pietrosul Rodnei, sub *Mastigobryum deflexum* (Hazslinszky 1866:153; Hazslinszky 1868:137); Ineu Peak, 2250 m *alt.*, sub *Mastigobryum deflexum* (Breidler 1890a:149); Rodna Mountains, sub *B. triangularis* (Pax 1908:130); Pietrosul Rodnei, 23.08.1942, *leg. & det.* Boros Á. (Györffy 1943d:321); Ineu, 1942, *leg. & det.* Boros Á. (Györffy 1943d:321; Ştefureac 1952a:392); below Ineu Peak, Tomnatec Ridge towards Cuşca, 2230 m *alt.*, 08.1937, sub *Pleuroschisma* (Ştefureac 1945:175,179); Pietrosul Rodnei, north-western slope, 2260-2290 m *alt.*, 8-9.08.1948, sub *Pleuroschisma* (Ştefureac 1952a:389-391, Tab.1; Ştefureac 1967b:308); Pietrosul Borşei, western slope, on rocks, 2150 m *alt.* (Ştefureac 1958a:109; Ştefureac 1977c:167); Rodnei Mountains (Ştefureac 1963c:168,170); Pietrosul Mare Glacial Ring, 1950-2000 m *alt.*, 19.07.1975, ass. *Luzuletum alpino-pilosae* Br.-Bl. 1926, *Soldanello pusillae-Ranunculetum crenati* Borza 1931 (Coldea, Täuber & Pînzaru 1981:439,440, Tabs.3,4); Pietrosul Rodnei, 2260-2290 *alt.*, ass. *Racomitrio-Aulacomnietum turgidae* (Ştefur. 1952) Ştefur. 1977 (Ştefureac 1986g:78); Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2204, B2210]; Iezerul Pietrosului, MM, 47°35'53"N / 24°38'49"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2502]; Iezerul Pietrosului, MM, 47°35'50"N / 24°38'50"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2013].

Țibleş Mountains, Păltiniş Valley, Bran Peak, Piciorul Arsurii, Țibleş Peak, 1984-1985 (Mohan 1988a:16).

Suceava County, Argestru, 16.05.1910, Muncelu-Pojorâta, 15.05.1910, sub *Mastigobryum deflexum* (Lilienfeldówna 1911:735).

Rarău Mountain, Codrul Secular Slătioara, 960 m *alt.*, 19.07.1938 (Ştefureac 1941:1154,1159, 1183,1242,1246,1251,1272,1273,1298,1302, Tab.4, Fig.15; Papp 1969b:188; Ştefureac 1986f:193); Codru Secular Slătioara, Ion's brook, common spruce forest, 1000-1100 m *alt.*, sub *Pleuroschisma tricrenatum* (Ştefureac 1942b:90; Ştefureac 1945:174); Rarău Mountain, SV, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ştefănuţ S. [BUCA B3772]; Pietrele Doamnei, 47°26'48"N / 25°34'05"E, 25.07.2007, *leg. & det.* Ştefănuţ S. [BUCA B3745];

Bărgău Mountains, Heniu Mare, Străjii Valley, Muncel Peak, Piatra Fântânele, Tomnatec Peak, 1983-1984 (Mohan & Hodoroga 1986:211).

Căliman Mountains, Pietrosul Peak, on rocks (Mihai 1968a:205); in common spruce forest, on soil and humus, 1981-1984 (Mihai 1985:97).

Harghita Mountains, Harghita Spa, 1700 m *alt.* (Boros 1951:375; Bálint & Orbán 2006:466).

Bucegi Massif, Gaura Glacial Ring, BV, 45°26'27"N / 25°26'19"E, 2120 m *alt.*, 8.07.1999, *leg. & det.* Ştefănuţ S. [BUCA B2039] (Mihăilescu & Ştefănuţ 2000a:14).

Făgăraş Mountains, Arpaş Valley, sub *Mastigobryum deflexum* var. *tricrenatum*, in beech forest (Heufler 1853:50-51, Pl.IV, Fig.4; Fuss 1854:20; Schur 1866:873; Fuss 1878:654; Hazslinszky 1885:43; Drăgulescu 2003:9); Negoiu, 2200 m *alt.*, sub *B. triangularis* (Loitlesberger 1898:196; Drăgulescu 2003:9); Bălea Lake, SB, 45°36'07"N / 24°37'02"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2175].

Iezer-Păpuşa Mountains, Bratia Valley, 900 m *alt.*, sub *B. triangularis* (Loitlesberger 1898:196).

Cozia Mountain, Cozia Peak, 1668 m *alt.*, 1975-1976 (Dihoru G. 1990:52); eastern slope of Omul Peak, 1558 m *alt.*, on rocks, 1987, *leg.* Negrean G. (Dihoru G. 1990:52).

Cindrel Mountains, Păltiniş, *leg. & det.* Barth J., sub *Mastigobryum deflexum* (Fuss 1878:654; Hazslinszky 1885:43; Gündisch 1977:47; Drăgulescu 2003:10); Găușoara, 1600 m *alt.*, Jujbea, 1800 m

alt. (Gündisch 1977:47; Drăgulescu 2003:10); Foltea, 1950 m *alt.*, *det.* Ştefureac T. (Gündisch 1977:47; Drăgulescu 2003:9); Iezerul Mare, 2000 m *alt.* [SIB HG](Gündisch 1977:47; Drăgulescu 1992:55; Drăgulescu 2003:10); Iezerul Mic [SIB HG](Drăgulescu 1992:55; Drăgulescu 2003:10); Foltea Peak, SB, 45°36'50"N / 23°46'09"E, 14.10.1957, *leg.* & *det.* Gündisch F., sub *Lepidozia reptans*, *rev.* Ştefănuţ S. [BUCA B5485].

Mureş County, Lunca Bradului, *leg.* & *det.* Demeter K. [CL](Igmándy 1943:56; Boros 1951:375).

Căpăţânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ştefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Repedea Valley, 08-09.1954, sub *Pleuroschisma* (Ştefureac, Popescu & Lungu 1959:9,19,31, Tab.6); east to the peatbog near Călcescu Lake (Ştefureac 1969a:106).

Retezat Mountains, Retezat, sub *Mastigobryum deflexum* (Simonkai 1872:67; Fuss 1878:654; Hazslinszky 1885:43); near Casa laborator Gemenele, 1750 m *alt.*, 30.07.1966, *leg.* Plămadă E. (Ştefureac 1969a:136; Plămadă 1985a:52); Rovine Brook, 2000 m *alt.*, 5.09.1967, *ass.* *Philonotido-Hygrohypnetum dilatati* Plămadă 1974 (Plămadă 1974b:Tab.3; Plămadă 1993:55, Tab.6); Gemenea Valley, 4.07.1969, *ass.* *Vaccinio-Plagiothecietum undulatae* Plămadă 1978 (Plămadă 1978:245, Tab.5); Retezat National Park, 1590-1600 m *alt.*, *ass.* *Hieracio rotundatae-Piceetum* Pawl. et Br.-Bl. 1939, 1800-1810 m *alt.*, *ass.* *Bruckenthalio spiculifoliae-Piceetum* Borhidi 1971 (Coldea, Lupşa & Plămadă 1984:95,97, Tabs.1,2); Retezat, 1650-1750 m *alt.*, *ass.* *Hieracio rotundati-Piceetum*, 1800-1860 m *alt.*, *ass.* *Bruckenthalio spiculifoliae-Piceetum* (Coldea 1993:46, Tab.10); Zănoaga Lake, 26.07.1974, Zănoaga Glacial Ring, northern slope, 28.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:138); Gemenele, 19.06.2005, *leg.* Cogălniceanu D., *det.* Ştefănuţ S. [BUCA B3189, B3191].

Alba County, Cetăţile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ştefănuţ S. [BUCA B3867].

Bihar County, Vlădeasa Mountain, 1600-1800 m *alt.*, 11.06.1901, 10.09.1902, *leg.* Györfffy I., sub *B. triangularis* (Schiffner 1909a:28,32; Boros 1951:375).

Bazzania trilobata (L.) Gray

Syn.:

- *Bazzania trilobata* var. *depauperata* (Müll. Frib.) Grolle
- *Bazzania trilobata* var. *minus* Nees
- *Herpetium trilobatum* (L.) Nees
- *Jungermannia tridenticulata* Michx.
- *Jungermannia trilobata* L.
- *Mastigobryum tridenticulatum* (Michx.) Lindemb.
- *Mastigobryum trilobatum* (L.) Nees
- *Plagiochila corniculata* Dumort.
- *Plagiochila tridenticulata* (Dumort.) Dumort.
- *Pleuroschisma trilobatum* (L.) Dumort.
- *Pleuroschisma trilobatum* fo. *grandis* Nees
- *Pleuroschisma trilobatum* fo. *minor* Nees
- *Pleuroschisma trilobatum* fo. *ramosa* Müll. Frib.
- *Pleuroschisma trilobatum* var. *depauperatum* Müll. Frib.
- *Radula corniculata* Dumort.

First citation for Romania: Baumgarten 1846.

Moldova, sub *Pleuroschisma* (Papp 1943:663; Ştefureac & al. 1973:143).

Muntenia (Mohan 1988b:99).

Transylvania (Pax 1908:130).

Ecology: humicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, SIB, FRE

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Sc, It, Si, Hr, Sb, Ba, Mk, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Rw, Rc, Ka, Ca, Ma.

Distribution in Romania:

Iniş Mountain, Lazului Valley, 970 m *alt.*, 7.07.1970, Izvorul la Gropi, 600 m *alt.*, 5-7.07.1973, *ass.* *Symphyto (cordato)-Fagetum* Vida (1959) 1963 *transsilvanicum* Soó 1964 (Raţiu O. & Moldovan 1974:89, Tab.2); Vlăşchinescu Valley, 1050 m *alt.*, 10-11.07.1972, *ass.* *Myrtillo-Piceetum excelsae* Březina & Hadač 1962 *muscorum* Raţiu & Moldovan 1972 (Raţiu O. & Moldovan 1974:90, Tab.3).

Maramureş Mountains, Cornedei-Prislop Peak, 1600 m *alt.*, 19-20.06.1975, *ass.* *Rhododendro kotschyi-Pinetum mugii* (Borza 1959) em. Coldea 1985 subass. *sphagnetosum nemorei* Plămadă & Coldea 1985 (Plămadă & Coldea 1985a:120,121, Tab.1); Covatar Waterfall from Săpânţa, *leg.* & *det.* Boros Á. (Jakab 1999:51); Săpânţioara, Covatar Waterfall from Săpânţa, 15-21.06.1997, between Tocila Valley

and Băiuț, common spruce forest, 600 m *alt.*, 21-23.08.1998, Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, (Pax 1908:130); Puzdra Peak, 2050 m *alt.*, 15.08.1982, ass. *Saxifragetum carpaticae-cymosae* Coldea 1990, Piciorul Anieșului, 1500 m *alt.*, 7.08.1977, Negrileasa-Anieșului Mare Valley, 1320 m *alt.*, 25.07.1981, Valea lui Dragoș Brook, 980 m *alt.*, 31.08.1983, ass. *Hieracio rotundati-Piceetum*, Anieșul Mare Valley, Negrileasa- Cepelor Basin, 1400 m *alt.*, 15.07.1981, ass. *Leucanthemo waldsteinii-Piceetum* Krajina 1933 (Coldea 1990:46,150,154, Tabs.11,68,69).

Țibleș Mountains, Arsuri Peak, Izvorul Țibleșului, Piciorul Țiglei, Mesteacănu Valley, 1984-1985 (Mohan 1988a:17).

Suceava County, Poiana Stampei, 18.05.1910, sub *Mastigobryum*, 17.05.1910, sub var. *minus* (Lilienfeldówna 1911:735); Coșna (Boros 1942d:149); the peatbogs from Dornei Basin (Pop E. 1960:287); near Țibău, in common spruce forest, *conf.* Mihai G. (Pascal 1970a:199); Bistriței Aurii Basin (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:478); Tinovul Mare from Poiana Stampei, ass. *Sphagneto (wulfiani)-Piceetum turfosum* Ștefur. 1977 (Ștefureac 1977a:49,51-53, Tab.1); Barnar Gorges (Pascal & Seghedin 1977:141); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce and bogs (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:91,95); Poiana Stampei Peatbog, 910 m *alt.*, 13.07.1976, ass. *Vaccinio-Pinetum sylvestris* Kleist 1929 (Coldea & Plămadă 1989:41, Tab.2); Poiana Stampei Peatbog, 47°20'33"N / 25°11'14"E, 920 m *alt.*, 28.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3797].

Giuralău Mountain, Poiana Ițcani Reserve, 880-920 m *alt.*, 1946-1957 (Ștefureac 1969a: Tab.16).

Rarău Mountain, Rarău, 14.05.1910, sub *Mastigobryum* (Lilienfeldówna 1911:735); Slătioara Forest, 950 m *alt.*, 10.08.1925, *leg. & det.* Mühlendorf A., sub *Pleuroschisma trilobatum* fo. *grandis* [FRE 604](Borza 1926:83; Borza & Nyárády E.I. 1940:12); Codrul Secular Slătioara, Ursului Brook, 800-1100 m *alt.*, sub *Mastigobryum*, *Pleuroschisma trilobatum*, incl. fo. *grandis*, fo. *minor*, fo. *ramosa* (Ștefureac 1941:1154,1249,1260,1263,1270-1273,1281,1284,1288, Tabs.1,3,7,8,9; Ștefureac 1969a: Tab.16; Papp 1969b:188; Ștefureac 1986f:193); Slătioara Scientific Reserve, sub *Mastigobryum* (Leandru & Stanciu 1967:133); Codrul Secular Slătioara, Ion's brook, sub *Pleuroschisma* (Ștefureac 1942b:91); Rarău, 1350 m *alt.* (Ștefureac 1969a: Tab.16); Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3773].

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ștefureac, Mihai & Pascal 1976:36).

Bistrița-Năsăud County, La Fântână, Piatra Corbului, Budacul de Sus, 1980-1981 (Mohan & Hodoroga 1983:51).

Harghita County, 26.07.1901, sub *Mastigobryum* (Barth 1905:13); Luci Peatbog, 1080 m *alt.*, 14.07.1976, ass. *Vaccinio-Pinetum sylvestris* Kleist 1929 (Coldea & Plămadă 1989:41, Tab.2).

Neamț County, Maghernița Brook Valley, sub *Pleuroschisma trilobatum* fo. *ramosa* (Papp 1959a:112; Ștefureac & al. 1973:143).

Ceahlău Mountain, Durău Hermitage, sub *Pleuroschisma* (Papp 1924b:392; Papp 1934b:67; Papp 1942b:525; Zanoschi 1970:280; Manoliu & al. 1998:335).

Nemira Mountains, Nemira, on rotten wood (Barabaș V. 1974:31); Nemira, in rocks zone, below the common spruce forest, 1970-1977 (Mihai & Barabaș V. 1978:115; Mititelu & Barabaș N. 1978:227); Nemira Mountain, 1600 m *alt.*, Țiganca Mountain, 1350 m *alt.* (Barabaș V. 1982b:58,61).

Bacău County, Slănic Moldova, on rotten fir, 07.1910, *leg.* Brândză M., *det.* Ștefureac T., sub *Pleuroschisma* (Ștefureac 1942a:5; Papp 1957:284); Dobrul Culm, in forest, 830 m *alt.* (Papp 1957:284).

Vrancea County, s - Cioara Forest, 207 m *alt.*, on soil (Mihai & Barabaș V. 1970:66,72).

Ciucăș Mountains, Bratocea Culm, Balaban Mountain, Tigăile Mari Culm, Chirușca Mountain, Ursului Valley, Gropșoarelor Peak (Mohan 1990b:39).

Făgăraș Mountains, Bălea Lake, SB, 45°36'07"N / 24°37'02"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ștefănuț S., sub var. *depauperata* [BUCA B2300]; Pojorta Valley, BV, 18.09.2001, 800-1000 m *alt.*, *leg. & det.* Ștefănuț S. [BUCA B2546] (Ștefănuț 2002:190).

Cozia Mountain, Năruțu Mountain, 1920, *leg.* Săvulescu T., *det.* Wallfisch R. (Dihoru G. 1990:52).

Sibiu County, Bradu, sub *Mastigobryum* (Fuss 1878:654; Hazslinszky 1885:44; Drăgulescu 2003:10).

Cindrel Mountains, Prejba, *leg. & det.* Schur F., sub *Mastigobryum* [SIB SCHUR 4694](Schur 1866:873; Fuss 1878:654; Hazslinszky 1885:44; Gündisch 1977:47; Drăgulescu 2003:10); Prejba, 16.06.1869, *leg. & det.* Barth J., sub *Mastigobryum* [SIB HF 1440](Fuss 1878:654; Hazslinszky 1885:44; Drăgulescu 1983:58; Gündisch 1977:47; Drăgulescu 2003:10); Păltiniș, 1000-1500 m *alt.* (Gündisch 1977:47; Drăgulescu 2003:10).

Vâlcea County, upstream Cerna, 7.09.2001, *leg. & det.* Răduțoiu D. (Dihoru G. & Răduțoiu 2002:22).

Parâng Mountains, Repedea Valley, 08-09.1954, sub *Pleuroschisma* (Ștefureac, Popescu & Lungu 1959:9,19,20,31,34, Tab.6).

Retezat Mountains, Retezat National Park, 1600 m *alt.*, ass. *Hieracio rotundatae-Piceetum* Pawl. et Br.-Bl. 1939 (Coldea, Lupșa & Plămadă 1984:95, Tab.1).

Domogled Mountain, Cerna Valley, 06.1933, *leg.* Badea M., sub *Pleuroschisma* (Papp 1937a:160,163); Domogled Mountain, sub *Pleuroschisma* (Papp 1939b:7,20).

Caraș-Severin County, Rusca Montană, sub *Mastigobryum* (Pančić 1861:94; Hazslinszky 1885:44); „Șapte Izvoare”, Herculane Spa, 200 m *alt.*, 22.06.1945, on the left bank of Cociului Brook, near Herculane Spa, 2.06.1945, sub *Pleuroschisma* (Ștefureac 1947a:138,150,151; Bujorean & Popescu P.C. 1966:21).

Codru-Moma Mountains, Valea Mare near Dulcele, sub *Pleuroschisma* (Simonkai 1893:363); Pâncoia, Măgura Diecilor, Ursului Hill, on rotten wood (Mohan 1996:49; Ardelean 2006:103); Crișul Văratecului Valley (Ardelean 2006:103, Fig.19).

Mureș County, Sighișoara, *leg. & det.* Baumgarten J.C.G., sub *Jungermannia* [SIB HF 1539], *leg. & det.* Baumgarten J.C.G., sub *Jungermannia radicans* L., *rev.* Drăgulescu C. [SIB HF 1526] (Baumgarten 1846; Schur 1866:873; Fuss 1878:654; Hazslinszky 1885:44; Drăgulescu 1983:58).

Alba County, Izbucl Ponorului (Boros & Vajda 1974:6); Ursoaia Saddle, 1270 m *alt.*, 24.08.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958 (Goia 2000:116, Tab.5); Arieșul Mic Basin (Goia & Schumacker 2000:92); Cepelor Valley, Cobleș Valley – Gârda Valley interfluvium, Ursoaia Saddle, Mătișești, Morii Valley, Arieșul Mic – downstream mine, on rotten wood (Goia 2001:77); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

Gilău Mountains, Răcățâu, 14.04.1916, *leg.* Györffy I. & Péterfi M. (Györffy 1924b:37); Lunca Valley (Ujvárosi 1944:33).

Bihar County, Vlădeasa Mountain, 1700-1800 m *alt.*, 11.06.1901, *leg.* Györffy I. (Schiffner 1909a:28,32); Drăgan Valley (Boros 1942a:35); Stâna de Vale, ass. *Piceeto-Fagetum carpaticum* Svoboda 1939, in the back of forest chalet and towards Custurilor Peak, 1150-1170 m *alt.*, 19.07.1964, below Prelucii Peak, 1250 m *alt.*, 2.08.1964 (Rațiu O. 1967:335, Tab.2); Stâna de Vale, ass. *Fagetum carpaticum* (Borza 1930) Moor 1938, Paucă 1941, in the back of “Păstrăvărie”, 1270 m *alt.*, 5.07.1964, below Baia Popii Hill, 1350-1370 m *alt.*, 4.08.1965, in the back of forest chalet, 1250-1270 m *alt.*, 9.07.1964 (Rațiu O. 1967:340-341, Tab.3); Drăgan Valley, Fântâna Izvorul Rece, 29-30.07.1970, ass. *Luzulo (sylvaticae)-Piceetum* Wraber 1953 (Rațiu O. & Sălăgeanu 1971:140, Tab.2).

Bihar Mountains, Drăgan Valley, 400-600 m *alt.* (Péterfi M. 1908:275); Someșul Cald Gorges, 4.08.1998 (Coldea & Wagner 1999:85, Tab.1); Padiș, 1200 m *alt.*, 08.1999 (Jakab 2000b:69); Someșul Cald Gorges (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3859].

Bazzania sp.

Rarău Mountain, Codrul Secular Slătioara, sub *Pleuroschisma* (Ștefureac 1941:1265).

Blasia pusilla L.

Syn.:

– *Blasia funckii* Corda

– *Jungermannia blasia* Hook.

First citation for Romania: Schur 1866.

Moldova (Papp 1943:653; Ștefureac & al. 1973:142).

Muntenia (Mohan 1988b:112,113).

Transylvania (Pax 1908:128).

Ecology: epigeic, acidophytic, hygrophytic, sciophytic; holarctic-circumboreal; mountain; Hth.

Herbaria and Exsiccatae: BUCA, PHHM, SIB, FRE, H.A.T.R.

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Sc, It, Si, Hr, Sb, Me, Mk, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, Ma.

Distribution in Romania:

Maramureș County, Vișeu de Jos, Morii Valley, 500 m *alt.*, Vișeu de Sus, Gurguiata, *leg. & det.* Coman A. (Boros & Vajda 1967:218).

Botoșani County, Comănești Forest, in wet and shady places (Mihai 1966:147,152,154).

Suceava County, Călimănețul Brook, Panaci (Papp 1927b:149); Bistrița Aurie Valley, between Iacobeni and Ciocănești, north-western slope of Brezuța Peak, on banks of Suhărzulul and Suhărzulul Mare brooks (Pascal 1969:106; Pascal 1973; Ștefureac 1986f:194); Cărlibaba Brook Valley, 1967 (Ștefureac & Pascal 1970a:246,249); Deaca brook Valley, Lițu, Țibău, Argestru, Vatra Dornei (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:477); Cristișor-Neagra Broștenilor, Borcut Meadow, on edge of the alder tree thicket (Lungu 1973b:72; Lungu 1981c:90); Barnar Gorges, on wet soil, sometimes marshy (Pascal & Seghedin 1977:141).

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ștefureac, Mihai & Pascal 1976:35); Tureac Brook, Cârțibavu Mare Valley, Leșului Valley, Muncel Peak, Piatra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:211).

Țibleș Mountains, Țibleș Valley, Mesteacănu Valley, Suplai Commune, Fiad Commune, 1984-1985 (Mohan 1988a:16).

Giupalău Mountain, above Giupalău Forest Chalet, 11.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3690].

Bistrița-Năsăud County, Râpa Mare, Piatra Corbului, Simionești, 1980-1981 (Mohan & Hodoroga 1983:51; Mohan 1990a:24).

Căliman Mountains, Pietrosul Peak, on soil, Dorna Valley, on rocks (Mihai 1968a:204).

Harghita County, 26.07.1901 (Barth 1905:13).

Harghita Mountains, Stâncilor Peak (Schiffner 1914:304); Stâncilor Peak (Degen 1930:975); Cifrabuc, 1200 m *alt.*, 16.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:466).

Neamț County, Neamț Monastery, on clayey soil, 07-08.1921, 1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242, 244; Lungu 1967b:249, Fig.1); Pângărăcior Brook Valley, on humus and wet rotten woods (Mihai 1973d:28).

Vrancea County, Tișița Gorges, on clayey wet soil, 1977 (Mihai & Pascal 1986:46).

Ciucaș Mountains, Teleajen Gorges at Bratocea, 2.09.1900 (Radian 1915:198); Bratocea Culm, Chirușca Mountain, Piscul Turiștilor (Mohan 1990b:45).

Gârbova Massif, Azuga Valley, Rea Valley, on soil, 1967-1970 (Lungu & Ștefureac 1970:5).

Prahova County, Doftana Valley [PHHM 7725/3873](Mohan 1971a:7; Mohan 1971b:45; Mohan 1990a:24); Teleajen Valley, Negrașului Valley, Ordojoaia Valley (Mohan 1990a:24).

Bucegi Massif, Izvorul Dorului Valley, PH, 45°22'04"N / 25°28'22"E, 1770 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3249, B3250, B3251]; Peștera Hermitage, DB, 45°23'17"N / 25°26'26"E, 1540 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3570]; ♀ - [BUCA B3628].

Piatra Craiului Mountains, Grohotișului Valley, 800 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:218; Ștefănuț & Pop O.G. 2006:74).

Leaota Mountain, Mitarca Valley, 1300-1600 m *alt.* (Papp & Diaconescu 1968:387).

Iezer-Păpușa Mountains, Iezer Valley, Bătrâna Valley, Dâmbovița Valley (Mohan 1990a:24).

Făgăraș Mountains, Arpaș Mountain (Schur 1866:869; Fuss 1878:652; Hazslinszky 1885:35; Drăgulescu 2003:9); *Obs.* Schur F. and Hazslinszky F. quoting this locality according Heufler F.R., but missing in Heufler's paper (Heufler 1853).

Argeș County, Căndești, in Brătioarei Valley, 26.09.1899 (Radian 1915:198).

Sibiu County, Sibiu [SIB SCHUR 4551](Schur 1866:869; Fuss 1878:652; Hazslinszky 1885:35; Gündisch 1977:46; Drăgulescu 2003:9).

Vâlcea County, at Olt in Boia Valley, about 800 m *alt.*, 14.08.1897, *leg. & det.* Loitlesberger K. [H.A.T.R. 159] (Loitlesberger 1898:196; Radian 1915:198).

Cindrel Mountains, Gura Râului, 800 m *alt.*, Păltiniș, 1300 m *alt.* (Gündisch 1977:46; Drăgulescu 2003:9).

Sebeşului Mountains, Sebeş Valley, from Loman to Tonea Hill, on wet clayey soil (Borza 1959:68).

Lotrului Mountains, the bog from Sărăcinul Mic, on the left side of Lotru river, near Puru forest chalet, Voineasa Commune, 1956 (Ştefureac, Popescu & Lungu 1957b:872); Rudaru, 08-09.1954 (Ştefureac, Popescu & Lungu 1959:8,36).

Căpăţânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ştefureac, Popescu & Lungu 1955:526).

Hunedoara County, Săcăřimb Village, Certeju de Sus, below Haitău-Săcăřimb Hill, 2,6.09.1953 (Ştefureac 1956a:241, Tab.1).

Retezat Mountains, Scientific Reserve, on bank of Gemenea Lake, in wet places with clayey soil (Pall 1962:121); Turcului Valley, 10.09.1969, ass. *Pogonatum urnigeri* Krusenstjerna 1945 *retezaticum* Plămadă 1978 (Plămadă 1978:239,243, Tab.3; Plămadă 1993:54, Tab.3).

Mehedinţi County, Orşova, *leg.* & *det.* Simonkai L., sub β . *funckii* (Simonkai 1872:66; Hazslinszky 1885:35); Lutiţa Brook, Vărciorova, 10.06.1945 (Ştefureac 1947a:138); Orşova – Cerna Valley part of Danube Defile, in forest, on wet clayey soil, 1966-1968 (Plămadă 1970c:393).

Cluj County, Feneşului Valley, 400 m *alt.* (Péterfi M. 1908:270); Feneşului Valley, 650 m *alt.*, 24.08.1915, *leg.* Péterfi M. [FRE 1124](Gyöřffy 1924b:37; Borza 1935:7; Borza & Nyárády E.I. 1940:9); Southern Ciucea on Surduc Valley (Boros 1942a:34; Ştefureac 1975b:313); Făget, Sălicea, Feleacului Hill (Boros 1958:3-7); on Puşcaşului Valley, on rocks, 1963-1965 (Plămadă 1968:24); Someşul Cald Valley, 450 m *alt.* (Boros 1958:5,7; Boros & Vajda 1967:218; Plămadă 1969:170); Someşul Rece Valley, *leg.* & *det.* Vajda L. (Boros & Vajda 1967:218).

Gilău Mountains, in beech forests (Plămadă 1985b:41).

Blepharostoma trichophyllum* (L.) Dumort. subsp. *trichophyllum

Syn.:

– *Chaetopsis trichophylla* (L.) Dumort.

– *Jungermannia tricophylla* L.

First citation for Romania: Baumgarten 1846.

Moldova (Papp 1943:664; Ştefureac & al. 1973:144).

Muntenia (Mohan 1988b:99).

Transylvania (Pax 1908:130).

Ecology: epigaeic, corticolous, saprolignicolous, humicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, CSH, PHHM,

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Nz, Fl, Rn, Rw, Rc, Re, Ca, Az.

Distribution in Romania:

Maramureş County, Maramureş, sub *Jungermannia* (Hazslinszky 1885:52); between Vişeu and Făina (Warnstorf 1895b:142); between Tocila Valley and Băiuţ, common spruce forest, 600 m *alt.*, the bog from Văratec Mountain, 1340 m *alt.*, 21-23.08.1998, Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, Galaţi Mountain, 2000 m *alt.*, *fer* - Corongiş (Matouschek 1905:79,80); Rodnei Mountains (Pax 1908:130); Lala Valley, 1200 m *alt.*, 17.08.1937 (Ştefureac 1938: 241,250,258,259; Ştefureac 1963c:168); Pietrosul Rodnei, 2260 m *alt.*, 31.08.1983, *leg.* & *det.* Ştefureac T., ass. *Bucegietum romanicae* Ştefur. 1984 subass. *jungermannietosum sphaerocarphae* Ştefur. 1986 (Ştefureac 1986h:105,106, Tab.2); Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg.* & *det.* Ştefănuţ S. [BUCA B2206].

Ţibleş Mountains, Piciorul Arsuri, Piciorul Ţiglei, Ţibleş Valley, Mesteacănul Valley, 1984-1985 (Mohan 1988a:17).

Suceava County, Suceava and in vicinity (Knauer 1863; Ştefureac & Pascal 1981:478); Rodna Nouă, on Perşa („Persia”) Mountain, 1400 m *alt.*, Coşna, Panasuri Mountain, 1330 m *alt.*, Coşna, at Preluca Ulmului, 1200 m *alt.*, sub *Jungermannia* (Breidler 1890a:149); Poiana Stampei, 17.05.1910, Izvorul Alb, 14.05.1910, sub *Jungermannia* (Lilienfeldówna 1911:732); Bistriţa Aurie Valley, between Iacobeni and Ciocăneşti, the egde of Suhăřzelul and Suhăřzelul Mare brooks (Pascal 1969:107; Ştefureac & Pascal 1981:479); Căřlibaba Brook Valley, Piatra Ţibău, 1967 (Ştefureac & Pascal 1970a:246); Barnar Gorges, on rotten woods, soil and rocks (Pascal & Seghedin 1977:141); Cristişor-Neagra Broştenilor, Borcut Meadow, in common spruce forest (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:91);

Poiana Stampei Peatbog, SV, 47°20'33"N / 25°11'14"E, 920 m alt., 28.07.2007, leg. & det. Ștefănuț S. [BUCA B3788, B3789], ♀ [BUCA B3798].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m alt., 1967, 1969, ass. *Tetraphidetum pellucidae* (Barkman 1958) Maurer 1961, *Lophocolea heterophylla-Ptilidium pulcherrimum* Maurer 1961, *Orthodicraneto-Plagiotheciellum* Barkman 1958; *Neckerieto-Isothecietum myosuroides* Barkman 1958, subass. *isothecietosum myuri* Barkman 1958 (Ștefureac, Mihai & Pascal 1976:36,39, Tabs.1-3); Muncel Peak, Heniul Mare Peak, Străja Valley, Măgura Calului, Cârțibavu Mare Valley, Leșului Valley, Pietra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:211); Prundul Bârgăului, 1800 m alt., 03.2004, leg. Ivănescu Cristina, det. Ștefănuț S. [BUCA B2938].

Giupalău Mountain, Giupalău, 1800 m alt., 1936 (Ștefureac 1938:258); Poiana Ițcani Reserve, 880-920 m alt., 1946-1957 (Ștefureac 1969a: Tab.16); Giupalău, subalpine zone, det. Ștefureac T. (Cristurean 2000:173,175); Giupalău Secular Forest, 1210 m alt., 11.09.2006, leg. & det. Ștefănuț S. [BUCA B3671, B3689, B3693]; Giupalău Secular Forest, 1200 m alt., 13.09.2006, leg. & det. Ștefănuț S. [BUCA B3651, B3663, B3676, B3679], ♀ - [BUCA B3686]; Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m alt., 27.07.2007, leg. & det. Ștefănuț S. [BUCA B3803], ♀ - 1.09.2008, leg. & det. Ștefănuț S. [BUCA B3944], s - [BUCA B3953, B3959, B3970].

Rarău Mountain, Rarău, 14.05.1910, Pietrele Doamnei, 15.05.1910 (Lilienfeldówna 1911:734); Codrul Secular Slătioara (Tarnavski 1936:284,285,289; Ștefureac & Pascal 1981:479); Codrul Secular Slătioara, 800-1600 m alt. (Ștefureac 1941:1153,1262,1263,1265,1272,1273,1280,1284,1288, Tabs.3,5,7,9; Ștefureac 1969a:Tab.16); Rarău, 1631 m alt. (Papp 1942b:525); between Dealul Colbului and Pietrele Doamnei, 1520 m alt., 27-28.08.1949, 27.08.1950 (Ștefureac 1951a:66); Todirescu Peak (Papp 1969b:188); Rarău, 1350 m alt. (Ștefureac 1969a: Tab.16); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:196); Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m alt., 25.07.2007, leg. & det. Ștefănuț S. [BUCA B3751, B3766, B3774, B3778, B3779].

Căliman Mountains, Dorna Valley, on soil (Mihai 1968a:205); Căliman Mountains, on rotten tree trunks, 1981-1984 (Mihai 1985:96).

Stânișoara Mountains, way towards Tarnița Peak and Ostra Brook Valley below Puzdrele, 1974 (Pascal & Toma M. 1977:42).

Bistrița-Năsăud County, Măgherușului Valley, Gropii Hill, ord. *Pino-Quercetalia* (Ștefureac & Cristurean 1973:315); Jelna Forest, Pietra Corbului, Simionești, Budacul de Jos, 1980-1981 (Mohan & Hodoroga 1983:51).

Neamț County, Neamț Monastery, on rotten wood and soil, 07-08.1921-1923, leg. Brândză M., det. Ștefureac T. (Ștefureac 1942a:5); Tarcău-Grinduș Mountains (Papp 1942b:525); Cărbunelui Hill (Mihai 1974c:23; Ștefureac & al. 1973:144).

Ceahlău Mountain, Patapi, Durău, incl. sub var. *corticola* (Papp 1924b:392; Papp 1934b:67,68,70,72; Zanoschi 1970:280; Mihai 1979b; Manoliu & al. 1998:335); Obs. according Ștefureac & al., the variety *corticola* belong to *Ptilidium pulcherrimum* (Ștefureac & al. 1973:144).

Hășmaș Mountains, Hășmașul Mare (Degen 1930:976; Bálint & Orbán 2006:472); Pietra Ascuțită, on rock, 13.08.1953, Oii Valley and Hăghimașul Negru, on rotten wood, 12.08.1953, Hăghimașul Negru, on rotten wood in forest, 11,13.08.1953 (Bîrcă & Mihai 1963:128,129).

Harghita Mountains, 30.08.1901, sub *Iungermannia* (Barth 1905:13); Stâncilor Peak (Degen 1930:976); Vermet Valley, 1050-1250 m alt., 2.07.2000, Asău Valley, 1000-1100 m alt., 22.10.2000, Cifrabuc, 1200 m alt., 16.08.2001, Rotund Mountain, 1100 m alt., 28.08.2001, leg. Bálint L. & Csízi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:466).

Harghita County, Vârșag, in common spruce forest, on rotten tree trunks, 1958-1962 (Páll 1963b:17); Bălan Spa (Bálint & Orbán 2006:472).

Nemira Mountains, Nemira, on rotten woods (Barabaș V. 1974:31); Șandru, on stumps and rotten tree trunks, 1970-1977 (Mihai & Barabaș V. 1978:114,115); Nemira Mountain, Șandru Mountain, 750-1550 m alt. (Barabaș V. 1982b:63,64,75, Tabs.12,13,27).

Bacău County, Piciorul Șandru Mountain, 1517 m alt., Sălăria Brook (Papp 1957:285); Sălăria Forest (Papp 1958b:403); Uzului Valley, on trunks and stumps of *Picea abies*, 1966-1967 (Mihai & Barabaș V. 1969:70,76,77); s - Măgura Hill, north-western Târgu Ocna, on soil and wet rocks, 680 m alt., rare (Mihai & Barabaș V. 1971:676,683); Fata Moartă Forest, Tălâmba Brook (Eftimie 1972:150,158); superior basin of Cașin, between springs of Fata Moartă Brook (Buciaș's affluent), on soil, 1000 m alt., 06.1970 (Eftimie 1973:423).

Siriu Mountain, Cheia Buzăului (Dihoru G. 1975:23).

Penteleu Massif, Roșu Lake, 1510 m *alt.*, on rotten woods, 11.10.1983 (Dihoru G. 1987b:94); Izvorul Bălescu, 07.1935, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B0959, B0966].

Buzău County, Bisoca, „Lacul Negru” (Dihoru, Wallfisch & Pîrvu 1984:4).

Ciucaș Mountains, Caprei Valley, Berii Valley, Ursului Valley, Piscul Gropșoarelor, Chirușca Saddle, Stănei Valley Culm (Mohan 1990b:39).

Brașov County, Predeal, 1897 (Loitlesberger 1898:195); Predeal, in forest, 12.10.1964, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B3027]; ♀ - Predeal, 45°30'13"N / 25°34'01"E, 800-900 m *alt.*, 6.09.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2558].

Gârbova Massif, Azuga Valley, Rea Valley, on soil, 1967-1970 (Lungu & Ștefureac 1970:5,8); Cumpătu Mountain, on rotten wood, 830 m *alt.*, 8.10.1985, *leg.* & *det.* Lungu L. [CSH]; ♀ - Tufa Valley, 5.07.1998, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2003, B2030], s - [BUCA B2029, B2126, B2218].

Bucegi Massif, Jepi Valley, in forest, *leg.* Dumitrescu M., *det.* Radian S.Ș. (Radian 1901b:41); *fer* - Mălăiești Valley (Matouschek 1905:81); Bucșoiu Peak, Mălăiești Valley, Omu Peak, 2500 m *alt.*, *fer* - Jepi Valley, 08-09.1911 (Degen 1914:217); Sinaia, on rotten fir, 08.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Lăptici Peatbog, 1500 m *alt.*, 1946 (Ștefureac 1949c:692; Pop E. 1960:349; Godeanu S. 1970:44); Bucegi (Ștefureac 1955:594); Gaura Glacial Ring, BV, 45°26'46"N / 25°26'37"E, 2250 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2491], 45°26'27"N / 25°26'19"E, 2120 m *alt.* [BUCA B2449], ♀ - [BUCA B2518], 45°26'22"N / 25°26'24"E, 2250 m *alt.* [BUCA B2244, B2245, B2247-B2249]; ♀ - [BUCA B2429], 45°26'22"N / 25°26'24"E, 2250 m *alt.* [BUCA B2884, B2887] (Mihăilescu & Ștefănuț 2000a:14); Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S., *conf.* Blockeel T. 2003 [BUCA B0946] (Ștefănuț 2004a:63; Ștefănuț 2004g:158); Padina-Cocora, DB, 6.08.1937, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B3020]; The glacial rings of Ialomița Valley, DB, 45°26'05"N / 25°26'50"E, 2190 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3360], 45°26'00"N / 25°26'42"E, 2200 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2102, B2316, B2321, B2443, B2457, B2463, B2464, B2468, B2469, B2473, B2479, B3466], 45°26'07"N / 25°26'57"E, 2205 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2033, B2894, B3144]; Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2064, B2089, B2196, B2531, B2582]; ♀ - Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2941], s - [BUCA B2037, B2260, B2301, B2482, B2527, B3464]; ♀♂ - Gaura Glacial Ring, BV, 45°26'26"N / 25°26'26"E, 2175 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3147], s - 45°26'27"N / 25°26'19"E, 2120 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3320, B3358], 45°26'22"N / 25°26'24"E, 2250 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3368]; Mălăiești Glacial Ring, BV, 45°27'06"N / 25°27'04"E, 2260 m *alt.*, 9.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2259, B2263], s - 45°27'07"N / 25°27'02"E, 2225 m *alt.*, 9.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2266], 45°27'06"N / 25°27'00"E, 2200 m *alt.*, 9.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2270], 45°27'05"N / 25°26'57"E, 2200 m *alt.*, 9.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2526]; Dorului Valley, PH, 45°21'51"N / 25°28'37"E, 1830 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3217]; ♀ - Horoaba Valley, DB, 45°23'28"N / 25°26'02"E, 1520 m *alt.*, 23.10.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3605], s - [BUCA B3607].

Piatra Craiului Mountains, way towards Vlădușca Pasture, BV, 45°32'38"N / 25°12'11"E, 1100 m *alt.*, 30.10.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2839] (Dihoru G. & al. 2003:69; Ștefănuț & Pop O.G. 2006:74); Crăpătura, 4-8.06.2001, *leg.* Pop O., *det.* Ștefănuț S., Șpirlea Valley, *leg.* Pop O., *det.* Wallfisch R. (Dihoru G. & al. 2003:69; Ștefănuț & Pop O.G. 2006:74); ♀ - Poiana Lespezilor, BV, 1330 m *alt.*, *leg.* Pop O., 8.08.2003, *det.* Ștefănuț S. [BUCA B2895] (Ștefănuț & Pop O.G. 2006:74); ♀ - Crăpătura Pietrei Craiului, BV, 45°33'49"N / 25°15'54"E, 1050 m *alt.*, 21.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2770], s - on rotten wood [BUCA B2782], 45°33'44"N / 25°15'51"E, 1100 m *alt.*, 21.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2791], 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2697, B2704], on rotten wood, 45°33'35"N / 25°15'46"E, 1250 m *alt.*, 22.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2759] (Ștefănuț & Pop O.G. 2006:74); Ascuțit Peak, BV, 2100 m *alt.*, 8.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2993, B2994, B2996] (Ștefănuț & Pop O.G. 2006:74); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg.* & *det.* Ștefănuț S. [BUCA B2575, B2578, B2830, B2846, B2904], on rotten wood [BUCA B2615] (Ștefănuț & Pop O.G. 2006:74); Marele Grohotiș, AG, 45°30'36"N / 25°11'38"E, 1550 m *alt.*, 8.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2628], on rotten wood [BUCA B2622] (Ștefănuț & Pop O.G. 2006:74); Poiana Lespezilor, BV, 1330 m

alt., 8.08.2003, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3331, B3336]; towards Funduri Saddle, common spruce forest, AG, 1480 m *alt.*, 7.08.2003, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3327, B3339, B3342].

Prahova County, Sinaia, 1897 (Loitlesberger 1898:195); Doftana Valley [PHHM 5842/3004] (Mohan 1971a:8; Mohan 1971b:47).

Leaota Mountain, Brătei Valley, 1200-1300 m *alt.*, Mitarca Valley, 1300-1500 m *alt.* (Papp & Diaconescu 1968:386,387).

? - **Giurgiu County**, *fer* - Comana, on rotten wood, 1968-1969 (Ștefureac & Mohan 1970a:353,361).

Făgăraș Mountains, Arpaș Valley, in beech forest, sub *Jungermannia* (Heufler 1853:48-49; Fuss 1854:20; Schur 1866:872; Fuss 1878:655; Hazslinszky 1885:52; Drăgulescu 2003:10); above Bâlea Lake, Paltina Mountain, on sandy soil, 2100 m *alt.*, below Paltina Peak, on sandy soil, 2250 m *alt.*, 13.07.1946, above Avrig Lake, on limestone, 2150 m *alt.* (Ștefureac 1949a:289,290; Drăgulescu 2003:10); Arpășel Valley, 1000 m *alt.* (Pócs 1958:108); Urlea Lake, BV, 45°35'42"N / 24°50'28"E, 2200 m *alt.*, 17.09.2001, *leg.* & *det.* Ștefănuț S. [BUCA B2497], Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg.* & *det.* Ștefănuț S. [BUCA B2547, B2673] (Ștefănuț 2002:190); Bâlea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2134, B2137, B2392, B2879], 45°36'08"N / 24°37'00"E, 2060 m *alt.*, 18.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2097], 45°36'09"N / 24°37'00"E, 2050 m *alt.*, 18.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2508]; Capra Lake, AG, 45°36'00"N / 24°37'45"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2158, B2160], 45°36'01"N / 24°37'48"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2485, B2513], 45°36'00"N / 24°37'46"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2168, B2184], 45°36'00"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2167, B2387]; The glacial ring from Doamnei Valley, SB, 45°36'07"N / 24°36'27"E, 2120 m *alt.*, 16.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B3480].

Cozia Mountain, Păușa Valley, on rotten trees trunks, Cozia Peak, 1668 m *alt.*, 1975-1976 (Dihoru G. 1990:52).

Cindrel Mountains, Rozdești Peak (Gündisch 1962; Drăgulescu 2003:10); Păltiniș, 1300-1500 m *alt.*, Șerbănei, 1700 m *alt.*, Jujbea, 1950 m *alt.* (Gündisch 1977:47; Drăgulescu 2003:10); Foltea Peak, SB, 45°36'50"N / 23°46'09"E, 14.10.1957, *leg.* Gündisch F., *det.* Ștefănuț S. [BUCA B5485].

Sebeșului Mountains, Sebeș Valley, between Oașa and Cibán, in common spruce forest, 800-1200 m *alt.* (Borza 1959:69,283, Tab.38; Drăgulescu 2003:10).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Parâng Mountains, Latorița Valley, on calcareous rocks, 900 m *alt.*, 31.08.1954 (Ștefureac, Popescu & Lungu 1956a:512-513, Tab.1); Curmătura Vidruței, 1350 m *alt.*, 26.07.1955 (Ștefureac, Popescu & Lungu 1957a:69,70, Tab.1); Latorița Valley, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,20,31,33,37, Tabs.6,7); east to the bog on Călcescu Lake edge (Ștefureac 1969a:106).

Retezat Mountains, Retezat, sub *Jungermannia* (Simonkai 1872:67; Fuss 1878:655; Hazslinszky 1885:52); towards Drăgșanu Peak (Páll 1964a:108); Zlătuia Valley, 1300 m *alt.*, 8.09.1969, Turcului Valley, 800 m *alt.*, 9.09.1969, ass. *Isopterygio seligeri-Dicranetum scoparii* Ježek et Vondr. 1962 (Plămadă 1982a:313, Tab.7; Plămadă 1993:52, Tab.2); ♀♂ - Râușor, 1050 m *alt.*, 5.06.2003, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3097]; Gemețele, 2006, *leg.* Cogălniceanu D., *det.* Ștefănuț S. [BUCA B3715].

Domogled Mountain, Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8).

Codru-Moma Mountains, Teuz Valley, Monesei Valley, Măgura Diecilor, Brihenilor Valley, on rotten wood (Mohan 1996:49; Ardelean 2006:102).

Alba County, in the Scărișoara Cave aven (Boros & Vajda 1974:4; Goia 2001:82); Arieșul Mic (mine), on common spruce, 1200 m *alt.*, 20.08.1994, ass. *Isothecium myuri* Hilitzer 1925, ass. *Dicrano scoparii-Hypnetum cupressiformis* Barkman 1958, Morii Valley, on rotten woods, 600 m *alt.*, 7.08.1994, 22.10.1995, ass. *Riccardio-Nowellietum curvifoliae* Koppe 1956, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965 (Goia 1998:256,260-262, Tabs.6,9,10,12; Goia 2001:82); Scărișoara Cave, 1340 m *alt.*, 11.08.1996, ass. *Calypogeietum trichomanis* Neumayr 1971, Morii Valley, 600 m *alt.*, 22.10.1995, Vârciorog Valley, 780 m *alt.*, 1385 m, 13.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Morii Valley, 950 m *alt.*, 07.08.1994, Goieștilor Valley, 1340 m *alt.*, 15.04.1994, Galbena Valley, 780-900 m *alt.*, 12.09.1996, Scărișoara-Ocoale, 600 m *alt.*, 11.08.1996, Vidrișoara Valley, 1300 m *alt.*, 21.08.1992, Iarba Rea Valley, 900 m *alt.*, 25.08.1996, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965, Cepelor Valley, 1380 m *alt.*, 16.05.1996, Scărișoara Cave, 1200 m *alt.*, 12.08.1996, ass. *Cephalozio*

bicuspidatae-Nowellietum curvifoliae Philippi 1965, Ursoaia Saddle, 1270 m alt., 11.08, 24.08.1996, Cepelor Valley, 1370 m alt., 16.05.1996, Lupșa, 1180 m alt., 15.05.1996, Iarba Rea Valley, 790 m alt., 25.08.1996, ass. *Leucobryo-Tetraphydetum pellucidiae* Barkman 1958, Găina, 980 m alt., 21.08.1992, ass. *Brachythecio salebroși-Drepanocladetum uncinati* Marstaller 1989, Morii Valley, 700 m alt., 22.10.1995, ass. *Dicrano scoparii-Hypnetum filiformis* Barkman 1958, Iarba Rea Valley, 800 m alt., 25.08.1996, ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia 2000:111-113,115,116,118,119, Tabs.1-7); Arieșul Mic Basin (Goia & Schumacker 2000:92); Arieșul Mic – upstream mine, on common spruce and fir trees, Ursoaia Saddle, on common spruce and rotten woods, Cobleș Valley, on beech, Vârciorog Valley, Cepelor Valley, Galbena Valley, Arieșul Mare upstream to Arieșeni, Iarba Rea Valley, Gârda Seacă, Cobleș Valley, Scărișoara Cave – aven, Ghețari, Ocoale, Măgura Valley – Neagra, Mătișești, Stearpă Valley, Drăghița Valley, Țoha Mică, on rotten woods (Goia 2001:82); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); Arieșul Mic Valley down from the mine, 20.08.1994, ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930, Arieșul Mic Valley up from the mine, 20.08.1994, ass. *Dicrano scoparii - Hypnetum filiformis* Barkm. 1958 (Goia & Schumacker 2003:64, Tab.5); between Cobleș Valley and Galbena Valley, 1320 m alt., 9.08.1996, between Mătișești and Șaua Ursoaia, 730 m alt., ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia & Schumacker 2004:111, Tab.4).

Cluj County, Southern Ciucea on Surduc Valley, 400 m alt. (Péterfi M. 1908:276; Boros 1942a:34); Făget, Feleac Hill, Sălicea (Boros 1958:8).

Bihar County, Băița, 450-800 m alt., Onceasa, 1200 m alt. (Péterfi M. 1908:276); Iadului Valley between Remetea and Bulz, 350 m alt. (Péterfi M. 1908:276; Boros 1942a:33).

Bihar Mountains, Beliș, sub *Jungermannia* (Baumgarten 1846:229; Fuss 1878:655; Hazslinszky 1885:52); Cetățile Ponorului, 1150 m alt., 17.08.1999 (Jakab 2000a:91,92; Jakab 2000b:67); Someșul Cald Gorges (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m alt., 3.09.2007, leg. & det. Ștefănuț S. [BUCA B3820, B3830, B3837, B3851; B3863], ♀ - [BUCA B3858].

subsp. *brevirete* (Bryhn et Kaal.) R.M. Schust.

Syn.:

– *Blepharostoma trichophyllum* var. *brevirete* Bryhn & Kaal.

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Distribution in Europe: Sj, Is, No, Se, Fi, Po, Sk, It, Ro, Rn, Re.

Distribution in Romania:

Bucegi Massif, ♀♂ - Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3107, B3109], 45°26'56"N / 25°26'31"E, 2310 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3136], s - 45°26'55"N / 25°26'35"E, 2300 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3127, B3130], 45°26'56"N / 25°26'31"E, 2310 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3112, B3128, B3133, B3137]; Gaura Glacial Ring, BV, 45°26'27"N / 25°26'19"E, 2120 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3367].

Bucegia romanica Radian

Syn.:

– *Bucsecsia romanica* (Radian) Györfly

– *Radiania rumaenica* Schiffn. ex. Györfly, nom. illeg.

The genus and species were described and published by Simeon Ștefan Radian in 1903.

Popular name: bucegia (Täuber 1980:121).

Romania: Radian 1903:3-7; Evans 1917:18; Evans 1923:61; Domin 1923:22; Podpěra 1931:53; Simionescu 1939:122,123, Fig.204; Gușuleac 1947-1948:501, Fig.712; Buia 1948:18; Müller 1954:385; Papp 1956b:31; Răvăruț & al. 1967:314; Ștefureac 1975a:141-149; Ștefureac 1978d:160; Ștefureac 1982b:56; Dihoru G. 1987a:88; Mohan 1988b:116; Opreș 1990:130; Dihoru G. 1999c:17-21; Sabovljević & al. 2001:77; Ștefănuț 2003b:236, Fig.1; Dihoru G. 2004:167.

Ecology: epigeaic, euryion, mesophytic, sciophytic; arctic-alpine; Hth. Characteristic species to ass. *Bucegietum romanicae* Ștefur. 1984.

Threatened species (Plămadă 1977b:115).

Herbaria and Exsiccatae: BUCA, CL, PHHM, FRE

Distribution in Europe: Po, Sk, Ro, Ua.

Distribution in Romania:

Rodna Mountains, Pietrosul Rodnei, 2280 m alt., 4.09.1982 (Ștefureac 1983b:510; Ștefureac 1983g:175,179,182; Coldea 1990:167; Dihoru G. 1999c:18); Pietrosul Rodnei, 2260 m alt., 31.08.1983,

leg. & det. Ștefureac T., ass. *Bucegetum romanicae* Ștefur. 1984 subass. *jungermannietosum sphaerocarphae* Ștefur. 1986 (Ștefureac 1986h:101-110, Figs.1-4, Tabs.1,2; Ștefureac 1986f:195,197; Plămadă 1987b:336; Dihoru G. 1999c:18; Nădișan & Chercheș 2002:58,59,122).

Bucegi Massif, ♀ - Cerbului Valley, *locus classicus*, on soil, silicious-calcareous rocks, 1500-1800 m *alt.*, 4.07.1899, *leg.* Radian S.Ș. & *det.* Radian S.Ș. 1903, *conf.* Schiffner V. 1903, Müller K. 1906 (Radian 1903:4-5; Müller 1906-1911:295-296; Schiffner 1908b:275; Radian 1915:193; Györffy & Péterfi M. 1916:23; Radian 1920:77-84; Domin 1933:46, Müller 1954:385; Ștefureac 1963b:87,101,102; Ștefureac 1986h:101; Dihoru G. 1999c:17); ♂ - Bătrâna – Omu Peak, 2000-2200 m *alt.*, 21.07.1897, *leg. & det.* Loitlesberger K., sub *Preissia quadrata*, *rev.* Radian S.Ș. 1903, *conf.* Schiffner V. 1908, Ștefureac T. 1940-1944 [H.A.T.R. 75](Loitlesberger 1898:196; Radian 1903:5; Müller 1906-1911:296; Schiffner 1908b:275; Radian 1915:193; Györffy & Péterfi M. 1916:23; Radian 1920:78; Györffy 1921:14; Ștefureac 1949a:293,295; Ștefureac 1963b:87,101,102, Fig.2; Péterfi Ș. & Ștefureac T. 1965:111; Ștefureac 1986h:101; Dihoru G. 1999c:17); ♀, ♂, Cerbului Valley, 11,24.08.1903 (Schiffner 1908b:275; Radian 1915:193); Cerbului Valley, 30.07.1904, 6.08.1905, 30.08.1908, 28.06.1911, 29.08.1911, 5,6.07.1914 (Radian 1915:193); Jepi Valley towards Caraiman, 10.08.1903 (Radian 1915:193; Györffy 1921:14); Ialomița Valley above Peștera Ialomiței Hermitage, 11.08.1903, 29.07.1904, 5.08.1905 (Radian 1915:193; Györffy & Péterfi M. 1916:23; Györffy 1921:14); Obârșia Ialomiței towards Omu, 11.08.1903 (Radian 1915:193; Györffy 1921:14); Bucegi (Pax 1908:128; Evans 1917:18; Pax 1919:280; Ștefureac 1975a:141-149, Figs.2,3; Ștefureac 1976d:169; Ștefureac 1983b:511; Ștefureac 1986f:190,191); ♂ - Mălăiești Valley, s - Bucșoiu Mountain (Deubel-Weg), *fer* – upper part of Jepi Valley, s - Omu (Degen 1914:216; Györffy & Péterfi M. 1916:25; Radian 1920:82; Györffy 1921:14; Ștefureac 1986h:107); ♂, ♀ - Ialomița Valley, 1960 m *alt.*, 1931, *leg. & det.* Domin K. (Domin 1933:27); ♀ - Bucșoiu, 10.06.1936, *leg. & det.* Vlădescu A.D. [PHHM 6207656] (Mohan 1971a:7); Brâna Caprelor and Bucșoiu, 1500-2000 m *alt.*, 30.08.1937, *leg. & det.* Vlădescu A.D. [FRE 1612] (Borza 1938:23; Borza & Nyárády E.I. 1940:9; Ștefureac 1949a:295; Ștefureac 1986h:107); Bucegi (Boros 1943a:6); Bucegi, 24.07.1906, *leg.* Zsák Z. [CL 28963] (Ștefureac 1949a:295; Ștefureac 1986h:107); Hornurile Țigănești, on rocks, 2330 m *alt.*, the northern slope of Bucșoiu Mountain, 2430 m *alt.*, on edge of waterfall, 2420 m *alt.*, 23.07.1950 (Ștefureac 1955:594,595, Tab.1); Cerbului Valley, 2200 m *alt.*, Jepii Mari, 1800 m *alt.*, Omu Peak-Mălăiești, 2000 m *alt.*, ass. *Doronicum carpaticum-Poa minor* (Pușcaru D. & al. 1956: 141,142, Tab.48); Jepi Mici Valley (Ștefureac 1971c:86; Ștefureac 1986h:107); Bucșoiu and Țigănești (Ștefureac 1972c:97,102-105; Ștefureac 1986h:107); ♀ - Gaura Glacial Ring, BV, 45°26'44"N / 25°26'37"E, 2210 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2490]; ♀ - 45°26'29"N / 25°26'17"E, 2110 m *alt.* [BUCA B2349], ♀ - 45°26'27"N / 25°26'19"E, 2120 m *alt.* [BUCA B2083, B2241, B2242], s - [BUCA B2251], ♀ - 45°26'26"N / 25°26'24"E, 2150 m *alt.* [BUCA B0934, B2086], s - [BUCA B044, B2309, B2521], ♂ - [BUCA B2520, B2522], ♂ - 45°26'24"N / 25°26'25"E, 2200 m *alt.* [BUCA B2109]; s - 45°26'23"N / 25°26'25"E, 2240 m *alt.* [BUCA B2237, B2240], ♀ - [BUCA B2238], ♂ - 45°26'22"N / 25°26'24"E, 2250 m *alt.* [BUCA B2243], s - [BUCA B2254, B2886] (Mihăilescu & Ștefănuț 2000a:14; Ștefănuț 2001:129; Ștefănuț 2003b:233, Fig.1); Gaura Glacial Ring, BV, 45°26'29"N / 25°26'17"E, 2110 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3150]; ♀ - The glacial rings of Ialomița Valley, DB, 45°26'06"N / 25°26'50"E, 2190 m *alt.*, *leg. & det.* Ștefănuț S., 10.07.1999 [BUCA B2276], s - 45°26'00"N / 25°26'42"E, 2200 m *alt.* [BUCA B0937, B2471], ♂ - [BUCA B2101], ♂ - 45°26'06"N / 25°26'48"E, 2190 m *alt.* [BUCA B2305, B3152], s - [BUCA B3141]; ♀ - Mălăiești Glacial Ring, BV, 45°27'07"N / 25°26'43"E, 2040 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2281], ♂ - [BUCA B2283], ♂ - 45°27'05"N / 25°27'07"E, 2275 m *alt.* [BUCA B2286], ♂ - 45°27'03"N / 25°27'08"E, 2300 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3467]; s - 45°27'06"N / 25°27'04"E, 2260 m *alt.* [BUCA B2262], ♂ - [BUCA B2264], ♀ - 45°27'05"N / 25°26'57"E, 2200 m *alt.* [BUCA B2601], ♂ - 45°27'04"N / 25°26'51"E, 2100 m *alt.* [BUCA B2115], ♀ - [BUCA B2287], s - 45°27'06"N / 25°26'41"E, 2050 m *alt.* [BUCA B2279], ♀ - 45°27'13"N / 25°26'45"E, 2010 m *alt.* [BUCA B0935, B2120, B3120, B3121], s - [BUCA B2119, B3117]; Cerbului Valley, *leg. & det.* Ștefănuț S., 11.07.1999 (Ștefănuț 2001:129; Ștefănuț 2003b:232,233, Fig.1); ♂ - Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m *alt.*, *leg. & det.* Ștefănuț S., 8.07.1999 [BUCA B2494] (Ștefănuț 2001:129; Ștefănuț 2003b:233, Fig.1; Ștefănuț 2004a:63; Ștefănuț 2004g:158); ♂ - Gaura Glacial Ring, BV, 45°26'24"N / 25°26'25"E, 2200 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3356]; Jepi Valley, PH, 45°26'18"N / 25°27'33"E, 5.06.1932, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B2947]; ♂ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3261, B3289, B3299]; ♀ - Babele Mountain, PH,

45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3283], 45°24'43"N / 25°28'37"E, 2180 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3495]; ♂ - Babele Mountain, PH, 45°24'49"N / 25°28'43"E, 2220 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3552, B3555]; ♀ - Babele Valley, PH, 45°24'41"N / 25°28'37"E, 2110 m *alt.*, 14.07.2008, *leg. & det.* Ștefănuț S. [BUCA B3902, B3903], ♂ - [BUCA B3904].

Piatra Craiului Mountains, *without locality*, 1943, *leg. & det.* Vlădescu A. (Ștefureac 1951b:257; Ștefănuț & Pop O.G. 2006:74); on humus, 1300-2244 m *alt.*; Brăul de Mijloc and Brăul de Jos al Ciorângii, 1600-2000 m *alt.*, Padina lui Călineț, Brăul Răchița - Cabana Ascunsă, Popii Valley, Zăplaz Saddle towards Spirlea Valley, Vlădușca Valley, Westwand, Padina Închisă, Diana Chalet, Padina and Râie's Valley, Curmătura (Ștefureac 1951b: 254,256,257,259; Ștefureac 1963b:88; Ștefureac 1972c:102,104; Ștefureac 1975a:141-149; Ștefureac 1986h:102,109; Dihoru G. 1999c:18; Ștefănuț & Pop O.G. 2006:74); Marele Grohotiș, 1998, *leg. & det.* Ștefănuț S. [BUCA B0933](Ștefănuț 2001:129; Dihoru G. & al. 2003:69, Figs.3-5; Ștefănuț 2003b:233, Fig.1; Ștefănuț & Pop O.G. 2006:74); ♂ - Brâna Caprelor, BV, 45°33'18"N / 25°14'29"E, 2000 m *alt.*, 23.05.2002, *leg. Pop O., det.* Ștefănuț S. [BUCA B2827] (Ștefănuț & Pop O.G. 2006:74); Diana, towards Brâna Caprelor, BV, 45°33'09"N / 25°14'35"E, 2000 m *alt.*, 23.05.2002, *leg. Pop O., det.* Ștefănuț S. [BUCA B2873] (Ștefănuț & Pop O.G. 2006:74).

Făgăraș Mountains, Bâlea Lake, 1950 m *alt.*, 9-19.07.1946 (Ștefureac 1949a:288; Ștefureac 1958a:103; Ștefureac 1972c:104; Ștefureac 1986h:102,107; Dihoru G. 1999c:18; Drăgulescu 2003:7); above Bâlea Lake, Paltina Peak, on sandy soil, 2100 m *alt.*, below Paltina Peak, on sandy soil, 2250 m *alt.*, 13.07.1946, above Avrig Lake, on calcareous rocks, 2150 m *alt.*, below Ciortea Peak, north-eastern slope, 2320 m *alt.* (Ștefureac 1949a:288-297; Ștefureac 1977d:138; Ștefureac 1975a:142; Ștefureac 1986h:102,107; Dihoru G. 1999c:18; Drăgulescu 2003:7); Râiosu Peak and Igheabul Văros, on calcareous-dolomite rocks (Ștefureac 1951b:255; Ștefureac 1963b:88; Ștefureac 1972c:104; Ștefureac 1975a:142; Dihoru G. 1999c:18); ♀ - Bâlea Lake, SB, 45°36'15"N / 24°37'04"E, 2040 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B0938, B2108], s - 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2144] (Ștefănuț 2001:129; Ștefănuț 2003b:233, Fig.1); Capra Lake, AG, 45°36'00"N / 24°37'45"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B0940], 45°36'00"N / 24°37'44"E, 2250 m *alt.* [BUCA B2178], ♀ - 45°36'00"N / 24°37'47"E, 2250 m *alt.* [BUCA B2188], ♂ - [BUCA B2189] (Ștefănuț 2001:129; Ștefănuț 2003b:233, Fig.1); The glacial ring from Doamnei Valley, SB, 45°36'05"N / 24°36'27"E, 2150 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B0939, B2181, B2186, B2454] (Ștefănuț 2001:129); Urlea Lake, BV, 45°35'42"N / 24°50'25"E, 2194 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S. [BUCA B0941, B2342] (Ștefănuț 2002:190,195; Ștefănuț 2003b:233, Fig.1); The glacial ring from Doamnei Valley, SB, 45°36'07"N / 24°36'27"E, 2120 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B3478].

Calypogeia azurea Sotler et Crotz

Syn.:

- *Calypogeia acuta* Steph.
- *Calypogeia trichomanis* auct., p.p.
- *Calypogeia trichomanoïdes* Warnst.
- *Calypogeia variabilis* Warnst.
- *Cincinnulus trichomanis* (L.) Dumort., p.p.
- *Jungermannia trichomanis* (L.) Dicks.
- *Kantius trichomanis* auct., p.p.
- *Mnium trichomanis* L.

First citation for Romania: Transylvania, *without locality*, sub *Jungermannia trichomanis*, Baumgarten 1846:228.

Moldova, sub *C. trichomanis* (Papp 1943:658; Ștefureac & al. 1973:149).

Muntenia, sub *C. trichomanis* (Mohan 1988b:100).

Transylvania, sub *Jungermannia trichomanis*, *Kantia trichomanis* (Baumgarten 1846:228; Pax 1908:130).

Ecology: humicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Fo, No, Dk, Se, Ie, Br, Fr, Ad, NI, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Ba, Mk, Ro, Bg, Al, Lv, Lt, By, Ua, Rn, Ca.

Distribution in Romania:

Maramureș County, Cavnic, sub *Kantia trichomanis* (Boros 1943e:146); Sălhoi Mountain, 1280 m *alt.*, 24.07.1971, sub *C. trichomanis* (Ștefureac 1973i:66; Ștefureac & Pânzaru 1978:40; Ștefureac & Pascal 1981:486).

Rodna Mountains, Puzdra Mountain, 1500-1600 m *alt.*, *leg. & det.* Boros Á., sub *C. trichomanis* (Boros & Vajda 1967:225); Pietrosul Rodnei, sub *C. trichomanis* (Ștefureac 1983g:177).

Țibleș Mountains, Bran Peak, Piciorul Țiglei, Izvorul Țibleșului, Bumbului Hill, 1984-1985, sub *C. trichomanis* (Mohan 1988a:22).

Suceava County, Coșna, on Panasuri Mountain, 1330 m *alt.*, Vatra Dornei, sub *C. trichomanis* (Breidler 1890a:149; Pax 1908:130); Izvorul Alb, 14.05.1910, Muncelu-Pojorâta, 15.05.1910, Poiana Stampei, 17.05.1910, sub *Kantia trichomanis* (L.) Gray (Lilienfeldówna 1911:736); Cârlibaba Brook Valley, 1967, sub *C. trichomanis* (Ștefureac & Pascal 1970a:246); Deaca brook Valley, Suhârzelu Mare, Țibău, Argestru, Ciocânești, Iedu, sub *C. trichomanis* (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:486); Bistrița Aurie Valley (Pascal 1973; Ștefureac 1986f:194); Adam and Eva Mountains, Pojorâta Commune, on wet soil, sub *C. trichomanis* (Mihai & Pascal 1973b:156); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, sub *C. trichomanis* (Lungu 1973b:72; Lungu 1981c:91).

Rarău Mountain, Rarău, 14.05.1910, sub *Kantia trichomanis* (L.) Gray (Lilienfeldówna 1911:736); Codrul Secular Slătioara, 1250-1380 m *alt.*, sub *C. trichomanis* (Ștefureac 1941:1153, 1263, 1279, Tabs.5,7; Papp 1969b:188; Ștefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve, sub *C. trichomanis* (Ștefureac & Raclaru 1978:198).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphideturum pellucidae* (Barkman 1958) Maurer 1961, sub *C. trichomanis* (Ștefureac, Mihai & Pascal 1976:36, Tab.1).

Ceahlău Mountain, Ceahlău, sub *C. trichomanis* (Papp 1931a:217,218, Figs.7-10; Papp 1934b:68; Zanoschi 1970:280; Manoliu & al. 1998:335).

Nemira Mountains, in common spruce forest on rotten trunk tree and wet soil, 1970-1977, sub *C. trichomanis* (Mihai & Barabaș V. 1978:117).

Bacău County, the forest on Pufu Hill, 900 m *alt.*, sub *C. trichomanis* (Papp 1957:284; Papp 1958b:396).

Brașov County, Codlea, *leg. & det.* Vajda L., sub *C. trichomanis* (Boros & Vajda 1967:225).

Ciucaș Mountains, Bratocea Peak, Ciucaș Peak, Bratocea Mountain, sub *C. trichomanis* (Mohan 1990b:40).

Piatra Mare Mountain, Tamina Waterfall, *leg. & det.* Vajda L., sub *C. trichomanis* (Boros & Vajda 1967:225); Chiva Valley, 45°32'58"N / 25°38'33"E, 17.05.2006, *leg.* Avramescu C., *det.* Ștefănuț S. [BUCA B3434].

Bucegi Massif, ? - Peleș Valley, *leg. & det.* Grecescu D. 4.08.1868, sub "*Colypogea trichomanes*", *Calypogeia trichomanis* (Grecescu 1869; Radian 1901a:135,136); Bucșoiu Peak, 08-09.1911, sub *C. trichomanis* (Degen 1914:217); Lăptici Peatbog, 1500 m *alt.*, 1946, sub *C. trichomanis* (Ștefureac 1949c:691; Pop E. 1960:349; Godeanu S. 1970:45).

Piatra Craiului Mountains, Marele Grohotiș, AG, 45°30'36"N / 25°11'38"E, 1550 m *alt.*, 8.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2632] (Ștefănuț & Pop O.G. 2006:74).

Făgăraș Mountains, Negoiu Mountain, at „Izvorul”, 1500 m *alt.*, sub *Kantia trichomanis* (Loitlesberger 1898:196; Drăgulescu 2003:17); Cârțișoara Valley, 1200 m *alt.*, sub *C. trichomanis* (Boros & Vajda 1967:225); Pojorta Valley, BV, 45°38'14"N / 24°53'48"E, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2553].

Iezer-Păpușa Mountains, Bratia Valley, 1200 m *alt.*, sub *Kantia trichomanis* (Loitlesberger 1898:196).

Cozia Mountain, Cozia Peak, 1668 m *alt.*, in common spruce forest, sub *C. trichomanis*, 1975-1976 (Dihoru G. 1990:52).

Cindrel Mountains, Păltiniș, *leg. & det.* Vajda L., sub *C. trichomanis* (Boros & Vajda 1967:224; Gündisch 1977:52); Crinț, 1200 m *alt.*, Păltiniș, 1300 m *alt.*, Cânaia, 1700 m *alt.*, Jujbea, 1900 m *alt.* (Gündisch 1977:52; Drăgulescu 2003:17).

Retezat Mountains, Peleaga Peak, sub *C. trichomanis* (Schiffner 1914:305); towards Gemenele Lake, sub *C. trichomanis* (Páll 1964a:108); Zlătuia Valley, 1300 m *alt.*, 8.09.1969, sub *C. trichomanis*, ass. *Isopterygio seligeri-Dicranetum scoparii* Ježek et Vondr. 1962 (Plămadă 1982a:313, Tab.7; Plămadă 1993:53, Tab.2).

Codru-Moma Mountains, Osoiu Mare, on rotten wood, sub *C. trichomanis* (Mohan 1996:49); Lilieciilor Cave (Ardelean 2006:103).

Arad County, Runc, Dulcele, sub *Cincinnulus trichomanis* (Simonkai 1893:363).

Alba County, Colții Trascăului, sub *C. trichomanis* (Páll 1960b:90); Scărișoara Cave, 1340 m *alt.*, 11.08.1996, ass. *Calypogeietum trichomanis* Neumayr 1971, Galbena Valley, 875 m *alt.*, 12.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Iarba Rea Valley, 900 m *alt.*, 25.08.1996, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965 (Goia 2000:111,113,114, Tabs.1-3); Arieșul Mic Basin (Goia & Schumacker 2000:92); Cepelor Valley, Galbena Valley, Arieșul Mare upstream to Arieșeni, Iarba Rea Valley, Măgura Valley-Neagra, Scărișoara Cave – aven, Vidrișoara Valley, on rotten wood (Goia 2001:77); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87).

Bihar Mountains, without locality, 300-1000 m *alt.*, sub *Kantia trichomanis* (Péterfi M. 1908:275; Goia 2001:77); Platoul Padiș, Șivla Hill, sub *C. trichomanes* (Kovács, Coman & Péterfi Ș. 1966:38); Someșul Cald Gorges, 4.08.1998 (Coldea & Wagner 1999:85, Tab.1); Someșul Cald Gorges (Goia & Mătase 2001:17).

Calypogeia fissa (L.) Raddi

Syn.:

- *Calypogeia fissa* var. *integrifolia* Raddi
- *Calypogeia trichomanis* (L.) Corda
- *Calypogeia trichomanis* fo. *fissa* (L.) Bernet
- *Calypogeia trichomanis* var. *fissa* (L.) De Not.
- *Cincinnulus calypogeus* (Raddi) Müll. Frib.
- *Cincinnulus sprengelii* (Nees) Dumort.
- *Cincinnulus trichomanis* (L.) Dumort.
- *Jungermannia calypogea* Raddi
- *Jungermannia fissa* (L.) Scop.
- *Jungermannia sprengelii* Nees
- *Jungermannia trichomanis* (L.) Scop.
- *Kantius calypogeus* (Raddi) Lindb.
- *Kantius fissus* (L.) Lindb.
- *Kantius sprengelii* (Nees) Trevis.
- *Kantius trichomanis* (L.) Gray
- *Kantius trichomanis* var. *fissus* (L.) Lindb.
- *Kantius trichomanis* var. *sprengelii* (Nees) M. Howe
- *Mnium fissus* L.

First citation for Romania: Boros & Vajda 1967.

Muntenia (Mohan 1988b:99).

Ecology: humicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Ct, Tu, Lv, Ua, Ca, Az, Ma, Cn.

Distribution in Romania:

Maramureș County, Tocila Valley, 16-18.10.1998 (Jakab 1999:53,55; Dihoru G. 2004:169).

Giulalău Mountain, Giulalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3963, B3968, B3978].

Ceahlău Mountain, Ocolașul Mare, in peatbog (Mihai 1984a:88; Ștefureac 1986f:192); Ceahlău, ass. *Vaccinio-Polytrichetum stricti* Mihai 1986 (Mihai 1986:16, Tab.2).

Harghita Mountains, above Ciceu (Bálint & Orbán 2006:466).

Ciucaș Mountains, Șuvițelor Culm, Piscul Turiștilor, Tigăile Mici Culm, Ciucaș Peak, Roșu Mountain (Mohan 1990b:39).

Gârbova Massif, Tufa Valley, PH, on rotten wood, 45°22'07"N / 25°34'13"E, 5.07.1998, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2202].

Bucegi Massif, Bucșoiu Mountain, in common spruce forest, 1400-1500 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:225; Mihai 1984a:88; Goia 2001:79, Fig.21); Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3229].

Piatra Craiului Mountains, Marele Grohotiș, AG, on rotten wood, 45°30'36"N / 25°11'45"E, *alt.* 1650 m, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2617, B2639] (Ștefănuț & Pop O.G. 2006:74).

Făgăraș Depression, Copăcioasa Valley, BV, 21.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2436, B3471]; Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 20.11.2006, *leg. & det.* Ștefănuț S. [BUCA B3589].

Făgăraș Mountains, Cârțișoara Valley, 800 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:225; Mihai 1984a:88; Goia 2001:79, Fig.21).

Codru-Moma Mountains, Monesei Valley, on rotten wood (Mohan 1996:49; Ardelean 2006:103).

Alba County, Vârciorog Valley, 780 m *alt.*, 13.09.1996, Iarba Rea Valley, 950 m *alt.*, 25.08.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965 (Goia 2000:113, Tab.2); Arieșul Mare upstream to Arieșeni, on rotten wood, Arieșul Mic towards springs, on beech tree (Goia 2001:77-79, Figs.21,22); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89); Vramiță Valley, 27.05.1998 (Smets 2003:60).

Bihor County, Someșul Cald Gorges (Goia & Mătase 2001:17).

Calypogeia integristipula Steph.

Syn.:

- *Calypogeia meylanii* H. Buch
- *Calypogeia neesiana* var. *meylani* (H. Buch) R.M. Schust.
- *Calypogeia neesiana* var. *subdivisa* Schiffn.

First citation for Romania: Boros & Vajda 1967.

Romania (Söderström, Urmi & Váňa 2007:311).

Muntenia, *Calypogeia meylani* H. Buch (Mohan 1988b:100).

Ecology: epilithic-epigaeic, acidophytic, meso-hygrophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Sb, Ro, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, Az.

Distribution in Romania:

Maramureș County, Săpâncioara, 15-21.06.1997, *leg.* Jakab G., *det.* Orbán S. (Jakab 1999:55; Ștefănuț 2007b:430).

Rarău Mountain, Rarău Mountain, 1450 m *alt.*, 25.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3755] (Ștefănuț 2007b:430).

Giupalău Mountain, Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg.* & *det.* Ștefănuț S. [BUCA B3942].

Harghita Mountains, Minei Valley, 1100-1200 m *alt.*, 11.07.2000, Groapa Mare, 1300 m *alt.*, 16.08.2001, Luci, 1050 m *alt.*, 13.08.2001, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2002:38; Bálint & Orbán 2003:14; Ștefănuț 2007b:430).

Bucegi Massif, Piatra Arsă, *leg.* & *det.* Vajda L., sub *C. neesiana* var. *meylani* (Boros & Vajda 1967:226; Ștefănuț 2007b:430); Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3212].

Făgăraș Mountains, Arpașului Valley, *leg.* & *det.* Vajda L., sub *C. neesiana* var. *meylani* (Boros & Vajda 1967:226; Ștefănuț 2007b:430).

Alba County, Detunata Mountains, 1055-1100 m *alt.*, *det.* Sass-Gyarmati A. (Sass-Gyarmati, Pócs & Orbán 2005:127; Ștefănuț 2007b:430).

Cluj County, Răcătău, Someșul Rece Valley, 700 m *alt.*, Lunca, Drăgan Valley, sub *C. neesiana* var. *meylani* (Boros & Vajda 1967:226; Ștefănuț 2007b:430).

Bihor County, Someșul Cald Gorges (Goia & Mătase 2001:17).

Calypogeia muelleriana (Schiffn.) Müll. Frib.

Syn.:

- *Calypogeia adscendens* (Nees) Warnst.
- *Calypogeia fissa* var. *intermedia* (C.E.O. Jensen) Jørg.
- *Calypogeia macrostipula* Warnst.
- *Calypogeia neesiana* var. *laxa* Meyl. ex Müll. Frib.
- *Calypogeia neesiana* var. *rotundifolia* Müll. Frib.
- *Calypogeia trichomanis* var. *adscendens* Nees
- *Calypogeia trichomanis* var. *aquatica* Ingham
- *Calypogeia trichomanis* var. *communis* Nees
- *Calypogeia trichomanis* var. *erecta* Müll. Frib.
- *Calypogeia trichomanoides* Warnst.
- *Calypogeia variabilis* Warnst.
- *Cincinnulus muellerianus* (Schiffn.) Müll. Frib.
- *Cincinnulus trichomanis* var. *muellerianus* (Schiffn.) Meyl.
- *Kantius muellerianus* Schiffn.
- *Kantius muellerianus* var. *erectus* (Müll. Frib.) Schiffn.
- *Kantius trichomanis* var. *aquatica* Ingham
- *Kantius trichomanis* var. *intermedius* C.E.O. Jensen

First citation for Romania: Boros & Vajda 1967.

Muntenia (Mohan 1988b:99,100).

Ecology: humicolous, acidophytic, hygrophytic, sciophytic; circumpolar; mountain; Hch.

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Sc, It, Si, Sb, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, Az, Ma.

Distribution in Romania:

Maramureș County, The peatbog from Văratec Mountain, 1340 m *alt.*, 21-23.08.1998, The Fountain from Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Harghita Mountains, Cifrabuc, 1200 m *alt.*, on soil, 16.08.2001, moorland Luci and in wet *Piceea abies* forest near Luci, 1050 m *alt.*, on soil, 13.08.2001, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:61; Bálint & Orbán 2003:14); Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14).

Făgăraș Mountains, Cârțișoara Valley, 1400 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:225; Ștefureac 1986f:192; Goia 2001:79,80, Fig.23).

Cindrel Mountains, Păltiniș, 1400 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:225; Ștefureac 1986f:192; Gündisch 1977:51; Goia 2001:79,80, Fig.23); Păltiniș, 1100 m *alt.* (Gündisch 1977:51; Drăgulescu 2003:17).

Alba County, Vârciorog Valley, 1000 m *alt.*, 3.06.1995, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965 (Goia 2000:113, Tab.3); Arieșul Mic Basin (Goia & Schumacker 2000:92); Morii Valley, Vârciorog Valley, on rotten woods (Goia 2001:79-81, Figs.23,24); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

Bihar Mountains, Cetățile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:92; Jakab 2000b:67); Someșul Cald Gorges, 4.08.1998 (Coldea & Wagner 1999:85, Tab.1); Someșul Cald Gorges (Goia & Mătase 2001:17).

***Calypogeia neesiana* (C. Massal. et Carestia) Müll. Frib.**

Syn.:

- *Calypogeia neesiana* var. *hygrophila* Müll. Frib.
- *Calypogeia neesiana* var. *latifolia* Jørg.
- *Calypogeia neesiana* var. *repanda* (Müll. Frib.) Meyl.
- *Calypogeia suecica* var. *repanda* Müll. Frib.
- *Calypogeia trichomanis* var. *neesiana* (C. Massal. & Carestia) Müll. Frib.
- *Cincinnulus neesianus* (C. Massal. & Carestia) Fam.
- *Cincinnulus trichomanis* var. *neesianus* (C. Massal. & Carestia) Müll. Frib.
- *Kantius neesianus* (C. Massal. & Carestia) Arnell & C.E.O. Jensen
- *Kantius trichomanis* var. *neesianus* C. Massal. & Carestia

First citation for Romania: Ștefureac 1941.

Moldova (Papp 1943:657; Ștefureac & al. 1973:149).

Muntenia (Mohan 1988b:100).

Ecology: humicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Hr, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Az.

Distribution in Romania:

Maramureș County, Tătaru, 700 m *alt.*, Izvoarele near Crăcești, 900 m *alt.*, *leg. & det.* Boros Á., Poiana Brazilor, 1040 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:226); Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, Pietrosul Borșei, Piciorul Moșului, 1600 m *alt.* (Ștefureac 1958a:108).

Țibleș Mountains, Dosul Obcinei, Dealul lui Vlad, Țibleș Peak, 1984-1985 (Mohan 1988a:22).

Gutâi Mountains, Tătarului Gorges, 670 m *alt.*, 28.06.1970 (Rațiu O. & Moldovan 1972b:4-6, Tab.1).

Suceava County, Benea-Breaza, 1250 m *alt.* (Ștefureac, Cristurean & Sihota 1964:225, Tab.1); Grădinița Peatbog, 1962-1963 (Ștefureac 1968:307); Cârlibaba Brook Valley, 1967 (Ștefureac & Pascal 1970a:246); Valea Stâniei Peatbog, between Fundul-Moldovei and Cârlibaba, in peatbog, 1100 m *alt.* (Diaconeasa & Ștefureac 1971a:381); Tatarca Brook Valley, Țibău Brook Valley (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:485); Bistrița Aurie Valley (Pascal 1973; Ștefureac 1986f:194); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest (Lungu 1973b:72; Lungu 1981c:91); Obcina Mare a Bucovinei, Poiana Calului, „La Arșiță”, 1050 m *alt.*, sub var. *repanda* (Ștefureac 1973d:23).

Rarău Mountain, Codrul Secular Slătioara, 800-850 m *alt.*, incl. sub var. *hygrophylla* (Ștefureac 1941:1153,1245,1280, Tabs.7,9; Papp 1969b:188; Ștefureac 1986f:193).

Bârgău Mountains, Cucureasa Reserve, Coşna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ştefureac, Mihai & Pascal 1976:36).

Căliman Mountains, on rotten woods, in peatlands or on soil, 1981-1984 (Mihai 1985:96; Ştefureac 1986f:194).

Nemira Mountains, Şandru, on wet soil, 1970-1977 (Mihai & Barabaş V. 1978:117); Nemira Mountain, 750-900 m *alt.* (Barabaş V. 1982b:76, Tab.27).

Harghita Mountains, Luci Peatbog, 1080 m *alt.* (Pócs 1958:110); Luci, 1050 m *alt.*, 13.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:467); Harghita Spa (Bálint & Orbán 2006:467).

Harghita County, Mohoş (Boros 1943c:114; Boros & Vajda 1967:226; Bálint & Orbán 2006:467); Mohoş (Pop E. 1960:322); Odorhei, Budvár, in beech forest, on rotten trunk trees, 1958-1962 (Páll 1963b:17; Boros & Vajda 1967:226).

Bodoc Mountains, Puciosu on Turia-Bufogo (Ştefureac & Kovács 1981:117).

Covasna County, Apa Roşie Peatbog (Ştefureac & Barabaş V. 1976:231; Ştefureac & al. 1982:59).

Vrancea County, s - Cioara Forest, 207 m *alt.*, on rotten trunk trees (Mihai & Barabaş V. 1970:66,67,72).

Ciucaş Mountains, Bratocea, above Roşu Mountain Hut, *leg. & det.* Vajda L. (Boros & Vajda 1967:226); Chiruşca Mountain, Berii Valley, Ciucaş Peak, Roşu Mountain (Mohan 1990b:39).

Piatra Mare Mountain, 950-1700 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:226).

Cristianul Mare Mountain, *leg. & det.* Vajda L. (Boros & Vajda 1967:226).

Bucegi Massif, Bucşoiu Mountain, above Mălăieşti Valley, 1700-1900 m *alt.* (Boros & Vajda 1967:226).

Leota Mountain, Mitarca Valley, on crystalline schists, 1300-1600 m *alt.*, sub var. *hygrophila* (Papp & Diaconescu 1968:387).

Făgăraş Mountains, Sâmbăta Valley, 1400 m *alt.* (Pócs 1958:110); Cârţişoara Valley, 1300-1500 m *alt.* (Boros & Vajda 1967:226); Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ştefănuţ S. (Ştefănuţ 2002:190).

Cindrel Mountains, Găuşoara, 1400-1600 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:226); Păltiniş, 900-1100 m *alt.* (Boros & Vajda 1967:226; Gündisch 1977:51); Păltiniş, 1300-1450 m *alt.*, Cotoreşti, 1700 m *alt.* (Gündisch 1977:51; Drăgulescu 2003:17).

Sebeşului Mountains, Sebeş Valley, at Oaşa Mare and between Oaşa and Cibán, 800-1200 m *alt.* (Borza 1959:69,283, Tab.38).

Parâng Mountains, Repedea Valley, 08-09.1954 (Ştefureac, Popescu & Lungu 1959:9,19,34,35).

Retezat Mountains, towards Custura Peak (Páll 1964a:108; Boros & Vajda 1967:226); near Gemenele Lake, 1750 m *alt.*, 5.07.1965, *leg.* Plămadă E. (Ştefureac 1969a:136; Plămadă 1985a:52); Retezat National Park (Plămadă 1976a; Plămadă 1976b:8); Zănoaga Lake, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

Caraş-Severin County, Caransebeş, 300 m *alt.*, 03.-08.1943, *leg.* Boşcaiu N. (Ştefureac 1948a:220,221; Pócs 1958:110).

Cluj County, Făget, *leg. & det.* Péterfi M. (Boros 1958:4,8).

Calypogeia sphagnicola (Arnell et J. Perss.) Warnst. et Loeske

Syn.:

- *Calypogeia muelleriana* fo. *sphagnicola* (Arnell & J. Perss.) Schljakov
- *Calypogeia paludosa* Warnst.
- *Calypogeia submersa* (Arnell) Warnst.
- *Calypogeia sphagnicola* var. *submersa* (Arnell) Müll. Frib.
- *Calypogeia tenuis* (Aust.) A. Evans
- *Calypogeia tenuis* var. *minuta* Warnst.
- *Calypogeia tenuis* var. *submersa* (Arnell) Warnst.
- *Calypogeia tenuis* var. *sphagnicola* (Arnell & J. Perss.) Warnst.
- *Calypogeia trichomanis* var. *sphagnicola* (Arnell & J. Perss.) Meyl.
- *Calypogeia trichomanis* var. *tenuis* Aust.
- *Cincinnulus trichomanis* var. *sphagnicolus* (Arnell & J. Perss.) Meyl.
- *Kantius submersus* Arnell
- *Kantius sphagnicolus* Arnell & J. Perss.
- *Kantius trichomanis* var. *tenuis* (Aust.) Underw.

First citation for Romania: Ştefureac 1941.

Moldova (Papp 1943:658).

Muntenia (Mohan 1988b:100).

Ecology: epigeaic, truficolous, highly acidophytic, hydro-hygrophytic, sciophytic; circumpolar; Hch. Characteristic to *Sphagnetalia*.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Pt, Es, It, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Az, Ma, Cn.

Distribution in Romania:

Suceava County, Valea Stâniei Peatbog, between Fundul-Moldovei and Cârlibaba, 1100 m *alt.* (Diaconeasa & Ștefureac 1971a:381); Tinovu Mare from Poiana Stampei, ass. *Sphagneto (wulfiani)-Piceetum turfosum* Ștefur. 1977 (Ștefureac 1977a:49,52, Tab.1); Cristișor-Neagra Broștenilor, Borcut Meadow, in peatbog, ass. *Campylopo-Dicranielletum cerviculatae* Herzog 1943 (Lungu 1973b:70,72; Lungu 1974:74, Tabs.1,2; Lungu 1976:235, Tab.1; Lungu 1981c:91,95; Ștefureac 1986f:193); Cristișor-Neagra Broștenilor Meadow, in peatbogs, ass. *Eriophoro-Sphagnetum recurvi* Hueck 1925, ass. *Sphagnetum medii* Kästn., Flossn. & Uhl. 1933, ass. *Sphagnetum acutifolii* Pușcariu & al. 1956, *Sphagnetum fusci* Luqu. 1926 (Lungu 1977: Tab.1); Poiana Stampei Peatbog, 910 m *alt.*, 13.07.1976, ass. *Vaccinio-Pinetum sylvestris* Kleist 1929 (Coldea & Plămadă 1989:41, Tab.2); Neagra Șarului Peatbog, 26.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3780].

Rarău Mountain, Codrul Secular Slătioara, 840-850 m *alt.* (Ștefureac 1941:1153,1280, Tab.7; Papp 1969b:188).

Harghita County, Mohoș Peatbog, 1050 m *alt.*, 14.07.1976, ass. *Vaccinio-Pinetum sylvestris* Kleist 1929 (Coldea & Plămadă 1989:41, Tab.2); Mohoș Peatbog, 46°07'41"N / 25°54'01"E, 1050 m *alt.*, 3.06.2004, *leg.* Mihăilescu Simona, *det.* Ștefănuț S. [BUCA B2214].

Harghita Mountains, moorland Luci, 1050 m *alt.*, epiphyte on *Sphagnum*, 13.08.2001, *leg.* Bălint L. & Csizi K. (Orbán & Bălint 2002:61; Bălint & Orbán 2003:14).

Penteleu Massif, ? - Roșu Lake, 1510 m *alt.*, on rotten woods, 11.10.1983, sub fo. *sphagnicola* (Dihoru G. 1987b:94).

Bucegi Massif, Lăptici Peatbog, 1500 m *alt.*, 1946 (Ștefureac 1949c:691; Pop E. 1960:349; Godeanu S. 1970:45).

Făgăraș Depression, Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 8.10.2003, *leg. & det.* Ștefănuț S. [BUCA B3083, B3088] (Ștefănuț 2004f:74).

Cindrel Mountains, Găușoara (Gündisch 1977:52); Surdu, 1250 m *alt.* (Gündisch 1977:52).

Retezat Mountains, Fața Retezatului (Plămadă 1993:49); Zănoaga Lake, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:138,139).

Cluj County, Râșca-Molhaș, Călățele, 3.06.1936, *leg.* Pop E. (Ștefureac 1958a:112); the peatbogs and mires on upper part of Someșului Cald and from Bălăcești-Călățele area (Pop E. 1960:385).

Calypogeia suecica (Arnell et J. Perss.) Müll. Frib.

Syn.:

- *Calypogeia suecica* subsp. *germanica* Schiffn.
- *Calypogeia suecica* fo. *erecta* (Meyl.) Meyl.
- *Calypogeia suecica* var. *erecta* Meyl.
- *Calypogeia suecica* var. *laxiretis* Jørg.
- *Cincinnulus suecicus* (Arnell & J. Perss.) Müll. Frib.
- *Cincinnulus trichomanis* var. *suecicus* (Arnell & J. Perss.) Meyl.
- *Kantius suecicus* Arnell & J. Perss.

First citation for Romania: Schiffner 1914.

Moldova, incl. fo. *erecta* Meyl. (Papp 1943:657; Ștefureac & al. 1973:149).

Muntenia (Mohan 1988b:100).

Ecology: humicolous, saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch. Characteristic species to spruce forest.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, It, Si, Hr, Sb, Ba, Ro, Bg, Ee, Lv, Lt, Ua, Rn, Rw, Rc, Ca, Az, Cn.

Distribution in Romania:

Maramureș Mountains, Cornedei-Prislop Peak, 1590 m *alt.*, 19-20.06.1975, ass. *Rhododendro kotschyi-Pinetum mugii* (Borza 1959) em. Coldea 1985 subass. *sphagnetosum nemorei* Plămadă & Coldea 1985 (Plămadă & Coldea 1985a:120,121, Tab.1); between Tocila Valley and Băiuț, common spruce forest, 600 m *alt.*, the Fountain from Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Țibleș Mountains, Arsuri Peak, Piciorul Mesteacănului, 1984-1985 (Mohan 1988a:22).

Suceava County, Tinovul Mare de la Poiana Stampei, ass. *Sphagneto (wulfiani)-Piceetum turfosum* Ștefur. 1977 (Ștefureac 1977a:49, Tab.1); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:91).

Giupalău Mountain, Poiana Ițcani Reserve, 920 m *alt.*, 1946-1957 (Ștefureac 1969a: Tab.16); Giupalău Secular Forest, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3653, B3656, B3681], 13.10.2006, *leg. & det.* Ștefănuț S. [BUCA B3637].

Rarău Mountain, Codrul Secular Slătioara (Tarnavski 1936:285; Ștefureac & Pascal 1981:486); Codrul Secular Slătioara, 830-1000 m *alt.* (Ștefureac 1941:1153,1284, Tab.9; Ștefureac 1969a: Tab.16; Papp 1969b:188); Rarău, 1350 m *alt.* (Ștefureac 1969a: Tab.16); Rarău Mountain, SV, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3760, B3763].

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphidetum pellucidae* (Barkman 1958) Maurer 1961 (Ștefureac, Mihai & Pascal 1976:36, Tab.1).

Neamț County, Neamț Monastery, on rotten wood, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Tarcău-Grinđuș Mountain, sub var. *erecta* (Papp 1942b:525).

Hășmaș Mountains, Hășmaș (Schiffner 1914:305); Hășmașul Mare (Degen 1930:976; Bálint & Orbán 2006:472); near Bălan Spa (Bálint & Orbán 2006:472).

Harghita Mountains, Asău Valley, 1000-1100 m *alt.*, on rotten wood, 22.10.2000, Groapa Mare, 1300 m *alt.*, on soil, 16.08.2001, moorland Luci, 1050 m *alt.*, on rotten wood, 13.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2002:38; Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Bacău County, Slănic Moldova, on rotten trees, 07.1910, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5; Papp 1957:284); Tălâmba Brook, on rotten fir (Eftimie 1972:151).

Penteleu Mountain, Tisa Reserve, on trunk trees, 1000 m *alt.* (Dihoru G. 1964:399, Tab.3; Dihoru G. 1987b:94); Izvorul Bălescu, 45°36'36"N / 26°25'23"E, 07.1935, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B0961].

Ciucaș Mountains, Gropșoarele Peak, Bratocea Peak (Mohan 1990b:40).

Piatra Mare Mountain, „Șapte Scări” Waterfall, Tamina Waterfall, *leg. & det.* Vajda L. (Boros & Vajda 1967:225).

Cristianul Mare Mountain, Cristianul Mare, 1300 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:225).

Bucegi Massif, Sinaia, on rotten fir, 05-08.1919,1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); above Mălăiești Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:225).

Piatra Craiului Mountains, Crăpătura and Plaiul Foi (Boros & Vajda 1967:225; Dihoru G. & al. 2003:69; Ștefănuț & Pop O.G. 2006:74); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2604, B2610, B2843] (Ștefănuț & Pop O.G. 2006:74); Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2702] (Ștefănuț & Pop O.G. 2006:74).

Făgăraș Mountains, Cârțișoara Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:225).

Cindrel Mountains, Găușoara Mountain, *leg. & det.* Vajda L. (Boros & Vajda 1967:225; Drăgulescu 2003:17).

Parâng Mountains, between Lotru Valley and Jiu Valley, way from Obârșia to Lonea, before Poiana Muierii, 1600 m *alt.*, 16.08.1955, *leg.* Ștefureac T. (Ștefureac, Popescu & Lungu 1957a:64,68,69,71).

Alba County, Piatra Runcului Mountain (Schiffner 1914:305; Goia 2001:81); Vârciorog Valley, 780 m, 1340 m and 1385 m *alt.*, 3.06.1995, 13.09.1996, 16.05.1996, Galbena Valley, 875 m *alt.*, 12.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Galbena Valley, 780 m *alt.*, 12.09.1996, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965, Iarba Rea Valley, 790 m *alt.*, 25.08.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958, Lupșa, 1160 m *alt.*, 15.05.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ștefur. 1941 (Goia 2000:112,113,116, Tabs.2,3,5); Vârciorog Valley, Cepelor Valley, Iarba Rea Valley, Arieșul Mare upstream to Arieșeni, Scărișoara Cave – aven, on rotten wood (Goia 2001:81); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87).

Cluj County, Dobrin Mountain, sub *Kantia* (Péterfi M. 1918:61); the peatbogs from spring and upper course of Someșul Rece, incl. Muntele Mare and Dobrin, sub *Kantia* (Pop E. 1960:397); Someșul Rece Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:225); Gilăului Mountains, in common spruce forest (Plămadă 1985b:40).

Bihar Mountains, Cetățile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:92; Jakab 2000b:67); Someșul Cald Gorges (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3821].

Calypogeia sp.

Maramureș Mountains, Băi-Arinieș, peatbog, 1948 (Ștefureac 1958a:106).

Maramureș County, Sălhoi (Sanda & Popescu A. 1991a:45).

Suceava County, Răchitișul Mare, ass. *Carici flavae-Cratoneuretum filicini* Kovács-Felföldy (1958)1960 emend. Soó (1961)1962 subass. *cochlearitosum* Ștefur. 1972 (Ștefureac 1972a:188).

Bucegi Massif, Lăptici Peatbog, 1470 m *alt.* (Ștefureac 1972c:100).

Cluj County, Dobrin Mountain, *leg.* Péterfi M. (Györffy 1924b:37).

Cephalozia ambigua C. Massal.

Syn.:

- *Cephalozia ambigua* var. *paludosa* Jørg.
- *Cephalozia bicuspidata* var. *arctica* Bryhn & Kaal.
- *Cephalozia bicuspidata* var. *atra* Arnell
- *Cephalozia bicuspidata* var. *cavifolia* Arnell
- *Cephalozia bicuspidata* subsp. *ambigua* (C. Massal.) R.M. Schust.

First citation for Romania: Boros & Vajda 1967.

Ecology: epilithic, acidophytic, hygrophytic, photo-sciophytic; arctic-alpine; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, No, Se, Fi, Br, Fr, De, Po, Ch, At, Sk, Es, It, Ro, Bg, Ua, Nz, Rn, Re.

Distribution in Romania:

Făgăraș Mountains, Bâlea Lake, 2000 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:224); Capra Lake, AG, 45°36'00"N / 24°37'46"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2378].

Cindrel Mountains, Beșineu, 1900 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:224; Gündisch 1977:51; Drăgulescu 2003:17).

Cephalozia bicuspidata (L.) Dumort. var. *bicuspidata*

Syn.:

- *Cephalozia alpicola* C. Massal.
- *Cephalozia bicuspidata* var. *alpicola* (C. Massal.) C. Massal. & Carestia
- *Cephalozia bicuspidata* var. *conferta* (Nees) Jaap
- *Cephalozia bicuspidata* var. *setulosa* Spruce
- *Jungermannia bicuspidata* L.
- *Jungermannia bicuspidata* var. *conferta* Nees
- *Trigonanthus bicuspidatus* (L.) Mitt.

First citation for Romania: Transylvania, *without locality*, sub var. *globulifera*, var. *capsulifera*, Baumgarten 1846.

Moldova (Papp 1943:661; Ștefureac & al. 1973:148).

Muntenia (Mohan 1988b:100).

Transylvania (Baumgarten 1846:223,224; Pax 1908:129).

Ecology: epigeaic-humicolous, saprolognicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, PHHM, SIB, FRE

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Ct, Tu, Ee, Lv, Lt, By, Ua, Nz, Fl, Rn, Rw, Rc, Re, Ca, Az, Ma, Cn.

Distribution in Romania:

Maramureș County, Săpâncioara, 15-21.06.1997, the peatbog from Pleșca Peak, 1150 m *alt.*, 21-23.08.1998, The Fountain from Văratec Mountain, 16-18.10.1998, *leg.* Jakab G., *det.* Orbán S. (Jakab 1999:55).

Rodna Mountains, Lala Valley, 1200 m *alt.*, 17.08.1937 (Ștefureac 1938:241,250,258); Ineu Mountain, 1600-2100 m *alt.*, 1937 (Ștefureac 1945:182); Pietrosul Borșei, north-west slope, 2280 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:390-391, Tab.1); Rodnei Mountains (Ștefureac 1963c:168); Pietrosul Rodnei, 2280 m *alt.*, 4.09.1982, ass. *Bucegietum romanicae* Ștefur. 1984 subass. *jungermannietosum sphaerocarphae* Ștefur. 1986 (Ștefureac 1986h:105,106, Tab.2); Iezerul Pietrosului, MM, 47°35'53"N / 24°38'48"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2192]; Iezerul Pietrosului, MM, 47°35'53"N / 24°38'49"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2014].

Țibleș Mountains, Țibleș Valley, Mestecănul Valley, Bumbului Hill, 1984-1985 (Mohan 1988a:22).

Suceava County, Rodna Nouă, on Perșa („Persia”) Mountain, 1400 m *alt.*, Vatra Dornei, on rocks (Breidler 1890a:149; Pax 1908:129); Argestrul, 16.05.1910 (Lilienfeldówna 1911:734); Grădinița Peatbog, 1962-1963 (Ștefureac 1968:307); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, ass. *Pogonatum alloides* v. *Krusenstjerna* 1948 (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1976:238, Tab.2; Lungu 1981c:91); ♀♂ - Poiana Stampei, 920 m *alt.*, 26.04.2006, *leg.* Ivănescu Cristina, *det.* Ștefănuț S. [BUCA B3394].

Giuralău Mountain, Poiana Ițcani Reserve, 920 m *alt.*, 1946-1957 (Ștefureac 1969a: Tab.16); ♀♂ - Giuralău Secular Forest, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3655, B3658]; Giuralău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 19.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3880]; ♀ - Giuralău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3951, B3974], ♂ - [BUCA B3967], s - [BUCA B3939, B3981].

Rarău Mountain, Codrul Secular Slătioara, 800-1300 m *alt.*, sub *C. cuspidata* (Ștefureac 1941:1153,1284, Tabs.7,9; Ștefureac 1969a: Tab.16; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:197).

Căliman Mountains, ♀♂ - Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m *alt.*, 26.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3741].

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ștefureac, Mihai & Pascal 1976:36); Heniu Mare Peak, Străja Valley, Muncel Peak, Arșiței Peak, 1983-1984 (Mohan & Hodoroga 1986:213).

Bistrița-Năsăud County, Jelna Forest, Piatra Corbului, Simionești, 1980-1981 (Mohan & Hodoroga 1983:53).

Iași County, Stavnice Brook Valley, in forest, on trunk trees (Papp 1950:400,403).

Neamț County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242,244).

Hășmaș Mountains, Hășmaș (Schiffner 1914:307); Hășmașul Mare (Degen 1930:976).

Harghita County, Olt Valley near Bălan Spa (Matouschek 1903b:160; Degen 1930:976); Balványos Spa (Bálint & Orbán 2006:467).

Harghita Mountains, Cifrabuc, 1200 m *alt.*, on soil, 16.08.2001, Mic Valley near Câmpul Galben, 1050-1150 m *alt.*, on soil, 16.08.2001, Groapa Mare, 1300 m *alt.*, on soil, 16.08.2001, Rotund Mountain, 1100 m *alt.*, on rotten wood, 28.08.2001, Luci, 1050 m *alt.*, on rotten wood, 13.08.2001, Ulieșul Mic, 1150 m *alt.*, on soil and rocks, 17.04.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2002:38; Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Bodoc Mountains, Zombor Brook Valley - Cereș Spa (Ștefureac & Kovács 1981:117).

Nemira Mountain, on gritstone, on soil in common spruce forest or on common spruce tree trunks, 1350-1550 m *alt.* (Barabaș V. 1974:23,24,26,28); Nemira Mountain, 1500 m *alt.*, above „Lacurilor Nemirei”, 1500 m *alt.*, Șandru Peak, 1400 m *alt.* (Barabaș V. 1982b:57,60,65,66, Tabs.4,5,8,14,15).

Bacău County, s - Măgura Hill, north-west to Târgu Ocna, on soil, 680 m *alt.* (Mihai & Barabaș V. 1971:676); Tălâmba Brook, on rotten wood (Eftimie 1972:151).

Vrancea County, Tișiței Gorges, an sandy-argillaceous- soil, 1977 (Mihai & Pascal 1986:46).

Buzău County, Bisoca, „Lacul Negru” (Dihoru, Wallfisch & Pîrvu 1984:5).

Ciucaș Mountains, Caprei Valley, Ursului Valley, Balaban Mountain, Zăgan Mountain, Chirușca Mountain (Mohan 1990b:40).

Prahova County, Doftana Valley, Secăria Valley, Păltinoasa Valley [PHHM 7727/3873](Mohan 1971a:9; Mohan 1971b:48).

Brașov County, Brașov (Baumgarten 1846; Schur 1866:871; Fuss 1878:655).

Piatra Mare Mountain, Tamina Waterfall, BV, 45°32'58"N / 25°38'33"E, 6.09.1997, *leg. & det.* Ștefănuț S. [BUCA B2540].

Postăvaru Mountain, (Schiffner 1914:307).

Gârbova Massif, Azuga Valley, Tufa Valley, Rea Valley, on soil, 1967-1970 (Lungu & Ștefureac 1970:5); Tufa Valley, PH, 45°22'07"N / 25°34'13"E, 5.07.1998, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2028, B2031].

Bucegi Massif, Piatra Arsă, *alt.* 2000 m, sub var. *alpicola* (Loitlesberger 1898:195); Jepi Valley, in forest, *leg.* Dumitrescu M., *det.* Radian S.Ș. (Radian 1901b:41); Mălăiești Valley (Matouschek 1905:81); Bucșoiu Peak, Omu Peak, 08-09.1911 (Degen 1914:217); Lăptici Peatbog, 1500 m *alt.*, 1946 (Ștefureac

1949c:692; Pop E. 1960:349; Godeanu S. 1970:45); Nucet, 1820 m *alt.*, ass. *Nardetum strictae typicum*, Furnica, 1985 m *alt.*, ass. *Nardetum strictae supinae* (Puşcaru D. & al. 1956: Tab.66); between Blana and Nucet Valley, 1850 m *alt.* (Puşcaru D. & al. 1956:396, Tab.174; Ştefureac 1972c:101,102); The glacial rings of Ialomiţa Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m *alt.*, 10.07.1999, *leg. & det.* Ştefănuţ S. [BUCA B2324]; ♀♂ - Horoaba Valley, DB, 45°23'28"N / 25°26'02"E, 1520 m *alt.*, 23.10.2006, *leg. & det.* Ştefănuţ S. [BUCA B3602].

Piatra Craiului Mountains, ♀♂ - Crăpătura Pietrei Craiului, BV, on rotten wood, 45°33'44"N / 25°15'51"E, 1100 m *alt.*, 21.08.2003, *leg. & det.* Ştefănuţ S. [BUCA B2745] (Ştefănuţ & Pop O.G. 2006:74,75); Ascuţit Peak, BV, 45°32'50"N / 25°13'57"E, 2100 m *alt.*, 8.08.2004, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B2995] (Ştefănuţ & Pop O.G. 2006:75); Marele Grohotiş, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ştefănuţ S. [BUCA B3164] (Ştefănuţ & Pop O.G. 2006:75); Poiana Lespezilor, BV, 45°30'27"N / 25°13'27"E, 1330 m *alt.*, 8.08.2003, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3347].

Giurgiu County, s - Comana, on rotten wood, 1968-1969 (Ştefureac & Mohan 1970a:353).

Făgăraş Depression, Copăcioasa Valley, BV, 45°44'17"N / 24°59'44"E, 21.07.1998, *leg. & det.* Ştefănuţ S. [BUCA B3472].

Făgăraş Mountains, Capra Lake, AG, 45°36'01"N / 24°37'48"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2484, B2507]; Urlea Lake, BV, 45°35'44"N / 24°50'31"E, 2200 m *alt.*, 17.09.2001, *leg. & det.* Ştefănuţ S. [BUCA B2050], 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg. & det.* Ştefănuţ S. [BUCA B2079], 45°35'42"N / 24°50'25"E, 2194 m *alt.*, 17.09.2001, *leg. & det.* Ştefănuţ S. [BUCA B2401].

Iezer-Păpuşa Mountains, Iezer Mountain, 1500-1800 m *alt.*, Stâna Păpău, 1700 m *alt.*, incl. sub var. *alpicola* (Loitlesberger 1898:195).

Cozia Mountain, fer - Cozia Peak, 1668 m *alt.*, 1975-1976 (Dihoru G. 1990:52).

Cindrel Mountains, Jujbea, 1800 m *alt.* (Gündisch 1977:51; Drăgulescu 2003:17); Cindrel, 2000-2030 m *alt.* [SIB HG](Gündisch 1977:51; Drăgulescu 1992:55; Drăgulescu 2003:17).

Parâng Mountains, Latoriţa Valley, on calcareous rocks, 900 m *alt.*, 31.08.1954 (Ştefureac, Popescu & Lungu 1956a:512-513, Tab.1); **fer** - Curmătura Vidruţei, 1350 m *alt.*, 26.07.1955 (Ştefureac, Popescu & Lungu 1957a:68-70, Tab.1); Latoriţa Valley, 08-09.1954 (Ştefureac, Popescu & Lungu 1959:9,39, Tab.7); around the peatbog near Călcescu Lake (Ştefureac 1969a:108); below Mohor Ridge, 2300 m *alt.*, alpine peatbog (Ştefureac 1969a:117,118, Tab.15).

Hunedoara County, Baldovin (Péterfi M. 1908:275); Băiţa, *leg.* Péterfi M. (Györffy 1924b:37).

Caraş-Severin County, Caransebeş, 300 m *alt.*, 03-08.1943, *leg.* Boşcaiu N. (Ştefureac 1948a:220,221).

Codru-Moma Mountains, Monesei Valley, Crişul Văratecului Valley, Brihenilor Valley, on rotten wood (Mohan 1996:49; Ardelean 2006:103).

Alba County, Colţii Trascăului (Páll 1960b:90); Scărişoara Cave, 1340 m *alt.*, 11.08.1996, ass. *Calypogeietum trichomanis* Neumayr 1971, Scărişoara Cave, 950 m and 1340 m *alt.*, 11.08.1996, Vârciorog Valley, 780 m, 1340 m and 1385 m *alt.*, 3.06.1995, 13.09.1996, Cepelor Valley, 875 m *alt.*, 16.05.1996, Galbena Valley, 875 m *alt.*, 12.09.1996, Iarba Rea Valley, 950 m *alt.*, 25.08.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Goieştilor Valley, 1340 m *alt.*, 15.04.1994, Galbena Valley, 780-900 m *alt.*, 12.09.1996, Ursoaia Saddle, 900 m *alt.*, 12.08.1996, Vârciorog Valley, 1270 m *alt.*, 3.06.1995, Vidrişoara Valley, 1300 m *alt.*, 21.08.1992, Iarba Rea Valley, 900 m *alt.*, 25.08.1996, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965, Cepelor Valley, 1380 m *alt.*, 16.05.1996, Scărişoara Cave, 1200 m *alt.*, 12.08.1996, Cobleş Valley, 980 m *alt.*, 9.08.1996, ass. *Cephalozio bicuspidatae-Nowellietum curvifoliae* Philippi 1965, Cobleş Valley, 1280 m *alt.*, 9.08.1996, Cepelor Valley, 1370 m *alt.*, 16.05.1996, Iarba Rea Valley, 790 m *alt.*, 25.08.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958, Lupşa, 1160 m *alt.*, 15.05.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ştefur. 1941, Iarba Rea Valley, 800 m *alt.*, 25.08.1996, ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia 2000:111,112,114,115,117,119, Tabs.1-5,7); Arieşul Mic Basin (Goia & Schumacker 2000:92); Vârciorog Valley, Cepelor Valley, Galbena Valley, Arieşul Mare upstream to Arieşeni, Iarba Rea Valley, Gârda Seacă – upstream to Casa de Piatră, Casa de Piatră, Gogii Brook – Cobleş, Cobleş Valley, Măgura Valley – Neagra, Scărişoara Caveaven, Ocoale, Gheţari, Ursoaia Saddle, Mătişeşti, Horea, Ţoha Mică, Goieştilor Brook, Arieşul Mic – downstream to mine, on rotten wood (Goia

2001:74,75); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89); Vramiță Valley, 27.05.1998 (Smets 2003:60).

Cluj County, Ciucea and Negreni, 300 m *alt.* (Péterfi M. 1908:275); Feneşel, Capul Dealului, 800 m *alt.*, 24.08.1915, *leg.* & *det.* Péterfi M., *rev.* Papp C. [FRE 1613] (Borza 1938:23; Borza & Nyárády E.I. 1940:9); Gilăului Mountains, Lunca Valley (Ujvárosi 1944:33); Feleac Hill (Boros 1958:8).

Bihor County, Peştiş, 400 m *alt.*, Beiuş, 400 m *alt.* (Péterfi M. 1908:275).

Vlădeasa Massif, Vlădeasa-Micău, *det.* Ştefureac T. (Resmeriță, Nemeş & Csürös Ş. 1963:135); Vlădeasa, Briței, *det.* Ştefureac T. & Plămadă E. (Resmeriță 1970a:44).

Bihor Mountains, Prislop, *leg.* Péterfi M. (Györffy 1924b:37); Cetăţile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:92; Jakab 2000b:67); Padiş, 1150 m *alt.*, 08.1999 (Jakab 2000b:70); Someşul Cald Gorges (Goia & Mătase 2001:17); ♀♂ - Cetăţile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ştefănuţ S. [BUCA B3866].

var. *lammersiana* (Huebener) Breidl.

Syn.:

- *Cephalozia bicuspidata* subsp. *lammersiana* (Huebener) R.M. Schust.
- *Cephalozia lammersiana* (Huebener) Carrington
- *Jungermannia lammersiana* Huebener
- *Trigonanthus bicuspidatus* var. *lammersiana* (Huebener) C. Hartm.

First citation for Romania: Ştefureac 1941.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Sa, It, Ro, Bg, Ct, Ee, Lv, Lt, Ua, Rn, Az, Ma, Cn.

Distribution in Romania:

Maramureş County, Cisla Valley near Borşa Spa, sub *C. lammersiana* (Boros 1951:374); the peatbog from Văratec Mountain, 1340 m *alt.*, *leg.* Jakab G., *det.* Orbán S., sub *C. lammersiana* (Jakab 1999:55).

Rodna Mountains, (Ştefureac 1963c:170); Ineu Glacial Ring, BN, 47°31'35"N / 24°53'35"E, 1920 m *alt.*, 26.08.1999, *leg.* & *det.* Ştefănuţ S. [BUCA B2415].

Rarău Mountain, Codrul Secular Slătioara, 1300 m *alt.* (Ştefureac 1941:1153, Tab.5; Papp 1969b:188; Ştefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve (Ştefureac & Raclaru 1978:197).

Neamţ County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242).

Harghita Mountains, Groapa Mare, 1300 m *alt.*, on soil, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2002:38).

Gârbova Massif, Tufa Valley, 45°22'07"N / 25°34'13"E, 5.07.1998, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B2127].

Făgăraş Mountains, Bâlea Lake and Arpaş Mountain, *leg.* & *det.* Vajda L., sub *C. lammersiana* (Boros & Vajda 1967:224); The glacial ring from Doamnei Valley, SB, 45°36'05"N / 24°36'27"E, 2150 m *alt.*, 16.07.2000, *leg.* & *det.* Ştefănuţ S. [BUCA B2174].

Cindrel Mountains, Beşineu, 1850 m *alt.*, *leg.* & *det.* Vajda L., sub *C. lammersiana* (Boros & Vajda 1967:224); Curmătura Bătrâni, 1870 m *alt.*, *det.* Vajda L. (Gündisch 1977:51; Drăgulescu 2003:17).

Alba County, *without locality*, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965, Cobleş Valley, 1300 m *alt.*, 9.08.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958 (Goia 2000:114,117, Tabs.3,5); Cobleş Valley, Vârciorog Valley, Iarba Rea Valley, on rotten wood (Goia 2001:74,75); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89); the spring of Ampoi river, 46°11'10"N / 23°05'54"E, 6.11.1997, *leg.* Şerpoiu Nicoleta, *det.* Ştefănuţ S. [BUCA B2560].

Cephalozia catenulata (Huebener) Lindb.

Syn.:

- *Cephalozia reclusa* (Taylor) Dumort.
- *Cephalozia serriflora* Lindb.
- *Jungermannia catenulata* Huebener
- *Jungermannia reclusa* Taylor
- *Trigonanthus catenulatus* (Huebener) C. Hartm.

First citation for Romania: Schur 1866.

Moldova, sub *C. reclusa* (Papp 1943:662; Ştefureac & al. 1973:148);

Muntenia (Mohan 1988b:100);

Transylvania, incl. sub *C. reclusa* (Pax 1908:129);

Ecology: humicolous, acidophytic, mesophytic, sciophytic; montan; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, It, Si, Hr, Ba, Sb, Ro, Bg, Gr, Ee, Lt, By, Ua, Rw, Ca, Ma.

Distribution in Romania:

Maramureş Mountains, Şuligu Peak, sub *Jungermannia* (Hazslinszky 1885:56); Pop Ivan Mountain, sub *C. reclusa* (Boros 1951:374).

Giupalău Mountain, ♀ - Giupalău Secular Forest, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3646, B3669], ♂ - [BUCA B3647], s - [BUCA B3652, B3680, B3698, B3708]; Giupalău Secular Forest, 1200 m *alt.*, 13.10.2006, *leg. & det.* Ştefănuţ S. [BUCA B3634], ♀ - [BUCA B3638].

Rarău Mountain, Rarău, 14.05.1910 (Lilienfeldówna 1911:734); Codrul Secular Slătioara, sub *C. reclusa* (Tarnavski 1936:285; Ştefureac & Pascal 1981:485); Codrul Secular Slătioara, 860-1000 m *alt.*, sub *C. reclusa* (Ştefureac 1941:1153,1284,1285, Tab.9; Ştefureac 1969a: Tab.16; Papp 1969b:188).

Bârgău Mountains, Cucureasa Reserve, Coşna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ştefureac, Mihai & Pascal 1976:36).

Harghita County, Puturosu Mountain, Sfânta Ana Lake (Schur 1866:871; Fuss 1878:655; Hazslinszky 1885:56; Bálint & Orbán 2006:467); Lacul Roşu (Boros 1951:374).

Ceahlău Mountain, Ceahlău, sub *C. reclusa* (Papp 1931a:219; Zanoschi 1970:280; Manoliu & al. 1998:335).

Bacău County, Slănic Moldova, on rotten fir, 07.1910, *leg.* Brândză M., *det.* Ştefureac T., sub *C. reclusa* (Ştefureac 1942a:5); Piciorul Şandru Mountain, 1645 m *alt.*, sub *C. reclusa* (Papp 1957:285; Papp 1958b:397).

Nemira Mountains, Nemira, on rotten woods and wet soil, 1970-1977 (Mihai & Barabaş V. 1978:114,117,125).

Prahova County, Sinaia, 900-1200 m *alt.*, sub *C. reclusa* (Loitlesberger 1898:195; Boros 1942a:34).

Piatra Craiului Mountains, Grohotişului Valley, 1200 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:224; Ştefănuţ & Pop O.G. 2006:75); Crăpătura Pietrei Craiului, 4-8.06.2001, *leg.* Pop O., *det.* Ştefănuţ S. (Dihoru G. & al. 2003:69; Ştefănuţ & Pop O.G. 2006:75).

Făgăraş Mountains, ? - Arpaşului Valley, ex Heufler L.R. (Schur 1866:871; Fuss 1878:655; Hazslinszky 1885:56; Drăgulescu 2003:17); *Obs.* This quoting missing in Heufler 1853.

Cindrel Mountains, Păltiniş, in common spruce forest, *leg. & det.* Vajda L. (Boros & Vajda 1967:224; Gündisch 1977:51; Drăgulescu 2003:17).

Retezat Mountains, sub *Jungermannia* (Hazslinszky 1885:56); Zlătuia Brook Valley, on the edge of Galeşu Lake (Páll 1964a:108).

Alba County, Vârciorog Valley, Cepelor Valley, Galbena Valley, Iarba Rea Valley, Cobleş Valley - downstream, Scărişoara Cave – aven, Ocoale, Ursoaia Saddle, on rotten wood (Goia 2001:75); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

Cluj County, Făget Forest, *leg. & det.* Péterfi M., sub *C. reclusa* (Györffy & Péterfi M. 1916:37; Boros 1942a:33; Boros 1958:4,8); Southern Ciucea on Surduc Valley, sub *C. reclusa* (Boros 1942a:34; Boros 1951:374); Someşul Rece Valley towards Răcăţău, *leg. & det.* Vajda L. (Boros & Vajda 1967:224).

Bihar Mountains, Padiş, 1200 m *alt.*, 08.1999 (Jakab 2000b:69).

Cephalozia connivens (Dicks.) Lindb.

Syn.:

- *Blepharostoma connivens* (Dicks.) Dumort.
- *Cephalozia multiflora* Lindb.
- *Jungermannia connivens* Dicks.
- *Trigonanthus connivens* (Dicks.) Mitt.
- *Cephalozia connivens* var. *compacta* (Warnst.) W.E. Nicholson
- *Cephalozia compacta* Warnst.

First citation for Romania: Heufler 1853.

Moldova (Papp 1943:662; Ştefureac & al. 1973:148).

Muntenia (Mohan 1988b:100,101).

Transylvania (Pax 1908:129).

Ecology: humicolous, turficolous, acidophytic, hygrophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Pt, Es, Co, It, Si, Ba, Mk, Ro, Bg, Ct, Ee, Lv, Lt, By, Ua, Rn, Rw, Re, Re, Ka, Az, Ma.

Distribution in Romania:

Rodna Mountains (Pax 1908:129).

Țibleș Mountains, Mesteacănu Valley, in the peatbog „La Borcut”, 1650 m *alt.*, 1984-1985 (Mohan 1988a:22).

Suceava County, Argestrul, 16.05.1910, Poiana Stampei, 17.05.1910 (Lilienfeldówna 1911:734); Tinovul Mare (Papp 1927b:149); Tinovul Mic (Papp 1942b:525,541); Cristișor-Neagra Broștenilor, Borcut Meadow, in peatbogs, ass. *Campylopo-Dicranielletum cerviculatae* Herzog 1943 (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1976:235, Tab.1; Lungu 1981c:91); Neagra Broștenilor Meadow from Cristișor, in peatbogs, ass. *Eriophoro-Sphagnetum recurvi* Hueck 1925, *Sphagnetum medii* Kästn., Flossn. & Uhl. 1933, *Sphagnetum acutifolii* Pușcariu & al. 1956, *Sphagnetum fusci* Luqu. 1926 (Lungu 1977: Tab.1); Neagra Șarului Peatbog, 26.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3781, B3784].

Rarău Mountain, Rarău, 14.05.1910 (Lilienfeldówna 1911:734); Codrul Secular Slătioara, 1500 m *alt.* (Ștefureac 1941:1153, Tab.5; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:197).

Giuralău Mountain, Giuralău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3940, B3976].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphidetum pellucidae* (Barkman 1958) Maurer 1961 (Ștefureac, Mihai & Pascal 1976:36, Tab.1); Muncel Peak, Cârțibavu Mare Valley, 1983-1984 (Mohan & Hodoroga 1986:213).

Harghita County, Mohoș Peatbog, 46°07'41"N / 25°54'01"E, 1050 m *alt.*, 3.06.2004, *leg.* Mihăilescu Simona, *det.* Ștefănuț S. [BUCA B2215].

Harghita Mountains, Minei Valley, 1100-1200 m *alt.*, 11.07.2000, Luci, 1050 m *alt.*, 13.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:467).

Bacău County, Pufu Hill, in forest, 900 m *alt.* (Papp 1957:285; Papp 1958b:396); Tălâmba Brook, on rotten fir (Eftimie 1972:151).

Bodoc Mountains, Puturosu Mountain, sub *Jungermannia* (Schur 1866:871; Fuss 1878:655; Hazslinszky 1885:55; Ștefureac & Kovács 1981:117); Zombor Brook Valley – Cereș Spa and Puciosu-Bufogo (Ștefureac & Kovács 1981:116,117).

Covasna County, Mohoșul de la Comandău, peatbog, 1050 m *alt.*, 16.06.1975, *det.* Plămadă E., ass. *Eriophoro vaginato-Sphagnetum (recurvi-magellanici)* (Weber 1902) Soó 1954 (Danciu & Kovács 1979:179,181, Tab.1; Sanda & Popescu A. 1992:170, Tab.1).

Ciucaș Mountains, Tigăile Mari Culm, Șuvițelor Culm, Berii Valley (Mohan 1990b:40).

Bucegi Massif, Mălăiești Valley (Matouschek 1905:81); Lăptici Peatbog, 1500 m *alt.*, 1946, sub *C. compacta* Warnst. (Ștefureac 1949c:691; Pop E. 1960:349; Godeanu S. 1970:45); ♀♂ - Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3227], s - [BUCA B3228].

Leaota Mountain, Mitarca Valley, on crystalline schists, 1300-1500 m *alt.* (Papp & Diaconescu 1968:386,387).

Făgăraș Depression, ♀♂ - Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 10.2001, *leg. & det.* Ștefănuț S. [BUCA B3082] (Ștefănuț 2004f:74); Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 8.10.2003, *leg. & det.* Ștefănuț S. [BUCA B3084]; ♀♂ - Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 8.10.2003, *leg. & det.* Ștefănuț S. [BUCA B3086]; Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 20.11.2006, *leg. & det.* Ștefănuț S. [BUCA B3590, B3595].

Făgăraș Mountains, Arpașului Valley, in beech forest, sub *J. connivens* Dicks. (Heufler 1853:50-51; Fuss 1854:20; Schur 1866:871; Fuss 1878:655; Hazslinszky 1885:55; Drăgulescu 2003:17).

Cindrel Mountains, Jujbea, 1800 m *alt.* (Gündisch 1977:51; Drăgulescu 2003:17).

Cephalozia lacinulata J.B. Jack ex Spruce

Syn.:

– *Jungermannia lacinulata* J.B. Jack

First citation for Romania: Ștefureac 1941.

Romania, chorology (Ștefănuț 2003b:231,237, Fig.4).

Moldova (Papp 1943:661; Ștefureac & al. 1973:148).

Muntenia (Mohan 1988b:101).

Ecology: humicolous, acidophytic, mesophytic, sciophytic; mountain; Europe-North-America; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Se, Fi, De, Po, At, Cz, Hu, Si, Sb, Ro, Bg, Rw, Ca.

Distribution in Romania:

Maramureş County, The peatbog from Văratec Mountain, 1340 m *alt.*, The peatbog from Pleşca Peak, 1150 m *alt.*, 21-23.08.1998, *leg.* Jakab G., *det.* Orbán S. (Jakab 1999:55).

Giupalău Mountain, Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3654].

Rarău Mountain, Codrul Secular Slătioara, 800-1000 m *alt.* (Ştefureac 1941:1153,1284, Tab.9; Ştefureac 1965c:63; Ştefureac 1965f; Papp 1969b:188; Ştefureac & Pascal 1981:485; Ştefănuţ 2003b:233, Fig.4).

Bârgău Mountains, Cârţibavu Mare Valley, 1983-1984 (Mohan & Hodoroga 1986:213).

Harghita Mountains, Minei Valley, 1100-1200 m *alt.*, on soil, 11.07.2000, Cifrabuc, 1200 m *alt.*, on soil, 16.08.2001, Rotund Mountain, 1100 m *alt.*, on rotten wood, 28.08.2001, Luci, 1050 m *alt.*, on rotten wood, 13.08.2001, Ulieşul Mic, 1150 m *alt.*, on rocks, 17.04.2001, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Bacău County, Slănic Moldova, on rotten wood, 07.1910, *leg.* Brândză M., *det.* Ştefureac T. (Ştefureac 1942a:5; Ştefănuţ 2003b:233, Fig.4); Slănic Brook Valley (Papp 1957:285; Ştefureac & al. 1973:148; Ştefănuţ 2003b:233, Fig.4).

Bucegi Massif, above Mălăieşti Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:224; Ştefănuţ 2003b:233, Fig.4); ♀ - Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg. & det.* Ştefănuţ S. [BUCA B3314], ♂ - [BUCA B3315].

Retezat Mountains, Bucura Lake, 45°21'44"N / 22°52'34"E, 18.08.2004, *leg.* Onete Marilena, *det.* Ştefănuţ S. [BUCA B3064].

Cephalozia leucantha Spruce

Syn.:

– *Cephalozia leucantha* (Spruce) Schiffn.

First citation for Romania: Loitlesberger 1898.

Moldova (Papp 1943:661; Ştefureac & al. 1973:148).

Muntenia (Mohan 1988b:101).

Transylvania (Pax 1908:129).

Ecology: humicolous, saprolognicolous, acidophytic, mesophytic, sciophytic; boreal-mountain; Europe-North-America; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, It, Si, Hr, Ba, Ro, Lt, Ua, Rn, Rw, Re.

Distribution in Romania:

Giupalău Mountain, Poiana Iţcani Reserve, 900-920 m *alt.*, 1946-1957 (Ştefureac 1969a: Tab.16); ♀ - Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.10.2006, *leg. & det.* Ştefănuţ S. [BUCA B3636]; ♂ - Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ştefănuţ S. [BUCA B3980].

Rarău Mountain, Codrul Secular Slătioara, 850-1300 m *alt.* (Ştefureac 1941:1153,1284, Tabs.3,7,9; Ştefureac 1969a: Tab.16; Papp 1969b:188; Ştefureac 1986f:193); Rarău, 1350 m *alt.* (Ştefureac 1969a: Tab.16); Plaiul Todirescu-Slătioara Reserve (Ştefureac & Raclaru 1978:193,197); Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ştefănuţ S. [BUCA B3762].

Bârgău Mountains, Cucureasa Reserve, Coşna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphideturum pellucidum* (Barkman 1958) Maurer 1961 (Ştefureac, Mihai & Pascal 1976:36,38, Tab.1).

Neamţ County, Neamţ Monastery, on rotten wood, 07-08.1921, *leg.* Brândză M., *det.* Ştefureac T. (Ştefureac 1942a:5); Magherniţa Brook Valley, on trunk trees (Papp 1959a:112).

Hăşmaş Mountains, Hăşmaş, on rotten trunk trees (Schiffner 1914:307); Hăşmaşul Mare (Degen 1930:976; Bálint & Orbán 2006:472); near Bălan Spa (Bálint & Orbán 2006:472).

Ciucaş Mountains, Piscul Caprei, Zăgan Mountain, Chiruşca Mountain (Mohan 1990b:40).

Braşov County, Predeal, 1200 m *alt.* (Loitlesberger 1898:195).

Bucegi Massif, above Mălăieşti Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:224).

Piatra Craiului Mountains, Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ştefănuţ S. [BUCA B2694, B2698, B2700, B2703, B2742, B2755, B2775] (Ştefănuţ & Pop O.G. 2006:75).

Iezer-Păpuşa Mountains, Bratia Valley, 1400 m *alt.* (Loitlesberger 1898:195).

Cindrel Mountains, Găușoara, *leg. & det.* Vajda L. (Boros & Vajda 1967:224; Gündisch 1977:51; Drăgulescu 2003:17).

Alba County, Izbucul Ponorului (Boros & Vajda 1974:6); Vârciorog Valley, 1340 m and 1385 m *alt.*, 3.06.1995, 13.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Cobleș Valley, 1280 m *alt.*, 09.08.1996, Iarba Rea Valley, 790 m *alt.*, 25.08.1996, ass. *Leucobryo-Tetraphydetum pellucidiae* Barkman 1958, Lupșa, 1160 m *alt.*, 15.05.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ștefur. 1941 (Goia 2000:112,115, Tabs.2,5); Arieșul Mic Basin (Goia & Schumacker 2000:92); Cepelor Valley, Vârciorog Valley, Iarba Rea Valley, Gârda Seacă – upstream to Casa de Piatră, Scărișoara Cave – aven, Arieșul Mic – downstream to mine, on rotten wood (Goia 2001:75); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89); ♀ - Cetățile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg.* Ștefănuț S. & Goia Irina, *det.* Văna J. [BUCA B3818]; ♀ - Cetățile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3819, B3823, B3861], s - [BUCA B3826].

Bihor County, Someșul Cald Gorges (Goia & Mătase 2001:17).

Cephalozia loitlesbergeri Schiffn.

Syn.:

– *Cephalozia loitlesbergeri* Schiffn. var. *gracilis*

First citation for Romania: Lungu 1973b.

Ecology: truficolous, acidophytic, rarely calcicolous, hygrophytic, photophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, Es, It, Ro, Bg, Ee, Lt, By, Ua, Rn, Rw, Rc, Ka.

Distribution in Romania:

Rodna Mountains, Iezerul Pietrosului, MM, 47°35'53"N / 24°38'53"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2122]; ♀♂ - Ineu Glacial Ring, BN, 47°31'35"N / 24°53'35"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2225], s - [BUCA B2226].

Suceava County, Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, on peat (Lungu 1973b:72; Lungu 1981c:91); Neagra Broștenilor Meadow at Cristișor, in peatbogs, ass. *Eriophoro-Sphagnetum recurvi* Hueck 1925, *Sphagnetum medii* Kästn., Flossn. & Uhl. 1933 (Lungu 1977: Tab.1).

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ștefureac, Mihai & Pascal 1976:35-37).

Covasna County, Mohoșul de la Comandău, peatbog, 1050 m *alt.*, 16.06.1975, *det.* Plămadă E., sub var. *gracilis*, ass. *Eriophoro vaginato-Sphagnetum (recurvi-magellanic)* (Weber 1902) Soó 1954 (Danciu & Kovács 1979:179,181, Tab.1; Sanda & Popescu A. 1992:170, Tab.1).

Făgăraș Mountains, ♀ - Pojorta Valley, BV, 45°38'14"N / 24°53'48"E, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2658, B2661].

Cephalozia lunulifolia (Dumort.) Dumort.

Syn.:

– *Cephalozia affinis* Lindb. ex Steph.

– *Cephalozia catenulata* var. *pallida* Spruce

– *Cephalozia media* Lindb.

– *Cephalozia media* var. *laxa* Schiffn.

– *Cephalozia media* var. *pallida* (Spruce) C. Massal.

– *Cephalozia multiflora* Spruce

– *Cephalozia pallida* (Spruce) Pearson

– *Cephalozia symbolica* (Gottsche) Breidl.

– *Jungermannia lunulifolia* Dumort.

First citation for Romania: Breidler 1890a.

Moldova, sub *C. media* (Papp 1943:662; Ștefureac & al. 1973:148).

Muntenia (Mohan 1988b:101).

Transylvania, sub *C. media* (Pax 1908:129).

Ecology: humicolous, acidophytic, mesophytic, sciophytic; boreal-mountain; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, It, Si, Hr, Ba, Sb, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Rc, Re, Ca, Az, Ma.

Distribution in Romania:

Maramureș County, Cioatele lui Stern – common spruce forest near Poiana Colibii, Săpâncioara, 15-21.06.1997, The peatbog from Văratec Mountain, 1340 m *alt.*, 21-23.08.1998, *leg.* Jakab G., *det.* Orbán S. (Jakab 1999:55).

Rodna Mountains, Pietrosul Borșei, north-west slope, 2260 m *alt.*, 8-9.08.1948, sub *C. media* (Ștefureac 1952a:390-391, Tab.1).

Țibleș Mountains, Arsuri Peak, Țibleș Valley, Mesteacănul Valley, Dealul Bumbului, 1984-1985, sub *C. media* (Mohan 1988a:22).

Suceava County, Coșna, on Panasuri Mountain, 1330 m *alt.*, sub *C. multiflora* (Breidler 1890a:149); the marsh from Drăgoiasa, on left edge of Neagra-Broștenilor river, 1020-1030 m *alt.*, sub *C. media* (Ștefureac, Cristurean & Gruia 1963:914); Valea Stâniei Peatbog, between Fundul-Moldovei and Cârlibaba, peatbog, 1100 m *alt.*, sub *C. media* (Diaconeasa & Ștefureac 1971a:381); Tinovu Mare de la Poiana Stampei, sub *C. media*, ass. *Sphagneto (wulfiani)-Piceetum turfosum* Ștefur. 1977 (Ștefureac 1977a:49,52, Tab.1); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest and peatbog, sub *C. media*, ass. *Campylopo-Dicranilietum cerviculatae* Herzog 1943 (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1976:235, Tab.1; Lungu 1981c:92); Neagra Broștenilor Meadow at Cristișor, in peatbogs, sub *C. media*, ass. *Eriophoro-Sphagnetum recurvi* Hueck 1925, *Sphagnetum medii* Kästn., Flossn. & Uhl. 1933 (Lungu 1977: Tab.1).

Rarău Mountain, Codrul Secular Slătioara, sub *C. media* (Tarnavski 1936:284,285,289; Ștefureac & Pascal 1981:485); Codrul Secular Slătioara, 800-1470 m *alt.*, sub *C. media* (Ștefureac 1941:1153,1263,1278, 1284, Tabs.5,7,9; Ștefureac 1969a: Tab.16; Papp 1969b:188; Ștefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve, sub *C. media* (Ștefureac & Raclaru 1978:197).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, sub *C. media* (Ștefureac, Mihai & Pascal 1976:36); Heniu Mare Peak, Muncel Peak, Iliuța Bozghi Brook, 1983-1984, sub *C. media* (Mohan & Hodoroga 1986:214).

Căliman Mountains, Piciorul Iancului, in common spruce forests, on rotten woods and leafage, on soil and rocks or peatlands, 1750 m *alt.*, 1981-1984 (Mihai 1984b:255; Mihai 1985:96).

Bistrița-Năsăud County, Râpa Mare, Piatra Corbului, Monari, Simionești, 1980-1981, sub *C. media* (Mohan & Hodoroga 1983:53).

Neamț County, Neamț Monastery, on rotten fir, 07-08.1919,1923, *leg.* Brândză M., *det.* Ștefureac T., sub *C. media* (Ștefureac 1942a:4).

Hămaș Mountains, Hășmaș, on rotten trunk trees, sub *C. media* (Schiffner 1914:307).

Harghita Mountains, Luci Peatbog, 1080 m *alt.*, sub *C. media* (Pócs 1958:109; Bálint & Orbán 2006:467); Rotund Mountain, 1100 m *alt.*, 28.08.2001, Luci, 1050 m *alt.*, 13.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:467).

Bodoc Mountains, Puciosu at Turia-Bufogo, sub *C. media*, *Vaccinio-Piceetalia* (Ștefureac & Kovács 1981:117).

Bacău County, Tălâmba Brook, on rotten fir, sub *C. media* (Eftimie 1972:151).

Ciucaș Mountains, Ciucaș Mountain, 1400 m *alt.*, sub *C. media* (Boros & Vajda 1967:224).

Piatra Mare Mountain, Piatra Mare, *leg.* & *det.* Vajda L., sub *C. media* (Boros & Vajda 1967:224).

Bucegi Massif, Piatra Arsă, 2000 m *alt.*, sub *C. media* (Loitlesberger 1898:195); above Mălăiești Valley, *leg.* & *det.* Vajda L., sub *C. media* (Boros & Vajda 1967:224); Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3253].

Leaota Mountain, Vaca Valley, 900 m *alt.*, sub *C. media* (Papp & Diaconescu 1968:387).

? - **Giurgiu County**, s - Comana, on rotten wood, 1968-1969, sub *C. media* (Ștefureac & Mohan 1970a:353,361).

Făgăraș Mountains, Negoiu Mountain at "Izvorul", 1500 m *alt.*, sub *C. media* (Loitlesberger 1898:195; Drăgulescu 2003:17); Bâlea Glacial Ring, alpine bogs, 2040 m *alt.*, *det.* Ștefureac, sub *C. media* (Diaconeasa 1968:393; Drăgulescu 2003:17).

Cozia Mountain, Păușa Valley, on rotten trunk trees, sub *C. lunilifolia*, 1975-1976 (Dihoru G. 1990:52).

Cindrel Mountains, Găușoara, sub *C. media* (Boros & Vajda 1967:224; Gündisch 1977:51; Drăgulescu 2003:17); Păltiniș, 1400 m *alt.*, Jujbea, 1900 m *alt.*, sub *C. media* (Gündisch 1977:51; Drăgulescu 2003:17).

Parâng Mountains, the edge of Câlcescu Lake, in peatbog, sub *C. media* (Ștefureac 1969a:90, Tab.14).

Alba County, Scărișoara, Piatra Runcului, sub *C. media* (Schiffner 1914:307); Scărișoara Cave, 1340 m alt., 11.08.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Vârciorog Valley, 1270 m alt., 3.06.1995, ass. *Lophocolo-Dolichothecetum seligeri* Philippi 1965, Cepelor Valley, 1380 m alt., 16.05.1996, Scărișoara Cave, 1200 m alt., 12.08.1996, ass. *Cephalozia bicuspidatae-Nowellietum curvifoliae* Philippi 1965, Ursoaia Saddle, 1270 m alt., 24.08, 11.08.1996, Pântești-Gârda Valley, 980 m alt., 11.08.1996, Cepelor Valley, 1370 m alt., 16.05.1996, ass. *Leucobryo-Tetraphydetum pellucidiae* Barkman 1958 (Goia 2000:112,113,115,116, Tabs.2-5); Arieșul Mare upstream to Arieșeni, Cepelor Valley, Galbena Valley, Iarba Rea Valley, Cobleș Valley - downstream, Mățișești, Horea, Ursoaia Saddle, on rotten wood (Goia 2001:75,76); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

Cluj County, Dobrin Mountain, sub *C. media* (Péterfi M. 1918:61); the peatbogs from spring and upper course of Someșul Rece, incl. Muntele Mare and Dobrin, sub *C. media* (Pop E. 1960:397); Somesul Rece Valley and Drăgan Valley, leg. & det. Vajda L., sub *C. media* (Boros & Vajda 1967:224);

Bihor Mountains, Cetatea Rădesei Cave, 1971, ass. *Mnio (thomsonii)-Orthothecietum intricati* Ștefur. 1985 (Ștefureac 1985e:111,115, Tab.1).

Cephalozia pleniceps (Austin) Lindb.

Syn.:

- *Cephalozia bicuspidata* var. *capitata* Ekstr.
- *Cephalozia crassiflora* Spruce
- *Cephalozia ekstrandii* Limpr.
- *Cephalozia macrantha* Kaal. & W.E. Nicholson
- *Cephalozia pleniceps* var. *capitata* (Ekstr.) Müll. Frib.
- *Cephalozia pleniceps* var. *concinata* Müll. Frib.
- *Cephalozia pleniceps* var. *macrantha* (Kaal. & W.E. Nicholson) Müll. Frib.
- *Cephalozia pleniceps* var. *sphagnorum* (C. Massal.) Jørg.
- *Cephalozia symbolica* var. *sphagnorum* C. Massal.
- *Jungermannia pleniceps* Aust.

First citation for Romania: Loitlesberger 1898.

Maramureș (Ștefureac 1979c:59).

Moldova (Papp 1943:662; Ștefureac & al. 1973:148);

Muntenia (Mohan 1988b:101).

Transylvania (Pax 1908:129).

Ecology: humicolous, acidophytic, mesophytic, sciophytic; mountain; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Me, Ro, Bg, Ee, Lv, Lt, By, Ua, Fl, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

The Mountains of Maramureș and Rodnei (Ștefureac 1986f:192).

Țibleș Mountains, Izvorul Țibleșului, Arcer Peak, Arsuri Peak, Mesteacănul Valley, 1984-1985 (Mohan 1988a:22).

Suceava County, Cristișor-Neagra Broștenilor, Borcut Meadow, ass. *Campylopo-Dicranielletum cerviculatae* Herzog 1943 (Lungu 1973b:72; Lungu 1976:235, Tab.1); Neagra Broștenilor Meadow at Cristișor, in peatbogs, ass. *Sphagnetum medii* Kästn., Flossn. & Uhl. 1933, *Sphagnetum acutifolii* Pușcariu & al. 1956 (Lungu 1974:74, Tabs.1,2; Lungu 1977: Tab.1).

Rarău Mountain, Codrul Secular Slătioara, 830-1400 m alt. (Ștefureac 1941:1153,1278, Tab.7; Papp 1969b:188; Ștefureac 1986f:193); Codrul Secular Slătioara, sub var. *macrantha* Koch (Ștefureac 1941:1153; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:197).

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m alt., 1967, 1969 (Ștefureac, Mihai & Pascal 1976:36).

Ceahlău Mountain, Durău Valley and in common spruce forest near Piatra Ciobanului, on soil (Mihai 1984a:89); Izvorul Muntelui Brook, in common spruce forest, ass. *Pogonatetum urnigeri* Krusenstjerna 1945 (Mihai 1987a:21, Tab.1); Ceahlău, in upper zone of the common spruce forests and in glades, ass. *Vaccinio-Polytrichetum alpini* Mihai 1987 (Mihai 1987a:23, Tab.3).

Neamț County, Pângărăcioc Brook Valley, on wet soil (Mihai 1973d:28,29,33; Mihai 1984a:89).

Harghita County, Harghita Spa, 1300 m alt., leg. & det. Boros Á. (Boros 1951:374; Boros & Vajda 1967:224; Bálint & Orbán 2006:467).

Harghita Mountains, Luci, 1050 m *alt.*, 13.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14).

Bacău County, Tălâmba Brook, on rotten fir (Eftimie 1972:151,158; Mihai 1984a:89).

Penteleu Massif, ? - Bâsca Roziliei at Nemertea, on bank, on sand and silt, 1.09.1985 (Dihoru G. 1987b:94).

Ciucaș Mountains, Caprei Valley, Berii Valley, Ciucaș Peak (Mohan 1990b:40).

Cristianul Mare Mountain, Cristianul Mare, *leg.* & *det.* Vajda L., sub var. *conncinata* (Boros & Vajda 1967:224).

Bucegi Massif, Piatra Arsă (Loitlesberger 1898:195; Schiffner 1911:287; Radian 1920:77); above Mălăiești Valley, *leg.* & *det.* Vajda L. (Boros & Vajda 1967:224); ♀♂ - Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3211, B3225], s - [BUCA B3232].

Făgăraș Mountains, Capra Lake, AG, 45°36'00"N / 24°37'45"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2161, B2185].

Parâng Mountains, the edge of Câlcescu Lake, in peatbog, sub var. *macrantha* (Ștefureac 1969a:90,112,113, Tab.14, Pl.V,1,a-d).

Bihor Mountains, Galbena Valley, 750 m *alt.*, Padiș, 1150 m *alt.*, 08.1999 (Jakab 2000b:66,70).

Cephalozia sp.

Bucegi Massif, Lăptici Peatbog, 1470 m *alt.* (Ștefureac 1972c:100).

Cephalozia baumgartneri Schiffn.

First citation for Romania: Smets 2003.

Ecology: epigaeic, calcicolous, xerophytic, photo-sciophytic; atlantic mediterranean; Hch.

Herbaria and Exsiccatae: BR, CL, Smets

Distribution in Europe: Br, Fr, NI, Be, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Me, Ba, Ro, Al, Gr, Ct, Tu, Az, Ma, Cn.

Distribution in Romania:

Hunedoara County, Podul natural from Grohot, Bulzeștii de Sus, 360 m *alt.*, 16.04.1995 [Smets 7692, BR] (Smets 2003:60; Dihoru G. 2004:168).

Alba County, Peștera lui Ionel, Gârda de Sus, 800 m *alt.*, 16.05.1999 [Smets 8616, 8672, CL] (Smets 2003:60; Dihoru G. 2004:168).

Cephalozia divaricata (Sm.) Schiffn.

Syn.:

- *Cephalozia byssacea* auct.
- *Cephalozia divaricata* (Sm.) Dumort.
- *Cephalozia divaricata* var. *rupestris* C.E.O. Jensen ex Arnell
- *Cephalozia starkei* (Funck) Dumort. ex Cogn.
- *Cephalozia byssacea* sensu R.M. Schust.
- *Cephalozia divaricata* var. *incurva* (Lindb.) C.E.O. Jensen
- *Cephalozia dusenii* Steph.
- *Cephalozia starkei* (Funck ex Nees) Schiffn.
- *Cephalozia starkei* var. *rupestris* (C.E.O. Jensen ex Arnell) Müll. Frib.
- *Jungermannia byssacea* auct.
- *Jungermannia divaricata* Sm.
- *Jungermannia starkei* Funck ex Nees
- *Trigonanthus divaricatus* (Sm.) Mitt.

First citation for Romania: Simonkai 1872.

Moldova, sub *C. starkei* (Papp 1943:662).

Muntenia (Mohan 1988b:101).

Transylvania (Pax 1908:129).

Ecology: epigaeic, acidophytic, xero-mesophytic, photo-sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, NI, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Ba, Mk, Sb, Ro, Bg, Al, Gr, Ct, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, Az, Ma, Cn.

Distribution in Romania:

Țibleș Mountains, Bran Peak, Piciorul Mesteacănului, 1984-1985, sub *C. starkei* (Mohan 1988a:21).

Giupalău Mountain, Giupalău, subalpine zone, *det.* Ștefureac T., sub *C. starkei* (Cristorean 2000:173,175); ♀ - Giupalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 11.09.2006, *leg.*

& det. Ștefănuț S. [BUCA B3684]; ♂ - Giupalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1210 m alt., 11.09.2006, leg. & det. Ștefănuț S. [BUCA B3685]; ♀ - Giupalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1200 m alt., 13.09.2006, leg. & det. Ștefănuț S. [BUCA B3648, B3709]; ♂ - Giupalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1200 m alt., 13.09.2006, leg. & det. Ștefănuț S. [BUCA B3710].

Rarău Mountain, Codrul Secular Slătioara, on fixed detritus, 830-1600 m alt., sub *C. starkei* (Ștefureac 1941:1153,1275-1277, Tabs.5-7; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve, sub *C. starkei* (Ștefureac & Raclaru 1978:193,197).

Bărgău Mountains, Leșului Valley, Cârțișavu Mare Valley, 1983-1984, sub *C. starkei* (Mohan & Hodoroga 1986:213).

Bistrița-Năsăud County, Jelna Forest, Râpa Mare, Piatra Corbului, Budacul de Jos, 1980-1981, sub *C. starkei* (Mohan & Hodoroga 1983:53).

Harghita Mountains, Harghita (Bálint & Orbán 2006:467).

Nemira Mountains, Farcu Mare Peak, on soil, 1970-1977 (Mihai & Barabaș V. 1978: 114,117,125).

Buzău County, s - Malul Alb, Pătărlagele Commune, on northern slope of the valley behind the steep, 360 m alt., 1980-1982 (Dihoru G. 1983:3,9).

Măcin Mountains, 1999, leg. Jalbă Adriana, det. Ștefănuț S. [BUCA B2556].

Tulcea County, Consul Hill, 12.06.2008, leg. & det. Ștefănuț S. [BUCA B3888, B3890].

Ciucaș Mountains, Tigăile Mari Culm, Piscul Caprei, Bratocea Culm, Albele Culm, Berii Brook Valley, Roșu Brook (Mohan 1990b:40);

Bucegi Massif, Mălăiești Glacial Ring, BV, 45°27'13"N / 25°26'45"E, 2010 m alt., 9.07.1999, leg. & det. Ștefănuț S. [BUCA B3308]; ♀, ♂ - Babele Valley, PH, 45°24'43"N / 25°28'44"E, 2150 m alt., 14.07.2008, leg. & det. Ștefănuț S. [BUCA B3897].

Giurgiu County, s - Comana, on wet soil, 1968-1969, sub *C. starkei* (Ștefureac & Mohan 1970a:353).

Făgăraș Depression, Gura Albota, SB, 45°42'47"N / 24°29'25"E, 555 m alt., 8.10.2003, leg. & det. Ștefănuț S. [BUCA B2929]; Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m alt., 30.10.2004, leg. & det. Ștefănuț S. [BUCA B3353]; ♀ - Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m alt., 20.11.2006, leg. & det. Ștefănuț S. [BUCA B3593]; ♂ - Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m alt., 20.11.2006, leg. & det. Ștefănuț S. [BUCA B3594].

Cindrel Mountains, Cotorești, 1600 m alt., sub *C. starkei* (Gündisch 1977:51; Drăgulescu 2003:16).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, leg. & det. Barth J., sub *Jungermannia* (Barth 1883:8); Repedea Valley, 08-09.1954, sub *C. starkei* (Ștefureac, Popescu & Lungu 1959:9,16,19,33).

Hunedoara County, Deva, leg. & det. Péterfi M., sub *C. byssacea* (Péterfi M. 1906b:313); Bulzești, alt. 700 (Péterfi M. 1908:275).

Retezat Mountains, Retezat, sub *Jungermannia divaricata* fo. *filiformis* (Simonkai 1872:67; Fuss 1878:655; Hazslinszky 1885:56).

Caraș-Severin County, on left bank of Cociului Brook, near Herculane Spa, 2.06.1945, sub *C. starkei* (Ștefureac 1947a:138,148,149,151; Ștefureac, Popescu & Lungu 1957a:70; Bujorean & Popescu P.C. 1966:21).

Alba County, Goieștilor Valley, on rotten wood, 700 m alt., 15.08.1994, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965 (Goia 1998:261, Tab.10); Goieștilor Valley, 1340 m alt., 15.04.1994, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965 (Goia 2000:114, Tab.3).

Cluj County, Someșul Rece Valley, leg. & det. Vajda L., sub *C. starkei* (Boros & Vajda 1967:224).

Bihar County, Băița, leg. & det. Péterfi M., sub *C. byssacea* (Péterfi M. 1906b:313); on edge of Rădvani Forest, det. Ștefureac T., sub *C. starkei* (Pop I. 1968:69).

Cephaloziella elachista (J.B. Jack ex Gottsche et Rabenh.) Schiffn.

Syn.:

– *Jungermannia elachista* J.B. Jack

– *Cephalozia elachista* (J.B. Jack) Lindb.

First citation for Romania: Ștefureac 1962a.

Romania, chorology (Ștefănuț 2003b:236, Fig.2).

Ecology: turficolous, hygrophytic, sciophytic; circumpolar; only in *Sphagnum* bogs; Hch.

Distribution in Europe: Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Pt, Si, Ro, Lv, Lt, By, Ua, Rn, Rw, Re, Ka.

Distribution in Romania:

Căliman Mountains, Pietrosul Peak, on soil (Mihai 1968a:205; Ștefănuț 2003b:233, Fig.2).

Harghita Mountains, Cifrabuc, 1200 m *alt.*, on soil, 16.08.2001, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Parâng Mountains, the south-eastern edge of Călcescu Lake, in peatbog, 08.1955, 06.1958, incl. sub *Cephalozia* (Ștefureac 1962a:317; Ștefureac 1969a:89,93,113, Tab.14, Pl.V,3,a-d; Ștefănuț 2003b:233, Fig.2).

Cephaloziella elegans (Heeg) Schiffn.

Syn.:

- *Cephalozia elegans* Heeg
- *Cephalozia myriantha* Lindb.
- *Cephaloziella myriantha* (Lindb.) Schiffn.
- *Cephaloziella rubella* J. Perss.
- *Cephaloziella rubella* (Nees) Warnst. var. *elegans* (Heeg) R.M. Schust.

First citation for Romania: Plămadă 1973a.

Romania, chorology (Ștefănuț 2003b:236, Fig.2); Frey & al. 2006:66.

Endangered species (Plămadă 1977b:113).

Ecology: epilithic, arenicolous, mesophytic, acidophytic, sciophytic; arctic-alpine; Hch.

Distribution in Europe: No, Se, Fi, Fr, De, Po, Ch, At, Cz, Sk, Es, It, Si, Ro.

Distribution in Romania:

Retezat Mountains, Gemenea Valley, in forest, on rocks, 1964-1971 (Plămadă 1973a:380; Plămadă 1976a; Plămadă 1976b:8; Plămadă 1977b:113; Plămadă 1993:49,56; Plămadă, Goia & Dumitru 2000:23; Ștefănuț 2003b:234, Fig.2).

Cephaloziella hampeana (Nees) Schiffn.

Syn.:

- *Cephalozia byssacea* (Roth) Dumort.
- *Cephalozia erosa* (Limpr. ex Warnst.) C. Massal.
- *Cephalozia hagenii* Bryhn
- *Cephalozia hampeana* (Nees) Douin & Schiffn. ex Arnell
- *Cephalozia hampeana* var. *camusii* Douin
- *Cephaloziella bryhnii* var. *elongata* Bryhn
- *Cephaloziella byssacea* (Roth) Warnst.
- *Cephaloziella curnowii* auct.
- *Cephaloziella erosa* Limpr. ex Warnst.
- *Cephaloziella gallica* Douin
- *Cephaloziella hampeana* var. *curnowii* auct.
- *Cephaloziella hampeana* var. *erosa* (Limpr. ex Warnst.) Müll. Frib.
- *Cephaloziella trivialis* Schiffn.
- *Jungermannia byssacea* Roth
- *Jungermannia dentata* Raddi
- *Jungermannia hampeana* Nees

First citation for Romania: Simonkai 1893.

Ecology: epigeic, acidophytic, meso-hygrophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Bl, It, Hr, Mk, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Az, Ma, Cn.

Distribution in Romania:

Baiului Mountains, Piscul Căinelui, sub *Cephalozia byssacea* (Loitlesberger 1898:195).

Bucegi Massif, Cota 1400, PH, 45°22'35"N / 25°28'51"E, 8.05.2004, *leg.* Ciolac C., *det.* Ștefănuț S. [BUCA B2945].

Piatra Craiului Mountains, Vlădușca Forest, 30.10.2001, *leg.* Pop O., *det.* Dihoru G. & Ștefănuț S. (Dihoru G. & al. 2003:69; Ștefănuț & Pop O.G. 2006:75).

Cindrel Mountains, Crinț, 900 m *alt.*, Cristești, 2200 m *alt.* (Gündisch 1977:51; Drăgulescu 2003:16).

Retezat Mountains, towards Custura Peak (Páll 1964a:108).

Arad County, Ghioroc, sub *Cephalozia byssacea* Roth (Simonkai 1893:362).

Parâng Mountains, the edge of Călcescu Lake, in peatbog, sub var. *erosa* (Ștefureac 1969a:113).

Hunedoara County, Deva, *leg.* & *det.* Péterfi M., sub *Cephalozia jackii* (Péterfi M. 1906b:313).

Alba County, at 20,5 km to Zlatna, in oak forest, sub *C. cf. hampeana* (Plămadă 1986a:59, Tab.1).

Cluj County, Pietros, 600 m *alt.* (Péterfi M. 1908:275); Craiului Hill, Mănăştur, *leg.* Péterfi M., sub *Cephalozia* sp., *det.* Boros Á. (Györfy 1924b:37; Boros 1958:4,8; Plămadă 1969:170).

Bihar County, Băiţa, 600 m *alt.*, *leg. & det.* Péterfi M., sub *Cephalozia jackii* (Péterfi M. 1906b:313; Péterfi M. 1908:275).

Cephaloziella integerrima (Lindb.) Warnst.

Syn.:

- *Cephaloziella obtusa* Culm.
- *Cephaloziella piriflora* Douin
- *Dichiton integerrimum* (Lindb.) H. Buch
- *Cephalozia integerrima* Lindb.
- *Lophoziella integerrima* (Lindb.) Douin
- *Lophoziella piriflora* (Douin) Douin

First citation for Romania: Bálint & Orbán 2002.

Ecology: on clay or humicolous sand, acidophytic, hygro-mesophytic, photophytic; subatlantic to boreomontane; Europe-North America; Hch.

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Hu, Es, Ro, Ee, Rn, Rw, Re.

Distribution in Romania:

Harghita Mountains, Groapa Mare, 1300 m *alt.*, 16.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2002:37,38; Orbán & Bálint 2002:61; Bálint & Orbán 2003:13,15).

Cephaloziella massalongi (Spruce) Müll. Frib.

Syn.:

- *Cephalozia aeraria* Pearson ex Spruce
- *Cephalozia colombae* F.A. Camus
- *Cephalozia massalongi* Spruce
- *Cephalozia perssonii* C.E.O. Jensen
- *Cephaloziella aeraria* (Pearson ex Spruce) Macvicar
- *Cephaloziella colombae* (F.A. Camus) Müll. Frib.
- *Cephaloziella nicholsoni* Douin
- *Cephaloziella perssonii* (C.E.O. Jensen) Müll. Frib.
- *Cephaloziella phyllacantha* var. *intermedia* Schade
- *Prionolobus compactus* Jørg.
- *Prionolobus massalongi* (Spruce) Bryhn

First citation for Romania: Jakab 2000a.

Ecology: epilithic, on the detritus of copper and mercury mines, calcophytic, hygro-mesophytic, sciophytic; circumpolar; Hch.

Distribution in Europe: Is, No, Se, Fi, Ie, Br, Fr, De, Ch, At, Sk, Pt, Es, Co, It, Ro, Bg.

Distribution in Romania:

Harghita Mountains, Piatra Colibei, 19.06.1999 (Jakab 2000a:87-89, Fig.1).

Cephaloziella rubella (Nees) Warnst.

Syn.:

- *Cephalozia biloba* Lindb.
- *Cephalozia bryhnii* Kaal.
- *Cephalozia jackii* Limpr. ex Spruce
- *Cephalozia pulchella* C.E.O. Jensen
- *Cephalozia rubriflora* (Nees) C.E.O. Jensen
- *Cephalozia subsimplex* Lindb. ex Kaal.
- *Cephalozia subtilis* Velen.
- *Cephaloziella bifida* (Schreb.) Schiffn.
- *Cephaloziella bifidoides* Douin
- *Cephaloziella bifidoides* var. *dentata* Douin
- *Cephaloziella bryhnii* (Kaal.) Schiffn.
- *Cephaloziella curnowii* Macvicar ex Douin
- *Cephaloziella jackii* Schiffn.
- *Cephaloziella hampeana* var. *curnowii* (Macvicar ex Douin) Jørg.
- *Cephaloziella minima* Douin
- *Cephaloziella pulchella* (C.E.O. Jensen) Douin
- *Cephaloziella raddiana* (C. Massal.) Schiffn.
- *Cephaloziella rubella* var. *bryhnii* (Kaal.) Douin
- *Cephaloziella rubella* var. *luxurians* Douin
- *Cephaloziella rubella* var. *subtilis* (Velen.) Müll. Frib.
- *Cephaloziella rubella* var. *sulivantii* (Austin) Müll. Frib.
- *Jungermannia bifida* Schreb., nom. nud.

- *Jungermannia divaricata* Nees
- *Jungermannia divaricata* var. *rubriflora* Nees
- *Jungermannia raddiana* C. Massal.
- *Jungermannia rubella* Nees
- *Jungermannia sullivantii* Austin

First citation for Romania: sub *Jungermannia divaricata* Nees (Barth 1880:121).

Moldova (Papp 1943:662); incl. sub var. *sullivantii* (Ștefureac & al. 1973:148).

Muntenia (Mohan 1988b:101).

Ecology: epigeaic, saprolignicolous, acidophytic, mesophytic, sciophytic; mountain; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Ro, Bg, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Rc, Re, Az, Ma, Cn.

Distribution in Romania:

Rodna Mountains, 20.08.1937 (Ștefureac 1958b:80,85,87, Fig.1); ♀♂ - Pietrosu Peak, north-western slope, MM, 47°35'46"N / 24°38'33"E, *alt.* 2000 m, 8.08.1948, *leg.* Ștefureac T., *det.* Ștefănuț S. [BUCA B3365].

Țibleș Mountains, Piciorul Țiblei, Suplai Commune, 1984-1985 (Mohan 1988a:21).

Suceava County, Adam and Eva Mountains, Pojorâta Commune, on humus (Mihai & Pascal 1973b:156).

Rarău Mountain, Codrul Secular Slătioara (Ștefureac 1941:1153; Papp 1969b:188).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, sub var. *sullivantii* (Ștefureac, Mihai & Pascal 1976:35-37); Secu Brook, Măgura Calului, Muncel Peak, 1983-1984 (Mohan & Hodoroga 1986:213).

Iași County, Breazu Forest, on clayey soil, 180 m *alt.*, 20.10.1956 (Papp 1958a:123; Mihai & Pascal 1973a:267,272,273, Tab.1).

Harghita Mountains, Minei Valley, 1100-1200 m *alt.*, 11.07.2000, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:467).

Nemira Mountains, Nemira, on wet soil and rotten wood, 1970-1977, incl. sub var. *sullivantii* (Mihai & Barabaș V. 1978:116,117).

Bacău County, Picioru Dobru, on rotten wood, 2.05-8.11.1971, sub var. *sullivantii* (Ștefureac & Barabaș V. 1972:76,77,84).

Bodoc Mountains, Puturosu at Turia-Bufago, rare, Al. *Fagion* (Ștefureac & Kovács 1981:115-117).

Ciucaș Mountains, Căzăturii Culm, Albele Culm, Piscul Caprei, Roșu Brook Valley, Ursului Brook Valley, Chirușca Mountain, Roșu Mountain (Mohan 1990b:40).

Brașov County, Prejmer (Ștefureac 1979d:118).

? - **Prahova County**, Doftana Valley between Trăistieni and Tesila, 850 m *alt.* (Mohan 1981:99).

Bucegi Massif, *without locality* (Ștefureac 1955:594); Caraiman Mountain, PH, 45°24'56"N / 25°29'02"E, 2330 m *alt.*, 20.07.2007, *leg.* & *det.* Ștefănuț S. (Ștefănuț 2008a:234).

Făgăraș Mountains, Urlea Lake, BV, 2200 m *alt.*, 17.09.2001, *leg.* & *det.* Ștefănuț S. (Ștefănuț 2002:190, Fig.4).

Cozia Mountain, Muchia Turneanu, 1975-1976 (Dihoru G. 1990:52); Turnu Monastery, on soil, 1982, *leg.* Paucă-Comănescu M. (Dihoru G. 1990:52).

Sibiu County, Mediaș, Micăsasa, sub *Jungermannia divaricata* Nees (Barth 1880:121).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub var. *subtilis* (Ștefureac, Popescu & Lungu 1955:527).

Retezat Mountains, Câmpul lui Neag (Páll 1964a:108).

Mehedinți County, on the left bank of Borovăț Brook, Păunești Vilage, "Borștița Mică", Svinița, 250 m *alt.*, 17.06.1945, incl. sub var. *subtilis* (Ștefureac 1947a:138,148-151); Danube Defile, between Orșova and Cerna Valley, on soil, 1966-1968 (Plămadă 1970c:393).

Caraș-Severin County, „Șapte Izvoare”, Herculane Spa, 200 m *alt.*, 22.06.1945, incl. sub var. *subtilis* (Ștefureac 1947a:138,148-151).

Codru-Moma Mountains, Monesei Valley, Valea Lungă, Pleșuț, on soil (Mohan 1996:49; Ardelean 2006:103).

Alba County, Valea Lungă, sub *Jungermannia divaricata* Nees (Barth 1880:121).

Cluj County, Someșul Rece Valley, *leg.* & *det.* Vajda L. (Boros & Vajda 1967:224).

Bihar Mountains, Cetățile Ponorului, 1150 m *alt.*, 17.08.1999, sub var. *sullivantii* (Jakab 2000a:92; Jakab 2000b:67).

***Cephaloziella spinigera* (Lindb.) Warnst.**

Syn.:

- *Cephaloziella spinosa* Douin
- *Cephaloziella spinigera* Lindb.
- *Cephaloziella elachista* (J.B. Jack ex Gottsche & Rabenh.) Schiffn. var. *spinigera* (Lindb.) Müll. Frib.
- *Cephaloziella striatula* (C.E.O. Jensen) Douin
- *Cephaloziella subdentata* Warnst.

First citation for Romania: Jakab 1999.

Ecology: truficolous, acidophytic, meso-xerophytic, photophytic; mostly in oligo-mesotrophic bogs, circumpolar; Hch.

Distribution in Europe: Sj, Is, No, Dk, Se, Fi, Ie, Br, Fr, Nl, De, Po, Ch, At, Cz, Sk, Hu, Es, Ro, Lv, Ua, Rn, Rc, Re.

Distribution in Romania:

Maramureş County, Săpâncioara, common spruce forest, 15-21.06.1997 (Jakab 1999:55).

***Cephaloziella* sp.**

Rodna Mountains, Pietrosul Borşei, *alt.* 1610 m, *exp.* S, SE, *leg.* Nyárády E.I. & Ştefureac T. 28.08.1962 (Nyárády E.I. 1963:255, Tab.1). Anieşul Mare Peak, 2000 m *alt.*, 17.07.1975 (Plămadă & Coldea 1982:109).

Rarău Mountain, Codrul Secular Slătioara (Ştefureac 1941:1265).

Bucegi Massif, Obârşia Ialomitei - Mecetul Turcesc, 2000 m *alt.*, 29.06.1943 (Ştefureac 1946:338; Ştefureac 1972c:101).

Parâng Mountains, Curmătura Vidruţei, 1350 m *alt.*, 26.07.1955 (Ştefureac, Popescu & Lungu 1957a:69, Tab.1).

Chiloscyphus pallescens* (Ehrh. ex Hoffm.) Dumort. var. *pallescens

Syn.:

- *Chiloscyphus adscendens* (Hook. & Wilson) Sull.
- *Chiloscyphus lophocoleoides* Nees
- *Chiloscyphus nordstedtii* Schiffn. ex Müll. Frib.
- *Chiloscyphus pallescens* fo. *intermedia* Papp
- *Chiloscyphus polyanthos* var. *grandicalyx* Lindb. & Arnell
- *Chiloscyphus polyanthos* var. *heterophylloides* Schiffn.
- *Chiloscyphus polyanthos* var. *pallescens* (Ehrh. ex Hoffm.) C. Hartm.
- *Chiloscyphus polyanthos* var. *viticulosus* auct.
- *Chiloscyphus viticulosus* auct.
- *Chiloscyphus webberianus* Steph.
- *Jungermannia adscendens* Hook. & Wilson ex Stephani
- *Jungermannia ascendens* Hook. & Wilson.
- *Jungermannia pallescens* Ehrh. ex Hoffm.
- *Jungermannia polyanthos* var. *pallescens* (Ehrh. ex Hoffm.) Lindenb.
- *Lophocolea heterophylla* var. *paludosa* Warnst.

First citation for Romania: Baumgarten 1846.

Romania (Müller 1954:614; Schuster 1980:260).

Moldova (Ştefureac & al. 1973:144).

Muntenia, incl. sub fo. *intermedia* Papp (Mohan 1988b:108).

Ecology: epigeaic, slightly acidophytic-subneutrophytic, hygro-mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Cm, Nz, Rn, Rw, Rc, Re, Ca, Az, Ma.

Distribution in Romania:

Maramureş County, Covatar Waterfall from Săpânţa, 900 m *alt.*, 15-21.06.1997, *leg.* Jakab G., *det.* Orbán S., Jilerescu, mire, 15-21.06.1997, *leg.* & *det.* Jakab G. (Jakab 1999:55).

Țibleş Mountains, Bran Peak, Bumbului Hill, Piciorul Mesteacănului, 1984-1985 (Mohan 1988a:17).

Suceava County, Bistriţa Aurie Valley, between Iacobeni and Ciocăneşti, the edge of Suhărzulul Brook and Suhărzulul Mare Brook (Pascal 1969:107; Ştefureac & Pascal 1981:479); Cârlibaba Brook Valley, Deaca, Liţu and Țibău, Argestru - Vatra Dornei (Pascal & Mititelu 1971; Ştefureac & Pascal 1981:479); Adam and Eva Mountains, Pojorâta Commune, in hay-field, in marshy area (Mihai & Pascal 1973b:156,157); Tinovu Mare de la Poiana Stampei (Ştefureac 1977a:49).

Rarău Massif, Codrul Secular Slătioara (Papp 1969b:188; Ştefureac 1986f:193).

Căliman Mountains, below Răchitiş Peak, mire, 1680 m *alt.*, 25.07.1972, ass. *Carici (rostratae)-Sphagnetum* (Rübell 12) Zóly. 31 (Coldea 1973a:167, Tab.2).

Iași County, Bârnova Forest, *det.* Mihai G. (Constantineanu 1969:188); Humosu Natural Reserve, ass. *Mnietum cuspidati* Felföldy 1941 (Mihai 1983c:349,356, Tab.7).

Ceahlău Mountain, Ceahlău, 800 m *alt.*, on rotten wood, sub *C. polyanthos* var. *pallescens* (Papp 1934b:71,83; Zanoschi 1970:280; Manoliu & al. 1998:335).

Neamț County, *without locality*, sub *C. polyanthos* var. *pallescens* (Papp 1934a:193); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242); *s* - Botoșanu Hill, beech forest, on wet rocks (Mihai 1971e:407,409); Pângărăcior Brook Valley, on wet soil (Mihai 1973d:29,32).

Harghita Mountains, in wet *Picea abies* forest near Luci, on soil, 13.08.2001, *leg.* Bálint L. & Csizi K., sub *C. polyanthos* var. *pallescens* (Orbán & Bálint 2002:60); Groapa Mare, 1300 m *alt.*, on wet rocks, 16.08.2001, Pietros Valley, 900 m *alt.*, on wet rocks, 28.08.2001, *leg.* Bálint L. & Csizi K., sub *C. polyanthos* var. *pallescens* (Orbán & Bálint 2002:60; Bálint & Orbán 2003:14).

Bacău County, Ciungetul Brook, Feșca de Sus Brook, Oituz River (Papp 1957:285); Slănic Brook, Cheșcheș Culm, on soil, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:77).

Vrancea County, Tișiței Gorges, on wet soil (Mihai & Pascal 1986:46).

Covasna County, Pasul Oituz, sub *Jungermannia* (Baumgarten 1846:226,227; Schur 1866:870; Fuss 1878:654; Szepesfalvi 1929:45).

Ciucaș Mountains, Chirușca Mountain, Ciucaș Peak, Alb Brook Valley, Berii Brook Valley, Zăgan Mountain, Piscul Turiștilor (Mohan 1990b:43).

Brașov County, Predeal, 1897, *leg. & det.* Loitlesberger K., sub *C. polyanthus* (Loitlesberger 1898:196; Szepesfalvi 1929:45); between Strâmba Valley and Lupului Valley, 13.09.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3614].

Bucegi Massif, Jepi Valley, in forest, *leg.* Dumitrescu M., *det.* Radian S.Ș., sub *C. polyanthos* var. *pallescens* Lindb. (Radian 1901b:41); Ialomița Valley (Mohan 1990a:24); Peștera Hermitage, DB, 45°23'17"N / 25°26'26"E, 1540 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3573].

Prahova County, Teleajen Valley, (Mohan 1990a:24).

Piatra Craiului Mountains, Pârâul Rece, AG, 45°30'38"N / 25°11'34"E, 1500 m *alt.*, 8.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2626] (Ștefănuț & Pop O.G. 2006:75); Prăpăștiilor Valley, BV, 45°31'47"N / 25°17'13"E, 890 m *alt.*, 21.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3530].

Iezer-Păpușa Mountains, Iezer Valley, Bătrâna Valley, Dâmbovița Valley (Mohan 1990a:24).

Leota Mountain, Vaca Valley, 900 m *alt.*, incl. sub fo. *intermedia* Papp (Papp & Diaconescu 1968:386,387).

Cindrel Mountains, Fânețele Tilișcanilor, 1000 m *alt.*, Crinț, 1000 m *alt.*, Săroi, 1300 m *alt.* (Gündisch 1977:47; Drăgulescu 2003:10); Cindrel, 2200 m *alt.* (Gündisch 1977:47; Drăgulescu 1992:55; Drăgulescu 2003:10); Iezerul Mic-Platoul Diavolului on Frumoasa, 2200 m *alt.* (Drăgulescu 1992:55; Drăgulescu 2003:10).

Sibiu County, Sibiu (Schur 1866:870; Fuss 1878:654; Szepesfalvi 1929:45; Drăgulescu 2003:10).

Mureș County, below Răchitiș „Poiana” Peak, 25.07.1995, ass. *Caricetum rostratae* Osvald 1923 em. Dierssen 1982, *Carici echinatae-Sphagnetum* Soó (1934) 1954 (Oroian 1996:235,239, Tabs.10,14).

Parâng Mountains, Repede Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,19,34).

Mehedinți County, Eșelnița Valley, on wet sandy soil, 1966 (Ștefureac & Mihai 1970:500).

Caraș-Severin County, Voislova, *leg. & det.* Simonkai L. (Fuss 1878:654; Szepesfalvi 1929:45).

Alba County, right slope of Ampoiului Valley, downstream Găureni, at 16 km from Zlatna, in hornbeam grove (Plămadă 1986a:59, Tab.1).

Cluj County, Cluj-Napoca „Pokolköz”, 29.06.1916, *leg.* Györffy I. & Péterfi M. (Györffy 1924b:37; Boros 1958:8); Sălice (Boros 1958:4,8).

Bihar County, Vadu Crișului Cave, *leg.* Neacșu M. 1968, Ștefureac T. 1985 (Ștefureac 1985e:110,111, Tab.1).

Bihar Mountains, Cetatea Rădesei Cave, 1971, ass. *Cratoneuro (filicini)-Chiloscyphetum pallescentis* Ștefureac 1985 (Ștefureac 1985e:110,111,115, Tab.1).

var. *fragilis* (A. Roth) Müll. Frib.

Syn.:

- *Chiloscyphus fragilis* (Roth) Schiffn.
- *Chiloscyphus pallescens* var. *erectus* (Boulay) Meyl.
- *Chiloscyphus polyanthos* var. *erectus* Boulay
- *Chiloscyphus polyanthos* var. *fragilis* (Roth) Müll. Frib.
- *Jungermannia fragilis* Roth

First citation for Romania: Péterfi M. 1918.

Distribution in Europe: Is, No, Dk, Se, Fi, Fr, De, Po, Ch, At, Cz, Sk, Hu, Es, Ro, Bg, Ee, Lv, Lt, Ua, Nz, Rn, Rw, Rc, Re.

Distribution in Romania:

Suceava County, Runc Mountain near Vatra Dornei, *leg.* Dörfler I. (Szepesfalvi 1929:45); Tinovu Mare de la Poiana Stampei, ass. *Sphagneto (wulfiani)-Piceetum turfosum* Ștefur. 1977 (Ștefureac 1977a:51, Tab.1).

Rarău Mountain, Codrul Secular Slătioara, sub *C. fragilis* x *C. pallescens* (Ștefureac 1941:1153); between Dealul Colbului and Pietrele Doamnei, 1520 m *alt.*, 27-28.08.1949, 27.08.1950, sub *C. fragilis* (Ștefureac 1951a:66,67).

Căliman Mountains, Dornei Valley, peaty area, sub *C. polyanthus* var. *fragilis* (Mihai 1968a:204).

Hunedoara County, Săcărîmb Village, Certeju de Sus, below Haitău-Săcărîmb Hill, 2.6.09.1953, sub *C. fragilis* (Ștefureac 1956a:241, Tab.1).

Mehedinți County, Ogașul Pârâului Slătincul Mare, between Gura Văii and Vârciorova, 27.06.1945, Jidostiței Valley, between Gura Văii and Schela Cladovei, 28.06.1945, sub *C. fragilis* (Ștefureac 1947a:138).

Cluj County, Dobrin Mountain, sub *C. fragilis* (Péterfi M. 1918:61); Răcătău, Negruții Valley, 13.04.1916, *leg.* Györfy I. & Péterfi M., sub *C. fragilis* (Györfy 1924b:37); the peatbogs from spring and upper course of Someșul Rece, incl. Muntele Mare and Dobrin, sub *C. fragilis* (Pop E. 1960:397).

Chiloscyphus polyanthos (L.) Corda var. *polyanthos*

Syn.:

– *Jungermannia polyanthos* L.

– *Marsupella polyanthos* (L.) Dumort.

First citation for Romania: Baumgarten 1846.

Moldova (Papp 1943:660; Ștefureac & al. 1973:144).

Muntenia (Mohan 1988b:108).

Transylvania (Baumgarten 1846:222-223; Pax 1908:129).

Ecology: epilithic-epigeic, slightly acidophytic-subneutrophytic, hygrophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, CL, CSH, SIB

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Cm, Nz, Rn, Rw, Rc, Re, Rs, Ca, Az, Ma.

Distribution in Romania:

Maramureș County, Prislop (Warnstorff 1895b:142; Pax 1908:129); Prislop, *leg.* Ramann (Szepesfalvi 1929:44); Poiana Colibi, *leg. & det.* Boros Á. (Jakab 1999:50); Runc Waterfall, Șipot Waterfall, 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, Vinului Valley, *leg.* Demeter K. & *det.* Hagen [CL](Szepesfalvi 1929:44; Igmándy 1943:56).

Țibleș Mountains, Păltiniș Peak, Țibleș Valley, Mesteacănu Valley, 1984-1985 (Mohan 1988a:17).

Suceava County, Vatra Dornei, Runc Mountain, 900 m *alt.* (Breidler 1890a:149); Izvorul Alb, 14.05.1910, Poiana Stampei, 17.05.1910 (Lilienfeldówna 1911:735); the peatbogs from Criștișorul on Neagra-Broștenilor Valley, on rotten woods, 1963-1966 (Lungu 1969:14; Lungu 1967c:329; Lungu 1974:74, Tabs.1,2); Iedu, Ciocănești (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:479); Criștișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest and alder tree thicket, on soil and rocks (Lungu 1973b:72; Lungu 1981c:92); Tinovul Mare de la Poiana Stampei, ass. *Sphagneto (wulfiani)-Piceetum turfosum* Ștefur. 1977 (Ștefureac 1977a:49, Tab.1); Poiana Stampei Peatbog, 47°20'33"N / 25°11'14"E, 920 m *alt.*, 28.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3785].

Rarău Mountain, Codrul Secular Slătioara, Ursului Brook, 800-1400 m *alt.* (Ștefureac 1941:1153,1270,1273,1278,1288, Tabs.3,7,9; Papp 1969b:188; Ștefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:196).

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ștefureac, Mihai & Pascal 1976:36); Cârțibavu Mare Valley, Leșului Valley, Pietra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:212).

Iași County, Bârnova Reserve (Papp 1925c:156; Papp 1929:555,556); Repedea-Bârnova Forest Massif, wet places (Papp & Eftimie 1963:110,112); Repedea-Bârnova Forest Massif, 1975-1976, ass. *Conocephaletum conicae* Schade 1934 (Mihai 1977a:139, Tab.1).

Bistrița-Năsăud County, Măgherușului Valley, Hederiș Hill, in mire (Ștefureac & Cristurean 1973:315); Jelna Forest, Monari, Budacul de Sus, 1980-1981 (Mohan & Hodoroga 1983:51; Mohan 1990a:24).

Giurgeu Depression, (Lungu & Rațiu F. 1975:49, Tab.1), Voșlăbeni, După Luncă Peatbog, Remetea, Trestiș Peatbog, ass. *Caricetum paniculatae* Wangerin 1916 (Rațiu F. 1971: 287, Tab.9).

Giurgeu Mountains, Bicaz Gorges, 1957-1960 (Papp & al. 1962:144).

Neamț County, Neamț Monastery, on clayey sandy soil, 07-08.1920,1921, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Tarcău-Grinduș Mountains (Papp 1942b:525); Maghernița Brook Valley, sub fo. *intermedia* Papp (Papp 1959a:112,114); Cernegura Mountain, Sterghinosu Brook Valley, *alt.* 400-550 m (Lungu 1963a:242,244).

Harghita County, Odorhei, on bank Budvár Brook, on rocks, 1958-1962 (Páll 1963b:17).

Harghita Mountains, Mic Valley near Câmpul Galben, 1050-1100 m *alt.*, on rocks, 16.08.2001, in wet *Picea abies* forest near Luci, 1050 m *alt.*, on rotten wood, 13.08.2001, *leg.* Bálint L. & Csizi K. (Orbán & Bálint 2002:60); Minei Valley, 1100-1200 m *alt.*, on soil, 11.07.2000, Vermet Valley, 1050-1250 m *alt.*, 2.07.2000, Asău Valley, 1000-1100 m *alt.*, on rocks, 22.10.2000, Pietros Valley, 900 m *alt.*, on rocks, 28.08.2001, *leg.* Bálint L. & Csizi K. (Orbán & Bálint 2002:60; Bálint & Orbán 2003:14; Bálint & Orbán 2006:467).

Nemira Mountains, Nemira Mountain, on fallen leaves and boughes of common spruce tree, 1450-1500 m *alt.* (Barabaș V. 1974:29; Barabaș V. 1982b:66, Tab.16); Nemira, on wet rotten trunk trees and on wet soil, 1970-1977 (Mihai & Barabaș V. 1978:115); Fagul Rotund Peatbog, 2.08.1996, ass. *Sphagno-Caricetum rostratae* Steffen. *filipendulosum ulmariae* (Kató 2000:74, Tab.1).

Bacău County, Slănic Moldova, 07.1907, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Pufu Hill, forest, 900 m *alt.*, Feșca de Sus Brook (Papp 1957:285; Papp 1958b:396,412); Slănic Brook, on hornbeam branch fallen in water, *al. Alnion*, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:77); Clăbucu Mountain, on soil (Eftimie 1972:151).

Bodoc Mountains, Bodoc Peak, around spring, 1100 m *alt.* (Ștefureac & Kovács 1981:117).

Brașov County, Brașov, sub *Jungermannia* (Baumgarten 1846:222-223; Schur 1866:870; Fuss 1878:654; Szepesfalvi 1929:44); Strâmba Valley, 14.05.2006, *leg.* Danciu M., *det.* Ștefănuț S. [BUCA B3810] (Pop O.G. 2008:61); Șinca Nouă, 11.10.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3999].

Ciucaș Mountains, Ciucaș, *leg.* Szepesfalvi J. (Szepesfalvi 1929:44); Ciucaș Peak, Zăgan Mountain, Gropșoarele Peak (Mohan 1990b:43).

Piatra Mare Mountain, Chiva Valley, 17.05.2006, *leg.* Avramescu C., *det.* Ștefănuț S. [BUCA B3435].

Gârbova Massif, Azuga Valley, Tufa Valley, Rea Valley, 1967-1970 (Lungu & Ștefureac 1970:5); Cumpătu Mountain, Șipa Valley, on soil, 820 m *alt.*, 28.09.1985, *leg.* & *det.* Lungu L. [CSH].

Prahova County, Doftana Valley (Mohan 1971a:8; Mohan 1971b:47; Mohan 1990a:24); Teleajen Valley, Negrașului Valley, Orjogoaia Valley (Mohan 1990a:24).

Bucegi Massif, ? - Peleş Valley, 4.08.1868, *leg.* & *det.* Grecescu D., sub "*Chiloxifos polyanthus*" (Grecescu 1869; Radian 1901a:135,136); Sinaia, 1897 (Loitlesberger 1898:196; Szepesfalvi 1929:44); Peleş Valley, on rocks, soil and rotten woods, 08.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Ialomița Valley (Mohan 1990a:24); Ialomița Valley, DB, 45°22'33"N / 25°26'10"E, 1465 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3620].

Piatra Craiului Mountains, the beginning of track towards Diana, BV, 45°33'49"N / 25°13'10"E, 950 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2851], towards Crăpătura, Prăpăstiile Zărneștiului, 21.08.2001, *leg.* Pop O., *det.* Ștefănuț S. (Dihoru G. & al. 2003:69; Ștefănuț & Pop O.G. 2006:75); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg.* & *det.* Ștefănuț S. [BUCA B2565, B2609, B3459, B3477] (Ștefănuț & Pop O.G. 2006:75); Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2709] (Ștefănuț & Pop O.G. 2006:75); Poiana Lespezilor, BV, 45°30'27"N / 25°13'27"E, 1330 m *alt.*, 8.08.2003, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3334, B3349].

Făgăraș Mountains, Bâlea Lake, SB, 45°36'08"N / 24°37'00"E, 2060 m *alt.*, 18.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2052]; Pojorta Valley, BV, 45°38'14"N / 24°53'48"E, 800 m *alt.*, 21.09.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2915].

Cozia Mountain, Turnu towards Stănișoara, 08.2005, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3484].

Iezer-Păpușa Mountains, Iezer Valley, Bătrâna Valley, Dâmbovița Valley (Mohan 1990a:24); Voina Chalet, AG, 45°26'31"N / 25°02'40"E, 20.08.2006, *leg.* Banciu C., *det.* Ștefănuț S. [BUCA B3547, B3548].

Dâmbovița County, the springs from Corbii Ciungi, *det.* Ștefureac T. (Botoșăneanu & Negrea 1962:101).

Sibiu County, Mediaș, on clayey soil, 6.05.1868, *leg. & det.* Barth J., sub *Jungermannia julacea* [SIB HF 1534](Fuss 1878:654; Drăgulescu 1983:58; Drăgulescu 2003:10); Sibiu [SIB HL](Drăgulescu 2003:10).

Cindrel Mountains, Crinț, 1000 *alt.*, Orlățel Valley, 1100 m *alt.*, Bătrâna, 1800 m *alt.*, Jujbea, 1900 m *alt.* (Gündisch 1977:47; Drăgulescu 2003:10,11).

Vâlcea County, s – Băița Valley, Călimănești, Căciulata, in *Carpino-Fagetum*, on wet soil (Ștefureac & Peicea 1973:45,46,50).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Parâng Mountains, Latorița Valley, on vertical slope of calcareous rocks, 900 m *alt.*, 31.08.1954 (Ștefureac, Popescu & Lungu 1956a:514, Tab.1); the springs of Mânileasa Brook, 1200 m *alt.*, 26.07.1955 (Ștefureac, Popescu & Lungu 1956b:1314); Latorița Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8); Vidra, in willow grove, 1200 m *alt.* (Ștefureac & al. 1962:89, Fig.7).

Lotrului Mountains, the peatbog from Sărăcinul Mic, on left side of Lotru Valley, near Puru forest chalet, Voineasa Commune, 1956 (Ștefureac, Popescu & Lungu 1957b:872).

Hunedoara County, Bulzeștii de Sus, 670 m *alt.*, 9.05.1998 (Smets 2003:61).

Retezat Mountains, Dobrun Brook Valley (Páll 1964a:108).

Mehedinți County, Orșova (Simonkai 1872:66); Vârciorova, Lutița Brook Bank, 10.06.1945, Stilbița Brook, between Balotești and Topolnița Hermitage, 6.06.1945, „Cornet”, Costești Village (Ștefureac 1947a:138); Danube Defile, between Orșova and Cerna Valley, in forest, on wet hollows, 1966-1968 (Plămadă 1970c:393).

Domogled Mountain, Domogled, *leg.* Simonkai L. (Szepesfalvi 1929:44).

Carăș-Severin County, Mehădia, Voislova (Simonkai 1872:66); the left bank of Cociu Brook, near Herculane Spa, 2.06.1945 (Ștefureac 1947a:138,151; Bujorean & Popescu P.C. 1966:21).

Semenic Mountain, Semenic, 25.07.1943, *leg.* Pop E. & Ciobanu I. (Ștefureac 1948a:220-222); in peatbog (Pop E. 1960:363).

Zarand Mountains, Debela Gora, Highiș Hill, on wet soil and wet rocks (Csűrös M. 1978:76; Ardelean 2006:104, Fig.20).

Arad County, the bottom of Găina Peak (Simonkai 1893:362; Szepesfalvi 1929:44); Codru Brook above Nădălbestilor and at Ocoli Springs (Simonkai 1893:362; Szepesfalvi 1929:44).

Poiana Ruscă Mountains, Luncani (Simonkai 1872:66; Fuss 1878:654; Szepesfalvi 1929:44).

Alba County, Vidra, 700 m *alt.* (Péterfi M. 1908:274; Goia & Schumacker 2000:92; Goia 2001:68); between Cămpeni and Zlatna, *leg.* Györfly I. (Schiffner 1909a:27,31; Szepesfalvi 1929:44); Alba-Iulia, Popii Valley, on wet soil, *leg.* Borza A., *det.* Papp C. (Papp 1944a:98,99; Papp 1944b:236); Valea Lungă, on soil, 5.04.1866, *leg. & det.* Barth J., sub *Jungermannia* [SIB HF 1533, 1535](Fuss 1878:654; Borza & Lupșa 1964:151; Drăgulescu 1983:58); oak forest on right slope of Ampoi Valley, downstream Pătrângenii, at 4,7 km from Zlatna (Plămadă 1986a:61, Tab.2); Galbena Valley, Ordâncușa Valley, Gârda Seacă – Izbuclul Chiobului, Cobleș Valley, Stearpă Valley, on rotten wood (Goia 2001:68); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); Râmeț Gorges, 46°17'45"N / 23°27'11"E, 26.05.1997, *leg.* Mihăilescu Simona, *det.* Ștefănuț S. [BUCA B2568].

Cluj County, Ciucea (Péterfi M. 1908:274; Szepesfalvi 1929:44); Valea Lungă near Valea Drăganului Village, on wet soil (Papp 1942a:51); Dâmbu Negru Peatbog-La Pod, Călățele region, *det.* Ștefureac T. (Pop E. 1947:73); Râșca-Răchitiș peatbog, Călățele Region, *leg.* Pop E., 3.06.1936, *det.* Ștefureac T. (Pop E. 1947:73; Ștefureac 1958a:102); Apahida (Soó 1951:46; Boros 1958:8); Dâmbu Negru, Călățele, 3.06.1936, *leg.* Pop E. (Ștefureac 1958a:112); Făget, Greben Valley (Boros 1958:8); Cluj, Someș Valley Bank, Someș's channel (Boros 1958:8; Plămadă 1969:170); the peatbogs and mires from upper part of Someșului Cald and Bălăcești-Călățele zone (Pop E. 1960:385).

Bihor County, Remetei, 300 m *alt.*, Pietros, 500 m *alt.*, Stâna de Vale, 1100 m *alt.* (Péterfi M. 1908:274); Iadului Valley between Remetea and Bulz (Boros 1942a:33); Drăgan Valley (Boros 1942a:35); Aștileu (Boros 1942e:154).

Pădurea Craiului Mountains, Ieduțului Valley, ass. *Epilobio-Juncetum effusi* Oberd. 1957, ass. *Cariceto rostrati-Sphagnetum recurvi* Zóly. 1931 (Rațiu O. & Boșcaiu 1967:36,38).

Bihor Mountains, Padiș, around Gârjoba Brook, 2-9.07.1961 (Páll 1963a:8); Someșul Cald Gorges (Goia & Mătase 2001:17).

var. *rivularis* (Schrad.) Gottsche et al.

Syn.:

- *Chiloscyphus rivularis* (Schrad.) Haszl.
- *Chiloscyphus rivularis* var. *subteres* Schiffn.
- *Jungermannia pallescens* var. *rivularis* Schrad.
- *Jungermannia polyanthos* var. *rivularis* (Schrad.) Lindb

First citation for Romania: Hazslinszky 1885.

Muntenia (Mohan 1988b:108).

Herbaria and Exsiccatae: FRE

Distribution in Europe: Fo, No, Dk, Se, Fr, De, Po, Ch, At, Cz, Sk, Hu, Es, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Ua, Cm, Rn, Rw.

Distribution in Romania:

Suceava County, Cristișor Brook, on rocks (Lungu 1973b:72; Lungu 1981c:92).

Harghita County, Vlăhița, 26.07.1901 (Barth 1905:13; Szepesfalvi 1929:45).

Gârbova Massif, Azuga Valley, on rocks, 1967-1970 (Lungu & Ștefureac 1970:5).

Prahova County, Teleajen Valley, (Mohan 1990a:24).

Iezer-Păpușa Mountains, Bratia Valley (Loitlesberger 1898:196); Iezer Valley, Bătrâna Valley, Dâmbovița Valley (Mohan 1990a:24).

Dâmbovița County, the springs from Corbii Ciungi, 06-07.1959 (Șerbănescu M. 1962:413,418).

Argeș County, Argeșului Valley (Mohan 1990a:24).

Vâlcea County, s – Lotrișor Gorges, on wet bark of tree (Ștefureac & Peicea 1973:46).

Sebeșului Mountains, Sebeș Valley, between Oașa and Cibán, 800-1200 m alt., sub *C. rivularis* (Borza 1959:69,283, Tab.38; Drăgulescu 2003:11).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Parâng Mountains, the edge of the peatbog near Călcescu Lake, 11.08.1955, sub *C. rivularis* (Ștefureac 1959:756,757; Ștefureac 1969a:105).

Hunedoara County, Ponor Cave, leg. & det. Györffy I. & Péterfi M., 10.06.1918, sub *C. rivularis*, incl. fo. *immersa*, rev. Papp C. [FRE 1625](Györffy 1924b:37; Borza 1938:28; Borza & Nyárády E.I. 1940:9).

Retezat Mountains, Valereasca, alpine zone, sub *C. rivularis* var. *subteres* (Schiffner 1914:307); Râu de Mori, leg. Degen A., det. Schiffner V., sub *C. rivularis* (Szepesfalvi 1929:45); towards Tăul Judele and on Galeșu Lake bank, sub *C. rivularis* (Páll 1964a:108); Cârligului Valley at “Casa alpinet”, 1900 m alt., 9.07.1968, ass. *Philonotido-Hygrohypnetum dilatati* Plămadă 1974 (Plămadă 1974b:99, Tab.3; Plămadă 1993:55,56, Tab.6).

Țarcu Mountain, Bistricioara Mountain, 1500-1900 m alt., 03-08.1943, leg. Boșcaiu N. (Ștefureac 1948a:220).

Poiana Ruscă Mountains, Luncani, leg. & det. Hazslinszky F., sub *C. rivularis* (Hazslinszky 1885:47; Szepesfalvi 1929:45).

Cluj County, Fânețele Clujului, leg. Péterfi M., sub *C. rivularis* (Györffy 1924b:37; Boros 1958:8); Dobrin, leg. Péterfi M., sub *C. rivularis* (Györffy 1924b:37).

Bihor Mountains, Iadului Valley, 800 m alt., sub *C. rivularis* (Péterfi M. 1908:274; Szepesfalvi 1929:45).

Chiloscyphus sp.

Alba County, Izbucl Ponorului (Boros & Vajda 1974:6).

Cladopodiella fluitans (Nees) H. Buch

Syn.:

- *Cephalozia aquatica* (Limpr.) Steph.
- *Cephalozia bicuspudata* var. *aquatica* Limpr.
- *Cephalozia fluitans* (Nees) Spruce
- *Cephalozia francisci* var. *fluitans* (Nees) Aust.
- *Cephalozia obtusiloba* Lindb.

- *Cladopodiella fluitans* var. *gigantea* (Lindb.) S.W. Arnell
- *Cladopus fluitans* (Nees) Meyl.
- *Jungermannia fluitans* Nees
- *Lophozia fluitans* (Nees) Boulay

First citation for Romania: Györfy 1924b.

Threatened species in Romania: Mihăilescu S. & Ștefănuț 2004a:88.

Ecology: turficolous, acidophytic, hygro-hydrophytic, sciophytic; mountain; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Es, It, Si, Ro, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re.

Distribution in Romania:

Maramureș County, Vlășchinescu Peatbog (Coldea & Markievici 1978:97, Tab.2).

Harghita County, Mohoș Peatbog, sub *Cephalozia* (Zólyomi 1943b:131; Boros & Vajda 1967:225; Bálint & Orbán 2006:467); Mohoș Peatbog, sub *Cephalozia* (Boros 1943c:114; Bálint & Orbán 2006:467); Mohoș Peatbog, sub *Cephalozia* (Pop E. 1960:322); Mohoș Peatbog (Boros & Vajda 1967:225); Mohoș Peatbog (Coldea & Markievici 1978:97, Tab.2); Mohoș Peatbog, 46°07'41"N / 25°54'01"E, 1050 m *alt.*, 3.06.2004, *leg.* Mihăilescu Simona, *det.* Ștefănuț S. [BUCA B2213].

Bodoc Mountains, Zombor Brook Valley - Cereș Spa and Puturosu at Turia-Bufogo, rare (Ștefureac & Kovács 1981:117).

Penteleu Massif, Lacul Roșu, peatbog, 1510 m *alt.*, 11.10.1983 (Dihoru G. 1987b:94,96).

Cluj County, Molhașul Mare de la Călățele, 25.10.1915, *leg.* & *det.* Györfy I. & Péterfi M., 1966, *leg.* & *det.* Boros Á. (Györfy 1924b:37; Boros & Vajda 1967:225).

Bihar Mountains, Izbuc Peatbog, ca. 1000 m *alt.*, 31.07-1.08.1968, ass. *Rhynchosporium albae* W. Koch 1926 (Coldea & Plămadă 1970a:107, Tab.2); Molhașul Mare de la Izbuc, peatbog, *det.* Plămadă E. (Péterfi Ș. 1973:19; Péterfi Ș. & Galló 1974:31), ass. *Rhynchosporium albae*, *det.* Plămadă E. (Pop I., Hodișan I. & Cristea 1987:113); Molhașul Mare de la Izbuc, 46°34'39"N / 22°50'22"E, 1200 m *alt.*, 09.2003, *leg.* Atanasiu Paulina, *det.* Wallfish R., *conf.* Ștefănuț S. [BUCA B2212]; Molhașul Mare de la Izbuc, BH, 46°35'27"N / 22°45'26"E, 1200 m *alt.*, 4.09.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3815].

Cololejeunea calcarea (Lib.) Schiffn.

Syn.:

- *Jungermannia hamatifolia* Hook.
- *Jungermannia hamatifolia* var. *calcarea* (Lib.) Huebener
- *Jungermannia hamatifolia* var. *echinata* Hook.
- *Lejeunea calcarea* Lib.
- *Lejeunea echinata* (Hook.) Taylor ex Gottsche et al.
- *Lejeunea hamatifolia* (Hook.) Spreng.

First citation for Romania: Péterfi M. 1908.

Romania, sub „*Lejeunia calcarea*” (Radian 1922a:188); (Plămadă & Dumitru 1998a:190).

Moldova, sub *Lejeunea* (Papp 1943:668).

Muntenia, incl. sub fo. *sublaevis* (Mohan 1988b:111).

Ecology: epilithic, calcicolous, mesophytic, sciophytic; Eurasia; mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Fo, No, Dk, Se, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Bl, Sa, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Ua, Cm, Ca.

Distribution in Romania:

Maramureș County, Covatar Waterfall from Săpânța, 900 m *alt.*, 15-21.06.1997 (Jakab 1999:53,55).

Suceava County, Adam and Eva Mountains, Pojorâta Commune, on calcareous rocks (Mihai & Pascal 1973b:157,161).

Rarău Mountain, Rarău, 15.05.1910, sub *Lejeunea* (Lilienfeldówna 1911:736); Codrul Secular Slătioara, 800-1450 m *alt.* (Ștefureac 1941:1153,1245,1263,1268,1273,1276, Tabs.3,5; Papp 1969b: 188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:198); Pietrele Doamnei, 47°26'48"N / 25°34'05"E, 25.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3748].

Harghita County, Lacul Roșu and Borsec (Boros 1951:378,379).

Siriu Mountain, Poiana din Fundul Muntelui, common spruce forest (Dihoru G. 1975:24).

Ciucaș Mountains, above Roșu Mountain Hut, 1650 m *alt.*, *leg.* & *det.* Vajda L. (Boros & Vajda 1967:227; Mohan 1990b:38).

Piatra Mare Mountain, „Șapte Scări” Waterfall, Tamina Waterfall, Piatra Mare Hut, 800-1700 m alt. (Boros & Vajda 1967:227).

Cristianul Mare Mountain, Cristianul Mare, 1300-1800 m alt., incl. sub fo. *sublaevis* (Boros & Vajda 1967:227).

Bucegi Massif, Mălăiești Hut and Bucșoiu Mountain, 1400-1700 m alt., Piatra Arsă, 1400 m alt., leg. & det. Vajda L. (Boros & Vajda 1967:227); Mălăiești Glacial Ring, BV, 45°27'13"N / 25°26'45"E, 2010 m alt., 9.07.1999, leg. & det. Ștefănuț S. [BUCA B2107].

Piatra Craiului Mountains, Curmătura, 1500-1600 m alt., Prăpăștiile Zărneștiului, 1000 m alt. (Boros & Vajda 1967:227; Ștefănuț & Pop O.G. 2006:75); ♀ - Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m alt., 22.08.2003, leg. & det. Ștefănuț S. [BUCA B2804], s - 45°33'28"N / 25°15'42"E, 1350 m alt., 22.08.2003, leg. & det. Ștefănuț S. [BUCA B2734, B2735] (Ștefănuț & Pop O.G. 2006:75); Piatra Craiului Mică, BV, 45°33'07"N / 25°15'53"E, 1750 m alt., 10.07.2004, leg. Pop O., det. Ștefănuț S. [BUCA B3043] (Ștefănuț & Pop O.G. 2006:75).

Domogled Mountain, Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8); Crucea Albă, CS, 44°53'10"N / 22°25'48"E, 500 m alt., 9.08.2004, leg. & det. Ștefănuț S. [BUCA B2981].

Caraș-Severin County, Ciorici Peak (Boros, Vajda & Debreczy 1969:7).

Codru-Moma Mountains, Liliecilor Cave, on calcareous rocks (Mohan 1996:50; Ardelean 2006:106, Fig.22).

Alba County, Piatra Struțu, 900 m alt., Scărișoara, 1000 m alt., sub *Lejeunea echinata* (Péterfi M. 1908:279; Ștefureac 1970h:482; Goia 2001:85); Ponor, 1.03.1916, leg. Györfy I. & Péterfi M. (Györfy 1924b:37); in the Scărișoara Cave aven, Poiana Ponorului (Boros & Vajda 1974:4; Plămadă 1985b:41; Goia 2001:85); Arieșul Mic Basin (Goia & Schumacker 2000:92); Morii Valley, on mosses on rotten wood (Goia 2001:84,85, Fig.25).

Cluj County, Someșul Cald Valley (Boros & Vajda 1974:9).

Bihar Mountains, Izbucul Ponorului, Padiș Mountain (Vajda 1973:291); Ponor, 1100 m alt., Padiș, 1050 m alt., 08.1999 (Jakab 2000b:66,68); Someșul Cald Gorges (Goia & Mătase 2001:18); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m alt., 3.09.2007, leg. & det. Ștefănuț S. [BUCA B3842, B3843].

Cololejeunea rossettiana (C. Massal.) Schiffn.

Syn.:

– *Lejeunea rossettiana* C. Massal.

– *Physocolea rossettiana* Steph.

First citation for Romania: Boros 1942a.

Ecology: epilithic, epiphytic, calcicolous, rarely silicicolous, meso-xerophytic, sciophytic; submediterranean-subatlantic; mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sc, It, Si, Hr, Sb, Me, Ro, Bg, Al, Gr, Ua, Cm, Ca.

Distribution in Romania:

Harghita County, near Merești Commune (Boros 1944b:149; Boros 1951:379; Ștefureac, Popescu & Lungu 1956a:510; Boros & Vajda 1967:227; Dihoru 1987:88).

Perșani Mountains, Homorod Spa (Boros 1944b:148); Vârghiș Gorges, 1942, 1943, leg. & det. Boros Á. (Boros 1944b:148; Munteanu, Miklóssy & Rațiu F. 1987:137).

Cristianul Mare Mountain, Cristianul Mare, 1300 m alt., leg. & det. Vajda L. (Boros & Vajda 1967:227; Vajda & Orbán 1975:116).

Bucegi Massif, Furnica Mountain, PH, 45°21'35"N / 25°31'54"E, 1010 m alt., 27.10.2005, leg. Paucă Mihaela, det. Ștefănuț S. [BUCA B3302].

Piatra Craiului Mountains, Curmătura, 1000-1600 m alt., Prăpăștiile Zărneștiului, 1000 m alt. (Boros & Vajda 1967:227; Vajda & Orbán 1975:116; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:75).

Parâng Mountains, Latorița Valley, on vertical slope of calcareous rocks, 900 m alt., 31.08.1954 (Ștefureac, Popescu & Lungu 1956a:509-518, Tab.1, Figs.1-4; Boros & Vajda 1967:227; Vajda & Orbán 1975:116; Dihoru 1987:88); Latorița Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,16,19,22,24,25, Pl.IV, Figs.1-5; Boros & Vajda 1967:227; Dihoru 1987:88).

Hunedoara County, Bulzești de Sus (Smets 2003:61).

Caraș-Severin County, Cerna Valley (Boros, Vajda & Debreczy 1969:5,6,9; Vajda & Orbán 1975:116).

Semenic Mountains, near Carașova (Vajda & Orbán 1975:116,118).

Bihar County, Crișul Repede Defile, Vadu Crișului, on wet rocks, ass. *Phyllitidi-Aceretum* (Boros 1942a:31,32; Boros 1944b:149; Boros 1951:379; Ștefureac, Popescu & Lungu 1956a:509-510; Boșcaiu & Gergely 1966:105; Dihoru 1987:88); Apuseni Mountains (Ștefureac 1975b:313,314); Vadu Crișului Cave, 1968, *leg.* Neacșu M., *det.* Ștefureac T. (Ștefureac 1985e:111,114,116, Tab.1).

Cololejeunea sp.

Suceava County, Benea-Breaza, on serpentine, 1100 m *alt.* (Ștefureac, Cristurean & Sihota 1964:225, Tab.1).

Rarău Mountain, Codrul Secular Slătioara (Ștefureac 1941:1262).

Conocephalum conicum (L.) Dumort.

Syn.:

- *Asterella kiaerii* Kaal.
- *Fegatella conica* (L.) Corda
- *Fimbriaria kiaerii* (Kaal.) Steph.
- *Hepatica conica* (L.) Lindb.
- *Marchantia conica* auct.

First citation for Romania: Baumgarten 1846.

Romania, *without locality*, Baumgarten 1846:234; Müller 1954:363; Schuster 1992b:96.

Moldova (Papp 1943:651; Ștefureac & al. 1973:140).

Muntenia (Mohan 1988b:114).

Transylvania (Hazslinszky 1885:30; Pax 1908:128).

Ecology: epilithic-epigeic, hygro-mesophytic, acidophytic, sciophytic; mountain; European; Hth.

Herbaria and Exsiccatae: BUCA, CSH, KRAM, M, PHHM, SIB, Bryotheca romanica, FRE

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, ?Ad, Lu, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, It, Hr, Sb, Me, Ba, ?Mk, Ro, Bg, Gr, Ua.

Distribution in Romania:

Maramureș County, Baia Mare, *leg.* & *det.* Kitaibel P., sub *Fegatella* (Hazslinszky 1885:30); Sâlhoi Mountain, *alt.* 1280 m, 24.07.1971 (Ștefureac 1973i:66; Ștefureac & Pânzaru 1978:40; Ștefureac & Pascal 1981:475; Sanda & Popescu A. 1991a:45); Covatar Waterfall near Săpânța, 900 m *alt.*, 15-21.06.1997, between Tocila Valley and Băiuț, common spruce forest, 600 m *alt.*, 21-23.08.1998, Tocila Valley, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, Corongiș, sub *Fegatella* (Matouschek 1905:79); Rodna Mountains (Pax 1908:128); Piatra Rea, Fântânele Valley above Izvorul Cailor Waterfall, 1220-1240 m *alt.*, 21.08.1982 (Olos 1983: Tab.I); Piatra Rea, 1260 m *alt.*, 27.07.1979, ass. *Cardaminetum opizii* Szafer., Pawl., Kulcz. 1923, Gușețel Valley – Rebra Valley, 900-1000 m *alt.*, 10.06.1981, ass. *Cratoneuretum filicino-commutati* (Kuhn 1937) Oberd. 1977, Cormaia Valley - Vinului Brook, 960 m *alt.*, 16.07.1980, Pietrosul Mare Reserve, 1060 m *alt.*, 24.06.1981, ass. *Phyllitidi-Fagetum* Soó 1964 (Coldea 1990:50,53,145, Tabs.13,16,66).

Țibleș Mountains, Piciorul Mesteacănului, Țibleș Valley, 1984-1985 (Mohan 1988a:15).

Suceava County, Suceava and in vicinity (Knauer 1863; Ștefureac & Pascal 1981:475); Izvorul Alb, 14.05.1910, Fundul Moldovei, 3.06.1910, Argestrul, 16.05.1910, „Berdo nad Czerniawka”, 24.04.1910, sub *Fegatella* (Lilienfeldówna 1911:730); on right side of Hostineț Brook (Raclaru & Barbu 1959: Tab.6); Bistrița Aurie Valley, between Iacobeni and Ciocănești, edge of Suhârzulul and Suhârzulul Mare Brooks (Pascal 1969:106; Pascal & Mititelu 1971); Cârlibaba Brook Valley, Țibău, Deaca and Lițu, Argestru, Vatra Dornei (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:475); Cristișor-Neagra Broștenilor, Borcut Meadow, in alder tree thicket, on soil (Lungu 1973b:72; Lungu 1974:75, Tabs.1,2; Lungu 1981c:94); Barnar Gorges, along Barnar Brook (Pascal & Seghedin 1977:141).

Rarău Mountain, Rarău, 07.1890, *leg.* Vlădescu M., sub *Fegatella* (Radian 1915:192); Rarău, 14.05.1910, Pietrele Doamnei, 15.04.1910, sub *Fegatella* (Lilienfeldówna 1911:730); Rarău (Papp 1924a:101); Codrul Secular Slătioara, Ursului Brook, 800-1250 m *alt.*, 11.08.1938, 20.08.1938, sub *Fegatella* (Ștefureac 1941:1153,1163,1164,1194,1195,1198,1242,1245,1267,1273,1288,1289,1293, Tabs.1,3,4, Fig.4; Ștefureac 1973c:138, Fig.2b); between Dealul Colbului and Pietrele Doamnei, 1520 m

alt., 27-28.08.1949, 27.08.1950 (Ștefureac 1951a:60,65); Codrul Secular Slătioara, Rarău Peak (Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:196); Rarău (Raclaru 1980:7).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ștefureac, Mihai & Pascal 1976:35); Străja Valley, Muncel Peak, Sângeorz-Băi, Secu Brook, Măgura Calului, Pietra Fântânele, Cârțibavu Valley, 1983-1984 (Mohan & Hodoroga 1986:210).

Stânișoara Mountains, Stânișoara Culm, Suha Mare Brook Valley at Văleni and Pietrelor Brook Valley at Tarnița, 1974 (Pascal & Toma M. 1977:42).

Bistrița-Năsăud County, Monari, Simionești, Orheiul Bistriței, Budacul de Sus, 1980-1981 (Mohan & Hodoroga 1983:51; Mohan 1990a:25, Fig.3).

Iași County, around Iași (Papp 1929:555-557,560); Bârnova Forest, on wet soil (Papp 1942b:524); Repedea-Bârnova Forest Massif, on wet soil (Papp 1935a:431; Papp 1939a:354,355; Papp & Eftimie 1963:108,110,112), 1975-1976, ass. *Conocephaletum conicae* Schade 1934 (Mihai 1977a:138, Tab.1); Humosu Natural Reserve (Mihai 1980:8).

Ceahlău Mountain, Ceahlău, 7.08.1898, *leg.* Panțu Z. & Procopianu A., sub *Fegatella* (Radian 1915:193); Măcărescu Fontaine, Ceahlău below „Piatra cu apă rece”, 1700 m *alt.*, 20.07.1905, sub *Fegatella* (Grințescu G.P. 1922a:142; Ștefureac & al. 1973:140); Martin Brook, Durău (Papp 1924b:391; Papp 1934b:66,67,70,77; Zanoschi 1970:279; Manoliu & al. 1998:335); Ocolașul Mic (Papp 1934b:74); Ceahlău, 1700-1850 m *alt.*, ass. *Poëto (minoris)-Doronicetum carpatici* (Pușcaru & al. 1956) Borhidi 1958 (Borhidi 1958:225, Tab.3; Beldie & Dihoru G. 1967:227; Zanoschi 1970:279; Manoliu & al. 1998:335); Ceahlău, 1200-1700 m *alt.* (Mihai 1979b); near Polița cu Crini and Turnul Panaghia, in common spruce forest, on wet soil, ass. *Conocephaletum (Fegatelletum) conicae* Schade 1934 (Mihai 1987a:21, Tab.2).

Neamț County, Agapia, 21.08.1914, *leg.* Săvulescu T., sub *Fegatella* (Radian 1915:193); Poieni Forest (Papp 1924a:101); Cuejdiu Valley (Papp 1932:462,464,466; Papp 1933a:102); Tarcău Mountain-Grinđuș (Papp 1942b:524); Peste Recea Hill, in forest (Papp 1947b:185,186,190); Cernegura Mountain, Sterghinosu Brook Valley, *alt.* 400-550 m (Lungu 1963a:242-243); Sterghinosu Brook Valley (Lungu 1967b:249, Fig.1); Pângărăcior Brook Valley, tericol (Mihai 1973d:28); Mălinului Hill, Cărbunelui Hill, Brăilene Hill (Mihai 1974c:23; Ștefureac & al. 1973:140).

Gurghiu Mountains, Sirod Valley, 3.08.1995, Secușului Valley 2.08.1995 (Coldea 1996:6,7, Tab.5).

Giurgeu Mountains, Bicaz Gorges, on soil, 1957-1960 (Papp & al. 1962:144,147,149); Bicaz Gorges, Oii Brook Valley, 1978, 1979, ass. *Tortello-Ctenidietum* (Gams 1927) Stodiek 1937 (Mihai 1981a:18, Tab.5).

Hășmaș Mountains, Pietra Ascuțită, sub *Fegatella* (Matouschek 1903b:160; Bálint & Orbán 2006:472); Hășmaș (Schiffner 1914:303); Pietra Ascuțită (Degen 1930:975).

Harghita Mountains, Pietra Colibei, 19.06.1999 (Jakab 2000a:88); Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14).

Harghita County, Tușnad Spa, sub *Fegatella* and *Cynocephalum* (Schur 1859:115; Fuss 1878:651; Bálint & Orbán 2006:467); Odorhei, on soil, *leg.* Borza A., *det.* Papp C. (Papp 1944a:98); Odorhei, Szarkakő, around springs, on edge of beech forest, 1958-1962 (Páll 1963b:16); Homorod Spa, sub *Fegatella* (Bálint & Orbán 2006:473); Lacul Roșu (Dobrescu & Ghenciu 1974:33).

Nemira Mountains, Nemira Mountain, 1550-1600 m *alt.*, on gritstone (Barabaș V. 1974:23); Crăcurele, Bălătău, bank of lakes in upper zone of the mountain, on wet soil, 1970-1977 (Mihai & Barabaș V. 1978:113,114); Nemira Peak, 1550-1600 m *alt.*, Ciunget, Cheșcheș, Șandru (Barabaș V. 1982b:54,59,72, Tabs.1,23).

Bacău County, Măgura Mountain, wet places and under rocks, towards north, sub *Fegatella* (Grințescu G.P. 1907:47); Slănic, 1887, 04.1890, 24.04.1891, *leg.* Brândză D., sub *Fegatella* (Radian 1915:192); Slănic, 2.05.1892, *leg.* Vlădescu M., at Ceardac on Slănic, 05.1892, *leg.* Vlădescu M., sub *Fegatella* (Radian 1915:192); Coasei Mountain, on Zboina, at Putna Waterfall, 25.07.1914, *leg.* Săvulescu T., sub *Fegatella* (Radian 1915:193); Sălăria Brook, between Coama Pufului and Cleja Mountain (Papp 1957:284); Șurei Hill, Cernica Brook Valley at „Cascadă”, Sălăria Brook Valley (Papp 1958b:393,394,402); Uzului Valley, on wet soil, 1966-1967 (Mihai & Barabaș V. 1969:70); s - Măgura Hill, north-west to Târgu Ocna, on rocks, 680 m *alt.* (Mihai & Barabaș V. 1971:675,682); Slănic Brook Valley, Slănicel Brook Valley, Cheșcheș Culm, on wet soil, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:78); s - Seaca Forest, Mărgineni Commune, on wet soil, 1971, Secătura Forest, *det.* Mihai G.

(Mititelu, Barabaş N. & al. 1968:147,168; Mihai & Barabaş V. 1972:86; Ştefureac & al. 1973:140); Tălâmba Brook, on soil and rocks, Buciaş Waterfall, Clăbucu Mountain, on rocks, Fundu Caşin, forest way from Întârcătoarea towards Zboina Verde, Gura Dobrilor, on wet soil (Eftimie 1972:152); *without locality*, 450 m *alt.* (Barabaş V. 1982b:70, Tab.20).

Vrancea County, *s* – near Adjud (Mihai & Barabaş V. 1970:66); Tişitei Gorges, on wet rocks, 1977 (Mihai & Pascal 1986:46); Tişitei Gorges, VN, 45°52'49"N / 26°30'38"E, 2005, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3197].

Penteleu Massif, Bâsca Roziliei at Nemertea, on bank, on wet soil, 1.09.1985 (Dihoru G. 1987b:94).

Siriu Mountain, western slope of Mălâia, *Fagetalia* (Dihoru G. 1975:24).

Tulcea County, Consul Hill, 8.07.1938, *leg.* & *det.* Popescu A. [PHHM 6207671](Mohan 1971a:7); Luncaviţa on Fagilor Valley, 1995, *leg.* & *det.* Ifrim Luminiţa (Dihoru G. 1997:33).

Braşov County, Braşov, at Pietrele lui Solomon, sub *Fegatella* and *Cynocephalum* (Schur 1866:870; Fuss 1878:651); Homorod Spa, 20.07.1901, sub *Fegatella* (Barth 1905:12); Predeal, 1200 m *alt.*, 6.07.1897, *leg.* & *det.* Loitlesberger K. (Radian 1915:192); Predeal, Râşnoavei Valley, 16,17.06.1914, *leg.* Săvulescu T., sub *Fegatella* (Radian 1915:193); Predeal, 800-900 m *alt.*, 6.09.1997, *leg.* & *det.* Ştefănuţ S. [BUCA B2533]; ♂ - Predeal, 6.04.2006, *leg.* & *det.* Ştefănuţ S. [BUCA B3399]; Strâmba Valley, 14.05.2006, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3806](Pop O.G. 2008:60); Şinca Nouă, 11.10.2006, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3998].

Ciucaş Mountains, Zăgan Mountain, on Cheia Teleajenului and Berei Valley at Bratocea, 1,2.09.1900, sub *Fegatella* (Radian 1915:193); Berii Brook Valley, Zăgan Mountain, Caprei Brook Valley, Albele Culm, Bratocea Culm, Roşu Mountain, Pârâul Sterp Valley (Mohan 1990b:45).

Piatra Mare Mountain, Tamina Waterfall, 45°32'58"N / 25°38'33"E, 6.09.1997, *leg.* & *det.* Ştefănuţ S. [BUCA B2056, B2536]; Chiva Valley, 17.05.2006, *leg.* Avramescu C., *det.* Ştefănuţ S. [BUCA B3429].

Postăvaru Mountain, (Schiffner 1914:303); Dracului Valley, 850 m *alt.*, 14.03.1999, *leg.* Mihăilescu Simona, *det.* Ştefănuţ S. [BUCA B2221].

Gârbova Massif, Azuga Valley, Tufa Valley, Rea Valley, on soil and rocks, 1967-1970 (Lungu & Ştefureac 1970:6); Cumpătul Mountain, Rea Valley, on wet soil, 800 m *alt.*, 30.09.1985, *leg.* & *det.* Lungu L. [CSH].

Prahova County, along Prahova Valley (Loitlesberger 1898:196; Radian 1915:192); Grecului Valley at Azuga, 17.08.1897, sub *Fegatella* (Radian 1915:193); Cumpătul and Furnica Mountains, 06-07.1944, *leg.* Tăzlăuanu I. (Papp 1945b:92); Doftana Valley (Mohan 1971a:7; Mohan 1971b:45; Mohan 1990a:25, Fig.3); Teleajen Valley, Negraşului Valley (Mohan 1990a:25, Fig.3), Valea Largă, 14.05.2008, *leg.* & *det.* Ştefănuţ S. [BUCA B4004, B4005].

Bucegi Massif, Jepi Valley, 8.07.1900, *leg.* Dumitrescu M., *det.* Radian S.Ş. (Radian 1901b:40; Radian 1915:192); Cerbului Valley, on soil, 1500-1800 m *alt.*, 4.07.1899, *leg.* & *det.* Radian S.Ş. (Radian 1903:4; Schiffner 1908b:275); ♂, ♀ - Mălăieşti Valley, Jepi Valley, Bucşoiu Mountain (Degen 1914:216); Cerbului Valley, 7.06.1896, *leg.* Moisescu N., Ialomiţa Valley, around and above to Peştera Ialomiţei Hermitage, Obârşia Ialomiţei towards Omul, Cerbului Valley, 13.06.1894, 21.06.1897, 11.08.1903, 30.07.1904, 5.08.1905, 30.08.1908, 5,6.07.1914, sub *Fegatella* (Radian 1915:192); Sinaia towards Peleş castle, 17.08.1897, 12.08.1903, 24.04.1914, Jepi Valley towards Caraiman, 10.08.1903, 30.08.1908, Urlătoarea Waterfall and towards Vârful cu Dor, 12.08.1903, 27.06.1911, sub *Fegatella* (Radian 1915:193); Jepi Valley at Buşteni, Cerbului Valley towards Diham, 16,17.06.1914, *leg.* Săvulescu T., sub *Fegatella* (Radian 1915:193); Bucegi (Radian 1923:10); Sinaia, 08.1920, *leg.* Brândză M., *det.* Ştefureac T., sub *Fegatella* (Ştefureac 1942a:3); Jepi Valley, 2000 m *alt.*, Ialomiţei Waterfall, 1750 m *alt.*, Tătarului Gorges, 1500 m *alt.* (Puşcaru D. & al. 1956:142,220,251, Tab.87); Ialomiţa Valley (Ştefureac 1972c:101,104); Ialomiţa Valley (Mohan 1990a:25, Fig.3); Gaura Glacial Ring, BV, 45°26'29"N / 25°26'17"E, 2110 m *alt.*, 8.07.1999, *leg.* & *det.* Ştefănuţ S. [BUCA B2045, B2046]; the glacial ring from Cerbului Valley, PH, 45°26'21"N / 25°27'40"E, 2150 m *alt.*, 11.07.1999, *leg.* & *det.* Ştefănuţ S. [BUCA B2267]; The glacial rings of Ialomiţa Valley, DB, 45°26'02"N / 25°26'44"E, 2200 m *alt.*, 10.07.1999, *leg.* & *det.* Ştefănuţ S. [BUCA B2455, B2483]; Mălăieşti Glacial Ring, BV, 45°27'04"N / 25°26'43"E, 2090 m *alt.*, 9.07.1999, *leg.* & *det.* Ştefănuţ S. [BUCA B2346], *s* - 45°27'22"N / 25°27'19"E, 1940 m *alt.*, 9.07.1999, *leg.* & *det.* Ştefănuţ S. [BUCA B2272]; Lăptici Valley, DB, 45°22'34"N / 25°27'32"E, 1700 m *alt.*, 28.07.2005, *leg.* & *det.* Ştefănuţ S. [BUCA B3234].

Leaota Mountain, Mitarca Valley, on edge springs, 1300-1600 m *alt.* (Papp & Diaconescu 1968:386,387); Cheii Valley, 800-850 m *alt.*, 21,27,28.05.1971, Rudăriței Valley, 800 m *alt.*, 27.06.1971 (Diaconescu F. 1973: Tab.2).

Piatra Craiului Mountains, above Zărnești, sub *Fegatella* (Matouschek 1905:82; Ștefureac 1951b:250; Dihoru G. & al. 2003:70); Râie's Valley, 1280 m *alt.*, Crăpătura Valley, *leg.* Beldie A., *det.* Ștefureac T. (Beldie 1952:1008; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:75); Crăpătura Valley, 1200-1300 m *alt.*, 22.09.1996, ass. *Sedo fabariae-Geranium macrorrhizi* Boșcaiu & Täuber 1977 (Mihăilescu S. 2001:224, Tab.16; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:75); Prăpăstiile Zărneștilor, 780-800 m *alt.*, 09.09.1996, ass. *Phyllitidi-Fagetum* Vida (1959)1963 (Mihăilescu S. 2001:315, Tab.44; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:75); the beginning of track towards Diana, BV, 45°33'49"N / 25°13'10"E, 950 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2805, B2849], Diana, BV, 45°33'39"N / 25°13'40"E, 1100 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2823, B2852], Crăpătura Pietrei Craiului, BV, 45°33'12"N / 25°15'24"E, 1550 m *alt.*, 8.06.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2858, B2859, B2861-B2864, B2866, B2905], Diana, 4-8.06.2001, *leg.* Pop O., *det.* Ștefănuț S., Prăpăstiile Zărneștiului, 8.06.2001, *leg.* Pop O., *det.* Ștefănuț S., Curmătura Chalet - Curmătura Saddle, 26.06.2001, *leg.* Pop O., *det.* Ștefănuț S., Șpirlea Valley, 3.08.2001, *leg.* Pop O., *det.* Ștefănuț S. & Wallfisch R., Gura Bârsei, 3.08.2001, *leg.* Pop O., *det.* Ștefănuț S., towards Vlădușca Pasture, 30.10.2001, *leg.* Pop O., *det.* Ștefănuț S. (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:75); Crăpătura Pietrei Craiului, BV, 45°33'35"N / 25°15'46"E, 1250 m *alt.*, 22.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2773]; Diana, towards Brâna Caprelor, BV, 45°33'09"N / 25°14'35"E, 2000 m *alt.*, 23.05.2002, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2856, B2874], towards Padina lui Călineț, BV, 45°33'48"N / 25°12'31"E, 850 m *alt.*, 7.08.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2684, B2687, B2848], Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg.* & *det.* Ștefănuț S. [BUCA B2613, B2902], ♂ - Brusturet Gorges, AG, 45°27'55"N / 25°13'45"E, 950 m *alt.*, 26.07.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2952], s - [BUCA B2959, B2962], ♂ - [BUCA B2966] (Ștefănuț & Pop O.G. 2006:75,76); ♀ - towards Padinile Frumoase, common spruce forest, BV, 45°32'42"N / 25°14'31"E, 1600 m *alt.*, 6.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3007], s - [BUCA B3009] (Ștefănuț & Pop O.G. 2006:76); towards Padinile Frumoase, BV, 45°32'38"N / 25°14'18"E, 1700 m *alt.*, 7.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3000] (Ștefănuț & Pop O.G. 2006:76); ♂ - Prăpăstiile Zărneștiului, BV, 45°31'36"N / 25°17'03"E, 880 m *alt.*, 21.08.2004, *leg.* Purice Dorina, *det.* Ștefănuț S. [BUCA B3035] (Ștefănuț & Pop O.G. 2006:76); ♀ - Valea cu Apă, BV, 45°33'01"N / 25°15'25"E, 1430 m *alt.*, 12,13.09.1997, *leg.* Mihailescu Simona, *det.* Ștefănuț S. [BUCA B3162, B3163]; Padinile Frumoase, BV, 45°32'36"N / 25°14'28"E, 1600 m *alt.*, 20.06.1997, *leg.* Mihailescu Simona, *det.* Ștefănuț S. [BUCA B3161] (Ștefănuț & Pop O.G. 2006:76); Crăpătura Valley, BV, 45°33'37"N / 25°15'48"E, 1200 m *alt.*, 22.09.1996, *leg.* Mihailescu Simona, *det.* Ștefănuț S. [BUCA B3158] (Ștefănuț & Pop O.G. 2006:76); ♂ - towards Șaua Funduri, common spruce forest, AG, 45°29'54"N / 25°12'39"E, 1480 m *alt.*, 7.08.2003, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3343]; s - Poiana Lespezilor, BV, 45°30'27"N / 25°13'27"E, 1330 m *alt.*, 8.08.2003, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3326, B3329, B3333, B3348], ♂ - [BUCA B3332], ♀ - [BUCA B3364].

Iezer-Păpușa Mountains, Iezer Valley, Bătrâna Valley, Dâmbovița Valley (Mohan 1990a:25, Fig.3).

Argeș County, Boteni, 06.1891, *leg.* Vlădescu M., Cândești, 07.1891, *leg.* Vlădescu M., Văleni Hermitage, 10.08.1891, *leg.* Vlădescu M., sub *Fegatella* (Radian 1915:192); Capra Valley, Bratia Valley, 23.05.1899, Brătioarei Valley and at Cândești in Berevoiești-Ungureni Forest, 26.09.1899, *leg.* Panțu Z., sub *Fegatella* (Radian 1915:193); Ghimbav Gorges, 740-850 m *alt.*, 8.08.1993, Cheii Gorges, 740 m *alt.*, 8.08.1994, 780 m *alt.*, 28.08.1994, Cheii Gorges (Podu Dâmboviței), 740 m *alt.*, 25.08.1994, ass. *Cystoperidetum fragilis* Oberd. 1938, subass. *campanuletosum carpaticeae* (Sanda, Popescu & Doltu 1977) em. Coldea 1991 (Alexiu 1994:126, Tab.1; Alexiu 1998:166; Ștefănuț & Pop O.G. 2006:76); Ghimbav Gorges, 810 m *alt.*, 25.08.1994, ass. *Asplenio (quadrialeans)-Poetum nemoralis* Soó 1944 em. Gergely 1966 (Alexiu 1998:171; Ștefănuț & Pop O.G. 2006:76); ♂ - Great Gorges of Dâmbovița River, AG, 45°23'04"N / 25°11'43"E, 750 m *alt.*, 8.06.2005, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3168], s - [BUCA B3174].

Făgăraș Mountains, Arpaș Mountain, 1849-1850, *leg.* & *det.* Schur F., sub *Marchantia* (Schur 1852:92; Heufler 1853:64,65); Bălea Waterfall, sub *Fegatella* and *Cynocephalum* (Schur 1866:870; Fuss 1878:651; Hazslinszky 1885:30; Ștefureac 1949a:287; Drăgulescu 2003:7); Arpașului Valley, in beech forest, sub *Fegatella* (Heufler 1853:52-53; Fuss 1854:20; Schur 1866:870; Fuss 1878:651; Hazslinszky

1885:30; Ștefureac 1949a:287,288; Drăgulescu 2003:7); Făgăraș, sub *Fegatella* (Ștefureac 1949a:288); Voila Mountain, 25.06.1960, *leg. & det.* Moșneagă M. [PHHM 627667, 6207670] (Mohan 1971a:7); Pojorta Valley, BV, 45°38'14"N / 24°53'48"E, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2555] (Ștefănuț 2002:190); Vâlsan Valley, Brădet, AG, 45°18'39"N / 24°46'06"E, 713 m *alt.*, 21.09.2003, *leg.* Matei B., *det.* Ștefănuț S. [BUCA B2920]; Bâlea Lake, SB, 45°36'08"N / 24°37'01"E, 2050 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2509]; Bâlea Lake, SB, 45°36'14"N / 24°37'04"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2511]; Capra Lake, AG, 45°36'01"N / 24°37'41"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2394], 45°36'01"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2382]; The glacial ring from Doamnei Valley, SB, 45°36'05"N / 24°36'27"E, 2150 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2362], 45°36'07"N / 24°36'27"E, 2120 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2353], 45°36'10"N / 24°36'23"E, 2100 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2154, B2157]; Capra Valley, AG, 45°34'42"N / 24°38'33"E, 1200 m *alt.*, 5.07.1998, *leg. & det.* Ștefănuț S. [BUCA B3069-B3071].

Cozia Mountain, Cascada Păușa, on soil, Poarta de Piatră – Slavei Brook, on wet soil, in east side of Bulzu Peak, on wet soil, 1560 m *alt.*, 1975-1976 (Dihoru G. 1990:52); Roșiei Gorges, 1987, *leg.* Negrean G. (Dihoru G. 1990:52); Turnu towards Stânișoara, 08.2005, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3208].

Sibiu County, Csnădie, *leg. & det.* Sigerus P., incl. sub *Marchantia conica* [SIB HF 1482] (Fuss 1865:28; Fuss 1878:651; Gündisch 1977:45; Drăgulescu 1983:57; Drăgulescu 2003:7); Prejba, sub *Fegatella* and *Cynocephalum* [SIB SCHUR 4550] (Schur 1866:870; Fuss 1878:651; Gündisch 1977:45; Drăgulescu 2003:7); Măgura Csnădiei, Ursului Brook, *leg. & det.* Lerchenfeld J. [SIB HL 33708] (Fuss 1878:651; Drăgulescu 1983:57; Drăgulescu 2003:7); Tâlmăciu, on soil, 2.10.1874, 4.04.1878 [SIB HF 1485] (Fuss 1878:651; Gündisch 1977:45; Drăgulescu 1983:57; Drăgulescu 2003:7); Poiana Neamțului, 26.08.1866, *leg. & det.* Barth J., sub *Fegatella* [SIB HF 1484] (Fuss 1878:651; Drăgulescu 1983:57); Tâlmăciu, conglomerate, 18.10.1968, *det.* Plămadă E., ass. *Asplenio-Cystoperidetum* Oberd. (1936) 1949 em. (Schneider-Binder 1969:149, Tab.2; Schneider-Binder 1970a:166; Drăgulescu 2003:7).

Cindrel Mountains, Crint, 1100 m *alt.*, Păltiniș 1400 m *alt.*, Cănaia 1700 m *alt.* (Gündisch 1977:45; Drăgulescu 2003:7).

Vâlcea County, Greblești ("la Olt") (Loitlesberger 1898:196; Radian 1915:192); s - Lotrișoarei Gorges, on wet rocks (Ștefureac & Peicea 1973:45,50).

Sebeșului Mountains, Sebeș Valley, on Bistra and between Oașa and Cibán, wet places (Borza 1959:68; Drăgulescu 2003:7).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, *leg.* Barth J., sub *Fegatella* (Barth 1883:8); Latorița Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,20,23,29,36).

Șureanu Mountain, Râul Mare Valley, sub *Fegatella* (Greguss 1930:7).

Hunedoara County, Orăștie, *leg. & det.* Unverricht J., sub *Marchantia conica* [SIB HF 1483] (Fuss 1878:651; Drăgulescu 1983:57); Geoagiu, Cigmău Cave, 19.04.1916, *leg.* Györffy I. (Györffy 1924b:37); ♂ - Dumbrăvița, Săcămașul Valley, 280 m *alt.*, 23.04.1943, *leg. & det.* Pteancu P., *rev.* Ștefureac T., *conf.* Szweykowski J., Buczkowska K. & Odrzykoski I.J., 2005 [FRE 3044b; PHHM 6207735; M M-0060741; KRAM 43447] (Borza, Gergely & Rațiu O. 1968:522; Szweykowski, Buczkowska, Odrzykoski 2005:153).

Retezat Mountains, Retezat (Simonkai 1872:66; Fuss 1878:651; Hazslinszky 1885:30); Râu de Mori (Schiffner 1914:303); Slăveiu Culm, *leg.* Georgescu C.C. (Papp 1937a:159,163); Zlătuia Valley, Râului Mare Valley, on rocks (Páll 1962a:121); Dobrun Brook Valley (Páll 1964a:108).

Godeanu Mountains, Lunca Berhinei, 28.06.1967, Stâna Mare Valley below Borăscu, 27.07.1967, ass. *Chrysosplenio-Cardaminetum* (Tx. 1937) Maas 1959 (Boșcaiu 1971a:125, Tab.1).

Țarcu Mountains, Bistra Mărului Valley, 15.06.1964, ass. *Chrysosplenio-Cardaminetum* (Tx. 1937) Maas 1959 (Boșcaiu 1971a:125, Tab.1).

Gorj County, "munții Dealul lui Frate și Braia (Gorj)", *leg.* Panțu Z. & Procopianu A., 27,28.07.1896, sub *Fegatella* (Radian 1915:192); Tismana Monastery at waterfall and on Dorna Valley towards Cioclovina Hermitage, 4.07.1905, sub *Fegatella* (Radian 1915:193); Bold Mountain and at Gura Olanului on Sucevele from left of Cerna, 5,8.08.1899, sub *Fegatella* (Radian 1915:193).

Mehedinți County, Piatra lui Vodiță and Vârciorova Mountains, 9.06.1886, *leg.* Brândză D., sub *Fegatella* (Radian 1915:192); Bahnei Valley at Vârciorova, 4.09.1908, *leg.* Panțu Z., sub *Fegatella* (Radian 1915:193); Vârciorova, on edge of Lutița Brook, 10.06.1945, Topolnița Hermitage, Clecevăț Brook, 5.06.1945, sub *Fegatella* (Ștefureac 1947a:138); Cazanele Mari (Boros, Vajda & Debreczy 1969:9); Eșelnița Valley, edge of the brook, on wet soil (Plămadă 1970b:205); Câmpul Mare, Motru Valley, on wet soil, in *Carpino-Fagetum* (Costache 2002:55).

Domogled Mountain, sub *Fegatella* (Degen 1901:14).

Caras-Severin County, Goleț, *leg. & det.* Borbás V., sub *Fegatella* (Hazslinszky 1885:30); Cerna Valley at Crucea-Ghizelei, on soil, 25.12.1937, *leg.* Cretzoiu P., *det.* Pilous Z., sub *Fegatella* [Bryotheca romanica 7] (Pilous 1938:2; Ștefureac 1947a:134,135); Herculane Spa, Vânturătoarea, 2.05.1999, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2025].

Zarand Mountains, Highiș Valley, Debela Gora, along mountain brooks (Csűrös M. 1978:77; Ardelean 2006:108; Ardelean 2006:108, Fig.25).

Codru-Moma Mountains, Monesei Valley, Valea Lungă, Măgura Diecilor, Brihenilor Valley, on wet soil (Mohan 1996:50; Ardelean 2006:108, Fig.25).

Arad County, Cladova Valley, Șoimoș Valley, on mountains from Arăneag, on Highiș Mountains, Dezna Veche Valley and Rășirata Valley; Dulcele Valley, Valea cea Mare, above Nădălbeștilor along Codru Brooks, on wet soil or rocks (Simonkai 1893:360); ♀ - Runcu-Groși Reserve, Palom Valley, 46°10'11"N / 22°06'56"E, 515 m *alt.*, 19.08.2008, *leg. & det.* Ștefănuț S. [BUCA B3933], ♂ - [BUCA B3934].

Poiana Ruscă Mountains, Rusca Montană, sub *Fegatella* (Pančić 1861:94; Hazslinszky 1885:30); Rusca Mountain, Luncani, sub *Fegatella* (Simonkai 1872:66; Fuss 1878:651; Hazslinszky 1885:30); Tomești, sub *Fegatella* (Simonkai 1872:66; Fuss 1878:651); Poiana Ruscă, Luncani, on soil, 700 m *alt.*, *leg.* Pteancu P., *det.* Papp C. (Papp 1944a:98).

Mureș County, Sighișoara, sub *Fegatella* (Höhr 1914:86); Sălardului Valley, 10.08.1995, ass. *Chrysosplenio-Cardaminetum amarae* Mass. 1959 (Oroian 1996:248, Tab.22); Ilva Valley, 9.08.1995 (Oroian 1997:113, Tab.1).

Alba County, Piatra Ceții, Trascău Mountains, 3.07.1868, sub *Fegatella* (Barth 1868:141); Galda de Sus, *leg. & det.* Barth J. (Fuss 1878:651); Scărișoara, on soil, 1200 m *alt.* (Papp 1942a:51); Feneș Gorges (Papp 1944b:236; Papp 1945a:163); Feneș Gorges, 900 m *alt.*, 30.08.1961 (Hodișan I. 1965:20, Tab.4); in the Scărișoara Cave aven (Boros & Vajda 1974:4,6,7); Râmeț Gorges, 26.05.1997, *leg.* Mihăilescu Simona, *det.* Ștefănuț S. [BUCA B2559].

Cluj County, Southern Ciucea on Surduc Valley (Boros 1942a:34); Feleac, Făget (Boros 1958:3,7); Făget and Mănăștur Forests, on soil, 1961-1966 (Plămadă 1967:470); Pușcașului Valley, on wet sandy soil, 1963-1965 (Plămadă 1968:24); Someșul Cald Valley (Boros & Vajda 1974:8); Turzii Gorges (Plămadă & Goia 1994:86).

Gilău Mountains, in beech forest (Plămadă 1985b:41).

Bihar County, Aleșd, Pădurea Neagră, sub *Fegatella* (Simonkai 1890a:129); Stâna de Vale, 1100 m *alt.* (Péterfi M. 1908:267); Drăgan Valley (Boros 1942a:35); Crișul Repede Defile, wet rocks on bank of the Vadu Peșterii Brook (Boros 1942a:31; Boros 1942e:154; Boșcaiu & Gergely 1966:103); Șuncuiuș (Boros 1942e:153); Tâlharului Cave, Vadu Crișului Cave (Boros 1942e:154); Crișul Repede Defile, wet rocks on bank of the Vadu Peșterii Brook, *det.* Plămadă E. (Viehmänn, Pleșa & Rusu 1964; Boșcaiu & Gergely 1966:103); Vadu Crișului Cave, 1968, *leg.* Neacșu M., *det.* Ștefureac T. (Ștefureac 1970h:482; Ștefureac 1985e:111,113,114,116, Tab.1); Izbucul Ponor, Poiana Ponorului (Boros & Vajda 1974:4,6,7); Mărișel towards Beliș, 950 m *alt.*, ass. *Symphyto (cordato)-Fagetum* Vida 1959, 1963 (Pop I. & Hodișan I. 1981:45, Tab.2); Ponor Hill, 480-590 m *alt.*, 11.05.1967, Arsura Hill, 500 m *alt.*, 12.05.1867, Toplița Valley, 610 m *alt.*, 11.05.1967, ass. *Chrysosplenio-Cardaminetum amarae* (Tx. 1937) Mass 1959 (Coldea 1978:126, Tab.1; Sanda & Popescu A. 1991a:41, Tab.1); Padiș, rocks below Biserica Moșului, 10.07.1996, ass. *Asplenio-Caricetum brachystachyos* Richard 1972 (Coldea, Plămadă & Wagner 1997:85, Tab.1); Someșul Cald Gorges (Goia & Mătase 2001:16).

Bihar Mountains, Cetatea Rădesei Cave, 1971 (Ștefureac 1985e:111,113, 114, Tab.1); Ponorului Spring, 1000 m *alt.*, 08.1999 (Jakab 2000a:93; Jakab 2000b:67); Galbena Valley, 750 m *alt.*, 08.1999 (Jakab 2000b:66).

Conocephalum salebrosum Szweyk., Buczkowska & Odrzykoski

First citation for Romania: Szweykowski, Buczkowska, Odrzykoski 2005:155.

Ecology: epilithic-epigaic, hygro-mesophytic, acidophytic, sciophytic; mountain; circumpolar; Hth.

Herbaria and Exsiccatae: BUCA, KRAM, M, FRE

Distribution in Europe: No, Dk, Se, Ie, Br, Fr, Be, Lu, De, Po, Ch, At, Cz, Sk, Hu, Ba, Ro, Lv, Ua.

Distribution in Romania:

Giupalău Mountain, Giupalău Secular Forest, 47°26'44"N / 25°29'44"E, 1210 m *alt.*, 11.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3503] (Ștefănuț 2007a:103); Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 12.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3630].

Bucegi Massif, Jepi Valley, above Bușteni, 1100 m *alt.*, 29.04.1940, *leg.* Cretzoiu P., *det.* Papp C., sub *C. conicum*, *rev.* Szweykowski J., Buczkowska K. & Odrzykoski I.J., 2005 [FRE 3044a; M M-0060740; KRAM 14994](Borza, Gergely & Rațiu O. 1968:522; Szweykowski, Buczkowska, Odrzykoski 2005:155); Furnica Mountain, 1010 m *alt.*, 27.10.2005, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3300, B3301].

Piatra Craiului Mountains, ♀ - Crăpătura Pietrei Craiului, BV, on soil, 45°33'44"N / 25°15'51"E, 1100 m *alt.*, 21.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2749] (Ștefănuț 2007a:103); ♀ - Brusturet Gorges, AG, 45°27'55"N / 25°13'45"E, 950 m *alt.*, 26.07.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2956] (Ștefănuț 2007a:103).

Bucharest, Botanical Garden, 5.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3177] (Ștefănuț 2007a:103).

Gorj County, Peștera Muierii, 05.09.2006, *leg.* Cogălniceanu Gina, *det.* Ștefănuț S. [BUCA B3527] (Ștefănuț 2007a:103).

Șureanu Mountain, ♂ - Godeanu Valley, HD, 25.05.2006, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3528, B3529] (Ștefănuț 2007a:103).

Alba County, Cetățile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3857], ♀ - [BUCA B3871].

Corsinia coriandrina (Spreng.) Lindb.

Syn.:

- *Brissocarpus riccioides* Bisch.
- *Corsinia marchantioides* Raddi
- *Corsinia reticulata* (J.F. Gmel.) Dumort.
- *Guentheria graveolens* Trevir.

First citation for Romania: Müller 1954:404, Fig.93.

Ecology: epigaic, acidophyt-subneutrophytic, xerophytic, scio-photophytic, thermophytic; mediterranean-atlantic; Hth.

Distribution in Europe: Fr, Ch, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Me, Mk, Ro, Bg, Al, Gr, Ct, Az, Ma, Cn.

Distribution in Romania:

Caraș-Severin County, Cerna Valley, 500 m *alt.*, sub *C. marchantioides* (Müller 1954:404, Fig.93).

Obs. Müller K. quoted this species from Kawarna, Romania, but this locality is in Bulgaria (Müller 1954:404, Fig.93).

Diplophyllum albicans (L.) Dumort.

Syn.:

- *Diplophylleia albicans* (L.) Trevis.
- *Diplophylleia albicans* var. *elegans* C.E.O. Jensen
- *Diplophylleia albicans* var. *recurva* C.E.O. Jensen
- *Diplophylleia albicans* var. *secunda* C.E.O. Jensen
- *Diplophyllum albicans* var. *elegans* (C.E.O. Jensen) Müll. Frib.
- *Diplophyllum albicans* var. *recurvum* (C.E.O. Jensen) Müll. Frib.
- *Diplophyllum albicans* var. *secundum* (C.E.O. Jensen) Müll. Frib.
- *Jungermannia albicans* L.
- *Jungermannia falcata* Raddi
- *Jungermannia fissidentoidea* Huebener

First citation for Romania: without locality, sub *Jungermannia*, Baumgarten 1846:225,226.

Romania, (Petrov 1958:408).

Moldova (Papp 1943:664; Ștefureac & al. 1973:147).

Muntenia (Mohan 1988b:106).

Transylvania (Pax 1908:130).

Ecology: epigaic, epilithic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, SIB, FRE

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Me, Ba, Mk, Ro, Bg, Gr, Lv, Lt, Ua, Rn, Az, Ma, Cn.

Distribution in Romania:

Maramureş County, between Vişeu and Făina (Warnstorf 1895b:142); Şerban Mountain, *leg. & det.* Boros Á. (Boros & Vajda 1969:416); Covatar Waterfall from Săpânta, *leg. & det.* Boros Á. (Jakab 1999:51); Şipot Waterfall, Covatar Waterfall near Săpânta, 900 m *alt.*, 15-21.06.1997, near Băiuţ, 800 m *alt.*, 21-23.08.1998 (Jakab 1999:55).

Rodna Mountains, Vinului Valley, 700 m *alt.*, Corongiş (Matouschek 1905:78,79); Rodna Mountains (Pax 1908:130); Ineu, Crestele Găgii, Tăul Mare, 2000 m *alt.* (Ştefureac 1942b:90); Pietrosul Borşei, north-west slope, 2260 m *alt.*, 2260 m *alt.*, 2290 m *alt.*, 8-9.08.1948 (Ştefureac 1952a:391, Tab.1; Ştefureac 1967b:308; Ştefureac 1968:304); Rodna Mountains (Ştefureac 1963c:170); Iezerul Pietrosului, MM, 47°35'50"N / 24°38'50"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2012, B2292].

Țibleş Mountains, Țibleş Valley, Izvorul Țibleşului, Mesteacănu Valley, 1984-1985 (Mohan 1988a:21).

Suceava County, Argestrul, 16.05.1910 (Lilienfeldówna 1911:733); Cârlibaba Brook Valley, 1967 (Ştefureac & Pascal 1970a:246,249; Pascal 1973; Ştefureac & Pascal 1981:483); Bistriţa Auriu Basin (Pascal & Mititelu 1971; Ştefureac & Pascal 1981:483); Cristişor-Neagra Broştenilor, Borcut Meadow, on soil (Lungu 1973b:72; Lungu 1981c:93).

Giurnalău Mountain, Piciorul Pietrii, 1700 m *alt.* (Ştefureac 1942b:90).

Bârgău Mountains, Tomnatec Peak, Străja Valley, Piatra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:213).

Bistriţa-Năsăud County, Jelna Forest, Râpa Mare, Monari, Simioneşti, 1980-1981 (Mohan & Hodoroga 1983:52).

Căliman Mountains, Gruiu Peak, on soil (Mihai 1968a:205).

Neamţ County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242-244).

Nemira Mountains, Nemira, on siliceous rocks (Barabaş V. 1974:31); Nemira, on soil, 1970-1977 (Mihai & Barabaş V. 1978:116).

Bacău County, Slănic, on wet soil (Papp 1942b:525); Cerbului Brook Valley, Dobrul Culm, 900 m *alt.* (Papp 1957:285); between Slănicului Valley from Spa and Oituz Valley, at Poiana Sărată (Papp 1958b:394,417); Cerbului Brook, 600 m *alt.*, 23.07.1949, *leg. & det.* Papp C. [FRE 2925](Ghişa & Gergely 1962:358); *s* - Măgura Hill, north-west to Târgu Ocna, on rocks slopes from banks of brooks, 680 m *alt.*, rare (Mihai & Barabaş V. 1971:676,682-685); Slănic Brook, on wet rocks, 2.05-8.11.1971 (Ştefureac & Barabaş V. 1972:76-78,82); near Târgu Ocna, beech forest, 450 m *alt.* (Barabaş V. 1982b:68, Tab.18).

Ciucaş Mountains, Ciucaş Peak, Cucului Brook Valley, Bratocea Peak, Tigăile Mici Culm, Zăgan Mountain, Berii Brook Valley (Mohan 1990b:42).

Prahova County, Doftana Valley, Secăria Valley (Mohan 1971b:48);

Gârbova Massif, Azuga Valley, on soil, 1967-1970 (Lungu & Ştefureac 1970:5,8).

Făgăraş Mountains, Arpaş Mountain (Schur 1866:871; Fuss 1878:657; Hazslinszky 1885:66; Drăgulescu 2003:15); Vidraru Lake, AG, 6.07.1998, *leg. & det.* Ştefănuţ S. [BUCA B3067, B3473]; ♀ - Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ştefănuţ S. [BUCA B2549, B2654, B2657, B2659, B2665, B2667], *s* - [BUCA B2550], ♂ - [BUCA B2655, B2664, B2668] (Ştefănuţ 2002:190); ♀ - Pojorta Valley, BV, 800 m *alt.*, 21.09.2003, *leg. & det.* Ştefănuţ S. [BUCA B2916].

Iezer-Păpuşa Mountains, Bratia Valley, 900 m *alt.*, sub *Diplophyllia* (Loitlesberger 1898:194).

Cozia Mountain, on northern side of Bulzu Peak, 1560 m *alt.*, common spruce forest, Cozia Peak, 1668 m *alt.*, 1975-1976 (Dihoru G. 1990:52); Şirul de Pietre Culm, on rotten wood, 1987, *leg.* Negrean G. (Dihoru G. 1990:52).

Cindrel Mountains, Păltiniş, 12.06.1875, *leg. & det.* Barth J., sub *Jungermannia* [SIB HF 1550](Fuss 1878:657; Hazslinszky 1885:66; Gündisch 1977:50; Drăgulescu 1983:58; Drăgulescu 1992:55; Drăgulescu 2003:15); Crinţ, 900 m *alt.*, Păltiniş, 1450-1500 m *alt.*, Găușoara, 1600 m *alt.* (Gündisch 1977:50); Iezerul Mic, 2100 m *alt.* [SIB HG](Gündisch 1977:50; Drăgulescu 1992:55; Drăgulescu 2003:15); Iezerul Mare [SIB HG](Drăgulescu 1992:55; Drăgulescu 2003:15).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, *leg.* Barth J., sub *Jungermannia* (Barth 1883:8); Latoriţa Valley, 08-09.1954 (Ştefureac, Popescu & Lungu 1959:9,15,16,19,20,25,31, Tab.6).

Retezat Mountains, Retezat, sub *Jungermannia* (Hazslinszky 1885:66); Valereasca, in alpine zone (Schiffner 1914:308); Dobrun Brook Valley (Páll 1964a:108); Zănoaga Lake, 26.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

Alba County, Găina, 700 m *alt.* (Péterfi M. 1908:277; Goia 2001:69); Cepelor Valley, on rotten wood (Goia 2001:69); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); Detunata Mountains, 1055-1100 m *alt.*, *det.* Pócs T. & Sass-Gyarmati A. (Sass-Gyarmati, Pócs & Orbán 2005:127).

Cluj County, Dealul Mare (Péterfi M. 1908:277); Făget, *leg.* & *det.* Péterfi M. (Boros 1958:8).

Gilău Mountains, Răcătău, Negruța Valley, 13.04.1916, *leg.* & *det.* Györffy I. & Péterfi M. (Györffy 1924b:38).

Bihar County, *fer* - Vlădeasa Mountain, 1700 m *alt.*, 11.06.1901, *leg.* Györffy I. (Schiffner 1909a:28,33); Drăgan Valley (Boros 1942a:35; Ștefureac 1975b:313).

Diplophyllum obtusifolium (Hook.) Dumort.

Syn.:

– *Diplophyllia obtusifolia* (Hook.) Trevis.

– *Jungermannia obtusifolia* Hook.

– *Scapania microscopica* Culm.

First citation for Romania: Hazslinszky 1866; Schur 1866.

Transylvania (Pax 1908:130).

Herbaria and Exsiccatae: BUCA

Ecology: epigeic, epilithic, subneutrophyt-acidophytic, mesophytic, scio-photophytic; circumpolar; mountain; Hch.

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Hr, Sb, Ba, Ro, Bg, Lv, Lt, Ua, Rn, Rw, Re.

Distribution in Romania:

Maramureș Mountains, Stedia Valley, Cireș Valley (Boros 1951:376); Tâjla Valley, towards Borșa Spa, 08.1948 (Ștefureac 1958a:111); Jilerescu, Covatar Waterfall near Săpânța, 900 m *alt.*, 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, Pietrosul Rodnei, sub *Jungermannia* (Hazslinszky 1866:153; Hazslinszky 1868:137); Galați Mountain, 2000 m *alt.* (Matouschek 1905:80); Rodna Mountain (Pax 1908:130).

Țibleș Mountains, Arcer Peak, Țibleș Peak, 1984-1985 (Mohan 1988a:21).

Giulalău Mountain, Piciorul Pietrii, 1700 m *alt.* (Ștefureac 1942b:91).

Suceava County, Țapu Mountain, on wet rocks, *conf.* Mihai G. (Pascal 1970a:199; Pascal 1973; Ștefureac & Pascal 1981:483).

Căliman Mountains, Pietrosul Peak, on rocks (Mihai 1968a:205).

Harghita Mountains, Oltului Valley, near Bălan (Matouschek 1903b:160; Degen 1930:976); Minei Valley, 1100-1200 m *alt.*, on soil, 11.07.2000, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Bucegi Massif, ♀♂ - Lăptici Valley, DB, 45°22'34"N / 25°27'32"E, 1700 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3237].

Făgăraș Mountains, Suru, sub *Jungermannia obtusifolia* var. *purpurascens* (Schur 1866:872; Fuss 1878:657; Demeter 1886:111; Drăgulescu 2003:15).

Cindrel Mountains, Păltiniș, 1200-1300 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:15).

Parâng Mountains, *fer* - Curmătura Vidruței, 1350 m *alt.*, 26.07.1955 (Ștefureac, Popescu & Lungu 1957a:64-69, Tab.1); *fer* - between Lotru Valley and Jiu Valley, the way from Obârșia towards Lonea, before Poiana Muierii, 1600 m *alt.*, 16.08.1955, *leg.* Ștefureac T. (Ștefureac, Popescu & Lungu 1957a:64-69, Tab.1); Cârja, 2300 m *alt.* (Pócs 1958:109).

Retezat Mountains, Obârșia Nucșoarei, 1050 m *alt.*, 18.09.2003, *leg.* Paucă-Comănescu Mihaela, *det.* Ștefănuț S. [BUCA B3092].

Alba County, Cepelor Valley, Iarba Rea, on rotten wood (Goia 2001:69); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

Cluj County, Ciucea, 14.04.1916, *leg.* & *det.* Györffy I. & Péterfi M., sub *Diplophyllia* (Györffy 1924b:38).

Bihar County, Drăgan Valley (Boros 1942a:35).

Diplophyllum taxifolium (Wahlenb.) Dumort.

Syn.:

- *Diplophylleia taxifolia* (Wahlenb.) Trevis.
- *Diplophyllum taxifolium* var. *macrosticta* H. Buch
- *Diplophyllum taxifolium* var. *microsticta* H. Buch
- *Jungermannia albicans* var. *taxifolia* (Wahlenb.) Wallr.
- *Jungermannia taxifolia* Wahlenb.

First citation for Romania: Heufler 1853.

Ecology: epigeaic, epilithic, acidophyt-subneutrophytic, meso-hygrophytic, photophytic; circumpolar; subalpine-alpine; Hch.

Herbaria and Exsiccatae: BUCA, SIB

Distribution in Europe: Sj, Is, No, Se, Fi, Br, Fr, De, Po, Ch, At, Cz, Sk, Pt, Es, Co, It, Si, Ro, Bg, Ua, Nz, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Maramureş Mountains, Vaser Valley, sub *Jungermannia albicans* var. *taxifolia* (Hazslinszky 1885:66); Şerban Mountain, *leg. & det.* Boros Á. (Boros & Vajda 1969:416).

Rodna Mountains, Ineu Peak, 2250 m *alt.*, sub *Jungermannia albicans* var. *taxifolia* (Breidler 1890a:150); Corongiş, Galaţi Mountain, 2000 m *alt.* (Matouschek 1905:79,80); Ineu, Crestele Găgii, Tăul Mare, 2000 m *alt.* (Ştefureac 1942b:90); below Ineu Peak, Tomnatec Ridge towards Cuşca (Ştefureac 1945:175); Pietrosul Borşei, north-west slope, 2280 m *alt.*, 8-9.08.1948 (Ştefureac 1952a:391, Tab.1); Rodnei Mountains (Ştefureac 1963c:168,170); Ineu, 25.08.1937 (Ştefureac 1958b:80,81,85,86, Fig.2); Pietrosul Mare Glacial Ring, 1950-2000 m *alt.*, 19.07.1975, ass. *Luzuletum alpino-pilosae* Br.-Bl. 1926, *Soldanello pusillae-Ranunculetum crenati* Borza 1931 (Coldea, Täuber & Pînzaru 1981:439, Tab.3); Buhăiescu Mare Peak, 2080 m *alt.*, 24.07.1976, ass. *Soldanello pusillae-Ranunculetum crenati* (Coldea, Täuber & Pînzaru 1981:440, Tab.4); Anieşul Mare Peak, 2000 m *alt.*, in wet places, 17.07.1975 (Plămadă & Coldea 1982:109); Pietrosul Mare, 2150 m *alt.*, 19.07.1977, Buhăiescu Mare, 2080 m *alt.*, 24.07.1967, Puzdra-Anieşul Mare, 1800 m *alt.*, 27.07.1976, ass. *Soldanello hungaricae-Ranunculetum crenati* Coldea 1985 (Coldea 1985a:102, Tab.1); Anieşul Mare Peak, 1980-2000 m *alt.*, 17.07.1975, 7.08.1977, ass. *Salicetum herbaceae* Br.-Bl. 1931, Rebra Peak, 2080 m *alt.*, 24.07.1976, Puzdra-Anieş Saddle, 1800 m *alt.*, 27.07.1976, ass. *Soldanello hungaricae-Ranunculetum crenati* (Coldea 1990:56,57,59, Tabs.18,19); Buhăescu Peak, MM, 2100 m *alt.*, 26.06.1982, *leg.* Roman N., *det.* Ştefănuţ S. [BUCA B2948, B2950]; Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2205], 47°35'53"N / 24°38'49"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2148], 47°35'49"N / 24°38'49"E, 1860 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2228]; 47°35'50"N / 24°38'50"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B3453]; ♂ - Iezerele Buhăescu, MM, 47°35'19"N / 24°38'37"E, 1910 m *alt.*, 29.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B3456]; Ineu Glacial Ring, BN, 47°31'38"N / 24°53'33"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B3717, B3720].

Giupalău Mountain, Piciorul Pietrii, 1700 m *alt.* (Ştefureac 1942b:90).

Suceava County, Muncelu-Pojorâta, 15.05.1910 (Lilienfeldówna 1911:733); Ţapu Mountain, on wet rocks, *conf.* Mihai G. (Pascal 1970a:199; Pascal 1973; Ştefureac & Pascal 1981:483).

Căliman Mountains, Răchitiş Peak, on humus, 1981-1984 (Mihai 1985:96); Răchitiş Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m *alt.*, 26.07.2007, *leg. & det.* Ştefănuţ S. [BUCA B3736, B3737].

Făgăraş Mountains, Arpaşului Valley, beech forest, sub *Jungermannia albicans* var. *taxifolium* (Heufler 1853:50-51; Fuss 1854:20; Drăgulescu 2003:15); Arpaş Mountain (Schur 1866:871; Fuss 1878:657; Drăgulescu 2003:15); Bâlea Lake, *leg.* Zsák Z. (Schiffner 1914:308; Drăgulescu 2003:15); Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg.* Ştefănuţ S. & Ştefănuţ Mirela, *det.* Ştefănuţ S., incl. sub *D. obtusifolium*, *rev.* Ştefănuţ S. [BUCA B2355] (Ştefănuţ 2002:190; Ştefănuţ & Ştefănuţ M. 2003:80); ♀ - Bâlea Lake, SB, 45°36'07"N / 24°37'01"E, 2060 m *alt.*, 18.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2313], *s* - [BUCA B2314], ♀ - 45°36'07"N / 24°37'04"E, 2050 m *alt.*, 18.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2312], *s* - 45°36'07"N / 24°37'02"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B0956]; Capra Lake, AG, 45°36'01"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2373; B2385], 45°36'00"N / 24°37'46"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2376], 45°36'02"N / 24°37'50"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B0953, B2315]; The glacial ring from Doamnei Valley, SB, 45°36'19"N / 24°36'07"E, 1870 m *alt.*, 16.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2163].

Iezer-Păpuşa Mountains, Iezer Mountain, 2200 m *alt.*, sub *Diplophylleia* (Loitlesberger 1898:194).

Cindrel Mountains, Cănaia, 1750 m *alt.*, Cristești, 2200 m *alt.* [SIB HG](Gündisch 1977:50; Drăgulescu 2003:15); Cindrel, 2200 m *alt.*, Iezerul Mare, 1900 m *alt.* [SIB HG](Gündisch 1977:50; Drăgulescu 1992:55; Drăgulescu 2003:15).

Retezat Mountains, Valereasca, in alpine zone (Schiffner 1914:308); Zlătuia Valley, 6-7.09.1969, ass. *Grimmia hartmanii-Isothecium scabridi* Plămadă 1978 (Plămadă 1978:241, Tab.1; Plămadă 1993:54, Tab.4); Bârlei Valley towards Tăul Negru, 2000 m *alt.*, 8.07.1969, ass. *Rhododendro kotschyi-Pinetum mugi* (Borza 1959) em. Coldea 1985 (Plămadă & Coldea 1985a:124,125, Tab.2); Zănoaga Glacial Ring, 2200 m *alt.*, 27.07.1974, leg. Orbán S. & Debreczy Z., Zănoaga Lake, 28.07.1974, leg. Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

***Fossombronia pusilla* (L.) Nees**

Syn.:

- *Fossombronia pusilla* var. *decipiens* Corb.
- *Jungermannia pusilla* L., non (C.E.O. Jensen) H. Buch

First citation for Romania: Schur 1866.

Moldova (Ștefureac & al. 1973:143).

Dobrogea (Ștefureac, Mihai & Pascal 1970:123).

Muntenia (Mohan 1988b:111).

Ecology: epigeic, acidophytic, hygrophytic, photo-sciophytic; Eurasia-Australia; Hth.

Herbaria and Exsiccatae: SIB

Distribution in Europe: Dk, Se, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Mk, Ro, Bg, Gr, Ct, Tu, Ua, Az, Ma, Cn.

Distribution in Romania:

Botoșani County, fer - Borolea Nouă in Borolea Forest, on clayey soil, 11.04.1962, *conf.* Ștefureac T. (Mihai 1969c:90,97; Mihai 1969d:14,41; Mihai 1972b:116).

Iași County, Breazu Forest, 160-180 m *alt.* (Mihai & Pascal 1973a:266,272,273).

Constanța County, Făurei Forest, south-east to Băneasa Commune, on wet soil (Mihai & Pascal 1963:264; Mihai 1969c:97; Ștefureac, Mihai & Pascal 1970:123).

Brașov County, Homorod Spa, 26.07.1901 (Barth 1905:13; Mihai 1969c:97).

? - **Iezer-Păpușa Mountains**, Iezer Valley, Bătrâna Valley (Mohan 1990a:24).

Sibiu County, Sibiu [SIB SCHUR 4556](Schur 1966:870; Fuss 1878:652; Hazslinszky 1885:36; Pax 1908:128; Papp 1956b:39; Mihai & Pascal 1963:263; Mihai 1969c:97; Gündisch 1977:46; Drăgulescu 2003:9).

Bihar County, Vadu Crișului (Simonkai 1890a:129).

***Fossombronia wondraczekii* (Corda) Lindb.**

Syn.:

- *Codonia wondraczekii* (Corda) Dumort.
- *Fossombronia cristata* Lindb.
- *Fossombronia cristata* var. *wondraczekii* Lindb.
- *Fossombronia mittenii* Tind.
- *Fossombronia pusilla* var. *capitata* Nees
- *Fossombronia wondraczekii* var. *cristata* (Lindb.) S.W. Arnell
- *Fossombronia wondraczekii* var. *rubella* Bryhn
- *Jungermannia pusilla* var. *capitata* Nees
- *Jungermannia wondraczekii* Corda

First citation for Romania: Baumgarten 1846.

Muntenia (Mohan 1988b:112).

Ecology: epigeic, acidophytic, hygrophytic, scio-photophytic; circumpolar; Hth.

Herbaria and Exsiccatae: Smets

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sc, It, Hr, Ro, Bg, Gr, Ct, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Az.

Distribution in Romania:

Harghita County, Odorheiu-Secuiesc, “Szombatfalva”, sub *Jungermannia pusilla* fo. *capitata* (Baumgarten 1846:223; Schur 1966:870; Fuss 1878:653; Mihai 1969c:97; Bálint & Orbán 2006:468).

? - **Prahova County**, Doftana Valley between Trăistieni and Tesila, 850 m *alt.* (Mohan 1981:97-101, Pl.I, Figs.1-10; Mohan 1990a:24; Plămadă & Dumitru 1998b:70).

Caras-Severin County, Voislova, leg. & det. Simonkai L., sub *F. pusilla* fo. *capitata* (Simonkai 1872:66; Fuss 1878:653; Hazslinszky 1885:37; Szurák 1911:165; Plămadă & Dumitru 1998b:70).

Hunedoara County, Tomnatec Mountain in Tomnatica Valley, Bulzeștii de Sus, 700 m *alt.*, 20.07.1994 [Smets 7471](Smets 2003:61).

Bihor County, between Aleșd and Peștiș, 300 m *alt.*, sub *F. cristata* (Péterfi M. 1908:270; Ștefureac 1975b:310; Ștefureac 1986f:191; Plămadă & Dumitru 1998b:70).

***Fossombronia* sp.**

Bihor Mountains, Cetățile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:92; Jakab 2000b:67).

***Frullania dilatata* (L.) Dumort.**

Syn.:

- *Frullania dilatata* var. *anomala* Corb.
- *Frullania dilatata* var. *briziana* C. Massal.
- *Frullania dilatata* var. *microphylla* Nees
- *Frullania dilatata* var. *subtilissima* Nees
- *Frullania funchalensis* Gottsche
- *Frullania trabutiana* Steph.
- *Jungermannia dilatata* L.

First citation for Romania: Baumgarten 1846.

Romania, without locality, *leg. & det.* Lerchenfeld J., sub *Jungermannia* [SIB HL 33713] (Fuss 1878:653; Drăgulescu 1983:59); sub var. *anomala* (Müller 1957:1247).

Moldova (Papp 1943:667; Ștefureac & al. 1973:150);

Dobrogea, Black Sea Littoral, in forest, on bark (Mititelu D., Vițariu G. & al. 1968:152); Ștefureac, Mihai & Pascal 1970:120,123.

Muntenia (Mohan 1988b:111).

Transylvania (Pax 1908:130).

Ecology: corticolous, saprolignicolous, epigeaic, epilithic, indifferent, xero-mesophytic, photo-sciophytic; Eurasia; Hch.

Herbaria and Exsiccatae: BUCA, CSH, PHHM, SIB, Bryotheca romanica

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ct, Tu, Ee, Lv, Lt, By, Md, Ua, Cm, Rn, Rw, Rc, Re, Ca, Ma, Cn.

Distribution in Romania:

Rodna Mountains, (Pax 1908:130); Lala Valley, 1200 m *alt.*, on rocks, 17.08.1937 (Ștefureac 1938:240,242,250,251,258).

Țibleș Mountains, Păltiniș Peak, Arsuri Peak, Izvorul Țibleșului, 1984-1985 (Mohan 1988a:23).

Botoșani County, Bașeu Basin, in forests, on *Fagus sylvatica* (Mihai 1966:147,154, Tab.2); Pădureni Forest, sub var. *anomala* (Mihai 1968b:138); Ciritei and Pădureni Forests (Mihai 1968b:138, 143, Tab.4; Mihai 1968c:396); Sadoveni Forest, on *Quercus robur*, *conf.* Ștefureac T. (Mihai 1969c:91); Mitoc Forest (Mihai 1972d:113); Dobârceni Forest, on *Quercus petraea* (Mihai 1977b:23).

Suceava County, Vatra Dornei, 800 m *alt.* (Breidler 1890a:149); Izvorul Alb, 14.05.1910, Breaza, 3.06.1910, „Czarna dolina”, 13.05.1910, „Berdo, nad Czernianka”, 26.05.1910 (Lilienfeldówna 1911:736); Benea-Breaza, on serpentine, 1050-1100 m *alt.* (Ștefureac, Cristurean & Sihota 1964:225, Tab.1); the peatbogs from Cristișorul along Neagra-Broștenilor, 06.1964 (Lungu 1967c:329); Bistrița Aurie Valley, between Iacobeni and Ciocănești, the edge of Suhârzulul and Suhârzulul Mare brooks (Pascal 1969:107); Piatra Țibău, 1967 (Ștefureac & Pascal 1970a:247; Pascal & Mititelu 1971; Ștefureac & Pascal 1981:486); Ciocănești, Cârlibaba, Cârlibaba Nouă, between Iacobeni and Argestru, Codreava, Mestecăniș, Șesuri, Țibău, Valea Stâniilor, Iedu, Țapu, Dodu, Suhard, Tolovan (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:487); Cristișor-Neagra Broștenilor, Borcut Meadow, on trees trunks (Lungu 1973b:72; Lungu 1981c:94); Lunca Zamostea Reserve, 283 m *alt.*, 1988 (Dihoru G. 1999a:189,191; Dihoru G. 2002:68).

Rarău Mountain, Codrul Secular Slătioara, 780-1230 m *alt.* (Ștefureac 1941:1154,1263,1282, 1303, Tabs.5,8; Mickiewicz 1968:30,31); Codrul Secular Slătioara, Rarău Peak (Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:198).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Lophocolea heterophylla*-*Ptilidium pulcherrimum* Maurer 1961, ass. *Neckerieto-Isothecietum myosuroides* Barkman 1958 subass. *isothecietosum myuri* Barkman 1958 (Ștefureac, Mihai & Pascal 1976:36,39, Tab.3).

Stânișoara Mountains, Văleni in Suha Mare Brook Valley, on beech trunk and Gemenea Hill from Ostra Basin, on birch trunk, 1974 (Pascal & Toma M. 1977:42).

Bistrița-Năsăud County, Jelna Forest, Piatra Corbului, Monari, Simionești, Budacul de Jos, 1980-1981 (Mohan & Hodoroga 1983:54).

Iași County, Sinești Forest (Papp 1924a:102; Papp 1929:555,557,560); Repedea and Bârnova forests (Papp 1939a:355; Papp 1942b:526); Pârlitura Valley, Carului Valley, in forest, Ciurdea Brook Valley, in forest, on trees trunks (Papp 1950:400,403); Uricani Forest, incl. sub var. *subtilissima* (Eftimie 1967:290,292); Repedea-Bârnova Forests, on trees trunks, frequent (Papp & Eftimie 1963:109,111,112); Crâșnița - Ciortești Forest, on trees trunks, 1966-1969 (Plămadă & Vițalariu 1971:166); Breazu Forest, 160-180 m *alt.*, ass. *Madotheceto-Leskeetum nervosae* (Gams 1927) Barkaman 1958 (Mihai & Pascal 1973a:267,273, Tab.3); Uricani Forest, ass. *Frullanieto-Raduletum complanatae* (Lippmaa 1935) Mihai 1973 (Mihai 1973b:413-419, Tabs.5-7); Repedea-Bârnova Forests, ass. *Madotheceto-Leskeetum nervosae* (Gams 1927) Barkaman 1958, ass. *Leskeelleto-Raduletum complanatae* Mihai 1974, ass. *Frullanieto-Raduletum complanatae* (Lippmaa 1935) Mihai 1973, ass. *Leucodontetum sciuroides* Hilitzer 1925, ass. *Metzgerietum furcatae* Størmø 1938 (Mihai 1974a:128-130, Tabs.2-6); Mârzești Forest, ass. *Frullanieto-Raduletum complanatae* (Lippmaa 1935) Mihai 1973, ass. *Pylaisietum polyanthae* Gams 1927, ass. *Leskeetum polycarpae* Horvat 1932 subass. *brachythecietosum velutini* Mihai 1976, ass. *Hypnetum cupressiformis* Hilitzer 1925, ass. *Orthotrichetum fallacis* v. Krusenstjerna 1940 (Mihai 1976c:663,665, 666, Tabs.3,4,6,7,8); Humosu Natural Reserve (Mihai 1983c:349).

Hășmaș Mountains, Piatra Ascuțită (Öcsém) (Matouschek 1903b:160; Degen 1930:976; Bálint & Orbán 2006:467); Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Cifrabuc, 1200 m *alt.*, 16.08.2001, Cormoș Valley, 900 m *alt.*, 28.08.2001, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:467).

Harghita County, 20.07.1901 (Barth 1905:13); Odorhei, in beech forest, on trees trunks, 1958-1962 (Páll 1963b:17); Lacul Roșu (Dobrescu & Ghenciu 1974:33).

Neamț County, Neamț Monastery, on trees trunks and argillaceous soil, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Peste Recea Hills, in forest, Muncelașu and Poarta Poienilor (Papp 1947b:182-184,191); Corni Forest, Lacul cu Clin Forest (Papp 1959b:564; Ștefureac & al. 1973:150); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242); *s* - Botoșanu Hill, on fir trunks (Mihai 1971e:407); Pângărăcior Brook Valley, on beech trunks (Mihai 1973d:29,32); Dobreanului Culm, on the trunk of beech (Mihai 1974c:24; Ștefureac & al. 1973:150).

Ceahlău Mountain, Durău, on common spruce (Papp 1924b:393; Papp 1934b:66,69,72; Manoliu & al. 1998:336); Chirilul (Papp 1942b:526); Ceahlău, 650-1700 m *alt.* (Mihai 1979b).

Nemira Mountains, Nemira Mountain, on *Acer pseudoplatanus*, 1100 m *alt.* (Barabaș V. 1974:30); Șandru, on beech trunks and on *Alnus incana*, 1970-1977, incl. sub var. *anomala* (Mihai & Barabaș V. 1978:114,117); Nemira Mountain, 1100-1400 m *alt.* (Barabaș V. 1982b:75, Tab.25).

Bacău County, Colina Rogojina, 500 m *alt.*, Cheșcheșul Culm, 913 m *alt.*, Porcului Hill, in forest, Grozei Forest, Cernica Brook, Izvorul Negru Brook, Grozei Brook (Papp 1957:285); Pufu Hill, 800 m *alt.*, Coama Cheșcheșului (Papp 1958b:396,397); Berzunț Culm, 400-990 m *alt.*, around Sava Hermitage, in forest (Papp & Bîrcă 1960:316,324); Tajbuga Culm, on trees trunks (Papp 1966:219,220); Uz Valley, on *Salix caprea*, rare, 1966-1967 (Mihai & Barabaș V. 1969:71,77,78); *s* - Măgura Hill, north-western Târgu Ocna, on *Quercus petraea* trunks, on rocks, 680 m *alt.*, frequent (Mihai & Barabaș V. 1971:677,682,684-686); Slănic Brook, on hornbeam trunks, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:78,82); *s* - Bacău, Libertății Park, on fir trunks, Traian Forest, on *Quercus robur* trunks, 1971 (Mihai & Barabaș V. 1972:87,92); way from Întârcătoarele towards Zboina Verde, on trunks of *Fraxinus excelsior*, *Fagus sylvatica*, *Populus tremula* and *Picea abies*, Pucna Forest, on *Acer campestre*, Lunca Scutarului, on *Alnus incana* (Eftimie 1972:152,159); Măgura Hill - Târgu Ocna, 400-450 m *alt.* (Barabaș V. 1982b:77,78, Tabs.29,30).

Vrancea County, Tișitei Gorges, on trees trunks, 1977 (Mihai & Pascal 1986:46).

Măcin Mountains, Cheia Hill-Măcin, *leg.* & *det.* Ștefureac T. (Ștefureac, Mihai & Pascal 1970:123).

Tulcea County, Insula de fagi de la Luncavița, Luncavița Commune, on trees trunks, *leg.* & *det.* Dihoru G., *conf.* Ștefureac T. (Dihoru G. 1962:51; Ștefureac, Mihai & Pascal 1970:123); ? - Luncavița, *leg.* Dihoru G., *det.* Ștefureac T. (Ștefureac, Mihai & Pascal 1970:123); Babadag Forest, 220 m *alt.*, Niculițel Forest, on trees, 20-23.07.1968 (Ștefureac & Mohan 1969:140,144; Ștefureac, Mihai & Pascal 1970:123); ♀ - at 4 km south to Atmagea, 05.06.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3988, B3989]; Topolog, 13.06.2008, *leg.* & *det.* Ștefănuț S. [BUCA B3885].

Constanța County, the forest near Valul lui Traian, on trees (Mihai, Pascal & Vițalariu 1962:285; Ștefureac, Mihai & Pascal 1970:123); Danube Bank between Galița and Ostrov, Canaraua Fetii Forest,

1963 (Mihai 1965:160; Ștefureac, Mihai & Pascal 1970:123); Carvan Forest (Mihai 1965; Ștefureac, Mihai & Pascal 1970:123); Negureni Forest, on *Quercus cerris* (Mihai 1981b:10); Canaraua Fetii and Esehioi Forest Reserves (Mititelu, Parincu & Gheorghiiță 1993:33); ♀ - Canaraua Fetii, on *Ulmus* bark, 6.06.2007, *leg. & det.* Ștefănuț S. [BUCA B3990], ♂ - [BUCA B3991]; ♂ - Canaraua Fetii, on *Quercus* bark, 6.06.2007, *leg. & det.* Ștefănuț S. [BUCA B3992]; Neptun railway station, 2.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3195]; ♀ - Comarova Forest near Neptun railway station, 2.07.2006, *leg. & det.* Ștefănuț S. [BUCA B3538-B3540].

Penteleu Mountain, ♀ - Izvorul Stânei, 45°36'36"N / 26°25'23"E, 24.07.1935, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B0963].

Buzău County, Frasin Forest, 45°05'55"N / 26°48'34"E, 26.08.2003, *leg.* Biță Claudia, *det.* Ștefănuț S. [BUCA B2921]; ♂ - Sărata-Monteoru, 45°09'08"N / 26°38'38"E, 07.2005, *leg.* Ivănescu Cristina, *det.* Ștefănuț S. [BUCA B3186]; ♂ - Spătaru Forest, on *Fraxinus pallisiae* bark, 11.11.2008, *leg. & det.* Ștefănuț S. [BUCA B3984], ♀ - [BUCA B3985].

Ciucaș Mountains, Berii Brook Valley, Zăgan Mountain, Piscul Caprei, Roșu Mountain, Ursului Brook Valley (Mohan 1990b:44); Cheia, PH, 45°27'13"N / 25°56'20"E, 13.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2910-B2912]; ♂ - Cheia, PH, 45°27'13"N / 25°56'20"E, 4.07.2004, *leg. & det.* Ștefănuț S. [BUCA B3053].

Brașov County, Brașov (Schur 1866:870; Fuss 1878:653); Cetății (Lempeș) Hill, on *Quercus robur* trunks, 05.1961 (Mihai 1962:278); Tâmpa, 18.06.2006, *leg. & det.* Ștefănuț S. [BUCA B3511], ♂ - [BUCA B3519], ♀ - [BUCA B3520] (Ștefănuț 2006b:33; Ștefănuț 2008b:28); ♀ - Sâmbăta Monastery, 45°41'24"N / 24°49'50"E, 23.08.2005, *leg. & det.* Ștefănuț S. [BUCA B3199], ♂ - [BUCA B3200]; ♀ - Predeal, 6.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3395], s - [BUCA B3400].

Prahova County, Sinaia (Loitlesberger 1898:196); Doftana Valley, Secăria Valley, on beech bark (Mohan 1971a:9; Mohan 1971b:48); Tătaru Mountain, on left side of Bâlbâitoarea Brook, Bâlbâitoarea Peatbog, on *Alnus glutinosa* trunks, 9.07, 20.10.1981 (Dihoru G. 1984c:82); Crângul lui Bot Forest, Puchenii Moșneni, Românești, Stejaru, Tinosu (Dihoru A. 1994:3); ♀ - the forest behind Prahova railway station, on *Fraxinus angustifolia*, 44°49'30"N / 26°05'23"E, 4.05.2004, *leg. & det.* Ștefănuț S. [BUCA B3073]; ♂ - the forest behind Prahova railway station, PH, 44°49'30"N / 26°05'23"E, 4.05.2004, *leg. & det.* Ștefănuț S. [BUCA B3074, B3075]; ♀ - the forest behind Prahova railway station, 44°49'30"N / 26°05'23"E, 4.05.2004, *leg. & det.* Ștefănuț S. [BUCA B3078]; ♂ - Sinaia, 45°21'02"N / 25°33'29"E, 23.01.2005, *leg. & det.* Ștefănuț S. [BUCA B3175]; ♀ - Doftana Valley, in *Quercus petraea* forest, 45°10'11,8"N / 25°45'04,6"E, 26.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3412, B3414], ♂ - [BUCA B3413] (Vasilii-Oromulu 2008:87); Doftana Valley, in mixed *Quercus petraea* with *Fagus sylvatica* forest, 45°10'01,6"N / 25°45'09,2"E, 27.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3425] (Vasilii-Oromulu 2008:87); ♂ - Câmpina, on tile tree, 26.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3441]; ♀ - Lunca Mare, 23.05.2007, *leg. & det.* Ștefănuț S. [BUCA B3812].

Gârbova Massif, Rea Valley, 1000-1300 m *alt.*, Cumpătul Peak, 1651 m *alt.* (Mickiewicz 1968:30-35); Azuga Valley, Tufa Valley, Rea Valley, Valea lui Bogdan, on *Fagus sylvatica*, 1967-1970 (Lungu & Ștefureac 1970:6,9); Cumpātu Mountain, on beech bark, 830 m *alt.*, 30.09.1985, *leg. & det.* Lungu L. [CSH].

Bucegi Massif, Poiana Coștilei, 1200 m *alt.*, on beech forest, 5.12.1937, *leg.* Cretzoiu P., *det.* Pilous Z. [Bryotheca romanica 8] (Pilous 1938:2); Vârful cu Dor, 1891 m *alt.*, Urlătoarea Valley, 900-1000 m *alt.* (Mickiewicz 1968:30-35).

Piatra Craiului National Park, Diana, BV, 45°33'39"N / 25°13'40"E, 1100 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2819, B2822] (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:76; Ștefănuț, Pop O.G. & Ștefănuț M. 2006:278, Fig.5); Great Gorges of Dâmbovița River, AG, on soil, 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2583, B2942], on *Pinus sylvestris*, 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2585, B2596, B2597, B2600], ♀ - on *Pinus sylvestris*, 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2586, B2587, B2589], ♂ - on *Pinus sylvestris*, 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2588, B2590, B2593, B2595] (Ștefănuț & Pop O.G. 2006:76; Ștefănuț, Pop O.G. & Ștefănuț M. 2006:278, Fig.5); Gura Râului, BV, 45°33'07"N / 25°17'50"E, 900 m *alt.*, 7.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2726, B2732], ♀ - [BUCA B2728], ♂ - [BUCA B2729] (Ștefănuț & Pop O.G. 2006:76; Ștefănuț, Pop O.G. & Ștefănuț M. 2006:278, Fig.5); Garofița Pietrei Craiului Hut, AG, 45°30'47"N / 25°10'26"E, 1080 m *alt.*, 9.07.2003, *leg. & det.* Ștefănuț S.

[BUCA B2793], on rotten beech trunk, 45°30'42"N / 25°10'25"E, 1150 m alt., 9.07.2003, leg. & det. Ștefănuț S. [BUCA B2720], on beech, 45°30'39"N / 25°10'27"E, 1200 m alt., 9.07.2003, leg. & det. Ștefănuț S. [BUCA B2723] (Ștefănuț & Pop O.G. 2006:76; Ștefănuț, Pop O.G. & Ștefănuț M. 2006:278, Fig.5); ♀ - Crăpătura Pietrei Craiului, BV, on beech, 45°33'55"N / 25°15'57"E, 1000 m alt., 21.08.2003, leg. & det. Ștefănuț S. [BUCA B2768], ♂ - [BUCA B2769], s - on soil, 45°33'49"N / 25°15'54"E, 1050 m alt., 21.08.2003, leg. & det. Ștefănuț S. [BUCA B2752]; ♀ - [BUCA B2767], ♀ - 45°33'44"N / 25°15'51"E, 1100 m alt., 21.08.2003, leg. & det. Ștefănuț S. [BUCA B2765]; ♂ - [BUCA B2766] (Ștefănuț & Pop O.G. 2006:76; Ștefănuț, Pop O.G. & Ștefănuț M. 2006:278, Fig.5); Piscul Rece, AG, 45°30'42"N / 25°11'04"E, 1250 m alt., leg. & det. Ștefănuț S., 8.07.2003 [BUCA B2951] (Ștefănuț & Pop O.G. 2006:76; Ștefănuț, Pop O.G. & Ștefănuț M. 2006:278, Fig.5).

Argeș County, Nămăești, sub var. *subtilissima* (Loitlesberger 1898:196; Eftimie 1967:289).

Ialomița County, „Bărăganu” Experimental Forest Station (Dihoru G. & Mărgăritescu 1994:95, Tab.1).

Ilfov County, Piscu-Hereasca, Căldărușani and Snagov Forests, on trees (Radian 1901b:41); Periș, on oak, 10.1920, leg. Brândză M., det. Ștefureac T., sub var. *anomala* (Ștefureac 1942a:5); ♀ - Știrbei-Vodă Forest, 25.03.1936, leg. & det. Popescu A. [PHHM 6207790](Mohan 1971a:9); ♂ - Pantelimon, Lebăda Forest, leg. & det. Ștefănuț S. (!); ♂ - Pantelimon, Lebăda Forest, 44°26'21"N / 26°13'16"E, 2.05.2005, leg. & det. Ștefănuț S. [BUCA B3176], 9.10.2005, leg. & det. Ștefănuț S. [BUCA B3307]; ♂ - Lebăda Forest, 11.06.2006, leg. & det. Ștefănuț S. [BUCA B3541]; Lebăda Forest, 9.07.2006, leg. & det. Ștefănuț S. [BUCA B3542]; Lebăda Forest, 3.09.2006, leg. & det. Ștefănuț S. [BUCA B3596]; Lebăda Forest, 44°26'21"N / 26°13'16"E, 6.07.2008, leg. & det. Ștefănuț S. [BUCA B3895], ♀ - [BUCA B3896]; ♀ - Pasărea Forest, 1.05.2008, leg. & det. Ștefănuț S. [BUCA B3882], ♂ - [BUCA B3883].

Bucharest, Botanical Garden (Ștefureac 1982c:200).

Giurgiu County, Comana Forest, on trees (Radian 1901b:41); s - Comana, 1968-1969, on *Quercus frainetto* (Ștefureac & Mohan 1970a:351,353); Tătarului Forest, 7.06.1969, on *Quercus cerris* (Ștefureac & Mohan 1970b:151,153,155, Tab.1); ♀ - Călugăreni Forest, 44°10'03"N / 26°00'44"E, 3.05.2004, leg. & det. Ștefănuț S. [BUCA B2932]; Călugăreni Forest, 44°10'03"N / 26°00'44"E, 10.05.2005, leg. Ivănescu Cristina, det. Ștefănuț S. [BUCA B3184]; ♂ - Comana Forest, 31.05.2006, leg. & det. Ștefănuț S. [BUCA B3588].

Făgăraș Mountains, Arpașului Valley, in beech forest, on trees (Heufler 1853:50-51; Schur 1866:870; Fuss 1878:653); Plaiul Țării, on beech trunks, 21.08.1868, leg. & det. Fuss M. [SIB HF 1582](Fuss 1878:653; Drăgulescu 1983:59); ♀ - Arpașul Mare Valley, SB, 45°41'46"N / 24°30'03"E, 590 m alt., 8.10.2003, leg. & det. Ștefănuț S. [BUCA B2922], ♂ - [BUCA B2923], s - on *Quercus robur* [BUCA B2924], ♀ - on *Quercus robur* [BUCA B2926], ♂ - on *Quercus robur* [BUCA B2927]; ♂ - on *Alnus incana* [BUCA B2928].

Cozia Mountain, Stănișoara Monastery, in forest, on trees, 1975-1976 (Dihoru G. 1990:52).

Teleorman County, Bujoreni, on *Acer campestre*, 44°07'08"N / 25°39'03"E, 21.04.2004, leg. & det. Ștefănuț S. [BUCA B2934], on *Quercus cerris* [BUCA B2935].

Sibiu County, Măgura Cisnădiei [SIB SCHUR 4547](Schur 1866:870; Fuss 1878:653; Gündisch 1977:52); Bradu (Fuss 1878:653).

Cindrel Mountains, Crinț, 800 m alt., Păltiniș, 1200 m alt. (Gündisch 1977:52).

Vâlcea County, s - Băița Valley, Proeni, Olănești, in *Carpino-Fagetum* Paucă 1941, goruneto-fagetum, on soil, on tree trunk and rotten woods, frequent (Ștefureac & Peicea 1973:44,46,49); Stănești, on walnut tree, Valea lui Nanu Forest, 18.11.2001, leg. Răduțoiu D., det. Dihoru G. (Dihoru G. & Răduțoiu 2002:22); Roești, Cornii Hill, on Hungarian oak trunk, 400-500 m alt., 20.10.2002 (Dihoru G. & Răduțoiu 2004:77).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:527,536).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, leg. Barth J. (Barth 1883:5); Latorița Valley, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,14,20,34,40,41, Tab.5).

Retezat Mountains, Retezat (Simonkai 1872:66; Fuss 1878:653); Retezat National Park, ass. *Anomodontetum attenuati* (Barkm. 1939) Peciar 1965 (Plămadă 1976a; Plămadă 1976b:20, Tab.2); Zlătuia Valley, 850 m alt., 6-7.09.1969, ass. *Anomodontetum attenuati* (Barkm. 1939) Peciar 1965 (Plămadă 1982a:306, Tab.3; Plămadă 1993:51, Tab.1).

Hunedoara County, Hills from Șoimuș, Făerag Valley, Piscului Brook (Certejul de Sus) and Hunedoara on Sânpetru Hill, ass. *Carpino-Fagetum* Paucă 1941 (Sanda, Popescu & Peicea 1972:315, Tab.7); between Deva and Șoimuș Commune, Certeju de Sus (Peicea 1973:440,443,446, Tabs.2,3).

Mehedinți County, Orșova (Simonkai 1872:66); †, ♀ - Ada-Kaleh Island, on *Populus alba*, *P. nigra*, *Tilia tomentosa*, rare on *Acer campestre* (Ștefureac & Mihai 1968a:298,303-305, Tab.1); Eșelnița Valley, on *Alnus glutinosa* and rocks (Plămadă 1970b:206); Danube Defile, between Orșova and Cerna Valley, in forest, frequent, 1966-1968 (Plămadă 1970c:393); between Berzasca and Svinița, in forest, on rocks, 1966 (Ștefureac & Mihai 1970:501).

Domogled Mountain, Șușcu Peak, *leg. & det.* Papp C. (Papp 1939b:20); Cerna Valley, on soil, 07.1933, *leg.* Badea M. (Papp 1937a:160); ♀ - Crucea Albă, 44°53'10"N / 22°25'48"E, 500 m *alt.*, 9.08.2004, *leg. & det.* Ștefănuț S. [BUCA B2986, B2988], s - [BUCA B2987].

Carăș Severin County, Mehadia (Simonkai 1872:66); Voislova (Simonkai 1872:66; Fuss 1878:653); Poiana Ruscă, Rusca Montană, on Pleșu, on hornbeam trunks, 630 m *alt.*, Rusca Mountain, 800-850 m *alt.*, Cracul Vulturului, 880-1100 m *alt.*, on beech trunk (Papp 1942a:51); "Fântâna Moșului", near the way from Herculan Spa towards Gornești, Isverna (Ștefureac 1947a:139); Caransebeș, 300 m *alt.*, 03-08.1943, *leg.* Boșcaiu N. (Ștefureac 1948a:220); Valea Mare Reserve, the station with *Daphne laureola*, on *Acer campestre*, 25.07.1962 (Ștefureac & Mihai 1967:14,16; Plămadă 1990:74); Cerna Valley, Ciorici Peak (Boros, Vajda & Debreczy 1969:6,7); ♂ - Grota cu Aburi, 44°54'03"N / 22°25'05"E, 400 m *alt.*, 6.08.2004, *leg. & det.* Ștefănuț S. [BUCA B2973], s - [BUCA B2974].

Poiana Ruscă Mountains, Luncani (Simonkai 1872:66; Fuss 1878:653); near Casa Verde (Timișoara), in Turkey oak and Hungarian oak forest, 24.07.1962 (Ștefureac & Mihai 1967:14); Sinersig „Dumbrava” Forest, in Turkey oak and Hungarian oak forest, 29.07.1962 (Ștefureac & Mihai 1967:14).

Zarand Mountains, Jernova Valley, Gurahonț, on deciduous trees trunks (Csürös M. 1978:77; Ardelean 2006:106).

Codru-Moma Mountains, Monesei Valley, Valea Lungă, Măgura Diecilor, Crișul Văratec Valley, on oak tree (Mohan 1996:50; Ardelean 2006:106).

Arad County, Săvârșin (Simonkai 1872:66; Simonkai 1893:361); Ciala Forest, Pecica (Simonkai 1893:361; Fuss 1878:653); ♀ - Ciala Forest, on poplar tree, 3.09.2003, *leg. & det.* Ștefănuț S. [BUCA B2329], ♂ - [BUCA B2330], s - on *Juglans nigra* [BUCA B2333], ♂ - on *Juglans nigra* [BUCA B2334, B2336], ♂ - on oak tree [BUCA B2337, B2339], ♀ - on oak tree [BUCA B2338], s - on oak tree [BUCA B2331]; Runcu-Groși Reserve, 46°10'14"N / 22°07'34"E, 428 m *alt.*, 20.08.2008, *leg. & det.* Ștefănuț S. [BUCA B3927, B3932].

Mureș County, Sighișoara, *leg. & det.* Baumgarten J.C.G., sub *Jungermannia* [SIB HF 1579] (Baumgarten 1846:230; Schur 1866:870; Fuss 1878:653; Höhr 1914:88; Drăgulescu 1983:59).

Alba County, Galda de Sus, Mihălț, *leg. & det.* Barth J. (Fuss 1878:653); Cămpeni, Poduri Forest, 9.05.1902, *leg.* Györffy I. (Schiffner 1909a:28,33; Goia 2001:83); ♂ - Felső-Vidra, „Piatra Struțu” (Schiffner 1914:309; Goia 2001:83); Valea Lungă, on old oak trees trunks, 15.04.1866, *leg. & det.* Barth J. [SIB HF 1580,1581](Fuss 1878:653; Borza & Lupșa 1964:150; Drăgulescu 1983:59); Piatra Ceții, Trascău Mountains, 3.07.1868 (Barth 1868:140,141); Pojar Hill, on hornbeam, 580 m *alt.*, 25.08.1994, ass. *Isothecium myuri* Hiltzer 1925, ass. *Madotheco-Leskeetum nervosae* (Gams 1927) Barkman 1958, Drăghița Valley, on fallen beech tree, 750 m *alt.*, 20.08.94, ass. *Anomodonto-Leucodontetum* Wisn. 1930 (Goia 1998:256-258, Tabs.6-8); Drăghița Valley, 750 m *alt.*, 28.08.1994, ass. *Anomodonto-Leucodontetum* (Goia 2000:120, Tab.8); Arieșul Mic Basin (Goia & Schumacker 2000:92); Popeștilor Brook, Vidrișoara Valley, Măguri Valley affluent of Neagra Valley, on beech and willow trees, Cobleș Valley, below Lucia Cave, on willow tree, Drăghița Valley, on beech and willow trees, on rotten woods, Pojar Hill, on hornbeam, Buciniș Valley, on apple tree and beech tree, Divaia Valley, Arieșul Mic towards springs, Gârda – Scărișoara interfluvium, Gârda Seacă, Ordencușa Valley, on beech forest, Băii Valley – Drăghița Valley, Morii Valley, on rotten wood (Goia 2001:83,84); Vidrișoara Valley, 2.06.1995, ass. *Orthotrichetum pallentis* Ochs. 1928, Popeștilor Valley, 15.08.1994, Drăghița Valley, 20.08.1994, ass. *Pylaisietum polyanthae* Felf.1941, Divaia Valley, 21.08.1994, Pojar Hill, 25.08.1994, Vidrișoara Valley, 20.08.1992, Cheia Valley, 31.07.1994, Morii Valley, 13.08.1994, Arieșul Mic Valley, 16,20.08.1994, ass. *Pterigynandretum filiformis* Hiltzer 1925, Drăghița Valley, 20.08.1994, Morii Valley, 7.08.1994, ass. *Homalothecium sericei-Porelletum platyphyllae* Störmer 1938, Drăghița Valley, 20.08.1994, ass. *Isothecium myuri*, Divaia Valley, 21.08.1994, Pojar Valley, 25.08.1994, Drăghița Valley, 20.08.1996, ass. *Anomodonto viticulosi-Leucodontetum sciuroidis*, Pojar Hill, 25.08.1994, ass.

Orthodicrano montani-Hypnetum filiformis Wisn. 1930 (Goia & Schumacker 2003:59,60,62-64, Tabs.1-5); Vramiță Valley, towards Avram Iancu, 27.05.1998 (Smets 2003:60); Buciniș Valley, 840 m alt., 13.09.1996, between Măgura Valley and Obârșia Valley, 800 m alt., 27.09.1996, ass. *Pylaisietum polyantae orthotrichetosum obtusifoliae* Marst. 1985, Scărișoara cave, 1070 m alt., 11.08.1996, between Măgura and Obârșia Valley, 980 m alt., 27.09.1996, between Gârda Valley and Scărișoara cave, 1000 m alt., 11.08.1996, ass. *Pterigynandretum filiformis*, Buciniș Valley, 890 m alt., 13.09.1996, ass. *Brachythecietum populei* Phil. 1972, between Măgura Valley and Obârșia Valley, 700 m alt., 27.09.1996, ass. *Anomodonto viticulosi-Leucodontetum sciuroides*, Cobleș Valley close o spring, 860 m alt., ass. *Brachythecio salebroși-Drepanocladetum uncinati* Marst. 1989 (Goia & Schumacker 2004:107,109-111, Tabs.1-4); Detunata Mountains, Detunata Goală, 1200 m alt., det. Sass-Gyarmati A. (Sass-Gyarmati, Pócs & Orbán 2005:127).

Cluj County, Turea, sub var. *microphylla* Nees (Péterfi M. 1910:322,323); Southern Ciucea on Surduc Valley (Boros 1942a:34); Turda, Băile Sărute (Todor 1947:41); Ciurila Forest, on tree trunks, 1961-1966 (Plămadă 1967:470); Greben Valley, Mănăștur (Soó 1951:40; Boros 1958:8); Cluj-Napoca, Făget, Pleșca Valley, Cluj-Napoca Botanical Garden, Hăitașului Valley, Sfântu Gheorghe (Chintău) Hill (Boros 1958:4-8; Plămadă 1963:180; Plămadă 1969:170; Ștefureac 1982c:197,200, Tab.2); Sălicea, Valea Popii, Cluj-Napoca, Central Park (Goia 2002:114, Tab.1).

Bihor County, Sânmartin, Felix Spa (Simonkai 1876; Borbas 1879:262; Simonkai 1890a:129); Iadului Valley between Remetea and Bulz, on rocks (Boros 1942a:33); Drăgan Valley (Boros 1942a:35); Rădvani Forest, on ash tree trunks, det. Ștefureac T. (Pop I. 1968:70).

Bihor Mountains, without locality, 200-1200 m alt. (Péterfi M. 1908:279; Goia 2001:83).

Frullania fragilifolia (Taylor) Gottsche et al.

Syn.:

– *Jungermannia fragilifolia* Taylor

First citation for Romania: Simonkai 1893.

Moldova (Papp 1943:667; Ștefureac & al. 1973:150).

Ecology: epilithic, acidophytic, mesophytic, sciophytic; mountain, European; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, Lt, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Ba, Ro, Bg, Al, Gr, Ua, Cn.

Distribution in Romania:

Maramureș County, Poloninca Mountain (Boros 1951:378; Plămadă 1973a:382).

Țibleș Mountains, Păltiniș Peak, Arsuri Peak, Izvorul Țibleșului, 1984-1985 (Mohan 1988a:23).

Iași County, Repedea Forest (Papp 1924a:102; Papp 1929:555,557); Repedea and Bârnova forests (Papp 1939a:355); Repedea-Bârnova Forests, on soil (Papp & Eftimie 1963:108).

Rarău Mountain, Codrul Secular Slătioara, 850-1600 m alt., 16.08.1937 (Ștefureac 1941: 1154,1242,1245,1275,1276,1283, Tabs.4,5,8; Mickiewicz 1968:32; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:198).

Hășmaș Mountains, Cupaș Valley, 1978, 1979, ass. *Dicrano-Hypnetum cupressiformis* (Ochsner 1928) v. Krunsenstjerna 1945, ass. *Orthodicrano-Hypnetum filiformis* Wisn. 1930 (Mihai 1981a:19, Tabs.6,7).

Harghita County, ♀ - Vârghiș Gorges, 46°19'19"N / 25°32'45"E, 2.10.2007, leg. & det. Ștefănuț S. [BUCA B3874], ♂ - [BUCA B3875].

Cozia Mountain, on gnaiss, 1975-1976 (Dihoru G. 1990:52).

Cindrel Mountains, Păltiniș, 1000 m alt. (Gündisch 1977:52); Păltiniș, 1300 m alt., leg. Boros Á. (Gündisch 1977:52).

Parâng Mountains, Parâng Mountain, 22-26.08.1882 (Barth 1883:5; Ștefureac, Popescu & Lungu 1955:525; Plămadă 1973a:382).

Retezat Mountains, Șesele Valley, Pârgului, Zlătuia, on rocks in river bed, 1964-1971 (Plămadă 1973a:382).

Zarand Mountains, Arăneag, in beech forest, on rocks (Csűrös M. 1978:77; Ardelean 2006:106).

Arad County, Cladova Valley, in Arăneag zone and on Mocrea Hill (Simonkai 1893:361).

Gilău Mountains, Răcătău, 14.04.1916, leg. & det. Györffy I. & Péterfi M. (Györffy 1924b:38; Plămadă 1973a:382).

Bihor Mountains, Onceasa and Buteasa, 1000-1400 m alt. (Péterfi M. 1908:279).

Frullania jackii Gottsche

Syn.:

– *Frullania davurica* auct. europ.

– *Frullania davurica* subsp. *jackii* (Gottsche) S. Hatt.

First citation for Romania: Boros 1942a.

Romania: Frey & al. 2006:121.

Transylvania (Müller 1957:1247).

Ecology: epilithic, basiphytic, mesophytic, sciophytic; Eurasia; Hch.

Distribution in Europe: No, Fr, De, Po, Ch, At, Sk, Hu, It, Si, Ro, Bg, Ua.

Distribution in Romania:

Cindrel Mountains, Crinț, 800 m *alt.*, Păltiniș, 1000 m *alt.* (Gündisch 1977:52); Păltiniș, 1000 m *alt.*, *leg.* Boros Á. (Gündisch 1977:52).

Căpățânci Mountains, Lotru Valley, above Bucureasa Gorges, *Fagus sylvatica*, *Acer pseudoplatanus* and *Quercus petraea* forest, 710 m *alt.*, 10-13.09.1952 (Ștefureac, Popescu & Lungu 1954:235-242, Figs.1-17; Ștefureac, Popescu & Lungu 1955:527, Pl.III, Figs.1-4, Pl.IV, Figs.5-17; Ștefureac, Popescu & Lungu 1959:17; Dihoru 1987:88).

Alba County, Piatra Secuiului Mountain, near Rimetea, *leg.* Vajda L. & Gergely I. (Vajda 1960:156).

Cluj County, Southern Ciucea on Surduc Valley, 5.10.1941 (Boros 1942a:34; Boros 1951:378; Ștefureac, Popescu & Lungu 1954:235,240,241; Ștefureac, Popescu & Lungu 1955:531; Ștefureac 1975b:313,314; Dihoru 1987:88); Sebeș Valley from Crișul Repede Springs, at Bologa and Traniș, 12.04.1943, *leg.* Soó R. & Harghitai Z. (Soó 1944a:58; Boros 1951:378; Ștefureac, Popescu & Lungu 1954:235,240, 241; Ștefureac, Popescu & Lungu 1955:531; Dihoru 1987:88); Someșul Cald Valley, 450 m *alt.*, *leg.* & *det.* Vajda L. (Boros & Vajda 1967:227).

Frullania parvistipula Steph.

Syn.:

– *Frullania eboracensis* Gottsche subsp. *parvistipula* (Steph.) R.M. Schust.

– *Frullania eboracensis* Gottsche subsp. *caucasica* (Steph.) R.M. Schust.

First citation for Romania: Ștefănuț 2004c.

Romania (Frey & al. 2006:122; Söderström, Urmi & Váňa 2007:317).

Ecology: epilithic, calcicolous, xerophytic, photo-sciophytic; Eurasia; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Ch, At, Sc, It, Ro.

Distribution in Romania:

Argeș County, Piatra Craiului National Park, Great Gorges of Dâmbovița River, AG, 45°23'19"N / 25°11'45"E, 800 m *alt.*, 7.07.1998, *leg.* & *det.* Ștefănuț S., *conf.* Schumacker R. 2003 [BUCA B0943], ♀ - 10.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B0944] (Ștefănuț 2004c:110-111; Ștefănuț 2006a:88-93, Figs.1a-d,2a-g,3a-e,4; Ștefănuț & Pop O.G. 2006:76).

Frullania tamarisci (L.) Dumort.

Syn.:

– *Frullania major* Raddi

– *Frullania maritima* Steph.

– *Frullania nervosa* Montin

– *Jungermannia tamarisci* L.

– *Jungermannia tamariscifolia* L.

First citation for Romania: Baumgarten 1846.

Romania, *without locality*, sub *Jungermannia* (Baumgarten 1846:231; Fuss 1878:653).

Maramureș (Hazslinszky 1885:38).

Moldova (Papp 1943:668; Ștefureac & al. 1973:150).

Muntenia (Mohan 1988b:111).

Transylvania (Hazslinszky 1885:38; Pax 1908:130).

Banat (Klinggraff H.; Hazslinszky 1885:38).

Ecology: epilithic-epigaeic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, CL, SIB, FRE

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ct, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Ka, Ca, Az, Ma, Cn.

Distribution in Romania:

Maramureş County, Maramureş (Hazslinszky 1885:38); between Vişeu and Făina, Bistriţa Aurie Valley, between Prislop and Poiana Rotundă (Warnstorf 1895b:143); Cavnic (Boros 1943e:146); Covatar Waterfall near Săpânţa, 900 m *alt.*, 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, (Pax 1908:130); Pietrosul Borşei, Piciorul Moşului, northern slope, 1650 m *alt.* (Ştefureac 1958a:105-106).

Suceava County, Câmpulung Moldovenesc, Ceardac Mountain, 1300 m *alt.* (Breidler 1890a:149); Cârlibaba, 1967 (Ştefureac & Pascal 1970a:247); Codreava, Piatra Țibău, Valea Stâni, Tolovan Mountain, between Iacobeni and Argestru (Pascal & Mititelu 1971; Ştefureac & Pascal 1981:487); Cristişor-Neagra Broştenilor, Borcut Meadow, on trees trunks (Lungu 1973b:72; Lungu 1981c:94).

Rarău Mountain, Rarău, 14.05.1910 (Lilienfeldówna 1911:736); Todirescu (Papp 1927b:150); Codrul Secular Slătioara, 800-1500 m *alt.* (Ştefureac 1941:1154,1270,1276,1282,1283, Tabs.3,5,8; Mickiewicz 1968:30-32; Ştefureac 1969a: Tab.16); Codrul Secular Slătioara, Rarău Peak (Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ştefureac & Raclaru 1978:198).

Bărgău Mountains, Cucureasa Reserve, Coşna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Neckerieto-Isothecietum myosuroides* Barkman 1958 *isothecietosum myuri* Barkman 1958 (Ştefureac, Mihai & Pascal 1976:36, Tab.3).

Harghita County, 20.07.1901 (Barth 1905:13); Târnava Mare Valley between springs and Odorhei City, on wet rocks, 1958-1962 (Páll 1963b:17); Tuşnad (Bálint & Orbán 2006:468).

Ceahlău Mountain, Ceahlău (Papp 1934b:66,72; Manoliu & al. 1998:336); northern slope of Toaca Peak and about Panaghia Peak, ass. *Dryadetum octopetalae* Csürös et al. 1956 *salicetosum retusae* Zanoschi 1972, 1890 m *alt.*, 31.08.1969, *det.* Mihai G. (Zanoschi 1972:225, Tab.1; Manoliu & al. 1998:336).

Bacău County, Slănic Brook, on hornbeam trees trunks, 2.05-8.11.1971 (Ştefureac & Barabaş V. 1972:78).

Siriu Mountain, Buzău Gorges, Piatra Zăpezii, in *Quercus-Fagetum* and *Tilio-Acerion* (Dihoru G. 1975:24).

Ciucăş Mountains, Zăgan Mountain, Stâncoasă Culm (Mohan 1990b:44).

Braşov County, Braşov (Barth 1880:121).

Bucegi Massif, Bucoşiu Peak, 2000 m *alt.*, 08-09.1911 (Degen 1914:217); Vârful cu Dor, 1891 m *alt.*, Urlătoarea Valley, 900-1000 m *alt.* (Mickiewicz 1968:30,31).

Piatra Craiului National Park, Great Gorges of Dâmboviţa River, AG, on soil [BUCA B2608], on *Pinus sylvestris* [BUCA B2795], 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg.* & *det.* Ştefănuţ S. (Ştefănuţ & Pop O.G. 2006:76).

Făgăraş Mountains, Arpaş Mountain (Schur 1866:870; Fuss 1878:653; Hazslinszky 1885:38); Pojorta Valley, BV, 45°38'14"N / 24°53'48"E, 800 m *alt.*, 21.09.2003, *leg.* & *det.* Ştefănuţ S. [BUCA B2919, B3155].

Sibiu County, Sibiu [SIB SCHUR 4588](Schur 1866:870; Fuss 1878:653; Hazslinszky 1885:38; Gündisch 1977:52).

Cindrel Mountains, Păltiniş, 1000 m *alt.* (Gündisch 1977:52); Păltiniş, 1000-1300 m *alt.*, *leg.* Boros Á. (Gündisch 1977:52).

Vâlcea County, Boia Mare Valley at Grebleşti (Loitlesberger 1898:196).

Mureş County, Lunca Bradului, *leg.* & *det.* Demeter K. [CL](Igmándy 1943:56).

Căpăţânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ştefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, *leg.* Barth J. (Barth 1883:5); Latoriţa Valley, Repedea Valley, Gura Văii Repedea, 08-09.1954 (Ştefureac, Popescu & Lungu 1959:9,13,19,27,28,34, Tabs.5,8).

Hunedoara County, Sălciua de Jos, 06.1918, *leg.* Györfy I. & Péterfi M. (Györfy 1924b:38); Porcurea Valley, Almaşul Mic de Munte, 14.06.1961, *leg.* Şerbănescu I., *det.* Ştefănuţ S. [BUCA B3024-B3026].

Retezat Mountains, Retezat (Simonkai 1872:66; Fuss 1878:653); Râu de Mori (Schiffner 1914:309); Zlătuia Brook Valley, towards Tăul Negru (Páll 1964a:108); Retezat National Park, ass. *Neckero complanatae-Leucodontetum*, *Leucodonto-Madothecietum platyphyllae*, *Neckeretum crispae* Ştefur. 1941 (Plămadă 1976a; Plămadă 1976b:20, Tab.2); Zlătuia Valley, 900 m *alt.*, 6-7.09.1969, ass.

Neckero complanatae-Leucodontetum (Lippmaa 1935) Plămadă 1982, between Zlătuia Valley and Turcului, 1100 m alt., 7.09.1969, ass. *Leucodonto-Madothecetum platyphyllae* Plămadă 1982, Șesele-Pârgului Valley, 950 m alt., 9.09.1969, ass. *Anomodonto attenuati-Neckeretum crispae* Plămadă 1982 (Plămadă 1982a:304,305,309, Tabs.1,2,5; Plămadă 1993:51, Tab.1).

Domogled Mountain, Domogled (Degen 1901:14).

Caraș-Severin County, Herculane Spa, on calcareous rocks, leg. Borza A. & Buia A., rev. Ștefureac T. [FRE 2809] (Borza 1947:103); „Șapte Izvoare”, on left bank of Cerna Valley, Herculane Spa, 22.06.1945, „Borștița Mică”, Svinița, on siliceous rocks, 240 m alt., 17.06.1945, on left bank of Cociului Brook Valley, affluent of Cerna River, near „Crucea Ghizelei”, 2.06.1945 (Ștefureac 1947a:139,150,151; Bujorean & Popescu P.C. 1966:21); Ciorici Peak (Boros, Vajda & Debreczy 1969:7).

Zarand Mountains, Highiș Hill, in beech forest, on rocks (Csűrös M. 1978:77; Ardelean 2006:106).

Arad County, Valea Mare near Dulcele, above Șiriei towards Fântâna Rece and towards Bot Valley, in upper side of Șoimoș Brook and along Highiș Brook (Simonkai 1893:361).

Poiana Ruscă Mountains, Luncani, leg. Simonkai L. (Simonkai 1872:66; Fuss 1878:653; Hazslinszky 1885:38; Szepesfalvi 1929:44).

Alba County, Pietra Ceții, Trascău Mountains, 3.07.1868 (Barth 1868:141); Galda de Sus, leg. & det. Barth J. (Fuss 1878:653; Barth 1880:121); Valea Lungă, leg. & det. Barth J., sub *Jungermannia* [SIB HF 1586] (Fuss 1878:653; Barth 1880:121; Drăgulescu 1983:59); Zlatna – Judenberg, 15.06.1866, leg. & det. Barth J. [SIB HF 1585](Fuss 1878:653; Drăgulescu 1983:59); Rimetea (Barth 1880:121); Arieș Valley, between Vidolm and Baia de Arieș (Offenbánya), 11.05.1902, leg. Györffy I. (Schiffner 1909a:29,33); between Alba and Scărișoara, in wet places (Schiffner 1914:309; Goia 2001:84); Feneș Gorges (Papp 1944b:236); Arieșul Mic Basin (Goia & Schumacker 2000:92); Morii Valley, on rotten wood, Gogii Brook – Cobleș, Ordencușa Valley, on beech tree (Goia 2001:84); Pârâul Gogii Valley, 1300 m alt., 9.08.1996, ass. *Isothecietum myuri* Hilitzer 1925, Ordâncușa Valley, 1060 m alt., 11.08.1996, ass. *Anomodonto viticulosi-Leucodontetum sciuroides* Wisn. 1930 (Goia & Schumacker 2004: 110, Tab.3); Feneș Gorges, 26.07.1944, leg. Papp C., det. Ștefănuț S. [BUCA B5483].

Cluj County, Turda Gorges, leg. & det. Barth J. (Fuss 1878:653; Barth 1880:121); Crișul Repede Defile, on wet rocks (Boros 1942a:31; Boșcaiu & Gergely 1966:105); Southern Ciucea on Surduc Valley (Boros 1942a:34); Sălcea, leg. & det. Péterfi M. (Boros 1958:4,8).

Bihor County, Drăgan Valley (Boros 1942a:35).

Bihor Mountains, without locality, 300-1000 m alt. (Péterfi M. 1908:279; Goia 2001:84); Galbena Valley, 750 m alt., 08.1999 (Jakab 2000b:66).

Frullania sp.

Rarău Mountain, Codrul Secular Slătioara (Ștefureac 1941:1265).

Geocalyx graveolens (Schrad.) Nees

Syn.:

– *Jungermannia graveolens* Schrad.

– *Saccogyna graveolens* (Schrad.) Lindb.

First citation for Romania: Péterfi M. 1908.

Romania: Smith A.J.E. 1990:216.

Muntenia (Mohan 1988b:108)

Ecology: epilithic, indifferent, mesophytic, sciophytic; circumpolar; mountain; Hch.

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Es, It, Ro, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Az.

Distribution in Romania:

? - **Iezer-Păpușa Mountains**, (Mohan 1988b:108).

Bihor County, Beiuș (Péterfi M. 1908:274; Péterfi M. 1909:97).

Gymnocolea inflata (Huds.) Dumort. subsp. *inflata*

Syn.:

– *Cephalozia heterostipa* Carrington & Spruce

– *Cephalozia rigida* Lindb.

– *Gymnocolea inflata* var. *compacta* (Nees) Jørg.

– *Gymnocolea inflata* var. *heterostipa* (Carrington & Spruce) Müll. Frib.

- *Gymnocolea inflata* var. *laxa* (Nees) Jørg.
- *Gymnocolea inflata* var. *nigricans* (Nees) Jørg.
- *Gymnocolea inflata* var. *teres* (Lindb.) Jørg.
- *Gymnocolea soerensenii* Kaal.
- *Jungermannia inflata* Huds.
- *Jungermannia inflata* var. *compacta* Nees
- *Jungermannia inflata* var. *heterostipa* (Carrington & Spruce) Lindb.
- *Jungermannia inflata* var. *laxa* Nees
- *Jungermannia inflata* var. *nigricans* Nees
- *Jungermannia inflata* var. *teres* Lindb.
- *Jungermannia subdichotoma* Lindb.
- *Jungermannia varia* Mart.
- *Lophozia inflata* (Huds.) M. Howe

First citation for Romania: Simonkai 1872.

Muntenia (Mohan 1988b:102).

Ecology: humi-truficolous, acidophytic, hygrophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, It, Si, Mk, Ro, Bg, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Rc, Re, Ka, Az, Ma, Cn.

Distribution in Romania:

Maramureş County, Vinişoara Valley, affluent of Cizla, at Izvoarele Alexandru, on calcareous tufa (Boros 1943b:123; Ştefureac 1951a:59).

Rodna Mountains, Pietrosul Rodnei, sub *Jungermannia* (Hazslinszky 1866:152; Hazslinszky 1868:138; Hazslinszky 1885:57).

Țibleş Mountains, Țibleş Peak, Mesteacănul Valley, Arcer Peak, Păltiniş Peak, 1984-1985 (Mohan 1988a:20).

Suceava County, Poiana Stampei, 18.05.1910, sub *Jungermannia* (Lilienfeldówna 1911:733).

Ciucaş Mountains, Gropşoarele Peak, Bratocea Culm, Chiruşca Mountain (Mohan 1990b:41).

Bucegi Massif, Izvorul Nucet, 1800 m *alt.*, below Blana, 1800 m *alt.*, ass. *Sphagnetum acutifolii* (Puşcaru D. & al. 1956:200,246, Tab.85; Buia 1963:126; Ştefureac 1972c:101); Ialomiţa Valley (Mohan 1990a:24); Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg. & det.* Ştefănuţ S. [BUCA B2063, B2524].

Prahova County, Teleajen Valley, (Mohan 1990a:24).

Iezer-Păpuşa Mountains, Iezer Valley, Bătrâna Valley (Mohan 1990a:24).

Argeş County, Argeşului Valley (Mohan 1990a:24).

Parâng Mountains, Câlcescu, 11.08.1955, *leg. & det.* Ştefureac T. (Racoviţă A. 1960:1113); the edge of Câlcescu Lake, in peatbog, south-eastern side, 08.1955, 06.1958, ass. *Eriophoreto vaginati-Sphagnetum compacti parvocaricetosum* (Ştefureac 1962a:317; Ştefureac 1969a:83,89,93,95, Tabs.13,14; Plămadă 1973b:102).

Retezat Mountains, Retezat, sub *Jungermannia* (Simonkai 1872:67; Fuss 1878:656; Hazslinszky 1885:57); on bank of Galeşu Lake (Páll 1964a:108); Judele Glacial Valley, in peatbogs, on peat, 2060 m *alt.* (Plămadă 1973b:102).

Caraş-Severin County, Voislova, sub *Jungermannia* (Simonkai 1872:67; Fuss 1878:656; Hazslinszky 1885:57; Plămadă 1973b:102).

Alba County, Cucurbăta Mică, Cepelor Valley, 1000 m *alt.*, Lăpuş, 900 m *alt.*, sub *Jungermannia* (Péterfi M. 1908:272; Goia & Schumacker 2000:92; Goia 2001:64); Cetate, near Roşia Montană, 800 m *alt.*, 11.05.1902, *leg.* Györffy I., sub *Lophozia inflata* (Schiffner 1909a:27,31).

Apusenii Mountains, Cetatea Ponorului, Dolina II, 21.07.1947 (Ştefureac 1958a:104); Molhaşul Mare de la Izbuca, ass. *Caricetum limosae* Br.-Bl. 1921 (syn. *Caricetum limosae-Sphagnetum* Resmeriţă 1973), *det.* Plămadă E. (Pop I., Hodişan I. & Cristea 1987:113).

Cluj County, Dobrin Mountain, Şoimului Valley (Péterfi M. 1918:61,62); Mluha, Dobrin, *leg. & det.* Péterfi M., sub *Jungermannia* (Györffy 1924b:38; Plămadă 1973b:102); the peatbogs from spring and upper course of Someşul Rece, incl. Muntele Mare and Dobrin (Pop E. 1960:397).

Bihor County, Stâna de Vale, 1100 m *alt.*, sub *Jungermannia* (Péterfi M. 1908:272).

subsp. *acutiloba* (Schiffn.) R.M. Schust. et Damsh. ex Söderström et Váňa

Syn.:

- *Gymnocolea acutiloba* (Schiffn.) Müll. Frib.
- *Gymnocolea inflata* var. *acutiloba* (Schiffn.) S.W. Arnell
- *Jungermannia acutiloba* Kaal., non Hook. F. & Taylor, nom. illeg.

- *Lophozia acutiloba* Schiffn.
- *Lophozia inflata* var. *acutiloba* Schiffn.

First citation for Romania: Plămadă 1973a.

Romania (Frey & al. 2006:82).

Ecology: epigaeic, epilithic, acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Dk, Br, De, Po, At, It, Ro.

Distribution in Romania:

Piatra Craiului Mountains, Grind - La Om Peak, AG, 45°31'33"N / 25°12'37"E, 2200 m *alt.*, 11.07.2002, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2814] (Ștefănuț & Pop O.G. 2006:76,77).

Făgăraș Mountains, Urlea Lake, BV, 45°35'42"N / 24°50'25"E, 2194 m *alt.*, 17.09.2001, *leg.* Ștefănuț S. & Ștefănuț Mirela, *det.* Ștefănuț S. & Dihoru G., sub *G. inflata* [BUCA B2162] (Ștefănuț 2002:190, Fig.6; Ștefănuț & Ștefănuț M. 2003:80); Urlea Lake, BV, 45°35'44"N / 24°50'31"E, 17.09.2001, 2200 m *alt.*, *leg.* & *det.* Ștefănuț S. [BUCA B3065].

Retezat Mountains, Râului Mare Valley at Gura Zlata, on soil, in forest, 10.07.1968, *leg.* Vajda L., sub *G. acutiloba* (Plămadă 1973a:378).

Gymnomitrium concinnatum (Lightf.) Lindb.

Syn.:

- *Acolea breviloba* Steph.
- *Acolea concinnata* (Lightf.) Dumort.
- *Cesia concinnata* (Lightf.) Lindb.
- *Cesia concinnata* var. *argentea* Jørg.
- *Cesia concinnata* var. *bryhnii* Kaal.
- *Cesia concinnata* var. *rufescens* Kaal.
- *Gymnomitrium breviloba* (Steph.) Horik.
- *Gymnomitrium concinnatum* var. *ambigua* Kaal. ex S.W. Arnell
- *Gymnomitrium concinnatum* var. *argenteum* (Jørg.) Müll. Frib.
- *Gymnomitrium concinnatum* var. *bryhnii* (Kaal.) Müll. Frib.
- *Gymnomitrium concinnatum* var. *intermedium* Limpr.
- *Gymnomitrium concinnatum* var. *rufescens* (Kaal.) Müll. Frib.
- *Jungermannia concinnata* Lightf.
- *Jungermannia crenulata* Lightf.

First citation for Romania: Schur 1866.

Romania (Müller 1957:796).

Muntenia (Mohan 1988b:106).

Ecology: epilithic, basiphytic, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, SIB

Distribution in Europe: Sj, Is, Fo, No, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, Es, It, Si, Ro, Bg, Ua, Nz, Fl, Rn, Re, Ca.

Distribution in Romania:

Rodna Mountains, Pietrosul Rodnei (Hazslinszky 1866:152; Hazslinszky 1868:137; Hazslinszky 1885:73; Pax 1908:128; Boros & Vajda 1967:221); Ineu Peak, 2250 m *alt.* (Breidler 1890a:150; Pax 1908:128); Pietrosul Rodnei, north-western slope, 2270 m, 2260 m and 2280-2290 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:391, Tab.I; Ștefureac 1963c:170; Boros & Vajda 1967:221; Ștefureac 1977c; Ștefureac 1983g:177); Galați Mountain, 1800-1900 m *alt.*, *leg.* & *det.* Boros Á. (Boros & Vajda 1967:221); Buhăescu Peak, 2100 m *alt.*, 26.06.1982, *leg.* Roman N., *det.* Ștefănuț S. [BUCA B2949]; Iezerul Pietrosului, 47°35'53"N / 24°38'49"E, 1835 m *alt.*, 28.08.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2149]; Pietrosul Rodnei, northern slope, 2100 m *alt.*, 7.08.1948, *leg.* & *det.* Ștefureac T., *conf.* Ștefănuț S., 2006 [BUCA B5290]; Ineu Glacial Ring, BN, 47°31'38"N / 24°53'33"E, 1920 m *alt.*, 26.08.1999, *leg.* Ștefănuț S., *det.* Váňa J. [BUCA B3719].

Țibleș Mountains, Arcer Peak, Bran Peak, Izvorul Țibleșului, Dosul Obcinei, 1984-1985 (Mohan 1988a:21).

Suceava County, Țapu Mountain, on rocks, *conf.* Mihai G. (Pascal 1970a:198; Pascal 1973; Ștefureac & Pascal 1981:483).

Căliman Mountains, Pietrosul Peak, on rocks (Mihai 1968a:204); Răchitiș Peak, on humus, 1981-1984 (Mihai 1985:96); Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m *alt.*, 26.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3742, B3743, B3744].

Bistrița-Năsăud County, Râpa Mare, Piatra Corbului, Budacul de Sus, 1980-1981 (Mohan & Hodoroga 1983:52).

Harghita Mountains, Căpâlnița, 1750 m *alt.*, *leg.* & *det.* Boros Á. (Boros & Vajda 1967:221).

Ciucaș Mountains, Caprei Brook Valley, Bratocea Peak, Ciucaș Peak (Mohan 1990b:42).

Bucegi Massif, Bucșoiu Saddle, 2420 m *alt.*, The Saddle above Țigănești Valley towards Gaura, 2320 m *alt.*, the Saddle between Gaura and Mălăiești, 2390 m *alt.* (Ștefureac 1955:558-560, Tab.2; Boros & Vajda 1967:221; Ștefureac 1991:114); The Plateau between Caraiman and Coștila, 2400 m *alt.*, Coștila Peak, 2400 m *alt.*, Bucura Peak, 2480 m *alt.*, Moraru, 2470 m *alt.*, Baba Mare, 2300 m *alt.*, ass. *Caricetum curvulae* Brockm.-Jer. 1907 (Pușcaru D. & al. 1956:59,60,149, Tab.12; Resmeriță 1973a:317, Tab.2; Ștefureac 1972c:103; Sanda, Popescu A. & Fișteag 1989:100, Tab.1); Gaura Glacial Ring (Mihăilescu & Ștefănuț 2000a:13).

Făgăraș Mountains, Arpaș Mountain, at Iezer (Schur 1866:870; Fuss 1878:658; Hazslinszky 1885:73; Drăgulescu 2003:15); Negoiu, 2200-2500 m *alt.*, sub *Cesia* (Loitlesberger 1898:192; Boros & Vajda 1967:221; Drăgulescu 2003:15); Bâlea Lake, *leg. & det.* Zsák Z. (Schiffner 1914:304; Boros & Vajda 1967:221; Drăgulescu 2003:15); above Avrig Lake, on schists with limestone, 2150 m *alt.*, below Ciortea Peak, north-eastern slope, 2320 m *alt.*, 9-19.07.1946 (Ștefureac 1949a:290; Drăgulescu 2003:15); Negoiu (Ștefureac 1949c:707; Drăgulescu 2003:15); Arpaș Valley towards Podragu Lake, 2000 m *alt.*, *leg. & det.* Vajda L., Bâlea Lake, 2050 m *alt.* (Boros & Vajda 1967:221); Urlea Lake, BV, 45°35'44"N / 24°50'31"E, 2200 m *alt.* [BUCA B2488], 45°35'43"N / 24°50'29"E, 2195 m *alt.* [BUCA B2354], 17.09.2001, *leg. & det.* Ștefănuț S. (Ștefănuț 2002:190; Ștefănuț 2004e:306).

Iezer-Păpușa Mountains, Iezer Mountain, sub *Cesia* (Loitlesberger 1898:192,194).

Cindrel Mountains, Iezerul Mic, 2100 m *alt.* [SIB HG](Gündisch 1977:50; Drăgulescu 1992:55; Drăgulescu 2003:14,15); Iezerul Mare, 2100 m *alt.* [SIB HG](Drăgulescu 1992:55; Drăgulescu 2003:14);

Parâng Mountains, Parâng and Cârja, 2100 m *alt.* (Pócs 1958:109; Boros & Vajda 1967:221).

Retezat Mountains, *leg. & det.* Simonkai L. (Hazslinszky 1885:73; Boros & Vajda 1967:221); Valereasca, in alpine zone (Schiffner 1914:304); Retezat (Prodan 1939:94; Ștefureac 1971b:15); Retezat, 1964-1971, sub var. *ambiguum* (Plămadă 1973a:380, Fig.8a-g; Plămadă 1976a; Plămadă 1976b:8); Zănoaga Lake and Zănoaga Glacial Ring, northern slope, 2200 m *alt.*, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

Bihor Mountains, Drăgan Valley, 1600-1700 m *alt.* (Péterfi M. 1908:270; Boros & Vajda 1967:221; Ștefureac 1975b:313).

Gymnomitrium corallioides Nees

Syn.:

- *Acolea corallioides* (Nees) Dumort.
- *Acolea fauriana* Steph.
- *Cesia corallioides* (Nees) Carruth.
- *Gymnomitrium faurianum* (Steph.) Herzog

First citation for Romania: Heufler 1853.

Ecology: epigeaic, epilithic, basiphytic, xero-mesophytic, photophytic; circumpolar; arctic-alpine; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, Fo, No, Se, Fi, Ie, Br, Fr, Ad, De, Po, Ch, At, Cz, Sk, Es, It, Si, Ro, Bg, Ua, Nz, Fl, Rn.

Distribution in Romania:

Rodna Mountains, Pietrosul Rodnei (Hazslinszky 1866:152; Hazslinszky 1868:137; Hazslinszky 1885:73); below Ineu Peak, Tomnatec Ridge towards Cușca (Ștefureac 1945:175); Pietrosul Borșei, north-western slope, 2260 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:391, Tab.1; Racoviță A. 1963:187); below Pietrosul Peak, 2100 m *alt.*, 8.08.1948, *leg. & det.* Ștefureac T., sub *G. concinatum*, *rev.* Ștefănuț S., 2006 [BUCA B5289].

Iezer-Păpușa Mountains, Iezer Mountain, 2300 m *alt.*, sub *Cesia* (Loitlesberger 1898:192,194).

Făgăraș Mountains, Arpaș Valley, in alpine zone (Heufler 1853:48-49, Pl.IV, Fig.5; Fuss 1854:20; Schur 1866:870; Fuss 1878:658; Hazslinszky 1885:73; Pax 1908:128; Boros & Vajda 1967:221; Drăgulescu 2003:15).

Haplomitrium hookeri (Sm.) Nees

Syn.:

- *Gymnomitrium hookeri* (Sm.) Corda
- *Haplomitrium cordae* Nees
- *Jungermannia hookeri* Sm.
- *Scalius hookeri* (Sm.) Gray

First citation for Romania: Ștefănuț 2000a.

Romania (Ștefănuț 2003b:237, Fig.3; ; Söderström, Urmi & Văna 2007:318).

Ecology: epigaeic, acidophytic, meso-hygrophytic, photo-sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, CL

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, NI, Ni, Be, De, Po, Ch, At, Cz, Sk, Es, It, Ro, Ua, Rn, Rw.

Distribution in Romania:

Rodna Mountains, Iezerele Buhăescu, MM, 47°35'18"N / 24°38'40"E, 1880 m *alt.*, 29.08.1999, *leg. & det.* Ștefănuț S., *conf.* Dihoru G. [BUCA B0932] (Ștefănuț 2000a:139-141; Ștefănuț 2000b:11-12; Sabovljević & al. 2001:77; Ștefănuț 2003a:78; Ștefănuț 2003b:231,234, Fig.3; Dihoru G. 2004:167); Ineu Glacial Ring, 9.08.1918, *leg.* Péterfi M., *det.* Ștefureac T. [CL 85058] (Ștefănuț 2003b:234, Fig.3).

Bucegi Massif, ♀ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3276] (Ștefănuț 2007a:103); ♂ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3277] (Ștefănuț 2007a:103); s - Babele Mountain, PH, 45°24'45"N / 25°28'42"E, 2190 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3550] (Ștefănuț 2007a:103).

Obs. In the paper of Mohan G. (1998), this species was quoted from Turku, but the location is in Ukraine not in Romania (Zerov 1964; Mohan 1998:69; Plămadă & Dumitru 1998b:67,68).

Harpanthus flotovianus (Nees) Nees

Syn.:

- *Harpanthus acutiflorus* Steph.
- *Harpanthus flotovianus* var. *cavifolius* S.W. Arnell
- *Harpanthus flotovianus* var. *chiloscyphoides* C.E.O. Jensen
- *Harpanthus flotovianus* var. *latifolia* Jørg.
- *Harpanthus flotovianus* var. *retusa* Jørg.
- *Harpanthus flotovianus* var. *uliginosus* Schiffn.
- *Jungermannia convoluta* Huebener
- *Jungermannia flotoviana* Nees
- *Jungermannia hartmanii* Thed.
- *Jungermannia vogesiaca* Huebener

First citation for Romania: Ștefureac 1967b.

Muntenia (Mohan 1988b:108).

Endangered species (Plămadă 1977b:115).

Ecology: epilithic-humicolous, acidophytic, mesophytic, sciophytic; mountain; circumpolar; Hch.

Distribution in Europe: Sj, Is, No, Se, Fi, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, It, Si, Ro, Ee, Lv, Ua, Rn, Rw, Re.

Distribution in Romania:

? - **Ciucaș Mountains**, Zăgan Mountain, Groșoarele Peak, Ursului Brook Valley, Caprei Brook Valley (Mohan 1990b:43).

Cindrel Mountains, Jujbea, 2000 m *alt.*, *det.* Vajda L. (Gündisch 1977:48; Drăgulescu 2003:11).

Parâng Mountains, the edge of Călcescu Lake, in peatbog (Ștefureac 1967b:310,318; Ștefureac 1967d:246; Ștefureac 1969a:89,95,102, Tab.14); south to the peatbog from border of Călcescu Lake (Ștefureac 1969a:104).

Harpanthus scutatus (F. Weber et D. Mohr) Spruce

Syn.:

- *Harpanthus scutatus* var. *laxa* Lindenb.
- *Jungermannia scutata* F. Web. & D. Mohr
- *Jungermannia stipulacea* Hook.
- *Lophozia scutata* (F. Web. & D. Mohr) Dumort.
- *Odontoschisma scutata* Aust.

First citation for Romania: Schur 1866.

Romania: Schuster 1980:296; Frey & al. 2006:110.

Bucovina (Schuster 1980:296).

Moldova (Papp 1943:660; Ștefureac & al. 1973:145).

Muntenia (Mohan 1988b:108).

Transylvania (Pax 1908:129).

Ecology: epigaeic, saprolognicolous, acidophytic, mesophytic, sciophytic; mountain; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, SIB

Distribution in Europe: Sj, No, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Es, ?It, Si, Hr, ?Me, Ba, Ro, ?Bg, Ee, Lv, Ua, Rn, Rw, Re.

Distribution in Romania:

Rarău Mountain, Codrul Secular Slătioara (Tarnavschi 1936:285; Ștefureac & Pascal 1981:479); Codrul Secular Slătioara, 800-1000 m *alt.* (Ștefureac 1941:1154,1284, Tab.9; Papp 1969b:188).

Giupalău Mountain, Giupalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3938, B3975].

Neamț County, Nilul Brook Valley, on rotten wood (Papp 1959a:112).

Bacău County, Fata Moartă Forest, on rotten common spruce wood (Eftimie 1972:151); superior basin of Cașin, between Fata Moartă Brook springs (affluent of Buciaș), on rotten fir wood, 1000 m *alt.*, 06.1970 (Eftimie 1973:424).

Ciucaș Mountains, Roșu Mountain, Ciucaș Peak, Caprei Brook Valley, Berii Brook Valley (Mohan 1990b:43).

Brașov County, Predeal (Loitlesberger 1898:196).

Cristianul Mare Mountain, „Farkas-szakadék”, *leg. & det.* Vajda L. (Boros & Vajda 1967:224).

Piatra Craiului Mountains, Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2710], on rotten wood, 45°33'35"N / 25°15'46"E, 1250 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2743] (Ștefănuț & Pop O.G. 2006:77).

? - **Iezer-Păpușa Mountains**, (Mohan 1978b:335,342).

Făgăraș Mountains, Cârțișoara Valley towards Bâlea Lake, *leg. & det.* Vajda L. (Boros & Vajda 1967:224).

Sibiu County, Prejba, sub *Jungermannia scutata*, incl. var. *laxa* Lindenb. [SIB SCHUR 4586] (Schur 1866:872; Fuss 1878:656; Hazslinszky 1885:47; Gündisch 1977:48; Drăgulescu 2003:11).

Cindrel Mountains, Păltiniș (Boros & Vajda 1967:224; Gündisch 1977:48; Drăgulescu 2003:11).

Retezat Mountains, (Plămadă 1976a; Plămadă 1976b:8).

Alba County, Scărișoara, Ordencuș Valley (Schiffner 1914:307; Goia 2001:68); Galbena Valley, on rotten wood (Goia 2001:68); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87).

Cluj County, Drăgan Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:224).

Bihar County, Someșul Cald Gorges (Goia & Mătase 2001:17).

***Jamesoniella autumnalis* (DC.) Steph.**

Syn.:

- *Aplozia autumnalis* (DC.) Heeg
- *Aplozia schraderi* (Mart.) Dumort.
- *Aplozia subapicalis* (Nees) Dumort.
- *Crossogyna autumnalis* (DC.) Schljakov
- *Haplozia autumnalis* (DC.) Heeg
- *Haplozia schraderi* (Nees) Dumort.
- *Haplozia subapicalis* (Nees ex Huebener) Dumort.
- *Jamesoniella heterostipa* A. Evans
- *Jamesoniella subapicalis* (Nees ex Huebener) Schiffn.
- *Jamesoniella myriocarpa* Brinkm.
- *Jamesoniella orizabensis* (Gottsche) Steph.
- *Jamesoniella schraderi* (Mart.) Schiffn.
- *Jamesoniella subapicalis* (Nees ex Huebener) Schiffn.
- *Jungermannia allenii* Clark
- *Jungermannia autumnalis* DC.
- *Jungermannia conferta* Huebener, non C.F.W. Meissn.
- *Jungermannia laevifolia* Lindb.
- *Jungermannia moriokensis* Steph.
- *Jungermannia rauana* Steph.
- *Jungermannia schraderi* Nees
- *Jungermannia subapicalis* Nees, non Huebener
- *Jungermannia variabilis* Steph.

First citation for Romania: Loitlesberger 1898.

Moldova (Ștefureac & al. 1973:146).

Muntenia (Mohan 1988b:102,103).

Transylvania, sub *Aplozia* (Pax 1908:129).

Ecology: humicolous-epilithic, acidophytic, mesophytic, sciophytic; mountain; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, PHHM, SIB

Distribution in Europe: No, Dk, Se, Fi, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Sb, ?Me, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Rodna Mountains, sub *Aplozia* (Pax 1908:129; Ștefănuț 2007b:429); Iezerele Buhăescu, MM, 47°35'21"N / 24°38'37"E, 1920 m *alt.*, 29.08.1999, *leg. & det.* Ștefănuț S. [BUCA B3451, B3452].

Căliman Mountains, Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m *alt.*, 26.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3727] (Ștefănuț 2007b:429).

Neamț County, Neamț Monastery, on rotten fir tree, 07.1919, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4; Ștefănuț 2007b:429).

Bacău County, s - Măgura Hill, north-west to Târgu Ocna, in oak grove, on humus, 680 m *alt.*, very rare (Mihai & Barabaș V. 1971:674,675,687).

Ciuceș Mountains, Tigăile Mici Culm, Caprei Brook Valley, Balaban Mountain, Chirușca Mountain (Mohan 1990b:41).

Brașov County, Predeal, sub *Aplozia* (Loitlesberger 1898:194).

Bucegi Massif, Gaura Glacial Ring, BV, 45°26'52"N / 25°26'32"E, 2290 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2105]; ♀ - Gaura Glacial Ring, BV, 45°26'26"N / 25°26'26"E, 2175 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2433]; The glacial rings of Ialomița Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2459, B2462, B2466], 45°26'13"N / 25°27'05"E, 2250 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2111, B3310]; ♀ - Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2197]; Mălăiești Glacial Ring, BV, 45°27'05"N / 25°27'07"E, 2275 m *alt.*, 9.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2504]; towards Cota 2000, PH, 45°21'29"N / 25°29'25"E, 1950 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3213]; Peștera Hermitage, DB, 1540 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3569].

Prahova County, Sinaia, 1000 m *alt.*, sub *Aplozia* (Loitlesberger 1898:194); Doftana Valley, Gâlma Secăriei [PHHM 7739/3873](Mohan 1971a:8).

Gârbova Massif, Azuga Valley, on humus and rocks, 1967-1970 (Lungu & Ștefureac 1970:5,8).

Piatra Craiului Mountains, Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2699] (Ștefănuț & Pop O.G. 2006:77).

Făgăraș Mountains, Capra Lake, AG, 45°36'01"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2383], 45°36'00"N / 24°37'46"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2375]; Urlea Lake, BV, 45°35'42"N / 24°50'28"E, 2200 m *alt.*, 17.09.2001, *leg.* & *det.* Ștefănuț S. [BUCA B2345], 45°35'44"N / 24°50'31"E, 2200 m *alt.*, 17.09.2001, *leg.* & *det.* Ștefănuț S. [BUCA B2049], 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg.* & *det.* Ștefănuț S. [BUCA B2069, B2070], 45°35'42"N / 24°50'25"E, 2194 m *alt.*, 17.09.2001, *leg.* & *det.* Ștefănuț S. [BUCA B2128, B2398, B2427].

Cozia Mountain, Păușa Waterfall, 1975-1976 (Dihoru G. 1990:52).

Cindrel Mountains, Iezerul Mic, 1900 m *alt.* [SIB HG](Gündisch 1977:49; Drăgulescu 1992:55; Drăgulescu 2003:13).

Parâng Mountains, Repede Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,16, Tab.7, Pl.III, Figs.1-8).

Retezat Mountains, Șesele Valley, Zlătuia Valley (Plămadă 1976a; Mohan 1998:29); Zănoaga Lake, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

Mehedinți County, Cazanele Mici, on soil, in forest, 23.07.1962 (Ștefureac & Mihai 1967:14).

Alba County, Scărișoara, 900 m *alt.*, sub *Aplozia* (Péterfi M. 1908:271; Goia 2001:65); Arieșul Mare Basin (Goia & Schumacker 2002:86).

Cluj County, Dealul Mare, 630 m *alt.*, sub *Aplozia* (Péterfi M. 1908:271); Southern Ciucea on Surduc Valley, *det.* Müller K., sub fo. *subapicalis* (Boros 1942a:34; Boros 1951:371).

Bihor County, Vlădeasa Mountain, Drăgan Valley, 27.05.1915, *leg.* & *det.* Györffy I. & Péterfi M., sub *J. subapicalis* (Györffy 1924b:38; Boros 1942a:35).

Bihor Mountains, Băița at Saca Valley, 600 m *alt.*, Galbena Valley, 700 m *alt.*, sub *Aplozia* (Péterfi M. 1908:271); Galbena Valley, 750 m *alt.*, Padiș, 1050 m *alt.*, 08.1999 (Jakab 2000b:66,68).

Jungermannia atrovirens Dumort.

Syn.:

- *Aplozia atrovirens* (Dumort.) Dumort.
- *Aplozia lanceolata* L.
- *Aplozia pumila* var. *sphaerocarpoidea* (De Not.) C. Massal.
- *Aplozia riparia* (Taylor) Dumort.
- *Aplozia sphaerocarpoidea* (De Not.) Dumort.
- *Aplozia towadensis* S. Okamura
- *Haplozia atrovirens* (Dumort.) Dumort.
- *Haplozia atrovirens* var. *sphaerocarpoidea* (De Not.) Müll. Frib.
- *Haplozia riparia* (Taylor) Dumort.

- *Haplozia riparia* var. *rivularis* Bernet
- *Haplozia riparia* var. *salevensis* Bernet
- *Haplozia sphaerocarpoidea* (De Not.) Dumort.
- *Haplozia tristis* (Nees) Müll. Frib.
- *Haplozia tristis* var. *rivularis* (Bernet) Jørg.
- *Jungermannia atrovirens* var. *sphaerocarpoidea* (De Not.) Schljakov
- *Jungermannia clavifolia* Steph.
- *Jungermannia lanceolata* L.
- *Jungermannia potamophila* Müll. Arg. ex Moug. et al.
- *Jungermannia pumila* Limpr., non With.
- *Jungermannia pumila* var. *notha* Gottsche
- *Jungermannia pumila* var. *sauteriana* Gottsche
- *Jungermannia pumila* var. *sphaerocarpoidea* (De Not.) C. Massal.
- *Jungermannia riparia* Taylor
- *Jungermannia riparia* var. *bactrocalyx* C. Massal.
- *Jungermannia riparia* var. *rivularis* (Bernet) Meyl.
- *Jungermannia sphaerocarpoidea* De Not.
- *Jungermannia towadensis* (S. Okamura) S. Hatt.
- *Jungermannia tristis* Nees
- *Jungermannia tristis* var. *rivulare* Bern.
- *Solenostoma atrovirens* (Dumort.) Müll. Frib.
- *Solenostoma sphaerocarpoideum* (De Not.) Paton & E.F. Warb.
- *Solenostoma triste* (Nees) Müll. Frib.

First citation for Romania: Baumgarten 1846.

Romania, 800-1500 m (Văna 1973a:260); (Plămadă & Dumitru 1998a:190).

Bucovina, sub *Solenostoma triste* (Müller 1957:816; Schuster 1969:933).

Moldova, sub *Haplozia riparia* and *H. atrovirens* (Papp 1943:657); sub *J. lanceolata* and *Solenostoma triste* (Ștefureac & al. 1973:146).

Muntenia, incl. var. *alpestris* Lindb. and *J. tristis* (Mohan 1988b:103).

Transylvania, sub *Aplozia riparia* (Pax 1908:128; Müller 1957:811,816,819).

Ecology: epigeaic, epilithic, basiphytic, hygro-mesophytic, sciophytic; mountain; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, Herb. Boros, Herb. Văna, W, SIB, H.A.T.R.

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Ct, Tu, Ee, Lv, Lt, Ua, Rn, Rw, Rc, Ca, Az, Ma, Cn.

Distribution in Romania:

Maramureș County, Copalnic, Lăpuș Valley near Răzoare, sub *Solenostoma triste* (Boros 1951:371).

Rodna Mountains, Vinului Valley, 700 m alt., sub *Haplozia riparia* (Matouschek 1905:78); sub *Aplozia riparia* (Pax 1908:128).

Suceava County, Criștor-Neagra Broștenilor, Borcut Meadow, in brushes, on soil, sub *J. lanceolata* (Lungu 1973b:72; Lungu 1981c:93).

Rarău Mountain, Codrul Secular Slătioara, 800-1250 m alt., sub *Haplozia atrovirens*, *H. riparia* incl. var. *rivularis* (Ștefureac 1941:1154,1183,1245,1263,1268,1273,1302, Tabs.3,9, Fig.15; Papp 1969b:188).

Bărgău Mountains, Piatra Fântânele, Leșului Valley, Ungurului Brook, 1983-1984, sub *Solenostoma*, Heniu Mare Valley, Cârțibavu Mare Valley, Arșiței Peak, Tomnatec Peak, sub *Solenostoma triste* (Mohan & Hodoroga 1986:213).

Bistrița-Năsăud County, Râpa Mare, Piatra Corbului, Budacul de Jos, 1980-1981, sub *Solenostoma* (Mohan & Hodoroga 1983:52).

Iași County, Bârnova Forest, in shady places, on wet soil, sub *Haplozia riparia* (Papp 1931a:218; Papp 1939a:339,347; Papp & Eftimie 1963:108,110).

Giurgeu Mountains, above Bicz Gorges, on slope of Surduc Mountain, sub *Haplozia* (Boros 1942a:32).

Neamț County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m alt., sub *Haplozia riparia* (Lungu 1963a:242,243).

Harghita County, Surduc Mountain at Lacul Roșu, sub *Solenostoma triste* and *S. atrovirens* (Boros 1951:371; Bálint & Orbán 2006:473).

Nemira Mountain, on soil, in common spruce forest, 1350-1550 m alt., sub *Solenostoma triste* (Barabaș V. 1974:26); Nemira Mountain, 1100-1500 m alt., Șandru Peak, 1400 m alt., Țiganca Mountain, 1350 m alt., sub *Solenostoma triste* (Barabaș V. 1982b:57,59, Tabs.4,5,7).

Bacău County, Cernica Brook, sub *Haplozia riparia* (Papp 1957:284); Tălâmba Brook, on rocks, sub *Solenostoma triste* (Eftimie 1972:151,159).

Ciucăș Mountains, Căzăturii Culm, Stâna Valley Culm, sub *J. tristis* (Mohan 1990b:41).

Prahova County, Teleajen Valley, sub *J. tristis* var. *rivulare* (Mohan 1990a:23); ♀ - Brebului Gorges, 26.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3409], ♂ - [BUCA B3410], s - [BUCA B3440].

Gârbova Massif, Azuga Valley, on humus, 1967-1970, sub *J. lanceolata* (Lungu & Ștefureac 1970:5).

Bucegi Massif, Ialomița Valley, 1500 m *alt.*, 1897, *leg. & det.* Loitlesberger K., sub *Aplozia riparia* [H.A.T.R. 77; W] (Loitlesberger 1898:194; Váňa 1973a:261); *fer* - Bucșoiu, *fer* - Jepsi Valley, 08-09.1911, sub *Aplozia riparia* (Degen 1914:217); Bucegi, 1000-1800 m *alt.*, sub *Haplozia riparia* (Ștefureac 1946:334,343); Ialomița Valley, sub *J. tristis* var. *rivulare* Bern. (Mohan 1990a:23).

Piatra Craiului Mountains, Zărnești, Râul Mare, 1000 m *alt.*, *leg.* Boros Á., *det.* Váňa J. [Herb. Boros; Herb. Váňa] (Váňa 1973a:261; Ștefănuț & Pop O.G. 2006:77); ♀ - Brusturet Gorges, AG, 45°27'55"N / 25°13'45"E, 950 m *alt.*, 26.07.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2954] (Ștefănuț & Pop O.G. 2006:77); ♀ - Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B3475].

Leaota Mountain, Vaca Valley, 900 m *alt.*, sub *Haplozia* (Papp & Diaconescu 1968:387).

Iezer-Păpușa Mountains, Dâmbovița Valley, sub *J. tristis* var. *rivulare* (Mohan 1990a:23).

Giurgiu County, s - Comana, on wet soil, 1968-1969, sub *Solenostoma triste* (Ștefureac & Mohan 1970a:353,361).

Cozia Mountain, Păușa Valley, on soil, 1975-1976, sub *Solenostoma triste* (Dihoru G. 1990:53).

Sibiu County, Nocrich, sub *J. lanceolata* (Baumgarten 1846:220,221; Schur 1866:872; Fuss 1878:655; Hazslinszky 1885:49; Drăgulescu 2003:14); Sibiu, sub *J. lanceolata* [SIB SCHUR 4547] (Schur 1866:872; Fuss 1878:655; Hazslinszky 1885:49; Gündisch 1977:49; Drăgulescu 2003:14).

Cindrel Mountains, Păltiniș, 1500 m *alt.*, Cănaia, 1700 m *alt.*, sub *J. lanceolata* (Gündisch 1977:49; Drăgulescu 2003:14).

Vâlcea County, Boia, Greblești, 800 m *alt.*, 1897, *leg.* Loitlesberger K. [H.A.T.R. 152,154; W] (Váňa 1973a:261); s - Lotrișor Gorges, on rocks in wet place, sub *Solenostoma triste* (Ștefureac & Peicea 1973:43,45,46,49).

Parâng Mountains, Repedea Valley, 08-09.1954, sub *Haplozia* cf. *riparia* (Ștefureac, Popescu & Lungu 1959:9,19,34,35); south to the peatbog on the border of Călcescu Lake, sub *Haplozia* (Ștefureac 1969a:104).

Caras-Severin County, Cerna Valley, sub *Solenostoma triste* (Boros, Vajda & Debreczy 1969:6); Ciorici Peak, sub *J. lanceolata* (Boros, Vajda & Debreczy 1969:7).

Arad County, near Săvârșin the bottom of Calvaria Mountain, Runc Mountain above Dulcele, Valea Mare, sub *Aplozia lanceolata* (Simonkai 1893:362; Fuss 1878:655; Hazslinszky 1885:49).

Alba County, Valea Lungă, in forest, on soil, *leg. & det.* Fuss M., sub *J. lanceolata* (Borza & Lupșa 1964:151); Izbucl Ponorului, sub *Solenostoma triste* (Boros & Vajda 1974:5,6); Poiana Ponorului, sub *Solenostoma* (Boros & Vajda 1974:7); Ionel's Cave, Gârda de Sus, 800 m *alt.*, 16.05.1999 (Smets 2003:60).

Codru-Moma Mountains, Liliecilor Cave, Ponoarele, on calcareous rocks, sub *J. tristis* (Mohan 1996:49; Ardelean 2006:104).

Cluj County, Pușcașului Valley near forest, on wet rocks, 1963-1965, sub *Solenostoma* (Plămadă 1968:25); Someșul Cald Valley, Șurii Cave, sub *Solenostoma triste* (Boros & Vajda 1974:8,9).

Bihar County, Vadu Crișului, ass. *Phyllitidi-Aceretum*, sub *Haplozia riparia*, *Solenostoma triste* (Péterfi M. 1910:321; Boros 1942a:31; Boros 1951:371; Boșcaiu & Gergely 1966:104); Vadului Cave entrance, sub *Solenostoma*, *Haplozia* (Boros 1942a:31; Boros 1942e:154; Boșcaiu & Gergely 1966:104; Ștefureac 1970h:482).

Bihar Mountains, Bratca, Șuncuiuș, sub *Solenostoma*, *S. triste*, *Haplozia triste* (Boros 1942a:31; Boros 1942e:153; Boros 1951:371); Izbucl Ponorului, Padiș Mountain, sub *Solenostoma triste* (Vajda 1973:291); Cetatea Rădesei Cave, 1971, ass. *Mnio (thomsonii)-Orthothecietum intricati* Ștefur. 1985, ass. *Cratoneuro (filicini)-Chiloscyphetum pallescentis* Ștefur. 1985 (Ștefureac 1985e:111,114-116, Tab.1); Someșul Cald Gorges (Goia & Mătase 2001:17).

Jungermannia borealis Damsh. et Váňa

Syn.:

- *Haplozia cordifolia* (Dumort.) Müll. Frib. var. *sibirica* Arnell & C.E.O. Jensen
- *Haplozia oblongifolia* auct.

- *Jungermannia karl-muelleri* auct., non Grolle
- *Jungermannia oblongifolia* auct., non (Müll. Frib.) H. Buch, A. Evans & Verd.
- *Solenostoma oblongifolium* auct.

First citation for Romania: sub *J. karl-muelleri*, Vajda 1975.

Romania (Frey & al. 2006:89).

Ecology: epigeaic, basiphytic, hygro-mesophytic, sciophytic; circumpolar; arctic-alpine; Hch.

Distribution in Europe: Sj, Is, Fo, No, Se, Ie, Br, Fr, Ch, At, Sk, It, Ro, Rn, Re, Ca.

Distribution in Romania:

Făgăraş Mountains, Podragu Valley, 1800-2000 m *alt.*, sub *J. karl-muelleri* Grolle (Vajda 1975:120; Schumacker & Váňa 2000:70; Söderström, Urmi & Váňa 2002:19).

Obs. This species was quoted from Romania only as *J. karl-muelleri* Grolle (Mihai 1983a:32; Dihoru G. 2001a:128) and can be *J. pumila* With.

Jungermannia caespiticia Lindenb.

Syn.:

- *Aplozia caespiticia* (Lindenb.) Dumort.
- *Aplozia punctata* (Gottsche) Dumort.
- *Haplozia caespiticia* (Lindenb.) Dumort.
- *Jungermannia caespitosa* Lindenb. var. *obtusata*
- *Jungermannia parvula* Lindb.
- *Jungermannia punctata* Gottsche
- *Solenostoma caespiticium* (Lindenb.) Steph.

First citation for Romania: Schur 1866.

Romania, Frey & al. 2006:90.

Ecology: epigeaic, acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BP, FH

Distribution in Europe: Is, No, Dk, Se, Fi, Br, Nl, Be, De, Po, At, Cz, Sk, Hu, Ro, Bg, Ee, Lv, Ua, Rn, Rw, Rc.

Distribution in Romania:

Maramureş County, between Tocila Valley and Băiuţ, common spruce forest, 600 m *alt.*, 21-23.08.1998 (Jakab 1999:55).

Rodna Mountains, Iezerale Buhăescu, MM, 47°35'18"N / 24°38'40"E, 1880 m *alt.*, 29.08.1999, *leg. & det.* Ştefănuţ S. (Ştefănuţ 2000a:141).

Harghita County, Bălan, Olt Valley, *leg.* Degen A., *det.* Schiffner V, sub *Aplozia caespititia* [BP; FH](Schiffner 1914:305; Váňa 1974:380; Bálint & Orbán 2006:474).

Făgăraş Mountains, Arpaş Valley, sub *J. caespitosa* Lindenb. var. *obtusata* (Schur 1866:871; Fuss 1878:657; Hazslinszky 1885:61; Schiffner 1914:305; Drăgulescu 2003:13).

Cindrel Mountains, Păltiniş, 1450 m *alt.*, sub *Solenostoma caespiticium* (Gündisch 1977:49 Drăgulescu 2003:13).

Jungermannia confertissima Nees

Syn.:

- *Alicularia levieri* (Steph.) Steph.
- *Aplozia confertissima* (Nees) Dumort.
- *Aplozia nana* var. *confertissima* (Nees) Breidl.
- *Aplozia scalariformis* (Nees) Dumort.
- *Aplozia sphaerocarpa* var. *confertissima* (Nees) Heeg
- *Haplozia breidleri* Müll. Frib.
- *Haplozia confertissima* (Nees) Dumort.
- *Haplozia levieri* (Steph.) Müll. Frib.
- *Haplozia lurida* Breidl.
- *Haplozia scalariformis* (Nees) Dumort.
- *Haplozia scalariformis* var. *scandica* C.E.O. Jensen
- *Jungermannia bolanderi* Gottsche & Underw., non (Austin) Austin
- *Jungermannia levieri* (Steph.) H. Buch et al.
- *Jungermannia scalariformis* Nees
- *Jungermannia scalariformis* var. *scandica* C.E.O. Jensen ex S.W. Arnell
- *Jungermannia sphaerocarpa* auct., non Hook.
- *Nardia levieri* Steph.
- *Solenostoma confertissimum* (Nees) Schljakov
- *Solenostoma levieri* (Steph.) Steph.

First citation for Romania: Degen 1914.

Romania, 1500-1900 m *alt.* (Váňa 1974:373; Schuster 1969:960).

Ecology: epilithic, basiphytic, hygro-mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BP, BUCA, FH

Distribution in Europe: Sj, Is, No, Se, Fi, Br, Fr, Ad, De, Po, Ch, At, Cz, Sk, Es, It, Si, Sb, Ro, Bg, Ee, Ua, Rn, Re, Ca.

Distribution in Romania:

Rodna Mountains, Vinului Valley, sub *J. levieri* (Boros 1951:371; Schuster 1969:960); ♀♂ - Iezerele Buhăescu, MM, 47°35'18"N / 24°38'40"E, 1880 m alt., 29.08.1999, leg. & det. Ștefănuț S. [BUCA B2371]; ♀♂ - Iezerul Pietrosului, MM, 47°35'53"N / 24°38'49"E, 1835 m alt., 28.08.1999, leg. & det. Ștefănuț S. [BUCA B3362].

Ciucaș Mountains, Zăgan Mountain, PH, 45°29'39"N / 25°58'33"E, 1850 m alt., 4.07.2004, leg. & det. Ștefănuț S. [BUCA B3050].

Brașov County, ? – Brașov (probably Cristianul Mare), 1700 m alt., 1962, leg. Vajda L., sub *J. sphaerocarpa* [BP](Váňa 1974:374).

Bucegi Massif, Bucșoiu, 08-09.1911, leg. Degen A., det. Schiffner, sub (*Jungermannia*) *Nardia pusilla* C.E.O. Jensen [FH](Degen 1914:217; Váňa 1974:374); Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3126]; 45°26'56"N / 25°26'31"E, 2310 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3132]; Gaura Glacial Ring, BV, 45°26'22"N / 25°26'24"E, 2250 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3369]; below Colții lui Barbeș, PH, 45°21'24"N / 25°28'43"E, 1780 m alt., 28.07.2005, leg. & det. Ștefănuț S. [BUCA B3220]; ♀♂ - Lăptici Valley, DB, 45°22'34"N / 25°27'32"E, 1700 m alt., 28.07.2005, leg. & det. Ștefănuț S. [BUCA B3235]; ♀♂ - Dorului Valley, PH, 45°21'51"N / 25°28'37"E, 1830 m alt., 28.07.2005, leg. & det. Ștefănuț S. [BUCA B3222]; ♀♂ - Peștera Hermitage, DB, 1540 m alt., 7.09.2006, leg. & det. Ștefănuț S. [BUCA B3571, B3579].

Făgăraș Mountains, Podragu, 1900 m alt., 1964, leg. Vajda L. [BP](Váňa 1974:374); Podragu Valley, 1800-2000 m alt., sub *J. levieri* Steph. (Vajda 1975:120); Bâlea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m alt., 18.07.2000, leg. & det. Ștefănuț S. [BUCA B2882]; ♀♂ - Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m alt., 17.09.2001, leg. & det. Ștefănuț S. [BUCA B2073]; ♀♂ - Pojorta Valley, BV, 45°38'14"N / 24°53'48"E, 800-1000 m alt., 18.09.2001, leg. & det. Ștefănuț S. [BUCA B2663], s - [BUCA B2660, B2662].

Parâng Mountains, the edge of the peatbog near Călcescu Lake, sub *Haplozia breidlerii* Müll. Frib. (Ștefureac 1969a:111,113).

Jungermannia exsertifolia Steph. subsp. *cordifolia* (Dumort.) Váňa

Syn.:

- *Aplozia cordifolia* Dumort.
- *Haplozia cordifolia* (Dumort.) Müll. Frib.
- *Haplozia cordifolia* var. *gracilis* C.E.O. Jensen
- *Haplozia cordifolia* var. *minor* Schiffn.
- *Jungermannia cordifolia* Hook., non Brot., nec Ehrh. ex F. Weber
- *Jungermannia eucordifolia* Schljakov
- *Plectocolea cordifolia* (Dumort.) Mitt.
- *Solenostoma cordifolium* (Dumort.) Steph.

First citation for Romania: Müller 1957:826,827.

Romania (Schuster 1969:940).

Moldova, sub *Solenostoma cordifolium* (Ștefureac & al. 1973:146).

Ecology: epilithic-epigaeic, acidophytic, hygrophytic, sciophytic; circumpolar; Hch. In *Philonotido-Hygrohypnetum dilatati* Plămadă 1974.

Distribution in Europe: Is, Fo, No, Se, Fi, Ie, Br, Fr, Ad, Be, De, Ch, At, Sk, Es, Co, Sc, It, Ro, Bg, Rn, Re, Ca.

Distribution in Romania:

Maramureș, without locality (Müller 1957:826,827, Fig.282a; Schuster 1969:940; Plămadă 1973a:380);

Neamț County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m alt., sub *Haplozia cordifolia* (Lungu 1963a:242).

Retezat Mountains, Rovine Brook near Casa laborator Gemenea, on wet rocks, 1964-1971, sub *Solenostoma cordifolium* (Plămadă 1973a:380, Fig.5a-d); Rovine Brook, 2000 m alt., 5.09.1967, sub *Solenostoma cordifolium*, ass. *Philonotido-Hygrohypnetum dilatati* (Plămadă 1974b:99, Tab.3; Plămadă 1993:55, Tab.6).

Bihar Mountains, Izvorul Ponorului, 1000 m alt., 08.1999 (Jakab 2000a:93; Jakab 2000b:67).

Jungermannia gracillima Sm.

Syn.:

- *Aplozia cordifolia* var. *turfosa* Warnst.
- *Aplozia crenulata* (Mitt.) Lindb.
- *Aplozia crenulata* var. *gracillima* (Sm.) Heeg
- *Aplozia cristulata* Dumort.
- *Aplozia gracillima* (Sm.) Dumort.
- *Eucalyx crenulatus* (Sm.) Loeske
- *Eucalyx gracillimus* (Sm.) Loeske
- *Haplozia crenulata* (Mitt.) Dumort.
- *Haplozia crenulata* var. *cristulata* (Dumort.) C. Massal.
- *Haplozia crenulata* var. *gracillima* (Sm.) C.E.O. Jensen
- *Haplozia cristulata* Dumort.
- *Haplozia gracillima* (Sm.) Dumort.
- *Haplozia hyalina* (Lyell) Warnst. var. *heteromorpha* (Schiffn.) Warnst.
- *Haplozia turfosa* (Warnst.) Warnst.
- *Jungermannia crenulata* Sm., nom. illeg., non Schmidel
- *Jungermannia crenulata* var. *cristulata* (Dumort.) C. Massal.
- *Jungermannia crenulata* var. *gracillima* (Sm.) Hook.
- *Jungermannia cristulata* (Dumort.) C. Massal.
- *Jungermannia cycloseris* Huebener
- *Jungermannia denudata* Huebener, non Mart.
- *Jungermannia genthiana* Huebener
- *Jungermannia gracillima* var. *cristulata* (Dumort.) Düll.
- *Jungermannia hyalina* var. *heteromorpha* Gottsche
- *Jungermannia scalaris* var. *colorata* Nees
- *Jungermannia sphaerocarpa* var. *gracilescens* Nees
- *Jungermannia tenerrima* Raddi, non Steph.
- *Nardia crenulata* (Mitt.) Lindb.
- *Nardia crenulata* var. *gracillima* (Sm.) Lindb.
- *Nardia gracillima* (Sm.) Lindb.
- *Plectocolea crenulata* Mitt.
- *Solenostoma crenulatum* Mitt.
- *Solenostoma gracillimum* (Sm.) R.M. Schust.
- *Solenostoma gracillimum* var. *cristulatum* (Dumort.) R.M. Schust.
- *Southbya crenulata* (Mitt.) Bernet

First citation for Romania: Heufler 1853.

Romania, 600-1000 m alt. (Văna 1974:386); Kolcino, leg. Boros Á. 1937, det. Müller K. [S](Văna 1974:386).

Moldova, sub *Haplozia crenulata* (Papp 1943:657); sub *Solenostoma crenulatum* (Ștefureac & al. 1973:146).

Muntenia (Mohan 1988b:103).

Transylvania, sub *Nardia* (Pax 1908:128).

Ecology: epigeaic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, S, SIB

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Ba, Mk, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Az, Ma, Cn.

Distribution in Romania:

Țibleș Mountains, Izvorul Țibleșului, Mesteacănul Valley, Piciorul Țiglei, 1984-1985 (Mohan 1988a:20).

Suceava County, Oușorul Mountain, on soil, 1971, sub *Solenostoma crenulatum* and fo. *gracillima* (Mihai 1974b:317-320).

Bărgău Mountains, Strâmba Valley, Heniu Mare, Leșului Valley, 1983-1984, sub *Solenostoma crenulatum* (Mohan & Hodoroga 1986:213).

Neamț County, Pietricica, on wet soil, sub *Haplozia crenulata* (Papp 1931a:218; Papp 1937d:238,240).

Giurgeu Mountains, Bicz Gorges, 1957-1960, sub *Haplozia crenulata* (Papp & al. 1962:147).

Harghita Mountains, Pietros Mountain, 1295 m alt., 15.08.2001, leg. Bálint L. & Csízi K. (Bálint & Orbán 2003:14); Harghita Băi (Bálint & Orbán 2006:468).

Brașov County, Băile Homorod, 20.07.1901, sub „*Jungermannia genthiana*” (Barth 1905:13); ♀ - between Strâmba Valley and Lupului Valley, 13.09.2006, leg. Pop O., det. Ștefănuț S. [BUCA B3612].

Mureș County, Lunca Bradului, 600 m alt., 1942, leg. Boros Á., det. Müller K. [S PA](Văna 1974:387).

? - **Ciucaș Mountains**, Cucului Hill, Bratocea Peak, Ciucaș Peak, Șuvițelor Culm, Albele Culm, Bratocea Culm (Mohan 1990b:41).

Făgăraș Mountains, Arpaș Valley, common spruce forest, sub *J. crenulata* Sm. (Heufler 1853:50-51; Schur 1866:871; Fuss 1878:657; Hazslinszky 1885:61; Drăgulescu 2003:13).

Cindrel Mountains, Valea Sadului, incl. sub *Solenostoma* [SIB SCHUR 4570](Schur 1866:871; Fuss 1878:657; Hazslinszky 1885:61; Gündisch 1977:49; Drăgulescu 2003:13); Păltiniș, 1400 m *alt.*, Șanta, 1400 m *alt.*, Jujbea, 2100 m *alt.*, sub *Solenostoma crenulatum* (Gündisch 1977:49; Drăgulescu 2003:13).

Retezat Mountains, on the bank of Galeșu Lake, sub *Solenostoma crenulatum* (Páll 1964a:108); Zănoaga Lake, Zănoaga Glacial Ring, northern slope, 2200 m *alt.*, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

Alba County, Cucurbăta Mare, 1600 m *alt.*, Cucurbăta Mică, 1200 m *alt.*, sub *Aplozia crenulata* (Péterfi M. 1908:271; Goia 2001:64); Cepelor Valley, on rotten wood (Goia 2001:65); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86).

Codru-Moma Mountains, Monesei Valley, Măgura Zăgăului, Brihenilor Valley, on wet soil (Mohan 1996:49; Ardelean 2006:104).

Cluj County, Southern Ciucea on Surduc Valley, sub *Haplozia crenulata* (Péterfi M. 1910:321; Boros 1942a:34); Drăgan Valley, sub *Haplozia crenulata* (Boros 1942a:35); Drăgan, 600 m *alt.*, 1941, *leg.* Boros Á., *det.* Müller K. [S](Váňa 1974:387).

Bihar County, Someșul Cald Gorges, on soil (Goia & Mătase 2001:17).

***Jungermannia hyalina* Lyell**

Syn.:

- *Alicularia muelleriana* (Schiffn.) Müll. Frib.
- *Aplozia hyalina* (Lyell) Dumort.
- *Eucalyx hyalinus* (Lyell) Carrington
- *Eucalyx muellerianus* (Schiffn.) Müll. Frib.
- *Haplozia hyalina* (Lyell) Dumort.
- *Haplozia muelleriana* (Schiffn.) Casares-Gil
- *Jungermannia bififormis* Aust.
- *Jungermannia schmidelianum* Huebener
- *Nardia bififormis* (Aust.) Lindb.
- *Nardia hyalina* (Lyell) Carrington
- *Nardia muelleriana* Schiffn.
- *Plectocolea hyalina* (Lyell) Mitt.
- *Solenostoma hyalinum* (Lyell) Mitt.
- *Southbya bififormis* (Aust.) Aust.
- *Southbya hyalina* (Lyell) Husn.

First citation for Romania: Schur 1866.

Romania, *alt.* 700 – 1600 m (Váňa 1975:72).

Moldova, sub *Plectocolea* (Ștefureac & al. 1973:146).

Transylvania, sub *Nardia* (Pax 1908:128).

Ecology: epigaeic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, Herb. Váňa, OP, PRC, SIB, W, H.A.T.R.

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Sa, Sc, It, Si, Hr, Sb, Ba, Ro, Bg, Al, Gr, Ct, Ee, Lv, Lt, Ua, Rn, Rw, Rc, Re, Ca, Az, Cn.

Distribution in Romania:

Maramureș County, Bistrița Aurie Valley, sub “*J. hyalina* Hook.” (Warnstorff 1895b:142; Pax 1908:128).

Rodna Mountains, Iezerele Buhăescu, MM, 47°35'19"N / 24°38'37"E, 1910 m *alt.*, 29.08.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3449], 47°35'21"N / 24°38'37"E, 1920 m *alt.*, 29.08.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3450] (Ștefănuț 2007b:429).

Căliman Mountains, ♂ - Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m *alt.*, 26.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3734], ♀ - [BUCA B3735] (Ștefănuț 2007b:429).

Harghita Mountains, Mic Valley near Câmpul Galgen, 1050-1150 m, on soil, 16.08.2001, Ulieșul Mic, 1150 m *alt.*, on rocks, 17.04.2001, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:60; Bálint & Orbán 2003:14; Ștefănuț 2007b:429).

Bacău County, Slănic Moldova, on clayey soil, 07.1910, *leg.* Brândză M., *det.* Ștefureac T., sub *Eucalyx* (Ștefureac 1942a:4; Papp 1957:284); *s* - Măgura Hill, north-west to Târgu Ocna, on soil, 680 m *alt.*, very rare, sub *Plectocolea* (Mihai & Barabaș V. 1971:674,675,683,687).

Postăvaru Mountain, ♂ - Postăvaru, sub *Nardia* (Schiffner 1914:305).

Bucegi Massif, Sinaia, 1897, *leg.* & *det.* Loitlesberger K. [H.A.T.R. 38; W](Loitlesberger 1898; Váňa 1975:73); Bucșoiu, 08-09.1911, sub *Nardia* (Degen 1914:217); The glacial rings of Ialomița Valley, DB, 45°26'13"N / 25°27'05"E, 2250 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2194]; Babele

Mountain, PH, 45°24'40"N / 25°28'32"E, 2150 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3274]; Babele Mountain, PH, 45°24'45"N / 25°28'42"E, 2190 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3627]; ♀ - Babele Mountain, PH, 45°24'49"N / 25°28'43"E, 2220 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3557]; ♀ - Peștera Hermitage, DB, 1540 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3580], s - [BUCA B3578, B3584].

Argeș County, Piatra Nemoștilor, 700 m *alt.*, sub *Nardia* (Loitlesberger 1898:193).

Iezer-Păpușa Mountains, Piatra Râioasă Sheepfold on Iezer Mountain, 1800 m *alt.*, sub *Nardia* (Loitlesberger 1898:193).

Făgăraș Mountains, Colții Brezii, BV (Schur 1866:871; Fuss 1878:657; Hazslinszky 1885:62); Clăbucet Mountain, AG, 06.1941, sub *Plectocolea* (Racoviță A. 1942:506,510).

Sibiu County, Turnu Roșu, 1970, *leg.* Rivola & Knížetová [Herb. Váňa] (Váňa 1975:73).

Cindrel Mountains, Ghihan (as „Ghylan”), 1962, *leg.* Vajda L. [OP] (Váňa 1975:73); Păltiniș, 1400 m *alt.*, Oncești, 1700 m *alt.*, sub *Plectocolea* (Gündisch 1977:49; Drăgulescu 2003:13); Cindrel, 2100 m *alt.*, sub *Plectocolea* (Gündisch 1977:49; Drăgulescu 1992:55; Drăgulescu 2003:13); Iezerul Mare [SIB HG] (Drăgulescu 1992:55; Drăgulescu 2003:13).

Vâlcea County, Boița-Grăblești, 800 m *alt.*, sub *Nardia* (Loitlesberger 1898:193; Ștefureac & Peicea 1973:44).

Parâng Mountains, Repedea Valley, 08-09.1954, sub *Eucalyx* (Ștefureac, Popescu & Lungu 1959:9,16,19,34,35, Pl.II, Figs.1-5).

Mehedinți County, Danube Defile, between Orșova and Cerna Valley, in forest, on soil, 1966-1968, sub *Plectocolea* (Plămadă 1970c:390,393, 396, Figs.1,2).

Alba County, Runcului Gorges, on soil, 900-1000 m *alt.*, *det.* Páll Ș., sub *Solenostoma*, ass. *Fagetum sylvaticae transsilvanicum* (Pop I. & al. 1964:221); Cepelor Valley, on rotten wood (Goia 2001:65); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,87,89).

Cluj County, Apuseni Mountains, sub *Plectocolea* (Ștefureac 1975b:313).

Jungermannia leiantha Grolle

Syn.:

- *Aplozia lanceolata* sensu Dumort.
- *Haplozia lanceolata* (Nees) Müll. Frib.
- *Jungermannia lanceolata* (Schrad.) Dumort, non L.
- *Liochlaena lanceolata* Nees
- *Solenostoma lanceolatum* auct.

First citation for Romania: Simonkai 1872.

Romania, *alt.* 750 – 1200 m (Váňa 1973b:400).

Transylvania, sub *Aplozia lanceolata* (Pax 1908:128).

Muntenia (Mohan 1988b:103).

Ecology: epigaeic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, OP, PRC, S, SIB, W, H.A.T.R.

Distribution in Europe: No, Dk, Se, Fi, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, Ma, Cn.

Distribution in Romania:

Neamț County, Neamț Monastery, on rotten wood, clayey soil, 07-08.1923, *leg.* Brândză M., *det.* Ștefureac T., sub *Haplozia lanceolata* (Ștefureac 1942a:4).

Bacău County, Grozei Forest, 930 m *alt.*, sub *Haplozia lanceolata* (Papp 1957:284).

Brașov County, ♀♂ - Strâmba Valley, 14.05.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3809].

Gârbova Massif, Rea Valley, 1000 m *alt.*, 1897, *leg.* Loitlesberger K. [H.A.T.R. 32; PRC; W] (Loitlesberger 1898:194; Váňa 1973b:401).

Bucegi Massif, Sinaia, on rotten fir trees, 08.1920, *leg.* Brândză M., *det.* Ștefureac T., sub *Haplozia lanceolata* (Ștefureac 1942a:4).

Piatra Craiului Mountains, Zărnești, 1200 m *alt.*, 1963, *leg.* Vajda L. [OP] (Váňa 1973b:401; Ștefănuț & Pop O.G. 2006:77).

Leaota Mountain, Vaca Valley, 900 m *alt.*, sub *Haplozia lanceolata* (Papp & Diaconescu 1968:387).

Făgăraș Mountains, Argeșului Valley, 750 m *alt.*, sub *Haplozia lanceolata* (Herzog 1919:295); Pojorta Valley, BV, 45°38'14"N / 24°53'48"E, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2671].

Argeş County, Valea cu Peşti as “Val ou Pesti”, 750 m *alt.*, 1916, *leg.* Herzog T. [S] (Váňa 1973b:401).

Cozia Mountain, Poarta de Piatră - Slavei Brook, on rotten woods, 1975-1976 (Dihoru G. 1990:52).

Sibiu County, Sibiu, sub *Lioclaena lanceolata* [SIB SCHUR 4547](Schur 1866:872; Fuss 1878:655; Hazslinszky 1885:49; Gündisch 1977:49; Drăgulescu 2003:14).

Căpăţânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub *Haplozia lanceolata* (Ştefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Latoriţa Valley, 08-09.1954, sub *Haplozia lanceolata* (Ştefureac, Popescu & Lungu 1959:9,19,37, Tab.7).

Poiana Ruscă Mountains, Luncani, sub *Lioclaena lanceolata* (Simonkai 1872:67; Fuss 1878:655; Hazslinszky 1885:49).

Arad County, Calvaria Mountain near Săvârşin, sub *Lioclaena lanceolata* (Simonkai 1872:67).

Alba County, Găina, 1200 m *alt.*, Lăpuş, 850 m *alt.*, sub *Aplozia lanceolata* (Péterfi M. 1908:272; Goia 2001:65); Iarba Rea Valley, 950 m *alt.*, 25.08.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965 (Goia 2000:113, Tab.2); Arieşul Mic Basin (Goia & Schumacker 2000:92); Vârciorog Valley, Galbena Valley, Cepelor Valley, Măgura Valley - Neagra, Izbuluc Gura Apei - Gârda de Sus, Morii Valley, on rotten wood (Goia 2001:65,66); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:87).

Bihar County, Iadului Valley between Remetea and Bulz, 350 m *alt.*, sub *Aplozia lanceolata* (Péterfi M. 1908:272; Boros 1942a:33).

Bihar Mountains, Izbuluc Ponorului (Boros & Vajda 1974:6); Izbuluc Ponorului, Padiş Mountain (Vajda 1973:291); Ponor, 1100 m *alt.*, 08.1999 (Jakab 2000b:66); Someşul Cald Gorges, on sandstone (Goia & Mătase 2001:17).

***Jungermannia obovata* Nees**

Syn.:

- *Aplozia obovata* (Nees) Loeske
- *Eucalyx obovatus* (Nees) Breidl.
- *Eucalyx obovatus* var. *elongatus* (Nees) Jörg.
- *Eucalyx obovatus* var. *rivularis* (Schiffn.) Macvicar
- *Gamochoetum obovatum* Trevis.
- *Jungermannia flaccida* Huebener
- *Jungermannia obovata* var. *elongatus* Nees
- *Nardia obovata* (Nees) Lindb.
- *Nardia obovata* var. *elongata* (Nees) Schiffn.
- *Nardia obovata* var. *rivularis* Schiffn.
- *Plectocolea obovata* (Nees) Lindb.
- *Southbya obovata* (Nees) Lindb.

First citation for Romania: Loitlesberger 1898.

Romania, *alt.* 1800 m (Váňa 1975:79).

Transylvania, sub *Nardia* (Pax 1908:128).

Ecology: epilithic, acidophytic, hygrophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, SIB, W, H.A.T.R.

Distribution in Europe: Is, Fo, No, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Pt, Es, Co, Sc, It, Sb, Ro, Bg, Ua, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Rodna Mountains, Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg.* & *det.* Ştefănuţ S. [BUCA B2190].

Suceava County, Argestru, 16.05.1910, sub *Aplozia* (Lilienfeldówna 1911:732).

Bodoc Mountains, Puturosu at Turia-Bufago, rare, sub *Plectocolea (Eucalyx)* (Ştefureac & Kovács 1981:115-117).

Făgăraş Mountains, Negoiu, 1800 m *alt.*, 1897, *leg.* & *det.* Loitlesberger K., sub *Nardia* [H.A.T.R. 193; W](Loitlesberger 1898:193; Plămadă 1973a:380; Váňa 1975:80; Drăgulescu 2003:14); Podragu Valley, 1800-2000 m *alt.* (Vajda 1975:120); ♀♂ - Capra Lake, AG, 45°36'01"N / 24°37'43"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ştefănuţ S. [BUCA B2075].

Cindrel Mountains, Iezerul Mare, 2000 m *alt.*, sub *Plectocolea* [SIB HG](Gündisch 1977:49; Drăgulescu 1992:55; Drăgulescu 2003:14).

Retezat Mountains, Rovine Brook, on wet rocks, 1964-1971, sub *Plectocolea* (Plămadă 1973a:380, Fig.4a-d).

Alba County, Cucurbăta Mare Peak, 4.08.1994, 1720 m *alt.*, ass. *Fontinalietum antipyreticae* Gretzer (Goia 1998:251, Tab.2).

Bihor Mountains, Buteasa, 1000-1300 m *alt.*, sub *Nardia* (Péterfi M. 1908:271; Péterfi M. 1909:97; Plămadă 1973a:380; Ștefureac 1975b:313).

Jungermannia polaris Lindb.

Syn.:

- *Aplozia polaris* (Lindb.) Bryhn
- *Aplozia schiffneri* Loitl.
- *Haplozia polaris* (Lindb.) Bryhn & Kaal.
- *Haplozia schiffneri* (Loitl.) Müll. Frib.
- *Jungermannia pumila* subsp. *polaris* (Lindb.) Berggr.
- *Jungermannia pumila* var. *polaris* (Lindb.) Berggr.
- *Jungermannia schiffneri* (Loitl.) A. Evans, non (Loitl.) Steph.
- *Jungermannia schiffneri* (Loitl.) A. Evans
- *Solenostoma polare* (Lindb.) R.M. Schust.
- *Solenostoma pumilum* subsp. *polaris* (Lindb.) R.M. Schust.
- *Solenostoma schiffneri* (Loitl.) Müll. Frib.

First citation for Romania: Ștefureac 1955.

Romania, Carpathians, 1700-2050 m *alt.* (Váňa 1973a:282).

Muntenia (Mohan 1988b:103).

Transylvanian Alps (Schuster 1969:955).

Ecology: epigeaic, basiphytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BP, BUCA, Herb. Boros, Herb. Váňa, Herb. Vajda.

Distribution in Europe: Sj, Is, Fo, No, Se, Fi, Br, Fr, Ad, Po, Ch, At, Sk, Es, It, Si, Hr, Me, Ro, Al, Gr, Nz, Fl, Rn.

Distribution in Romania:

Cristianul Mare Mountain, 1700 m *alt.*, 1962, *leg. & det.* Vajda L., sub *Solenostoma schiffneri* [Herb. Váňa] (Boros & Vajda 1967:221; Váňa 1973a:283).

Bucegi Massif, Bucșoiu Mountain, northern slope, 2430 m *alt.*, on waterfall edge, 2420 m *alt.*, 23.07.1950, sub *Solenostoma schiffneri* (Ștefureac 1955:594,595, Tab.1; Schuster 1969:955; Ștefureac 1972c:103; Boros & Vajda 1967:221); ♀♂ - Mălăiești Glacial Ring, BV, 45°27'04"N / 25°26'51"E, 2100 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2023, B2117]; ♀♂ - Mălăiești Glacial Ring, BV, 45°27'13"N / 25°26'45"E, 2010 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2121]; Gaura Glacial Ring, BV, 45°26'29"N / 25°26'17"E, 2110 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3151]; ♀♂ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3279], s - [BUCA B3275]; ♀♂ - Babele Mountain, PH, 45°24'49"N / 25°28'43"E, 2220 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3556].

Făgăraș Mountains, Bâlea, 2050 m *alt.*, 1963, *leg.* Boros Á., *det.* Váňa J. [Herb. Boros; Herb. Váňa] (Váňa 1973a:283); Podragu, 2000 m *alt.*, 1966, *leg. & det.* Váňa J. [Herb. Vajda; BP] (Váňa 1973a:283); Podragu Valley, 1800-2000 m *alt.* (Vajda 1975:120); The glacial ring from Doamnei Valley, SB, 45°36'05"N / 24°36'27"E, 2150 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2388]; ♀♂ - The glacial ring from Doamnei Valley, SB, 45°36'08"N / 24°36'26"E, 2120 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2002].

Parâng Mountains, Parâng, 1956, *leg. & det.* Simon T., sub *Solenostoma schiffneri* (Pócs 1960a:166).

Jungermannia pumila With.

Syn.:

- *Aplozia atrovirens* var. *arnellii* Schiffn.
- *Aplozia oblongifolia* (Müll. Frib.) Jörg.
- *Aplozia pumila* (With.) Dumort.
- *Aplozia rivularis* (Schiffn.) Schiffn.
- *Aplozia rostollata* (Huebener) Dumort.
- *Aplozia zeyheri* (Huebener) Dumort.
- *Gymnoscyphus repens* Corda
- *Haplozia atrovirens* var. *arnellii* Schiffn.
- *Haplozia oblongifolia* Müll. Frib.
- *Haplozia pumila* (Dicks.) Dumort.
- *Haplozia pumila* var. *alpestris* (Lindb.) Jörg.
- *Haplozia pumila* var. *rivularis* Schiffn.

- *Haplozia rivularis* (Schiffn.) Schiffn.
- *Haplozia rostellata* (Huebener) Dumort.
- *Jungermannia karl-muelleri* Grolle
- *Jungermannia oblongifolia* (Müll. Frib.) H. Buch et al.
- *Jungermannia pumila* var. *alpestris* Lindb.
- *Jungermannia pumila* var. *rivularis* (Schiffn.) Frye & L. Clark
- *Jungermannia repens* Dietrich
- *Jungermannia rostellata* Huebener
- *Jungermannia zeyheri* Huebener
- *Solenostoma oblongifolium* (Müll. Frib.) Müll. Frib.
- *Solenostoma pumilum* (Dicks.) Müll. Frib.

First citation for Romania: Loitlesberger 1898.

Romania, 1800-2000 m *alt.* (Váňa 1973a:288).

Moldova, sub *Solenostoma* (Ștefureac & al. 1973:146).

Transylvania, sub *Aplozia pumila* (Pax 1908:128; Müller 1957:823).

Ecology: epilithic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, PRC, W, H.A.T.R.

Distribution in Europe: Is, Fo, No, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sc, It, Si, ?Me, Ba, Ro, Bg, Ua, Fl, Rn, Re, Az, Ma, Cn.

Distribution in Romania:

Suceava County, Benea-Breaza, on serpentine, 1100 m *alt.*, sub *Solenostoma* (Ștefureac, Cristurean & Sihota 1964:225, Tab.1).

Neamț County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.*, sub *Eucalyx* (Lungu 1963a:242,243).

Nemira Mountains, on banks of lakes, on marshy soil, 1970-1977, sub *Solenostoma* (Mihai & Barabaș V. 1978:114,116).

Bodoc Mountains, Balványos Spa - Turia, on andesite, sub *Solenostoma* (Boros 1951:371; Ștefureac & Kovács 1981:115-117).

Bucegi Massif, ♀♂ - Gaura Glacial Ring, BV, 45°26'46"N / 25°26'37"E, 2250 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2506].

Făgăraș Mountains, Negoiu, 1800 m and 2000 m *alt.*, 1897, *leg. & det.* Loitlesberger K., sub *Aplozia pumila* var. *alpestris* [H.A.T.R. 166,191; PRC; W] (Loitlesberger 1898:194; Müller 1957:823; Váňa 1973a:289; Drăgulescu 2003:14); Bâlea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2138]; Capra Lake, AG, 45°36'01"N / 24°37'48"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2486].

Cluj County, Southern Ciucea on Surduc Valley, sub *Haplozia* (Boros 1942a:34).

Jungermannia sphaerocarpa Hook.

Syn.:

- *Aplozia amplexicaulis* (Dumort.) Dumort.
- *Aplozia lurida* (Dumort.) Dumort.
- *Aplozia nana* (Nees) Breidl.
- *Aplozia sphaerocarpa* (Hook.) Dumort.
- *Aplozia tersa* (Nees) Bernet
- *Haplozia amplexicaulis* (Dumort.) Dumort.
- *Haplozia goulardii* (Husn.) Boulay
- *Haplozia lurida* (Dumort.) Dumort.
- *Haplozia nana* Nees ex Breidl.
- *Haplozia sphaerocarpa* (Hook.) Dumort.
- *Haplozia sphaerocarpa* var. *amplexicaulis* (Dumort.) Müll. Frib.
- *Haplozia sphaerocarpa* var. *elongata* (Huebener) Jørg.
- *Haplozia sphaerocarpa* var. *goulardii* (Husn.) Kaal. ex Jørg.
- *Haplozia sphaerocarpa* var. *lurida* (Hook.) Bryhn & Kaal.
- *Haplozia sphaerocarpa* var. *nana* (Nees ex Breidl.) Müll. Frib.
- *Jungermannia amplexicaulis* Dumort.
- *Jungermannia goulardii* Husn.
- *Jungermannia lurida* Dumort.
- *Jungermannia nana* Nees
- *Jungermannia sphaerocarpa* var. *amplexicaulis* (Dumort.) Frye & L. Clark
- *Jungermannia sphaerocarpa* var. *elongata* Huebener
- *Jungermannia sphaerocarpa* var. *lurida* Pearson
- *Jungermannia sphaerocarpa* var. *nana* (Nees ex Breidl.) Frye & L. Clark
- *Jungermannia tersa* Nees
- *Solenostoma amplexicaule* (Dumort.) Steph.
- *Solenostoma sphaerocarpum* (Hook.) Steph.

First citation for Romania: Heufler 1853.

Romania, *alt.* 600-2280 m (Váňa 1974:403).

Moldova, sub *Haplozia* (Papp 1943:657), sub *Solenostoma* (Ștefureac & al. 1973:146).

Muntenia (Mohan 1988b:103).

Transylvania, sub *Aplozia* (Pax 1908:129).

Ecology: epilithic, acidophytic, hygromesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, Herb. Boros, PHHM, W, H.A.T.R.

Distribution in Europe: Sj, Is, Fo, No, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Sc, It, Si, Sb, Me, Mk, Ro, Bg, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Re, Ca.

Distribution in Romania:

Maramureș County, Lăpuș (Papp 1967a:16); The Fountain from Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, Ineu Peak, 2200 m *alt.*, sub *Jungermannia tersa* (Breidler 1890a:150); *fer* – Corongiș, sub *Haplozia* (Matouschek 1905:80); Rodna Mountains, sub *Aplozia* (Pax 1908:129); Ineu, Crestele Găgii, Tăul Mare, 2000 m *alt.*, sub *Haplozia* (Ștefureac 1942b:91); Ineu Peak, Crestele Găgii, 1800 m *alt.*, sub *Haplozia* (Ștefureac 1945:174); Pietrosul Rodnei, 23.08.1942, *leg. & det.* Boros Á., sub *Solenostoma* (Györffy 1943d:321); Pietrosul Rodnei, north-western slope, 2280 m and 2280 m *alt.*, 8-9.08.1948, sub *Haplozia* (Ștefureac 1952a:390,391, Tab.1); Ineu, 1942, *leg. & det.* Boros Á. (Györffy 1943d:321; Ștefureac 1952a:392); Rodna Mountains, sub *Haplozia* (Ștefureac 1963c:168); Pietrosul Mare Glacial Ring, 1810 m *alt.*, 19.07.1975, sub *Solenostoma*, ass. *Cardaminetum opizii* Szafer., Pawl., Kulcz. 1923 (Coldea, Täuber & Pînzaru 1981:437, Tab.1; Coldea 1990:50, Tab.13); Pietrosul Rodnei, 2280 m *alt.*, 4.09.1982, 2260 m *alt.*, 31.08.1983, *leg. & det.* Ștefureac T., ass. *Bucegietum romanicae* Ștefur. 1984 subass. *jungermannietosum sphaerocarphae* Ștefur. 1986 (Ștefureac 1986h:105-107, Tab.2); ♀♂ - Iezerul Pietrosului, MM, 47°35'53"N / 24°38'49"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2875], s - [BUCA B2489]; Iezelele Buhăescu, MM, 47°35'19"N / 24°38'37"E, 1910 m *alt.*, 29.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2366].

Țibleș Mountains, Izvorul Țibleșului, Mesteacănul Valley, Piciorul Țiglei, 1984-1985 (Mohan 1988a:20).

Suceava County, Tătarca Brook Valley, on wet soil, sub *Solenostoma*, *conf.* Mihai G. (Pascal 1970a:198; Pascal 1973; Ștefureac & Pascal 1981:482); Cristișor-Neagra Broștenilor, Borcut Meadow, in brushes, on soil, sub *Solenostoma* (Lungu 1973b:72; Lungu 1981c:93).

Rarău Mountain, Codrul Secular Slătioara, on fixed screes, 1480 m *alt.*, sub *Haplozia*, incl. var. *nana* (Ștefureac 1941:1154,1176,1245,1272,1277, Tabs.5,6; Papp 1969b:188); Codrul Secular Slătioara, Ion's brook, sub *Haplozia* (Ștefureac 1942b:91); Plaiul Todirescu-Slătioara Reserve, sub *Solenostoma*, incl. var. *nana* (Ștefureac & Raclaru 1978:197).

Bărgău Mountains, Heniu Mare Peak, Muncel Peak, Arșiței Peak, 1983-1984, sub *Solenostoma* (Mohan & Hodoroga 1986:213).

Bistrița-Năsăud County, Măgheruș Valley, Gropii Hill, sub *Solenostoma* (Ștefureac & Cristurean 1973:314,315); Râpa Mare, Piatra Corbului, Simionești, Budacul de Jos, 1980-1981, sub *Solenostoma* (Mohan & Hodoroga 1983:52; Mohan 1990a:23).

Căliman Mountains, alpine zone, on wet stony soil, sub *Solenostoma* (Mihai 1968a:204).

Neamț County, Doamna, 350 m *alt.*, sub *Haplozia sphaerocarpha* var. *nana* (Papp 1934a:193; Lungu 1963a:241); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.*, sub *Haplozia* (Lungu 1963a:242-244).

Ceahlău Mountain, above Piatra Ciobanului, in common spruce forest, on soil (Mihai 1984a:89); Ceahlău, upper edge of common spruce forest, also in glades, ass. *Vaccinio-Polytrichetum alpini* Mihai 1987 (Mihai 1987a:23, Tab.3).

Harghita Mountains, Minei Valley, 1100-1200 m *alt.*, on soil, 11.07.2000, Cifrabuc, 1200 m *alt.*, on soil, 16.08.2001, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:60; Bálint & Orbán 2003:14).

Bacău County, Colina Măgura, 514 m *alt.*, Secătura Grozei Forest, 913 m *alt.*, sub *Haplozia* (Papp 1957:284; Papp 1958b:410,417).

Ciucăș Mountains, Alb Brook Valley, Berii Brook Valley, Balaban Mountain, Piscul lui Neacșu, Chirușca Saddle (Mohan 1990b:41).

Gârbova Massif, Azuga Valley, Tufa Valley, on stone, 1967-1970, sub *Solenostoma* (Lungu & Ștefureac 1970:5).

Bucegi Massif, Sinaia, Furnica, 1800 m *alt.*, 1897, *leg. & det.* Loitlesberger K., sub *Aplozia sphaerocarpha* var. *nana*, *minor* [H.A.T.R. 87; W] (Loitlesberger 1898:194; Váňa 1974:404); Mălăiești

Valley, 08-09.1911, sub *Aplozia amplexicaulis* (Degen 1914:217); Piatra Arsă, 2000 m alt., sub *Haplozia*, ass. *Elynetum myosuroides* (Puşcaru D. & al. 1956: Tab.24); north-western part of the Massif, 1900-2350 m alt., sub *Solenostoma* (Ştefureac 1972c:103); ♀ - Babele Valley, PH, 45°24'41"N / 25°28'37"E, 2110 m alt., 14.07.2008, leg. & det. Ştefănuţ S. [BUCA B3906].

Prahova County, Doftana Valley, Păltinoasa Valley, sub *Solenostoma* [PHHM 7786/3873](Mohan 1971a:8; Mohan 1971b:47); Teleajen Valley, Doftana Valley, Negraşului Valley (Mohan 1990a:23).

Piatra Craiului Mountains, Marele Grohotiş, AG, 45°30'36"N / 25°11'45"E, 1650 m alt., 8.07.1998, leg. & det. Ştefănuţ S. [BUCA B2810], 45°30'34"N / 25°11'46"E, 1650 m alt., 8.07.2003, leg. & det. Ştefănuţ S. [BUCA B2635] (Ştefănuţ & Pop O.G. 2006:77).

Iezer-Păpuşa Mountains, Bratia Valley, 900 m alt., 1897, leg. & det. Loitlesberger K., sub *Aplozia sphaerocarpa* var. *tersa* (Loitlesberger 1898:194); Iezer Valley, Bătrâna Valley, Dâmboviţa Valley (Mohan 1990a:23).

Făgăraş Mountains, Arpaş Valley, subalpine zone (Heufler 1853:50-51; Fuss 1854:20; Schur 1866:872; Fuss 1878:656; Hazslinszky 1885:62; Drăgulescu 2003:14); Negoiu, 2200 m alt., 1897, leg. & det. Loitlesberger K., sub *Aplozia sphaerocarpa* var. *nana*, *minor* [H.A.T.R. 199; W](Loitlesberger 1898:194; Văna 1974:404; Drăgulescu 2003:14); above Bâlea Labe, below Paltina Peak, on sandy soil, 2250 m alt., 13.07.1946, above Avrig Lake, on schists with limestone, 2150 m alt., sub *Haplozia* (Ştefureac 1949a:289-290; Drăgulescu 2003:14); ♀♂ - Bâlea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m alt., 18.07.2000, leg. & det. Ştefănuţ S. [BUCA B2136], *s* - [BUCA B2140, B2141]; ♀♂ - Capra Lake, AG, 45°36'00"N / 24°37'49"E, 2250 m alt., 17.07.2000, leg. & det. Ştefănuţ S. [BUCA B2297], ♀♂ - 45°36'01"N / 24°37'50"E, 2250 m alt., 17.07.2000, leg. & det. Ştefănuţ S. [BUCA B2076], *s* - 45°36'00"N / 24°37'44"E, 2250 m alt., 17.07.2000, leg. & det. Ştefănuţ S. [BUCA B2165]; ♀♂ - Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m alt., 17.09.2001, leg. & det. Ştefănuţ S. [BUCA B2072].

Cozia Mountain, fer - Stânişoara Monastery, **fer** – Cozia Peak, 1668 m alt., sub *Solenostoma*, 1975-1976 (Dihoru G. 1990:53); Bulzu Peak, 1560 m alt., 1987, leg. Negrean G. (Dihoru G. 1990:53).

Cindrel Mountains, Păltiniş, 1200-1300 m alt., Şanta, 1300 m alt., Jujbea, 2100 m alt. (Gündisch 1977:49; Drăgulescu 2003:14); Iezerul Mic, 1900 m alt. (Gündisch 1977:49; Drăgulescu 1992:55; Drăgulescu 2003:14).

Vâlcea County, Stânişoara Valley, on soil, 1400 m alt., 30.04.2003 (Dihoru G. & Răduţoiu 2004:78).

Căpăţânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub *Haplozia* (Ştefureac, Popescu & Lungu 1955:527).

Parâng Mountains, fer - Curmătura Vidruţei, 1350 m alt., 26.07.1955, sub *Haplozia* (Ştefureac, Popescu & Lungu 1957a:62-71, Tab.1); **fer** - Obârşia Lotrului, at 4 km to Obârşia Hut, 1420 m alt., 14.08.1955, leg. Ştefureac T., sub *Haplozia* (Ştefureac, Popescu & Lungu 1957a:63-71, Tab.1); **fer** – the water shed between Lotru Valley and Jiu Valley, the way from Obârşia towards Lonea, before Poiana Muierii, 1600 m alt., 16.08.1955, leg. Ştefureac T., sub *Haplozia*, incl. *H.s.* var. *nana* (Ştefureac, Popescu & Lungu 1957a:63-71, Tab.1); Cârja, 2400 m alt., Mândra, 2000 m alt., det. Vajda L., sub *Aplozia* (Pócs 1958:108); Latoriţa Valley, 08-09.1954, sub *Haplozia* (Ştefureac, Popescu & Lungu 1959:9,19); below Mohor Ridge, 2300 m alt., small alpine peatbog, on wet clayey and peaty soil, sub *Solenostoma* (Ştefureac 1969a:118, Tab.15).

Alba County, Găina Mountain, 1100 m alt., sub *Aplozia* (Péterfi M. 1908:272); Cucurbăta Mare, 1600 m alt., sub *Aplozia tersa* (Péterfi M. 1908:272); Cucurbăta Mică, 1000 m alt., sub *Aplozia* (Péterfi M. 1908:272; Goia 2001:66); Cepelor Valley, on rotten wood (Goia 2001:66); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:87).

Cluj County, Drăgan Valley, sub *Haplozia* (Boros 1942a:35); Drăgan, 600 m alt., 1963, leg. Boros Á., det. Văna J. [Herb. Boros](Văna 1974:404).

Bihar County, Crişul Repede Defile, at Vadu Crişului, sub *Aplozia* (Péterfi M. 1908:272; Boros 1942a:31; Boşcaiu & Gergely 1966:104).

Jungermannia subelliptica (Lindb. ex Kaal.) Levier

Syn.:

- *Eucalyx subellipticus* (Lindb. ex Kaal.) Breidl.
- *Haplozia subelliptica* (Lindb. ex Kaal.) Casares-Gil
- *Nardia subelliptica* Lindb. ex Kaal.
- *Plectocolea subelliptica* (Lindb. ex Kaal.) A. Evans

- *Solenostoma subellipticum* (Lindb. ex Kaal.) R.M. Schust.
- *Southbya subelliptica* (Lindb. ex Kaal.) Lett

First citation for Romania: Pócs 1958.

Ecology: epigaeic, epilithic, basiphytic, hygrophytic, photo-sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: S

Distribution in Europe: Sj, Is, Fo, No, Se, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, It, Si, Ro, Rn, Ca.

Distribution in Romania:

Covasna County, Turia („Torja”), 1942, *leg.* Boros Á., *det.* Müller K., sub *J. obovata* [S](Váňa 1975:87).

Bucegi Massif, Mălăiești Valley, 2000 m *alt.*, *det.* Vajda L., sub *Plectocolea* (Pócs 1958:108).

Făgăraș Mountains, Podragu Valley, 1800-2000 m *alt.*, sub *Plectocolea* (Vajda 1975:120).

Cindrel Mountains, Păltiniș, 1300 m *alt.*, sub *Plectocolea* (Gündisch 1977:49; Drăgulescu 2003:14).

Jungermannia subulata A. Evans

Syn.:

- *Aplozia lanceolata* var. *gemmipara* Heeg
- *Aplozia lanceolata* var. *prolifera* Breidl.
- *Jamesoniella subulata* (A. Evans) Steph.
- *Jungermannia amakawana* Grolle
- *Jungermannia brunescens* Amakawa, nom. nud.
- *Jungermannia cylindrica* (Steph.) S. Hatt., non Wallr.
- *Jungermannia lanceolata* subsp. *stephanii* Amakawa
- *Jungermannia leiantha* subsp. *stephanii* (Amakawa) S. Hatt.

First citation for Romania: Grolle & Váňa 1969.

Romania, chorology (Ștefănuț 2003b:237, Fig.4); Frey & al. 2006:87.

Ecology: epilithic, epigaeic, saprolignic, acidophytic, hygrophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: W

Distribution in Europe: Se, Fr, De, Po, At, Cz, Hu, Si, Ro, Ee, Lt, Ua, Re, Ca.

Distribution in Romania:

Harghita County, Vlăhița, 1874, *leg.* & *det.* Barth J., sub *J. lanceolata*, *rev.* Grolle R. & Váňa J. [W] (Grolle & Váňa 1969:312; Váňa 1973b:406; Ștefănuț 2003b:237, Fig.4).

Alba County, Valea Lungă, 1874, *leg.* & *det.* Barth J., sub *J. lanceolata*, *rev.* Grolle R. & Váňa J. [W] (Grolle & Váňa 1969:312; Váňa 1973b:406).

Jungermannia sp.

Parâng Mountains, Câlcescu Lake bank, sub “*Haplosia*” (Oltean 1963:40).

Hunedoara County, Geoagiu, *leg.* Györfy I., sub *Haplozia* (Györfy 1924b:38).

Cluj County, Dobrin, *leg.* Péterfi M., sub *Haplozia* (Györfy 1924b:38).

Kurzia pauciflora (Dicks.) Grolle

Syn.:

- *Blepharostoma setaceum* Dumort.
- *Jungermannia doelaviensis* Spreng.
- *Jungermannia multiflora* L., non Huds.
- *Jungermannia pauciflora* Dicks.
- *Jungermannia schultzi* Spreng.
- *Jungermannia setacea* auct.
- *Kurzia setacea* auct.
- *Jungermannia setacea* auct., non Weber
- *Lepidozia setacea* var. *sertularioides* Carrington
- *Lepidozia setacea* var. *sphagnicola* (A. Evans) Hesselbo
- *Lepidozia sphagnicola* A. Evans
- *Microlepidozia setacea* auct.
- *Telaranea setacea* (Web.) Müll. Frib.

First citation for Romania: Plămadă & Coldea 1982.

Romania, Frey & al. 2006:53.

Ecology: truficolous, acidophytic, hygrophytic, photo-sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Pt, Es, Si, Ro, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Ka, Az, Ma.

Distribution in Romania:

Maramureş County, “La Vlăşchinescu” Peatbog, near the tourist station of Izvoarele, 916 m *alt.*, 27.08.1975, sub *Telaranea setacea* (Plămadă & Coldea 1982:109; Plămadă 1988:197; Mohan 1988a:17; Plămadă, Goia & Dumitru 2000:23).

? - **Țibleş Mountains**, Mesteacănul Valley, small peatbog, 1650 m *alt.*, 1984-1985 (Mohan 1988a:17-19, Figs.3,4).

Căliman Mountains, Piciorul Iancului, in common spruce forest with *Pinus cembra*, on peaty soil and on rotten vegetable rests, 1750 m *alt.*, 10.09.1981 (Mihai 1984b:253-256, Fig.1; Mihai 1985:96; Ștefureac 1986f:194; Mohan 1988a:17).

Harghita Mountains, *Sphagnum* moor near Câmpul Galben, on peaty ground, 1350 m *alt.*, 16.08.2001, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Bihar Mountains, ♀ - Molhașul Mare de la Izbuc, 46°35'27"N / 22°45'26"E, 1200 m *alt.*, 4.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3817].

***Leiocolea badensis* (Gottsche) Jorg.**

Syn.:

- *Jungermannia acuta* var. *gypsacea* Gottsche et al.
- *Jungermannia badensis* Gottsche
- *Jungermannia turbinata* var. *obtusiloba* Bernet
- *Leiocolea badensis* var. *obtusiloba* (Bernet) Jørg.
- *Lophozia badensis* (Gottsche) Schiffn.
- *Lophozia badensis* var. *obtusiloba* (Bernet) Schiffn.
- *Lophozia gypsacea* (Gottsche et al.) Schiffn.
- *Lophozia turbinata* var. *badensis* (Gottsche ex Rabenh.) Hillier

First citation for Romania: Degen 1914.

Muntenia, sub *Lophozia* (Mohan 1988b:103,104).

Ecology: epilithic, calcicolous, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Hr, Sb, Ba, Ro, Al, Gr, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Rc, Re.

Distribution in Romania:

Harghita County, Toplița (Soó 1944a:51; Boros 1951:373).

Bucegi Massif, Bucșoiu Peak, 08-09.1911, sub *Lophozia* (Degen 1914:217).

Argeș County, ♀ - Great Gorges of Dâmbovița River, AG, 45°23'04"N / 25°11'43"E, 750 m *alt.*, 8.06.2005, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3166], ♂ - [BUCA B3167] (Ștefănuț & Pop O.G. 2006:77).

Retezat Mountains, towards Custura Peak, sub *Lophozia* (Páll 1964a:108).

Bihar County, Vadu Crișului, Casa Zmăului (or „Tălharului”) Cave entrance, on stone (Boros 1942a:31; Boros 1942e:154; Boros 1951:373; Boșcaiu & Gergely 1966:104; Ștefureac 1970h:482; Ștefureac 1975b:310; Ștefureac 1986f:191); Șuncuiș (Boros 1942e:153; Boros 1951:373).

***Leiocolea bantriensis* (Hook.) Jorg.**

Syn.:

- *Jungermannia bantriensis* Hook.
- *Jungermannia hornschuchiana* Nees
- *Jungermannia muelleri* var. *bantriensis* (Hook.) Kaal.
- *Lophozia bantriensis* (Hook.) Steph.
- *Lophozia hornschuchiana* (Nees) Dumort. ex Schiffn.

First citation for Romania: Ștefureac 1941.

Romania (Boros & Vajda 1967:219; Ștefureac 1986f:192).

Bucovina (Müller 1954:698; Schuster 1969:388).

Moldova, sub *L. hornschuchiana* (Papp 1943:656; Ștefureac & al. 1973:145,146).

Muntenia, sub *Lophozia* (Mohan 1988b:104).

Ecology: epigeaic, humicolous, saprolignic, subneutrophytic-basiphytic, hygro-mesophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fo, No, Se, Fi, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Es, Sc, It, Mk, Sb, Me, Ro, Bg, Ee, Ua, Lv, Rn, Ca, Ma.

Distribution in Romania:

Bârgău Mountains, Heniu Mare, Măgura Calului, Leşului Valley, Muncel Peak, 1983-1984, sub *Lophozia* (Mohan & Hodoroga 1986:212).

Rarău Mountain, Codrul Secular Slătioara, Rarău Peak, *L. hornschuchiana* (Ştefureac 1941:1154; Papp 1969b:188; Goia 2001:59).

Giurgeu Mountains, Bicaz Gorges, 1957-1960, sub *Lophozia hornschuchiana* (Papp & al. 1962:144; Goia 2001:59).

Braşov County, Prejmer, Stupini (Ştefureac 1979d:118,120).

Piatra Mare Mountain, Tamina Waterfall, BV, 45°32'58"N / 25°38'33"E, 6.09.1997, *leg. & det.* Ştefănuţ S. [BUCA B2057].

Bucegi Massif, the Saddle between Caraiman and Coştila, 2380 m *alt.*, the Plateau between Caraiman and Coştila, 2400 m *alt.*, Moraru, 2470 m *alt.*, Omu Peak, 2500 m *alt.*, *ass. Caricetum curvulae* Brockm.-Jer. 1907 (Puşcaru D. & al. 1956:59,60,149, Tab.12; Resmeriţă 1973a:316, Tab.2; Sanda, Popescu A. & Fişteag 1989:100, Tab.1); Mălăieşti Valley, 1900 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:219; Goia 2001:59); in the north-western part of the Massif, 1900-2400 m *alt.* (Ştefureac 1972c:103,104); Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m *alt.*, 8.07.1999, *leg. & det.* Ştefănuţ S. [BUCA B2100]; ♀ - Ialomiţa Valley, DB, 45°22'33"N / 25°26'10"E, 1465 m *alt.*, 7.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3599]; ♂ - Ialomiţa Valley, DB, 45°22'33"N / 25°26'10"E, 1465 m *alt.*, 7.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3600].

Piatra Craiului Mountains, Marele Grohotiş, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ştefănuţ S. [BUCA B2643], 45°30'36"N / 25°11'38"E, 1550 m *alt.*, 8.07.2003, *leg. & det.* Ştefănuţ S. [BUCA B2644, B2645] (Ştefănuţ & Pop O.G. 2006:77).

Făgăraş Mountains, The glacial ring from Doamnei Valley, SB, 45°36'10"N / 24°36'23"E, 2100 m *alt.*, 16.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2155, B2390].

? - **Cozia Mountain**, Cheile Roşiei, on soil, 1987, *leg.* Negrean G. (Dihoru G. 1990:52).

Alba County, Gârda Seacă – upstream to Casa de Piatră, on fallen rotten wood (Goia 2001:58-60, Figs.12-14); Arieşul Mare Basin, on rotten wood, sub *Lophozia* (Goia & Schumacker 2002:86,89).

Bihor Mountains, Cetatea Rădesei Cave, 1971, sub *Lophozia*, *ass. Cratoneuro (filicini)-Chiloscyphetum pallenscentis* Ştefur. 1985 (Ştefureac 1985e:111,115, Tab.1); Someşul Cald Gorges, on rocks and moist cliffs, sub *Lophozia* (Goia & Mătase 2001:17).

subsp. *wallfischii* Ştefănuţ

Holotip: BUCA B3209

Distribution in Europe: Ro

Distribution in Romania:

Bucegi Massif, ♀ - Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg. & det.* Ştefănuţ S. [BUCA B3209], s - [BUCA B3210], 7.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3506].

***Leiocolea collaris* (Nees) Schljakov**

Syn.:

- *Jungermannia acuta* Lindenb.
- *Jungermannia alpestris* Schleich. ex F. Web.
- *Jungermannia alpestris* Schleich. ex F. Web. var. *serpentina* (Nees) Nees
- *Jungermannia bantriensis* var. *acuta* Lindb.
- *Jungermannia bantriensis* var. *muelleri* (Nees ex Lindenb.) Lindb.
- *Jungermannia barbata* var. *collaris* (Nees) Nees
- *Jungermannia collaris* Nees
- *Jungermannia hornschuchiana* var. *muelleri* (Nees ex Lindenb.) C. Massal.
- *Jungermannia libertae* Huebener
- *Jungermannia muelleri* Nees ex Lindenb.
- *Jungermannia muelleri* var. *libertae* (Huebener) Schiffn.
- *Jungermannia serpentina* Nees
- *Leiocolea alpestris* (Schleich. ex F. Web.) Isov.
- *Leiocolea muelleri* (Nees ex Lindenb.) Jørg.
- *Leiocolea muelleri* var. *libertae* (Huebener) Jørg.
- *Lophozia acuta* Dumort.
- *Lophozia alpestris* (Schleich. ex F. Web.) A. Evans
- *Lophozia collaris* (Nees) Dumort.
- *Lophozia muelleri* (Nees ex Lindenb.) Dumort.

First citation for Romania: Heufler 1853.

Bucovina (Müller 1954:701; Schuster 1969:609).

Moldova, sub *Lophozia alpestris*, *Lophozia muelleri* (Papp 1943:656; Ştefureac & al. 1973:145,146).

Muntenia, sub *Lophozia* (Mohan 1988b:104).

Transylvania, sub *L. mülleri*, *Lophozia alpestris* (Pax 1908:129; Müller 1954:701; Schuster 1969:609).

Ecology: epilithic, subneutrophytic-basiphytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, SIB

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Lv, Lt, ?Fl, Rn, Re, Ca.

Distribution in Romania:

Rodna Mountains, Pietrosul Borşei, sub *Jungermannia collaris* (Hazslinszky 1866:152; Hazslinszky 1868:138; Hazslinszky 1885:53; Ştefureac 1945:175; Ştefureac 1955:560; Ştefureac 1955:600; Ştefureac 1963b:90); Lala Lake, 2000 m *alt.*, sub *Lophozia alpestris* (Matouschek 1905:80); Rodna Mountains, sub *Lophozia alpestris* (Pax 1908:129); the edge of Tăul Mic Lake, below Ineu, 21.08.1937, sub *Lophozia alpestris* (Ştefureac 1945:179); Rodna Mountains, sub *Lophozia alpestris* (Ştefureac 1963c:168,170).

Suceava County, Ascuţit Mountain, Poiana Stampei, 1200 m *alt.*, sub *Jungermannia alpestris* (Breidler 1890a:150); Breaza, 3.06.1910, sub *Jungermannia muelleri* (Lilienfeldówna 1911:734); Criştişor-Neagra Broştenilor, Borcut Meadow, in common spruce forest, sub *Lophozia alpestris* (Lungu 1973b:72; Lungu 1981c:92).

Giuralău Mountain, Giuralău, subalpine zone, *det.* Ştefureac T., sub *Lophozia alpestris* (Cristorean 2000:173-175).

Rarău Mountain, Rarău, 14.05.1910, sub *Jungermannia muelleri* (Lilienfeldówna 1911:734); Codrul Secular Slătioara, 1370 m *alt.*, Ursului Brook, 800-1450 m *alt.*, Rarău Peak, sub *L. mülleri*, *Lophozia alpestris* (Ştefureac 1941:1154,1245,1268,1273,1276,1280, Tabs.3,5,7; Ştefureac 1969a: Tab.16; Papp 1969b: 188; Ştefureac 1986f:193); Rarău, 1350 m *alt.* (Ştefureac 1969a: Tab.16); Plaiul Todirescu-Slătioara Reserve, sub *L. mülleri*, *Lophozia alpestris* (Ştefureac & Raclaru 1978:196).

Harghita County, Vlăhiţa ("Olohfalu"), 20.08.1901, sub *Jungermannia acuta* (Barth 1905:13).

Ceahlău Mountain, Durău Valley, towards Cascada Duruitoare, on soil, in common spruce forest, sub *Lophozia* (Mihai 1984a:88; Ştefureac 1986f:192).

Neamţ County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.*, sub *L. mülleri*, *Lophozia mülleri* (Lungu 1963a:242; Ştefureac & al. 1973:145; Mihai 1984a:88); *s* – Pângăraţi Village, Pângăraţi Brook Valley, on soil, sub *L. mülleri* (Mihai 1971e:406).

Ciucaş Mountains, Gropşoarele Peak, Bratocea Peak, sub *Lophozia* (Mohan 1990b:41).

Braşov County, Braşov, on limestone (Schur 1866:870; Fuss 1878:656; Demeter 1886:111); Tâmpa, 18.06.2006, *leg.* & *det.* Ştefănuţ S. [BUCA B3515] (Ştefănuţ 2006b:33; Ştefănuţ 2008b:28).

Postăvaru Mountain, ♂ - Postăvaru, sub *Lophozia mülleri* (Schiffner 1914:306).

Gârbova Massif, Azuga Valley, Tufa Valley, on stone, 1967-1970, sub *L. mülleri* (Lungu & Ştefureac 1970:5).

Prahova County, Valea Largă, 14.05.2008, *leg.* & *det.* Ştefănuţ S. [BUCA B4006].

Bucegi Massif, Ialomiţa Valley, sub *Jungermannia muelleri* (Loitlesberger 1898:194); *fer* – Bucşoiu, Jepi Valley, Omu Peak, 2500 m *alt.*, 08-09.1911, sub *Lophozia mülleri*, incl. var. *libertae* (Degen 1914:217); Jepii Mari, on rocks and rotten fir tree, 08.1920, *leg.* Brândză M., *det.* Ştefureac T., sub *Lophozia mülleri* (Ştefureac 1942a:4); Bucşoiu Saddle, 2420 m *alt.*, The Saddle above Țigăneşti Valley towards Gaura, 2320 m *alt.*, The Saddle between Gaura and Mălăieşti, 2390 m *alt.*, sub *Lophozia alpestris* (Ştefureac 1955:558,559, Tab.2); Bătrâna, 2020 m *alt.*, ass. *Nardetum strictae*, sub *Lophozia alpestris* (Puşcaru D. & al. 1956: Tab.66); between Blana and Nucet Valley, 1850 m *alt.*, sub *Lophozia alpestris* (Puşcaru D. & al. 1956:396,404, Tab.174; Ştefureac 1972c:101,102); Albă Valley, 21.08.1959, *leg.* Racoviţă A. *det.* Ştefureac T., sub *L. mülleri* (Racoviţă A. 1960:1112); Bucegi, 1950-2350 m *alt.*, sub *Lophozia alpestris* (Ştefureac 1963b:99).

Făgăraş Mountains, Arpaş Valley, subalpine zone, sub *Jungermannia acuta*, *J. mülleri* (Heufler 1853:50-51; Fuss 1854:20; Schur 1866:870; Fuss 1878:656; Hazslinszky 1885:60; Demeter 1886:111; Drăgulescu 2003:12); Arpaş Mountain, on micaschist, sub *Jungermannia alpestris* (Schur 1866:871; Fuss 1878:656; Hazslinszky 1885:58); Negoiu (Fuss 1857; Drăgulescu 2003:13); Negoiu, 2200 m *alt.*, sub *Jungermannia alpestris*, incl. var. *serpentina* (Loitlesberger 1898:194; Drăgulescu 2003:13); Topolog Valley, 1600 m *alt.* (Herzog 1919:295); above Bălea Lake, Paltina Mountain, on sandy soil, 2100 m *alt.*,

13.07.1946, sub *Lophozia alpestris* (Ştefureac 1949a:289; Drăgulescu 2003:12,13); Negoiu, sub *Lophozia alpestris* (Ştefureac 1949c:707; Drăgulescu 2003:13).

Iezer-Păpuşa Mountains, Iezer Mountain, 1600-2400 m *alt.*, sub *Jungermannia alpestris* (Loitlesberger 1898:194).

Sibiu County, Sibiu, sub *Jungermannia acuta* [SIB SCHUR 4561](Schur 1866:870; Fuss 1878:656; Demeter 1886:111; Gündisch 1977:48; Drăgulescu 2003:12); Măgura, Valea Sadului, sub *Lophozia alpestris* [SIB SCHUR 4571](Gündisch 1977:48); Micăsasa, on wet soil, 3.05.1869, *leg. & det.* Barth J., sub *Jungermannia acuta* [SIB HF 1523](Demeter 1886:111; Drăgulescu 1983:58; Drăgulescu 2003:12).

Cindrel Mountains, Păltiniş, 1000 m *alt.*, Jujbea, 1900 m *alt.*, sub *Lophozia alpestris* (Gündisch 1977:48; Drăgulescu 2003:12,13); Cindrel, 2200 m *alt.*, sub *Lophozia alpestris* (Gündisch 1977:48; Drăgulescu 1992:55; Drăgulescu 2003:13); Frumoasa - Platoul Diavolului [SIB HG](Drăgulescu 1992:55; Drăgulescu 2003:13).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, sub *Jungermannia acuta* (Barth 1883:8).

Retezat Mountains, Valereasca, in upper part of mountain, sub *Lophozia mülleri* (Schiffner 1914:306); Galeşu Lake, sub *Lophozia alpestris* (Páll 1964a:108); Adăpătoarele Caprelor, 2150 m *alt.*, 14.09.1970, sub *Lophozia alpestris*, ass. *Rhacomitrio-Andreaeetum nivalis* (Krajina 1933) Plămadă 1974 (Plămadă 1974b:Tab.1); Adăpătoarele Caprelor, Pietrele Albe, incl. sub *Lophozia alpestris* (Plămadă 1993:49,55, Tab.6).

Mehedinţi County, „Cornet”, Costeşti, sub *Lophozia mülleri* (Ştefureac 1947a:138,148).

Domogled Mountain, Crucea Albă, Şerban, sub *L. mülleri* (Boros, Vajda & Debreczy 1969:8).

Caraş-Severin County, Cerna Valley, sub *L. mülleri* (Boros, Vajda & Debreczy 1969:6).

Poiana Ruscă Mountains, sub *Jungermannia collaris* (Hazslinszky 1885:53; Ştefureac 1945:175; Ştefureac 1955:560; Ştefureac 1963b:90).

Alba County, Avram Iancu („Felsővidra”), Piatra Strucu, sub *Lophozia mülleri* (Schiffner 1914:306); Colţii Trascăului, sub *Lophozia mülleri* (Páll 1960b:90); in the Scărişoara Cave aven, sub *L. muelleri* (Boros & Vajda 1974:4).

Cluj County, Făget (Boros 1958:4,7); Someşul Cald Valley, Şurii Cave, sub *L. muelleri* (Boros & Vajda 1974:8,9).

Vlădeasa Massif, Vlădeasa-Micău, *det.* Ştefureac T., sub *Lophozia alpestris* (Resmeriţă, Nemeş & Csürös Ş. 1963:135; Resmeriţă 1970a:44);

Bihar County, Crişul Repede Defile, sub *L. mülleri* (Boros 1942a:31), Crişul Repede Defile, on wet rocks, ass. *Phyllitidi-Aceretum*, sub *L. mülleri* (Boşcaiu & Gergely 1966:104); Stâna de Vale at Zmeilor Cave, sub *L. muelleri* (Boros & Vajda 1974:9).

Bihar Mountains, Izbuclul Ponorului, Padiş Mountain, sub *L. mülleri* (Vajda 1973:291); Cetatea Rădesei Cave, 1971, sub *Lophozia*, ass. *Mnio (thomsonii)-Orthothecietum intricati* Ştefur. 1985 (Ştefureac 1985e:111,115, Tab.1).

Leiocolea gillmanii (Austin) A. Evans.

Syn.:

– *Jungermannia gillmanii* Aust.

– *Jungermannia kaurinii* Limpr.

– *Leiocolea kaurinii* (Limpr.) Jörg.

– *Lophozia gillmanii* (Aust.) R.M. Schust.

– *Lophozia kaurinii* (Limpr.) Steph.

First citation for Romania: Ştefureac 1941.

Romania (Frey & al. 2006:83).

Bucovina (Schuster 1969:375).

Moldova, sub *Lophozia kaurinii* (Papp 1943:656).

Ecology: epilithic-epigaeic, calcicolous, hygro-hydrophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, No, Se, Fi, Ie, Br, Fr, De, Ch, At, It, Ro, By, Nz, Fl, Rn, Re.

Distribution in Romania:

Rarău Mountain, Codrul Secular Slătioara, sub *Lophozia kaurinii* (Ştefureac 1941:1154; Papp 1969b:188).

Făgăraş Mountains, Bâlea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2881].

Leiocolea heterocolpos (Thed. ex C. Hartm.) H. Buch

Syn.:

- *Jungermannia heterocolpa* Thed. ex C. Hartm.
- *Lophozia heterocolpos* (Thed. ex C. Hartm.) M. Howe

First citation for Romania: Ștefureac 1942a.

Maramureș (Ștefureac 1979c:59).

Moldova, sub *Lophozia* (Papp 1943:656; Ștefureac & al. 1973:145).

Ecology: humicolous-epilithic, acidophytic, mesophytic, sciophytic; circumpolar; subarctică-subalpină; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Sb, Me, Ro, Bg, Al, Gr, Ee, Lv, Ua, Nz, Fl, Rn, Rw, Ma, Cn.

Distribution in Romania:

? - **The Mountains of Rodna and Maramureș**, sub *Lophozia* (Ștefureac 1986f:192).

Giurnalău Mountain, Piciorul Pietrii, 1700 m *alt.*, sub *Lophozia* (Ștefureac 1942b:91).

Ceahlău Mountain, Durău Valley, towards Cascada Duruitoare, on soil, in common spruce forest, sub *Lophozia heterocolpos* var. *heterocolpos* (Mihai 1984a:89).

Bacău County, Slănic Moldova, on rocks, 07.1910, *leg.* Brândză M., *det.* Ștefureac T., sub *Lophozia* (Ștefureac 1942a:4; Papp 1943:656; Papp 1957:284; Ștefureac & al. 1973:145; Mihai 1984a:89).

Făgăraș Mountains, Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg.* & *det.* Ștefănuț S. [BUCA B2114].

Parâng Mountains, Latorița Valley, 08-09.1954, sub *Lophozia* (Ștefureac, Popescu & Lungu 1959:8,19,29).

Retezat Mountains, Șesele Plateau and Coama Șesele, 2100 m *alt.*, 8.07.1969, ass. *Rhododendro kotschy-Pinetum mugi* (Borza 1959) em. Coldea 1985 (Plămadă & Coldea 1985a:124,125, Tab.2; Plămadă 1993:49).

Leiocolea turbinata (Raddi) H. Buch

Syn.:

- *Jungermannia corcyraea* Nees
- *Jungermannia turbinata* Raddi
- *Lophozia turbinata* (Raddi) Steph.

First citation for Romania: Péterfi M. 1908.

Ecology: epigaeic, calcicolous, hygro-mesophytic, sciophytic-mesophotophytic; circumpolar; Hch.

Distribution in Europe: Ie, Br, Fr, Be, De, Ch, At, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Al, Gr, Ct, Tu, Ca, Cn.

Distribution in Romania:

Bihar County, Crișul Repede Defile at Vadul Crișului, 300-350 m *alt.*, in marshy places, sub *Jungermannia* (Péterfi M. 1908:273; Péterfi M. 1909:97; Boros 1942a:31; Boșcaiu & Gergely 1966:104).

Bihar Mountains, Cetatea Rădesei Cave, 1971, sub *Lophozia*, ass. *Cratoneuro (filicini)-Chiloscyphetum pallescentis* Ștefur. 1985 (Ștefureac 1975b:313; Ștefureac 1985e:111,112,114,115, Tab.1).

Lejeunea cavifolia (Ehrh.) Lindb.

Syn.:

- *Eulejeunea serpyllifolia* auct.
- *Jungermannia cavifolia* Ehrh.
- *Lejeunea cavifolia* var. *oblongifolia* Jørg.
- *Lejeunea cavifolia* var. *planiuscula* (Lindb.) Lindb.
- *Lejeunea planiuscula* (Lindb.) H. Buch
- *Lejeunea serpyllifolia* auct.
- *Lejeunea serpyllifolia* var. *cavifolia* (Ehrh.) Lindb.

First citation for Romania: Fuss 1878.

Moldova, sub *L. serpyllifolia* (Papp 1943:668), (Ștefureac & al. 1973:150).

Muntenia (Mohan 1988b:111).

Transylvania, sub *L. serpyllifolia* (Pax 1908:130).

Ecology: epilithic, saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, PHHM, SIB, FRE

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Ct, Tu, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Re, Ka, Ca, Ma.

Distribution in Romania:

Maramureș County, Cavnice (Boros 1943e:146); Runc Waterfall, Săpânțioara, 900 m *alt.*, 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, Ineu Peak, 2250 m *alt.*, sub *L. serpyllifolia* (Breidler 1890a:149; Pax 1908:130); Vinului Valley, 700 m *alt.* (Matouschek 1905:78); Vinului Valley, 800 m *alt.*, 7.08.1918, *leg. & det.* Péterfi M. [FRE 1126] (Borza 1935:7).

Țibleș Mountains, Arsuri Peak, Bran Peak, 1984-1985 (Mohan 1988a:23).

Suceava County, Breaza, 3.06.1910, sub *L. serpyllifolia* (Lilienfeldówna 1911:736); Cârlibaba Brook Valley, 1967 (Ștefureac & Pascal 1970a:247); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, on rotten common spruce tree wood (Lungu 1973b:72; Lungu 1981c:94).

Rarău Mountain, Rarău, 14.05.1910, sub *L. serpyllifolia* (Lilienfeldówna 1911:736); Codrul Secular Slătioara, 800-1240 m *alt.* (Ștefureac 1941:1154,1262,1265, 1270,1273,1282,1284, Tabs.3,8,9; Mickiewicz 1968:30,31; Ștefureac 1969a: Tab.16; Papp 1969b:188).

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, *ass. Neckerieto-Isothecietum myosuroides* Barkman 1958, *subass. isothecietosum myuri* Barkman 1958 (Ștefureac, Mihai & Pascal 1976:36, Tab.3); Străja Valley, Muncel Peak, Piatra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:214).

Bistrița-Năsăud County, Jelna Forest, Piatra Corbului, Monari, Simionești, Budacul de Jos, 1980-1981 (Mohan & Hodoroga 1983:54).

Neamț County, Cuediu Valley, sub *L. serpyllifolia* (Papp 1932:462,463); Neamț Monastery, on beech and common spruce trees bark, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242).

Ceahlău Mountain, Ceahlău, Durău, Chirilă, sub *L. serpyllifolia* (Papp 1924b:393; Papp 1934b:66,69; Papp 1942b:526; Manoliu & al. 1998:336).

Harghita County, 26.07.1901, *incl.* sub *L. serpyllifolia* (Barth 1905:13).

Harghita Mountains, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:468).

Ciuc Mountains, Șoi Peak, on wet rocks, 1966-1967 (Mihai & Barabaș V. 1969:71,75,77).

Nemira Mountains, Nemira Mountain, 1500-1600 m *alt.*, Bălătau Lake, 850 m *alt.*, Izvorul Alb Brook Valley, 800 m *alt.* (Barabaș V. 1982b:59,61,70, Tabs.7,20).

Bacău County, Slănic Brook Valley, sub *L. serpyllifolia* (Papp 1957:285); the forest way from Întârcătoarele towards Zboina Verde, on soil (Eftimie 1972:152).

Siriu Mountain, Poiana din Fundul Muntelui, common spruce forest, *Tilio-Acerion* (Dihoru G. 1975:24).

Ciucaș Mountains, Cucului Brook Valley, Zăgan Mountain, Caprei Brook Valley, Roșu Mountain, Chirușca Mountain (Mohan 1990b:44).

Brașov County, Predeal (Loitlesberger 1898:196).

Prahova County, Doftana Valley, Gâlma Secăriei, on humus [PHHM 7740/3873](Mohan 1971a:9; Mohan 1971b:48).

Gârbova Massif, Rea Valley (Loitlesberger 1898:196); Rea Valley, 1000-1300 m *alt.* (Mickiewicz 1968:30-35); Azuga Valley, Tufa Valley, Rea Valley, on soil and stone, 1967-1970 (Lungu & Ștefureac 1970:6).

Bucegi Massif, Mălăiești Valley, 08-09.1911 (Degen 1914:217); Peleş Valley, on wet calcareous rocks, 07-08.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Urlătoarea Valley, 900-1000 m *alt.* (Mickiewicz 1968:30-35); Furnica Mountain, PH, 45°21'35"N / 25°31'54"E, 1010 m *alt.*, 27.10.2005, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3304].

? - **Giurgiu County**, s - Comana, on rotten wood, 1968-1969 (Ștefureac & Mohan 1970a:353).

Cindrel Mountains, Păltiniș, 1000-1300 m *alt.* (Gündisch 1977:52).

Vâlcea County, Greblești, Boia Mare Valley (Loitlesberger 1898:196).

Căpățâni Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, sub *L. serpyllifolia* (Barth 1883:5); Latorița Valley, on calcareous rocks, 900 m *alt.*, 31.08.1954 (Ștefureac, Popescu & Lungu 1956a:513, Tab.1); Latorița Valley, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,19,27).

Hunedoara County, ? - Hunedoara, sub *L. serpyllifolia* (Simonkai; Hazslinszky 1885:37); Porcăreț Valley, 10.06.1961, leg. Șerbănescu I., det. Ștefănuț S. [BUCA B3490].

Retezat Mountains, Retezat National Park, *Neckeretum crispae* Ștefur. 1941 (Plămadă 1976a; Plămadă 1976b:20, Tab.2); Zlătuia Valley, 6-7.09.1969, ass. *Grimmio hartmanii-Isothecietum scabridi* Plămadă 1978, Turcului Valley, 12.07.1968, Coama Șesele, 12.07.1968, ass. *Pterigynandro-Isothecietum myuri* Plămadă 1978 (Plămadă 1978:237,241,242, Tabs.1,2; Plămadă 1993:54, Tab.4); Șesele-Pârgului Valley, 950 m alt., 9.09.1969, 1000 m alt., 14.07.1970, ass. *Anomodonto attenuati-Neckeretum crispae* Plămadă 1982 (Plămadă 1982a:309, Tab.5; Plămadă 1993:51, Tab.1); ♀♂ - Gemenele Valley, 08.2005, leg. Onete Marilena, det. Ștefănuț S. [BUCA B3203].

Țarcu Mountains, Muntele Mic, 1000-1800 m alt., 03.-08.1943, leg. Boșcaiu N. (Ștefureac 1948a:220).

Mehedinți County, Vărănic Hill, the way from Breznița Commune towards Gura Văii, 400 m alt., 03.1945 (Ștefureac 1947a:139,146); Eșelnița Valley, on rocks near brook (Plămadă 1970b:205,206); Tricule, the second valley towards east, on stone, 1966 (Ștefureac & Mihai 1970:501).

Caraș-Severin County, sub *L. serpyllifolia* (Simonkai; Hazslinszky 1885:37); Cerna Valley (Boros, Vajda & Debreczy 1969:6).

Arad County, Rășiratele Brook and near Dulcele on Mare Valley, sub *L. serpyllifolia* Dicks. (Simonkai 1893:361); ♀ - Runcu-Groși Reserve, 46°10'12"N / 22°07'34"E, 444 m alt., 21.08.2008, leg. & det. Ștefănuț S. [BUCA B3924], ♀ - [BUCA B3931].

Alba County, Valea Lungă, on base trunk tree, 25.03.1869, leg. & det. Barth J., sub *L. serpyllifolia* [SIB HF 2831] (Fuss 1878:653; Barth 1880:121; Hazslinszky 1885:37; Borza & Lupșa 1964:150; Drăgulescu 1983:59); Galda de Sus (Barth 1880:121); Dumbravița Hill, on forest, Zlatna, 600 m alt., Feneș Gorges, sub *L. serpyllifolia* (Papp 1944b:236); Morii Valley, Ordencușa Valley, Scărișoara Cave aven, on beech tree (Goia 2001:84); Morii Valley, 13.08.1994, ass. *Anomodontetum attenuati* Cain et Sharp 1938 (Goia & Schumacker 2003:62, Tab.3); Ordâncușa Valley, 1060 m alt., 11.08.1996, *Anomodonto viticulosi-Leucodontetum sciuroides* Wisn. 1930 (Goia & Schumacker 2004:110, Tab.3); Cetățile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m alt., 3.09.2007, leg. & det. Ștefănuț S. [BUCA B3834, B3841].

Cluj County, Cluj-Napoca (Barth 1880:121; Boros 1958:8; Plămadă 1969:170); Făget (Boros 1958:4,8); Southern Ciucea on Surduc Valley (Boros 1942a:34).

Bihor County, Peștiș, 300 m alt., Remetea, 400 m alt., Pietros, 400-600 m alt. (Péterfi M. 1908:278,279); Iadului Valley between Remetea and Bulz (Boros 1942a:33); Drăgan Valley (Boros 1942a:35); Sebeșului Valley at Crișul Repede springs (Ștefureac, Popescu & Lungu 1954:236).

Lepidozia reptans (L.) Dumort.

Syn.:

- *Herpetium reptans* (L.) Nees
- *Jungermannia reptans* L.
- *Lepidozia obliqua* Steph.
- *Lepidozia reptans* var. *julacea* (Nees) Gottsche et al.
- *Lepidozia reptans* var. *laxa* Schiffin.
- *Pleuroschisma reptans* (L.) Dumort.

First citation for Romania: Baumgarten 1846.

Moldova (Papp 1943:663; Ștefureac & al. 1973:143).

Muntenia (Mohan 1988b:99).

Transylvania (Pax 1908:130).

Ecology: epigeaic, saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch. Characteristic to *Lepidozio-Tetraphidetum pellucidae* (Barkman 1958) Maurer 1961.

Herbaria and Exsiccate: BUCA, CSH, PHHM, SIB

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, ?Az, Ma.

Distribution in Romania:

Maramureș County, without locality (Hazslinszky 1885:44; Pax 1908:130); Cioatele lui Stern, Poiana Colibii, Săpâncioara, 15-21.06.1997, between Tocila Valley and Băiuț, common spruce forest, 600 m alt., the peatbog above Pleșca Peak, 21-23.08.1998, The Fountain from Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Igniș Mountain, Vlășchinescu Valley, 1050 m alt., 10-11.07.1972, ass. *Myrtillo-Piceetum excelsae* Březina et Hadač 1962 *muscorum* Rațiu et Moldovan 1972 (Rațiu O. & Moldovan 1974:90, Tab.3).

Rodna Mountains, Lala Valley, 1200 m *alt.*, 17.08.1937 (Ștefureac 1938:240,241,250,258, Fig.4a-e); Pietrosul Rodnei, MM, 47°36'33"N / 24°39'11"E, 1500 m *alt.*, 29.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2229].

Țibleș Mountains, Arcer Peak, Păltiniș Peak, Țibleș Valley, Mesteacănul Valley, 1984-1985 (Mohan 1988a:17).

Gutâi Mountains, Tătarului Gorges, 670 m *alt.*, 28.06.1970 (Rațiu O. & Moldovan 1972b:4-6, Tab.1).

Suceava County, Coșna, Panasuri Mountain, 1330 m *alt.*, Vatra Dornei, on rocks, Câmpulung Moldovenesc on Ceardac Mountain (Bredler 1890a:149); Izvorul Alb, 14.05.1910, Argeștrul, 16.05.1910, Breaza, 3.06.1910 (Lilienfeldówna 1911:732,735); Grădinița Peatbog, 1962-1963 (Ștefureac 1968:307); Cârlibaba Brook Valley, 07.1966, *leg.* Pascal P. (Ștefureac 1969a:136,137; Pascal 1970b:112); Bistrița Aurie Valley, between Iacobeni and Ciocănești, Suhărzulul and Suhărzulul Mare Brooks bank (Pascal 1969:107; Pascal & Mititelu 1971; Ștefureac & Pascal 1981:478); Cârlibaba Brook Valley, Pietra Țibău, 1967 (Ștefureac & Pascal 1970a:246); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest and peatbog, incl. sub fo. *laxa*, ass. *Pogonatum alloides* v. *Krusenstjerna* 1948 (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1976:238, Tab.2; Lungu 1981c:91); Tinovul Mare de la Poiana Stampei (Toma 1973; Ștefureac & Pascal 1981:478); Barnar Gorges, on common spruce tree bark and rotten trunk tree (Pascal & Seghedin 1977:141); Neagra Șarului Peatbog, 26.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3782]; Poiana Stampei Peatbog, 920 m *alt.*, 28.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3786, B3787, B3790, B3801].

Giupalău Mountain, Poiana Ițcani Reserve, 900-920 m *alt.*, 1946-1957 (Ștefureac 1969a: Tab.16); Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3649, B3664, B3677, B3703]; Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.10.2006, *leg. & det.* Ștefănuț S. [BUCA B3633]; Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 27.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3802]; Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 19.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3877], 20.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3876], 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3937, B3955, B3966, B3977].

Rarău Mountain, Rarău, 14.05.1910, Pietrele Doamnei, 15.05.1910 (Lilienfeldówna 1911:731,732,734,735); Codrul Secular Slătioara (Tarnavski 1936:284,285,289; Ștefureac & Pascal 1981:478); Codrul Secular Slătioara, 800-1050 m *alt.*, Todirescu Peak (Ștefureac 1941:1154,1263, 1270,1272,1273,1284,1288, Tabs.1,3,7,9; Ștefureac 1969a: Tab.16; Papp 1969b:188); Rarău, 1350 m *alt.* (Ștefureac 1969a: Tab.16); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:196); Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3752].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphidum pellucidum* (Barkman 1958) Maurer 1961; *Orthodicraneto-Plagiothecietum* Barkman 1958 (Ștefureac, Mihai & Pascal 1976:36, Tabs.1,2); Cârțibavu Mare Valley, Muncel Peak, Pietra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:211).

Bistrița-Năsăud County, Jelna Forest, Pietra Corbului, Budacul de Jos, 1980-1981 (Mohan & Hodoroga 1983:51).

Căliman Mountains, upper part of Dorna Valley, near the forest chalet, on wet soil (Mihai 1968a:205); Piciorul Iancului and Petricelul, 1610 m *alt.*, ass. *Cembreto-Piceetum abietis* Chifu & al. 1984 (Chifu & al. 1984:30,33, Tabs.1,5); Căliman Mountains, on humus, 1981-1984 (Mihai 1985:96).

Stânișoara Mountains, Tarnița Brook Valley, Suha Mare Brooks Valley, Suha Mică Brooks Valley, on rotten wood, 1974 (Pascal & Toma M. 1977:42).

Neamț County, Neamț Monastery, on fir tree and rotten wood, 07-08.1919,1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Chiriac Culm, on rotten wood, sub fo. *laxa* (Papp 1959a:112); Cărbunelui Hill, on the trunk of fir (Mihai 1974c:23; Ștefureac & al. 1973:143).

Ceahlău Mountain, Patapi, Durău Hermitage (Papp 1924b:392; Papp 1934b:68,70; Zanoschi 1970:280; Manoliu & al. 1998:336); Ceahlău, 1200-1700 m *alt.* (Mihai 1979b); in upper part of common spruce forests, in glades of forest, ass. *Vaccinio-Polytrichetum alpini* Mihai 1987 (Mihai 1987a:23, Tab.3).

Hășmaș Mountains, Hășmaș (Schiffner 1914:307); Hășmașul Mare (Degen 1930:976); Oii Valley and Hăghimașul Negru, on rotten wood, 12.08.1953, Hăghimașul Negru, in forest, on rotten wood, 11,13.08.1953 (Bîrcă & Mihai 1963:127-129); Cupașului Valley, 1978, 1979, ass. *Dicrano-Hypnetum*

cupressiformis (Ochsner 1928) v. Krunsenstjerna 1945, ass. *Lepidozio-Tetraphidetum pellucidae* (Barkman 1958) Maurer 1961 (Mihai 1981a:19, Tabs.6,7).

Harghita Mountains, Stâncilor („Terkő”) Peak (Schiffner 1914:307); Stâncilor Peak (Degen 1930:976); Piatra Colibei, 19.06.1999 (Jakab 2000a:88); Greu Mountain, 1100 m *alt.*, 11.07.2000, Minei Valley, 1100-1200 m *alt.*, 11.07.2000, Vermet Valley, 1050-1250 m *alt.*, 2.07.2000, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Cifrabuc, 1200 m *alt.*, 16.08.2001, Descut, 15.08.2001, Podului de Piatră Mountain, 1551 m *alt.*, 15.08.2001, Rotund Mountain, 1100 m *alt.*, 28.08.2001, Luci, 1050 m *alt.*, 13.08.2001, Ulieşul Mic, 1150 m *alt.*, 17.04.2001, Cucu Mountain, 1550 m *alt.*, 15.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:468).

Harghita County, Tuşnad (Schur 1866:872; Fuss 1878:654); Harghita, 20.07.1901 (Barth 1905:13); Mohoş Peatbog, Padiş, 9.08.1996, ass. *Vaccinio-Betuletum pubescentis* Libbert 1933 (Coldea, Plămadă & Wagner 1997:93, Tab.3).

Nemira Mountains, Nemira Mountain, on gritstone, on soil, in common spruce forest, on *Picea abies* and *Acer pseudoplatanus* trunks, 1300-1550 m *alt.* (Barabaş V. 1974:23,26,28,30); Nemira, in common spruce forest, on rotten trees, 1970-1977 (Mihai & Barabaş V. 1978:114,115); Nemira Mountain, 750-1600 m *alt.*, above „Lacurilor Nemirei”, 1500 m *alt.*, Şandru Peak, 1400-1550 m *alt.* (Barabaş V. 1982b:54,56,60,61,63-65,74,75, Tabs.2,3,8,12-14,25,27).

Bacău County, Pufu Hill, in forest, 900 m *alt.* (Papp 1957:285); *s* - Măgura Hill, north-west to Târgu Ocna, on soil and rocks, 680 m *alt.*, frequent (Mihai & Barabaş V. 1971:676,682,683,685); Slănic Brook, Slănicel Brook, on wet soil, 2.05-8.11.1971 (Ştefureac & Barabaş V. 1972:77); *s* - Trebeş Forest, Mărgineni Commune, on humus, 1971 (Mihai & Barabaş V. 1972:87,92; Costică 1995:252); Fata Moartă Forest, Tălâmba Brook, Clăbucu Mountain, on rotten fir tree trunk (Eftimie 1972:150); upper basin of Caşin, between springs of Fata Moartă Brook, Buciaş's affluent, on soil and rotten fir tree trunk, 1000 m *alt.*, 06.1970 (Eftimie 1973:423,424); near Târgu Ocna, beech forest, 450-500 m *alt.* (Barabaş V. 1982b:68, Tab.18).

Vrancea County, Cioara Forest, 207 m *alt.*, on rotten trees trunks (Mihai & Barabaş V. 1970:66,67,72); Tişitei Gorges, on rotten trees trunks, 1977 (Mihai & Pascal 1986:46).

Penteleu Massif, Roşu Lake, in southern zone, 1510 m *alt.*, on rotten wood, 11.10.1983 (Dihoru G. 1987b:94); Izvorul Bălescu, 07.1935, *leg.* Şerbănescu I., *det.* Ştefănuţ S. [BUCA B0960].

Buzău County, Bisoca, „Lacul cu Muşchi” (Dihoru, Wallfisch & Pîrvu 1984:5).

Ciucaş Mountains, Piscul Caprei, Albele Culm, Valea Stânei Culm, Căzăturii Culm, Ciucaş Peak, Chiruşca Mountain, Piscul Turiştilor (Mohan 1990b:39).

Braşov County, Predeal, incl. sub var. *viridula* (Loitlesberger 1898:196); Predeal, 45°30'13"N / 25°34'01"E, 900 m *alt.*, 6.09.1997, *leg.* & *det.* Ştefănuţ S. [BUCA B2538].

Postăvaru Mountain, Postăvaru (Schiffner 1914:307).

Piatra Mare Mountain, Chiva Valley, 17.05.2006, *leg.* Avramescu C., *det.* Ştefănuţ S. [BUCA B3436].

Prahova County, Doftana Valley [PHHM 7741/3873](Mohan 1971a:8).

Gârbova Massif, Cumpătul Mountain, 06-07.1944, *leg.* Tăzlăuanu I. (Papp 1945b:92); Azuga Valley, Tufa Valley, Rea Valley, on humus, 1967-1970 (Lungu & Ştefureac 1970:5); Cumpătu Mountain, on rotten wood, 830 m *alt.*, 8.10.1985, *leg.* & *det.* Lungu L. [CSH]; ♀ - Tufa Valley, 5.07.1998, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B2005, B2125]; Tufa Valley, on rotten wood, 5.07.1998, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B2653, B3325].

Bucegi Massif, fer - Mălăieşti Valley (Matouschek 1905:81); Bucşoiu Peak, Mălăieşti Valley, Jepi Valley, 08-09.1911 (Degen 1914:217); Sinaia, on rotten fir trees, 07-08.1920, *leg.* Brândză M., *det.* Ştefureac T. (Ştefureac 1942a:5); Furnica Mountain, 06-07.1944, *leg.* Tăzlăuanu I. (Papp 1945b:92); Padina-Cocora, DB, 6.08.1937, *leg.* Şerbănescu I., *det.* Ştefănuţ S. [BUCA B3019]; the peatbog from the right side of Lăptici Brook, 45°22'34"N / 25°26'45"E, 1500 m *alt.*, 28.07.2005, *leg.* & *det.* Ştefănuţ S. [BUCA B3231]; Horoaba Valley, DB, 45°23'28"N / 25°26'02"E, 1520 m *alt.*, 23.10.2006, *leg.* & *det.* Ştefănuţ S. [BUCA B3606].

? - **Giurgiu County, s** - Comana, on rotten wood, 1968-1969 (Ştefureac & Mohan 1970a:353,361).

Piatra Craiului Mountains, the way towards Vlăduşca Pasture, BV, 1100 m *alt.*, 30.10.2001, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B2838] (Dihoru G. & al. 2003:70; Ştefănuţ & Pop O.G. 2006:77); Padina Bădoaia, BV, 1040 m *alt.*, 8.08.1997, *leg.* & *det.* Ştefănuţ S. [BUCA B2674-B2676, B2680] (Ştefănuţ & Pop O.G. 2006:77); Marele Grohotiş, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg.* & *det.*

Ștefănuț S. [BUCA B2574, B2580, B2614, B2903], ♀ - [BUCA B2579, B2831] (Ștefănuț & Pop O.G. 2006:77); ♀ - Crăpătura Pietrei Craiului, BV, 45°33'49"N / 25°15'54"E, 1050 m alt., 21.08.2003, leg. & det. Ștefănuț S. [BUCA B2760], s - [BUCA B2778], on rotten wood [BUCA B2783], on rotten wood, 45°33'44"N / 25°15'51"E, 1100 m alt., 21.08.2003, leg. & det. Ștefănuț S. [BUCA B2746], 45°33'30"N / 25°15'44"E, 1300 m alt., 22.08.2003, leg. & det. Ștefănuț S. [BUCA B2708, B2717, B2756, B2774], on rotten wood, 45°33'35"N / 25°15'46"E, 1250 m alt., 22.08.2003, leg. & det. Ștefănuț S. [BUCA B2757] (Ștefănuț & Pop O.G. 2006:77); Marele Grohotiș, AG, on rotten wood, 45°30'36"N / 25°11'38"E, 1550 m alt., 8.07.2003, leg. & det. Ștefănuț S. [BUCA B2621], 45°30'36"N / 25°11'38"E, 1550 m alt., 8.07.2003, leg. & det. Ștefănuț S. [BUCA B2627] (Ștefănuț & Pop O.G. 2006:77); towards Șaua Funduri, in common spruce forest, AG, 45°29'54"N / 25°12'39"E, 1480 m alt., 7.08.2003, leg. Pop O., det. Ștefănuț S. [BUCA B3338, B3341]; Poiana Lespezilor, BV, 45°30'27"N / 25°13'27"E, 1330 m alt., 8.08.2003, leg. Pop O., det. Ștefănuț S. [BUCA B3335].

Făgăraș Mountains, Arpaș Valley, common spruce forest (Heufler 1853:50-51; Fuss 1854:20; Fuss 1878:654; Drăgulescu 2003:10).

Cozia Mountain, Păușa Valley, on rotten woods, 1975-1976 (Dihoru G. 1990:52).

Sibiu County, Cisnădie [SIB SCHUR 4590](Schur 1866:872; Fuss 1878:654; Hazslinszky 1885:44; Gündisch 1977:47; Drăgulescu 2003:10).

Cindrel Mountains, Crinț, 1000 m alt., Păltiniș, 1200-1500 m alt., Ardei, 1300 m alt., Găușoara, 1600 m alt. (Gündisch 1977:47; Drăgulescu 1992:55; Drăgulescu 2003:10); Iezerul Mic [SIB HG](Drăgulescu 1992:55; Drăgulescu 2003:10).

Sebeșului Mountains, Sebeș Valley, between Oașa and Cibán, 800-1200 m alt. (Borza 1959:69,283, Tab.38; Drăgulescu 2003:10).

Parâng Mountains, Parâng Mountain, 22-26.08.1882 (Barth 1883:5); Curmătura Vidruței, 1350 m alt., 26.07.1955 (Ștefureac, Popescu & Lungu 1957a:65,70,71, Tab.1); Latorița Valley, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,19,34,37).

Retezat Mountains, Retezat (Simonkai 1872:67; Fuss 1878:654); Zlătuia Valley, 1300 m alt., 8.09.1969, ass. *Isopterygio seligeri-Dicranetum scoparii* Ježek et Vondr. 1962 (Plămadă 1982a:313, Tab.7; Plămadă 1993:52, Tab.2); Gemenele, 2006, leg. Cogălniceanu D., det. Ștefănuț S. [BUCA B3713].

? - **Hunedoara County**, (Hazslinszky 1885:44).

Poiana Ruscă Mountains, Luncani, Tăul Ursului, sub „*Lepidosia*” (Simonkai 1872:67; Fuss 1878:654; Hazslinszky 1885:44).

Codru-Moma Mountains, Ponoarele, Ponoaraș, Brihenilor Valley, on rotten wood (Mohan 1996:49; Ardelean 2006:103).

Mureș County, Sighișoara, sub *Jungermannia* (Baumgarten 1846:227,228; Schur 1866:872; Fuss 1878:654; Höhr 1914:87; Hazslinszky 1885:44).

Alba County, Valea Lungă, on soil, 18.01.1870, leg. & det. Barth J. [SIB HNFT 1114, HF 1541](Fuss 1878:654; Borza & Lupșa 1964:150; Drăgulescu 1983:58); Ordâncușa Valley, Piatra Runcului at Scărișoara (Schiffner 1914:307); Arieșul Mic (mine), on common spruce tree, 1200 m alt., 20.08.1994, ass. *Isothecium myuri* Hiltzer 1925, ass. *Dicrano scoparii-Hypnetum cupressiformis* Barkman 1958, Morii Valley, on rotten wood, 600 m alt., 07.08.1994, 22.10.1995, ass. *Riccardio-Nowellietum curvifoliae* Koppe 1956, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965, ass. *Dicrano scoparii-Hypnetum cupressiformis* (Goia 1998:256,260-262, Tabs.6,9,10,12; Goia 2001:76); Scărișoara Cave, 1340 m alt., 11.08.1996, ass. *Calypogeietum trichomanis* Neumayr 1971, Morii Valley, 600 m alt., 22.10.1995, Vârciorog Valley, 780 m, 1340 m and 1385 m alt., 13.09.1996, Cepelor Valley, 875 m alt., 16.05.1996, Iarba Rea Valley, 950 m alt., 25.08.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Morii Valley, 950 m alt., 07.08.1994, Galbena Valley, 780-900 m alt., 12.09.1996, Vârciorog Valley, 1000 m alt., 3.06.1995, ass. *Lophocoleo-Dolichothecetum seligeri*, Cobleș Valley, 980 m alt., 9.08.1996, ass. *Cephalozio bicuspidatae-Nowellietum curvifoliae* Philippi 1965, Ursoaia Saddle, 1270 m alt., 24.08.1996, 11.08.1996, Cobleș Valley, 1280-1300 m alt., 09.08.1996, Pântești-Gârda Valley, 980 m alt., 11.08.1996, Cepelor Valley, 1370 m alt., 16.05.1996, Iarba Rea Valley, 790 m alt., 25.08.1996, Lupșa, 1160-1200 m alt., 15.05.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958, Găina, 980 m alt., 21.08.1992, Morii Valley, 700 m alt., 22.10.1995, ass. *Dicrano scoparii-Hypnetum filiformis* Barkman 1958 (Goia 2000:111-113,115,116,118,119, Tabs.1-7); Arieșul Mic Basin (Goia & Schumacker 2000:92); Arieșul Mic – upstream mine, on common spruce tree and rotten woods, Ursoaia Saddle, on fir tree, common spruce tree and rotten wood, Vârciorog Valley, Cepelor Valley,

Galbena Valley, Arieșul Mare upstream to Arieșeni, Iarba Rea Valley, Gârda Seacă – upstream Casa de Piatră, Gogii Brook – Cobleș, Cobleș Valley, Scărișoara Cave – aven, Mățișești, Horea, Divaia Valley, on rotten wood (Goia 2001:76); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); Arieșul Mic Valley down from the mine, 20.08.1994, ass. *Orthodicrano montani-Hypnetum filiformis*, Arieșul Mic Valley up from the mine, 20.08.1994, ass. *Dicrano scoparii-Hypnetum filiformis* (Goia & Schumacker 2003:64, Tab.5); between Mățișești and Șaua Ursoaia, 730 m alt., ass. *Orthodicrano montani-Hypnetum filiformis* (Goia & Schumacker 2004:111, Tab.4); Detunata Mountains, 1055-1100 m alt., det. Sass-Gyarmati A. (Sass-Gyarmati, Pócs & Orbán 2005:127).

Cluj County, Dobrin Mountain (Péterfi M. 1918:61); Sălicea, leg. & det. Péterfi M. (Boros 1958:4,8); the peatbogs from spring and upper course of Someșul Rece, incl. Muntele Mare and Dobrin (Pop E. 1960:397).

Bihar Mountains, without locality, 300-900 m alt. (Péterfi M. 1908:276; Goia 2001:76); Galbena Valley, 750 m alt., 08.1999 (Jakab 2000b:66); Someșul Cald Gorges, 4.08.1998 (Coldea & Wagner 1999:85, Tab.1); Someșul Cald Gorges (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m alt., 3.09.2007, leg. & det. Ștefănuț S. [BUCA B3838, B3852], ♀ - [BUCA B3862].

Lophocolea bidentata (L.) Dumort. var. *bidentata*

Syn.:

- *Chiloscyphus coadunatus* (Sw.) J.J. Engel & R.M. Schust.
- *Chiloscyphus cuspidatus* (Nees) J.J. Engel & R.M. Schust.
- *Chiloscyphus latifolius* (Nees) J.J. Engel & R.M. Schust.
- *Jungermannia bidentata* L.
- *Jungermannia coadunata* Sw.
- *Lophocolea alata* (Gottsche et al.) Mitt. ex Larter
- *Lophocolea bidentata* var. *ciliata* Velen.
- *Lophocolea bidentata* var. *cuspidata* (Nees) Gottsche et al.
- *Lophocolea coadunata* (Sw.) Montin
- *Lophocolea cuspidata* (Nees) Limpr.
- *Lophocolea cuspidata* (Nees) Limpr. var. *banatica* Ștefur.

First citation for Romania: Baumgarten 1846.

Moldova, incl. sub *L. cuspidata* (Papp 1943:660; Ștefureac & al. 1973:144).

Muntenia, incl. sub *L. cuspidata* (Mohan 1988b:108).

Transylvania (Pax 1908:129).

Ecology: epigeic, saprolignicolous, acidophytic, meso-hygrophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, PHHM, SIB, BRHE

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ni, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Se, Me, Ba, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Rc, Re, Az, Ma, Cn.

Distribution in Romania:

Maramureș Mountains, Cornedei Peak - Prislop, 1550-1590 m alt., 19-20.06.1975, ass. *Rhododendro kotschy-Pinetum mugii* (Borza 1959) em. Coldea 1985 subass. *sphagnetosum nemorei* Plămadă & Coldea 1985 (Plămadă & Coldea 1985a:120,121, Tab.1); between Tocila Valley and Băiuț, common spruce forest, 600 m alt., 21-23.08.1998 (Jakab 1999:55).

Rodna Mountains, Lala Valley, 1200 m alt., 17.08.1937 (Ștefureac 1938:241,250,258).

Țibleș Mountains, Izvorul Țibleșului, Țibleș Valley, Mesteacănul Valley, 1984-1985, sub *L. cuspidata* (Mohan 1988a:20).

Suceava County, Argestrul, 16.05.1910 (Lilienfeldówna 1911:734,735); Seriuene Hill, northern slope, Știrbu Brook Valley, sub *L. cuspidata* (Raclaru & Barbu 1959: Tab.6). Bistrița Aurie Valley, between Iacobeni and Ciocănești (Pascal 1969:107; Ștefureac & Pascal 1981:479); Oușorul Mountain, on soil, 1971 (Mihai 1974b:318); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, alderthicket and peatbog, incl. sub fo. *interrupta*, ass. *Pogonatum alloides* v. Krusenstjerna 1948 (Lungu 1971; Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1976:238, Tab.2; Lungu 1981c:92; Ștefureac & Pascal 1981:479); Barnar Gorges, on soil and humus (Pascal & Seghedini 1977:141).

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m alt., 1967, 1969, ass. *Tetraphidietum pellucidae* (Barkman 1958) Maurer 1961 (Ștefureac, Mihai & Pascal 1976:36, Tab.1); Străja Valley, Măgura Calului, Piatra Fântânele, Tomnatec Peak, Măgura Ilvei, Iliuța Bozghi Brook, Tureac Brook, Secu Brook, Cârțibavu Mare Valley, 1983-1984, incl. sub *L. cuspidata* (Mohan & Hodoroga 1986:212).

Rarău Mountain, Rarău, 14.05.1910 (Lilienfeldówna 1911:735); Codrul Secular Slătioara, 860-1400 m alt., incl. sub *L. cuspidata* (Ștefureac 1941:1154,1279, Tabs.1,3,7; Papp 1969b:188); between

Dealul Colbului and Pietrele Doamnei, 1520 m *alt.*, 27-28.08.1949, 27.08.1950 (Ștefureac 1951a:60,65); Plaiul Todirescu-Slătioara Reserve, incl. sub *L. cuspidata* (Ștefureac & Raclaru 1978:196).

Giupalău Mountain, Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3935].

Stânișoara Mountains, Stânișoarei Culm and Ostra Brook Valley below Puzdrele, on wet soil, 1974 (Pascal & Toma M. 1977:42).

Iași County, Repedea-Bârnova Forest Massif, on rotten woods (Papp 1924a:101; Papp 1929:555,558; Papp & Eftimie 1963:108); Repedea and Bârnova forests (Papp 1939a:353).

Bistrița-Năsăud County, Măgheruș Valley, Hederiș Hill, around the springs, *Quercus-Fagetea*, sub *L. cuspidata* (Ștefureac & Cristurean 1973:315).

Vaslui County, Stroiștei Forest, on soil, 1966-1969 (Plămadă & Vițalariu 1971:166).

Ceahlău Mountain, Ceahlău, incl. sub *L. cuspidata* (Papp 1927b:149; Papp 1934b:66,68,72; Papp 1942b:525; Zanoschi 1970:280; Manoliu & al. 1998:336).

Neamț County, Poieni Forest (Papp 1924a:101; Papp 1947a:159); Peste Recea, Muncelașu and Poarta Poienilor Hills, in forests (Papp 1947b:182,188,190); Măgura Pietricica, on wet soil (Papp 1937d:235,238,240); Neamț Monastery, on clayey soil and humus, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T., incl. sub *L. cuspidata* (Ștefureac 1942a:4).

Giurgeu Mountains, Bicaz Gorges, 1957-1960 (Papp & al. 1962:144); Bicaz Gorges, 1978, 1979, ass. *Tortello-Ctenidietum* (Gams 1927) Stodiek 1937 (Mihai 1981a:18, Tab.5).

Harghita County, Vlăhița (Olohfalu), 20.08.1901 (Barth 1905:13).

Harghita Mountains, Rotund Mountain, 1100 m *alt.*, 28.08.2001, *leg.* Bálint L. & Csízi K., sub *Chiloscyphus coadunatus* (Bálint & Orbán 2003:14; Bálint & Orbán 2006:468).

Nemira Mountains, Nemira, on siliceous rocks (Barabaș V. 1974:31); Nemira, near upside lakes, on clayey soil, 1970-1977 (Mihai & Barabaș V. 1978:115); Nemira Peak, Șandru Mountain, 1400-1500 m *alt.* (Barabaș V. 1982b:56, Tab.3).

Bacău County, Colina Măgura, 514 m *alt.* (Papp 1957:285; Papp 1958b:388); *s* - Măgura Hill, north-west to Târgu Ocna, the edge of brooks and cuted forest, on soil, 680 m *alt.*, frequent (Mihai & Barabaș V. 1971:676,682); the forest way from Întărcătoare towards Zboina Verde, Fundu Cașin, Gura Dobrilor, on rotten fir wood and rocks (Eftimie 1972:151); Slănic Brook, on fir tree stump, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:77,82).

Ciucăș Mountains, Zăgan Mountain, Chirușca Mountain, Fugarul Brook Valley, Berii Brook Valley, Stâncoasă Culm, sub *L. cuspidata*, Berii Brook Valley, Roșu Brook Valley, Piscul Caprei, Căzăturii Culm, Piscul Groșșoarele, Piatra Laptelui Culm (Mohan 1990b:43).

Brașov County, Cetății (Lempeș) Hill, in glades, on soil, 05.1961, sub *L. cuspidata* (Mihai 1962:278).

Piatra Mare Mountain, Tamina Waterfall, 45°32'58"N / 25°38'33"E, 6.09.1997, *leg. & det.* Ștefănuț S. [BUCA B2453].

Gârbova Massif, Azuga Valley, Tufa Valley, on humus, 1967-1970 (Lungu & Ștefureac 1970:5).

Prahova County, Doftana Valley [PHHM 7743/3873](Mohan 1971a:8; Mohan 1971b:47); Doftana Valley between Trăistieni and Tesila, 850 m *alt.* (Mohan 1981:99; Mohan 1990a:24); Doftana Valley, in mixed *Quercus petraea* with *Fagus sylvatica* forest, 45°10'01,6"N / 25°45'09,2"E, 27.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3427] (Vasilii-Oromulu 2008:87).

Piatra Craiului Mountains, the way towards Vlădușca Pasture, BV, 1100 m *alt.*, 30.10.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2834] (Dihoru G. & al. 2003:69; Ștefănuț & Pop O.G. 2006:77); Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2696, B2714] (Ștefănuț & Pop O.G. 2006:77); towards Padinile Frumose, BV, 1700 m *alt.*, 7.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3002] (Ștefănuț & Pop O.G. 2006:77); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 24.07.2002, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3068], 45°30'36"N / 25°11'38"E, 1550 m *alt.*, 8.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2646] (Ștefănuț & Pop O.G. 2006:77).

Dâmbovița County, Corbii Mari, 6.05.1998, *leg. & det.* Ștefănuț S. [BUCA B3377].

Făgăraș Depression, ♀ - Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 8.10.2003, *leg. & det.* Ștefănuț S. [BUCA B3085] (Ștefănuț 2004f:74); Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 20.11.2006, *leg. & det.* Ștefănuț S. [BUCA B3591].

Făgăraș Mountains, Arpaș Mountain (Schur 1866:872; Fuss 1878:655; Hazslinszky 1885:48; Drăgulescu 2003:11); Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2545] (Ștefănuț 2002:190, Fig.5); Bâlea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2142, B2143].

Iezer-Păpușa Mountains, Iezer Valley, Bătrâna Valley, sub *L. cuspidata* (Mohan 1990a:24).

Cozia Mountain, Roșiei Gorges, on soil, 1987, *leg.* Negrean G. (Dihoru G. 1990:52).

Sibiu County, Măgura Cisnădioarei [SIB HL](Fuss 1878:655; Hazslinszky 1885:48; Gündisch 1977:47).

Cindrel Mountains, Crinț, 1200 m *alt.*, Șanta, 1300 m *alt.*, Grosul Muerii, 1000 m *alt.* (Gündisch 1977:47; Drăgulescu 2003:11); Beșineu, 1600 m *alt.*, sub *L. cuspidata* (Gündisch 1977:47; Drăgulescu 2003:11).

Vâlcea County, s - Lotrișoarei Gorges, at base of trunks trees, sub *L. cuspidata* (Ștefureac & Peicea 1973:46); upstream Cerna, on beech tree, 1.05.2001, *leg.* Răduțoiu D., *det.* Dihoru G. (Dihoru G. & Răduțoiu 2002:23).

Lotrului Mountains, Rudaru, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,36).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Hunedoara County, Deva, *leg. & det.* Péterfi M. (Györffy 1924b:38).

Retezat Mountains, Cârligului Valley at "Casa alpinet", 1900 m *alt.*, 9.07.1968, ass. *Philonotido-Hygrohypnetum dilatati* Plămadă 1974 (Plămadă 1974b:Tab.3; Plămadă 1993:55, Tab.6); Turcului Valley, 10.09.1969, ass. *Pogonatum urnigeri* Krusenstjerna 1945 *retezaticum* Plămadă 1978 (Plămadă 1978:243, Tab.3; Plămadă 1993:54, Tab.3); Șesele Plateau and Coama Șesele, 2100 m *alt.*, 8.07.1969, ass. *Rhododendro kotschy-Pinetum mugii* (Borza 1959) em. Coldea 1985 (Plămadă & Coldea 1985a:124,125, Tab.2); Râul Mare Valley, 19.06.2005, *leg.* Cogălniceanu D., *det.* Ștefănuț S. [BUCA B3392].

Mehedinți County, Lutița Brook, Jidostița Commune, 10.06.1945, *leg.* Țopa E., *det.* Ștefureac T., sub *L. cuspidata* Limpr. var. *banatica* Ștefur. (Ștefureac 1947a:138,142,143, Figs.5-11; Ștefureac 1978d:161; Ștefureac 1982b:56; Cristurean 1999:255).

Alba County, Valea Lungă, *leg. & det.* Barth J., sub *Jungermannia* [SIB HF 1532], Valea Lungă, on soil, 22.10.1867, *leg. & det.* Barth J. [SIB HF 1531](Fuss 1878:655; Hazslinszky 1885:48; Borza & Lupșa 1964:151; Drăgulescu 1983:58); beech forest with hornbeam on the left slope, upstream, at 12,5 km to Zlatna, 880 m *alt.* (Plămadă 1986a:59,65, Tab.1); Arieșul Mic Basin (Goia & Schumacker 2000:92); Morii Valley, Vârciorog Valley, Gârda Seacă – upstream Casa de Piatră, Izbuclul Chiobului and Izbuclul Gura Apei, Galbena Valley, on rotten woods (Goia 2001:67,68).

Codru-Moma Mountains, Monesei Valley, Lungă Valley, Brihenilor Valley, on wet soil (Mohan 1996:49; Ardelean 2006:105).

Cluj County, ♀ - Cluj-Napoca Botanical Garden, 380 m *alt.*, 5.11.1914, *leg.* Péterfi M. [BRHE 7](Györffy & Péterfi M. 1916:36-37; Boros 1958:5,8); Cluj, *leg. & det.* Péterfi M. (Györffy 1924b:38; Boros 1958:7); Southern Ciucea on Surduc Valley (Boros 1942a:34); Lomb Forest, Cluj (Soó 1951:33; Boros 1958:4,8); Făget, Becaș, Feleac Hill, Sălicea, incl. sub *L. cuspidata* (Boros 1958:5,7,8); Cluj-Napoca Botanical Garden, on brook valley and in „Japanese Garden”, on rocks and soil (Plămadă 1963:179; Plămadă 1969:170; Ștefureac 1982c:197, Tab.2); Gârbău Valley, on rocks, 1961-1966 (Plămadă 1967:470); Becaș Valley, in wet places (Plămadă 1969:170).

Bihar Mountains, Beliș Mountain, *leg. & det.* Baumgarten J.C.G., sub *Jungermannia* [SIB HF 1530](Baumgarten 1846:226; Schur 1866:872; Fuss 1878:655; Drăgulescu 1983:58).

Bihar County, 300–600 m *alt.* (Péterfi M. 1908:274); Vlădeasa Mountain, Drăgan Valley, 27.05.1915, *leg. & det.* Györffy I. & Péterfi M. (Györffy 1924b:38; Boros 1942a:35); Lacul Vărgat, at 4 km south-east to Săcueni, floating reed islet, 145 m *alt.*, 05-09.1980, *det.* Dihoru G., ass. *Carici-Menyanthetum* Soó (1938) 1955, ass. *Thelypteridi-Alnetum* Klika 1940, ass. *Salici cinerae-Sphagnetum recurvi* (Zólyomi 1931) Soó 1954 (Karácsonyi 1982:30,33,35, Tabs.1,2); Someșul Cald Gorges, on shaded rocks and exposed soils (Goia & Mătase 2001:17).

Satu Mare County, Ghiarmat, on rotten woods, in *Quercus-Fagetea* (Plămadă 1987a:63).

var. *rivularis* (Raddi) Warnst.

Syn.:

- *Chiloscyphus coadunatus* var. *rivularis* (Raddi) Frisvoll et al.
- *Chiloscyphus latifolius* (Nees) J.J. Engel & R.M. Schust.
- *Jungermannia bidentata* var. *obtusata* Hook.
- *Jungermannia bidentata* var. *rivularis* Raddi
- *Lophocolea bidentata* var. *ciliata* Warnst.
- *Lophocolea bidentata* var. *gracillima* Kaal.
- *Lophocolea bidentata* var. *interrupta* Huebener & Genth ex Schiffin.
- *Lophocolea bidentata* var. *obtusata* (Hook.) Dumort.
- *Lophocolea bidentata* var. *pulverulenta* Jörg.
- *Lophocolea hookeriana* Nees
- *Lophocolea lateralis* Dumort.
- *Lophocolea latifolia* Nees

First citation for Romania: Péterfi M. 1908.

Ecology: epigeaic-humicolous, moderat acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, NI, Be, De, Po, Ch, At, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Ba, Ro, Bg, Lt, Rc, Az, Ma, Cn.

Distribution in Romania:

Alba County, Bihor Mountains (Péterfi M. 1908:274; Goia 2001:67); Izbucl Chiobului and Izbucl Gura Apei, Galbenei Valley, on rotten wood (Goia 2001:67,68); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:87).

Lophocolea heterophylla (Schrad.) Dumort.

Syn.:

- *Chiloscyphus profundus* (Nees) J.J. Engel & R.M. Schust.
- *Jungermannia heterophylla* Schrad.
- *Lophocolea angustiflora* Steph.
- *Lophocolea austinii* Lindb.
- *Lophocolea fissicalyx* Steph.
- *Lophocolea heterophylla* fo. *multiformis* Nees
- *Lophocolea incisa* Lindb.

First citation for Romania: Schur 1866.

Romania (Müller 1954:604; Schuster 1980:216).

Moldova (Papp 1943:659; Ştefureac & al. 1973:144,145).

Muntenia (Mohan 1988b:109).

Transylvania (Pax 1908:129).

Ecology: humicolous, corticolous, saprolignic, acidophytic, meso-hygrophytic, sciophytic; circumpolar; Hch. Characteristic to *Lophocoleetum heterophyllae* Peciar 1965.

Herbaria and Exsiccate: BUCA, BRHE

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, NI, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Ct, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Rc, Re, Rs, Ca, Az, Ma, Cn.

Distribution in Romania:

? - **Rodna Mountains** (Pax 1908:129).

Țibleş Mountains, Bran Peak, Piciorul Arsurii, Arcer Peak, Suplai Commune, Fiad Commune, 1984-1985 (Mohan 1988a:20).

Botoşani County, Suhărau Forest, on rotten trunks trees and in wet places (Mihai 1966:147,152; Mihai 1969d:17; Mihai 1972b:112); Dobârceni Forest, on fallen rotten woods (Mihai 1977b:23).

Suceava County, Izvorul Alb, 14.05.1910, Poiana Stampei, 16.05.1910, Breaza, 3.06.1910 (Lilienfeldówna 1911:735); the peatbogs from Cristişorul on Neagra-Broştenilor Valley, on rotten woods, 06.1964 (Lungu 1967c:329; Lungu 1974:74, Tabs.1,2); Cristişor-Neagra Broştenilor, Borcut Meadow, in common spruce forest and alder tree thicket (Lungu 1973b:72; Lungu 1981c:92); Bistriţa Aurie Valley, between Iacobeni and Ciocăneşti, the edge of Suhărzulul and Suhărzulul Mare Brooks (Pascal 1969:107); Cârlibaba Brook Valley, Piatra Țibău, 1967 (Ştefureac & Pascal 1970a:246); Ouşorul Mountain, on humus, 1971 (Mihai 1974b:318,320); „Lunca Zamostea” Reserve, 283 m *alt.*, 1988 [BUCA](Dihoru G. 1999a:190,191; Dihoru G. 2002:68).

Giuralău Mountain, Giuralău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3670].

Rarău Mountain, Codrul Secular Slătioara (Tarnavschi 1936:285; Ştefureac & Pascal 1981:479); Codrul Secular Slătioara, 800-1000 m *alt.* (Ştefureac 1941:1154,1284, Tabs.8,9; Ştefureac 1969a: Tab.16); Rarău (Papp 1942b:525); Codrul Secular Slătioara, Rarău Peak, Todirescu Peak (Papp 1969b:188).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphidum pellucidum* (Barkman 1958) Maurer 1961, ass. *Lophocolea heterophylla-Ptilidium pulcherrimum* Maurer 1961 (Ștefureac, Mihai & Pascal 1976:35,36,39, Tab.1); Iliuța Bozghi Brook, Secu Brook, Măgura Calului, Muncel Peak, Strâmba Valley, Ilva Mică Commune, Sângeorz-Băi, Lunca Ilvei, 1983-1984 (Mohan & Hodoroga 1986:212); ♀ - Prundul Bârgăului, BN, 1800 m *alt.*, 03.2004, *leg.* Ivănescu Cristina, *det.* Ștefănuț S. [BUCA B2939].

Căliman Mountains, in common spruce grove, on rotten fallen trunk tree and rotten leaves, 1981-1984 (Mihai 1985:96-98).

Bistrița-Năsăud County, Jelna Forest, Piatra Corbului, La Fântână, Budacul de Jos, 1980-1981 (Mohan & Hodoroga 1983:51).

Iași County, Bârnova Forest (Papp 1924a:102; Papp 1929:555,558,560); Bârnova, on wood, sub fo. *multiformis* (Papp 1946b:150); Repedea-Bârnova Forest Massif, on rotten woods, sub fo. *multiformis* (Papp & Eftimie 1963:108,110); Breazu Forest, 160-180 m *alt.* (Pascal & al. 1958; Mihai & Pascal 1973a:266; Ștefureac & al. 1973:144); Repedea-Bârnova Forest Massif, ass. *Lophocoleetum heterophyllae* Peciar 1965, ass. *Metzgerietum furcatae* Störmer 1938 (Mihai 1974a:127,130, Tabs.1,6), ass. *Lophocoleetum heterophyllae* Peciar 1965, ass. *Anomodontetum attenuati* Peciar 1965 and bryocoenosis with *Brachythecium rutabulum* (Mihai 1975:105,106, Tabs.1,2,4), ass. *Madothecetum Leskeetum nervosae* (Gams 1927) Barkaman 1958 subass. *amblystegietosum* Mihai 1974, bryocoenosis with *Brachythecium salebrosum* or with *B. velutinum* (Mihai 1976b:282-284, Tabs.1,3,4); Domnița-Voinești Forest, Voinești and Țibana Communes, on rotten tree stump (Mititelu & Chifu 1978:377); Humosu Natural Reserve, ass. *Eurhynchietum striati* Waldheim 1944, ass. *Lophocoleetum heterophyllae* (Mihai 1980:8; Mihai 1983c:351,352,356,357, Tabs.1,2,8).

Ceahlău Mountain, Durău (Papp 1924b:392; Papp 1934b:66,67,72; Zanoschi 1970:280; Manoliu & al. 1998:336); Ceahlău, 1200-1700 m *alt.* (Mihai 1979b).

Neamț County, Cuejdiu Valley (Papp 1932:462); Măgura Pietricica, on rotten woods (Papp 1937d:235,238,240); Neamț Monastery, on rotten wood, 07-08.1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Masivul Corni (Papp 1959b:567; Ștefureac & al. 1973:145); Poarta Poieni, beech forest, west to Corni Village, Budești Commune, on trees bark (Papp 1960a:120); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242); Pângărăcior Brook Valley, on rotten tree stump (Mihai 1973d:29,32); Cărbunelui Hill, on rotten wood (Mihai 1974c:23; Ștefureac & al. 1973:145).

Giurgeu Mountains, Bicaz Gorges, 1957-1960 (Papp & al. 1962:144).

Hășmaș Mountains, Hășmașul Mare Mountain near Bălan (Matouschek 1903b:160); Hășmașul Mare (Degen 1930:976; Bálint & Orbán 2006:473); Cupașului Valley, 1978, 1979, ass. *Dicrano-Hypnetum cupressiformis* (Ochsner 1928) v. Krunsenstjerna 1945 (Mihai 1981a:19, Tab.6).

Harghita Mountains, Vârșag, in common spruce forest, on rotten trees trunks, 1958-1962 (Páll 1963b:17); Greu Mountain, 1100 m *alt.*, 11.07.2000, Vermet Valley, 1050-1250 m *alt.*, 2.07.2000, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Pietros Mountain, 1295 m *alt.*, 15.08.2001, Cifrabuc, 1200 m *alt.*, 16.08.2001, Bakratas Mountain, 1363 m *alt.*, 15.08.2001, Descut, 15.08.2001, Groapa Mare, 1300 m *alt.*, 16.08.2001, Podului de Piatră Mountain, 1551 m *alt.*, 15.08.2001, Rotund Mountain, 1100 m *alt.*, 28.08.2001, Boitor Forest, 1000-1100 m *alt.*, 28.08.2001, Luci, 1050 m *alt.*, 13.08.2001, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bálint L. & Csízi K., sub *Chiloscyphus profundus* (Bálint & Orbán 2003:14; Bálint & Orbán 2006:468).

Nemira Mountains, Nemira Mountain, on common spruce tree trunks, 1450-1550 m *alt.* (Barabaș V. 1974:28); Nemira, in beech forests and common spruce forests, on rotten trees trunks, 1970-1977 (Mihai & Barabaș V. 1978:116); Țiganca Mountain, 1400 m *alt.*, ass. *Dicrano scopari-Hypnetum cupressiformis* Will. 1962, Nemira Mountain, 1350-1500 m *alt.*, Șandru Mountain, 1400 m *alt.* (Barabaș V. 1982b:62,64,65, Tabs.10,13).

Bacău County, Cerbu Brook Valley, Ciungetul and Izvorul Negru (Papp 1957:285; Papp 1958b:409,417); Berzunț Culm, on rotten wood, 990 m *alt.* (Papp & Bircă 1960:316,325); *s* - Măgura Hill, north-west to Târgu Ocna, on rotten tree stump and rarely on wet rocks, 680 m *alt.*, frequent (Mihai & Barabaș V. 1971:676,682,685); Tălâmba Brook, Scorboroiaia, on rotten fir wood (Eftimie 1972:151); Codrul Secular Runc-Racova (Barabaș V. 1982a:49); near Târgu Ocna, beech forest, 400 m *alt.* (Barabaș V. 1982b:68, Tab.18).

Penteleu Massif, *fer* - Roșu Lake, 1510 m *alt.*, on rotten woods, south-eastern edge of peatbog and in the peatbog from the left side of Cernatului Valley, above forest chalet, 11.10.1983 (Dihoru G. 1987b:94-97).

Buzău County, *fer* - Bisoca, the peatbogs „Lacul cu Mușchi” and „Lacul Negru” (Dihoru, Wallfisch & Pîrvu 1984:5).

Ciucaș Mountains, Berii Brook Valley, Roșu Brook Valley, Zăgan Mountain, Roșu Mountain, Tigăile Mici Culm, Bratocea Culm (Mohan 1990b:43); Roșu Mountain, PH, 45°29'35"N / 25°56'45"E, 1400 m *alt.*, 4.07.2004, *leg. & det.* Ștefănuț S. [BUCA B3054].

Brașov County, ♀ - Tâmpa, 18.06.2006, *leg. & det.* Ștefănuț S. [BUCA B3526] (Ștefănuț 2006b:33; Ștefănuț 2008b:28); ♀ - Făgăraș, Galați Hill, 24.11.2002, *leg. & det.* Ștefănuț S. [BUCA B2058]; Predeal, 6.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3398, B3402, B3403].

Prahova County, Prahova Valley (Loitlesberger 1898:196); Doftana Valley (Mohan 1971a:8; Mohan 1971b:47); Tătaru Mountain, on left side of Bâlbâitoarea Brook, Bâlbâitoarea Peatbog, on rotten beech and alder trees and at base of alder trees trunks, 9.07, 20.10.1981 (Dihoru G. 1984c:82,85,86, Fig.1); Românești, Tinosu (Dihoru A. 1994:3); behind Prahova railway station, 44°49'30"N / 26°05'23"E, 4.05.2004, *leg. & det.* Ștefănuț S. [BUCA B3072]; Doftana Valley, in *Quercus petraea* forest, 45°10'11,8"N / 25°45'04,6"E, 26.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3417] (Vasiliu-Oromulu 2008:87).

Gârbova Massif, Azuga Valley, Tufa Valley, Rea Valley, Valea lui Bogdan, on humus, 1967-1970 (Lungu & Ștefureac 1970:5).

Bucegi Massif, *fer* - Jepi Valley, in forest, *leg.* Dumitrescu M., *det.* Radian S.Ș. (Radian 1901b:41); Mălăiești Valley, incl. sub var. *multiformis* (Matouschek 1905:81); Jepi Valley, 08-09.1911 (Degen 1914:217).

Piatra Craiului Mountains, on the lower zone of Bulimani Brook Valley, on rotten common spruce tree, 1150 m *alt.*, on rotten fir tree, 1100 m *alt.* (Ștefureac 1951b:260-261; Dihoru G. & al. 2003:69; Ștefănuț & Pop O.G. 2006:77); way towards Vlădușca Pasture, BV, 45°32'38"N / 25°12'11"E, 1100 m *alt.*, 30.10.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2837] (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:77); Padina Bădoaia, BV, 45°33'57"N / 25°13'45"E, 1040 m *alt.*, 8.08.1997, *leg. & det.* Ștefănuț S. [BUCA B2677] (Ștefănuț & Pop O.G. 2006:77,78); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2603] (Ștefănuț & Pop O.G. 2006:78); Gura Râului, BV, on rotten wood, 45°33'07"N / 25°17'50"E, 900 m *alt.*, 7.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2727] (Ștefănuț & Pop O.G. 2006:78); ♀♂ - Brusturet Gorges, AG, 45°27'55"N / 25°13'45"E, 950 m *alt.*, 26.07.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2953, B2965], s - [BUCA B2955] (Ștefănuț & Pop O.G. 2006:78).

Giurgiu County, ♀♂ - Naipu, 44°09'22"N / 25°45'45"E, 21.04.2004, *leg. & det.* Ștefănuț S. [BUCA B2933].

Făgăraș Mountains, Arpaș Mountain (Schur 1866:872; Fuss 1878:654; Hazslinszky 1885:48; Drăgulescu 2003:11).

Cozia Mountain, *fer* - Mocirle–Poarta de Piatră, ***fer*** - Păușa Valley, Slavei Brook, Poarta de Piatră- Slavei Brook, on rotten woods, 1975-1976 (Dihoru G. 1990:52).

Cindrel Mountains, Păltiniș, 1200-1300 m *alt.*, Șerbănei, 1700 m *alt.* (Gündisch 1977:47; Drăgulescu 2003:11).

Vâlcea County, upstream Cerna, on rotten fir wood, 1.05.2001, *leg.* Răduțoiu D., *det.* Dihoru G. (Dihoru G. & Răduțoiu 2002:23); Stroești, 400-500 m *alt.*, 16.03.2002, on bark, in hornbeam-beech forest, 1.04.2003, Cerna, 800-900 m *alt.*, 12.07.2002 (Dihoru G. & Răduțoiu 2004:79).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Curmătura Vidruței, 1350 m *alt.*, 26.07.1955 (Ștefureac, Popescu & Lungu 1957a:69, Tab.1); Latorița Valley, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,20).

Retezat Mountains, Zlătuia Valley, 1250-1300 m *alt.*, 6-8.09.1969, ass. *Nowellio-Ptilidietum pulcherrimi* Plămadă 1982, 8.09.1969, 11.07.1970, ass. *Isopterygio seligeri-Dicranetum scoparii* Ježek et Vondr. 1962 (Plămadă 1982a:312,313, Tabs.6,7; Plămadă 1993:52, Tab.2).

Gorj County, Rovinari, „Valea lui Lupe”, 10.1938, *det.* Papp C. (Racoviță A. 1941b:253).

Domogled Mountain, Domogled - Șușcu Peak (Papp 1939b:20); Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8); Crucea Albă, 44°53'10"N / 22°25'48"E, 500 m alt., 9.08.2004, leg. & det. Ștefănuț S. [BUCA B2983].

Mehedinți County, Orșova (Simonkai 1872:67); Danube Defile, between Orșova and Cerna Valley, in forest, wet valley, on soil, 1966-1968 (Plămadă 1970c:393); Cerânganilor Hill, between Strehaia and Cerângan, 9.07.2003, leg. Costache I. (Dihoru G. & Costache 2004:86).

Caraș-Severin County, Mehadia (Simonkai 1872:67).

Zarand Mountains, Highiș Valley, on trees bark (Csürös M. 1978:76; Ardelean 2006:105).

Arad County, Calvaria Mountain, near Săvârșin (Simonkai 1872:67; Simonkai 1893:362); above Arăneag, in Stojaț Valley and along Highiș Brook Valley (Simonkai 1893:362).

Codru-Moma Mountains, Monesei Valley, Valea Lungă, Crișul Văratecului Valley, on rotten wood (Mohan 1996:49; Ardelean 2006:105).

Alba County, at 20,5 km to Zlatna, the right slope, downstream, oak grove (Plămadă 1986a:59,65, Tab.1); Drăghița Valley, on fallen beech, 750 m alt., 20.08.94, ass. *Anomodonto-Leucodontetum* Wisn. 1930, Morii Valley, on rotten wood, 600 m alt., 22.10.1995, ass. *Riccardio-Nowellietum curvifoliae* Koppe 1956, Goieștilor Valley, on rotten wood, 700 m alt., 15.08.1994, Morii Valley, on wood and rotten wood, 600 m alt., 7.08.1994, 22.10.1995, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965, ass. *Dicrano scoparii-Hypnetum cupressiformis* Barkman 1958, Arieșul Mic, on rotten wood, 1200 m alt., 20.08.1994, ass. *Brachythecio salebroși-Drepanocladetum uncinati* Marstaller 1989 (Goia 1998:257,260,262, Tabs.7,9,11,12); Morii Valley, 600 m alt., 22.10.1995, Scărișoara Cave, 1340 m alt., 11.08.1996, Vârciorog Valley, 780 m alt., 13.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Morii Valley, 950 m alt., 07.08.1994, Goieștilor Valley, 1340 m alt., 15.04.1994, Galbena Valley, 780-900 m alt., 12.09.1996, Ursoaia Saddle, 900 m alt., 12.08.1996, Scărișoara-Ocoale, 600 m alt., 11.08.1996, Scărișoara Cave, 700 m and 1340 m alt., 11.08.1996, Vârciorog Valley, 1000-1270 m alt., 3.06.1995, Vidrișoara Valley, 1300 m alt., 21.08.1992, Iarba Rea Valley, 900 m alt., 25.08.1996, ass. *Lophocoleo-Dolichothecetum seligeri*, Cepelor Valley, 1380 m alt., 16.05.1996, ass. *Cephalozio bicuspidatae-Nowellietum curvifoliae* Philippi 1965, Lupșa, 1160 m, 15.05.1996, Gârda Valley, 1200 m alt., 7.08.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ștefur. 1941, Găina, 980 m alt., 21.08.1992, Morii Valley, 1200 m alt., 7.08.1994, Cobleș Valley, 10.08.1996, 1100 m alt., ass. *Brachythecio salebroși-Drepanocladetum uncinati*, Morii Valley, 700 m alt., 22.10.1995, ass. *Dicrano scoparii-Hypnetum filiformis*, Gârda Seacă Valley, 925 m alt., 8.08.1996, Măgura Valley, 1300 m alt., 28.08.1994, ass. *Pterigynandretum filiformis* Hilitzer 1925 (Goia 2000:112,113,115-117,119,120, Tabs.2-8); Gârda Seacă – upstream Casa de Piatră, on beech and rotten wood, Cobleș Valley, Arieșul Mic – umpstream mine, on beech, Morii Valley, on common spruce, Ursoaia Saddle, on rotten wood and common spruce, Vârciorog Valley, Galbena Valley, Ordencușa Valley, Scărișoara Cave – aven, Ghețari, Ocoale, Mățișești, Arieșul Mare upstream to Arieșeni, Cepelor Valley, on rotten wood (Goia 2001:68); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); Morii Valley, 13.08.1994, ass. *Pterigynandretum filiformis*, Drăghița Valley, 20.08.1994, ass. *Homalothecium sericei-Porelletum platyphyllae* Störmer 1938 (Goia & Schumacker 2003:60, Tab.2); between Măgura and Obârșia Valley, 1000 m alt., 27.09.1996, ass. *Pterigynandretum filiformis*, between Cobleș Valley and Galbena Valley, 1320 m alt., 9.08.1996, between Mățișești and Șaua Ursoaia, 730 m alt., ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia & Schumacker 2004:109,111, Tabs.2,4); Detunata Mountains, 1000-1050 m alt., det. Orbán S., sub *Chiloscyphus profundus* (Sass-Gyarmati, Pócs & Orbán 2005:127).

Cluj County, Făget, 580 m alt., 13.11.1914, leg. Péterfi M., sub fo. *multiformis* [BRHE 8](Györffy & Péterfi M. 1916:37; Boros 1958:4,8); Southern Ciucea on Surduc Valley (Boros 1942a:34); Cluj-Napoca Botanical Garden (Plămadă 1963:179; Plămadă 1969:170; Ștefureac 1982c:197, Tab.2); Negruța Valley, 1090 m alt., Someșul Rece Valley, 1120 m alt., ass. *Sphagno-Piceetum abietis* Brezina et Hadač 1969 (Pop I. & al. 1984:81, Tab.5); Hoia Forest, north-west to Cluj, on rotten woods, 1961-1963 (Plămadă 1966:60); Făget Forest, on soil, 1961-1966 (Plămadă 1967:470); Cluj-Napoca, Sporting Park (Plămadă 1969:170); Sălicea, Făget-Sf. Ion (Goia 2002:115, Tab.1).

Bihar County, Crișul Repede Defile (Boros 1942a:31; Boșcaiu & Gergely 1966:104); Someșul Cald Gorges (Goia & Mătase 2001:17).

Vlădeasa Mountains, Zârnei Valley, ass. *Piceeto-Fagetum carpaticum* Svoboda 1939 (Rațiu O. & Gergely 1970:242, Tab.7).

Satu Mare County, Noroieni, Ghiarmat, Cerhat, on soil and rotten woods, in *Quercus-Fagetea* (Plămadă 1987a:63); Ciumești, „Răchitișul lung”, 3.06.1987, ass. *Salici cinereae-Sphagnetum recurvi* (Zólyomi 1931) Soó 1954 (Karácsonyi 1992:117).

Lophocolea minor Nees

Syn.:

- *Chiloscyphus minor* (Nees) J.J. Engel & R.M. Schust.
- *Jungermannia bidentata* var. *minor* Raddi
- *Jungermannia crocata* De Not.
- *Lophocolea bidentata* var. *minor* (Nees) Moris & De Not.
- *Lophocolea crocata* (De Not.) Nees
- *Lophocolea fauriana* Steph.
- *Lophocolea heterophylla* var. *minor* (Nees) Douin
- *Lophocolea hirafusa* Steph.
- *Lophocolea minor* var. *erosa* (Nees) Gottsche et al.
- *Lophocolea setistipa* Steph.

First citation for Romania: Heufler 1853.

Moldova, incl. var. *erosa* (Papp 1943:660; Ștefureac & al. 1973:144).

Dobrogea (Ștefureac, Mihai & Pascal 1970:123).

Muntenia (Mohan 1988b:109).

Transylvania (Pax 1908:129).

Ecology: epigaeic, epilithic, indifferent, mesophytic, sciophytic; circumpolar; Hch. Characteristic to *Lathyro-Carpinenalia* Tăuber 1987.

Herbaria and Exsiccate: BUCA, PHHM, SIB

Distribution in Europe: Is, No, Dk, Se, Fi, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sc, It, Si, Hr, Sb, Ba, Mk, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Md, Ua, Cm, Rn, Rw, Rc, Re, Rs, Ca, Ma.

Distribution in Romania:

Maramureș County, Săpâncioara, 15-21.06.1997, leg. Jakab G., det. Orbán S. (Jakab 1999:55).

Țibleș Mountains, Păltiniș Peak, Dosul Obcinei, Dealul lui Vlad, Fiad Commune, Mesteacănul Valley, 1984-1985 (Mohan 1988a:20).

Botoșani County, Pădureni Forest (Mihai 1968b:137); Dobârceni Forest, on soil (Mihai 1977b:23).

Suceava County, Criștișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, on soil and rotten woods (Lungu 1973b:72; Lungu 1981c:92).

Rarău Mountain, Codrul Secular Slătioara, 850-1400 m alt. (Ștefureac 1941:1154, Tabs.3,7; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:196).

Bistrița-Năsăud County, Măgheruș Valley, at Lupiște, Gropii Hill (Ștefureac & Cristurean 1973:315); Jelna Forest, Pietra Corbului, La Fântână, Monari, Simionești, 1980-1981 (Mohan & Hodoroga 1983:52).

Bârgău Mountains, Heniu Mare Peak, Cârțișavu Mare Valley, Secu Brook, Măgura Calului, Tureac Brook, Sângeorz-Băi, 1983-1984 (Mohan & Hodoroga 1986:212).

Iași County, Bârnova, sub var. *erosa* (Papp 1924a:102); Breazu Forest (Papp 1925c:156); Breazu Forest, on clayey soil, 180 m alt., 20.10.1956, sub var. *erosa* (Papp 1958a:123); Repedea-Bârnova Forest Massif, Repedea Forest, on soil and rotten woods, sub var. *erosa* (Papp 1929:555-557,559; Papp 1935a:431; Papp 1939a:353-355; Papp & Eftimie 1963:108-110), 160-180 m alt. (Pascal & al. 1958; Mihai & Pascal 1973a:266,273, Tabs.1,2; Ștefureac & al. 1973:144); Bârnova Forest, sub var. *erosa* (Papp 1942b:525); Stavnic Brook Valley, in forest, on soil and trees bark, sub var. *erosa* (Papp 1950:400,402,403,405); Uricani Forest, incl. sub var. *erosa* (Eftimie 1967:290), ass. *Atricheto-Lophocoleum minoris* Mihai 1973 (Mihai 1973b:413-416, Tabs.1,2,3); Coasta Beschiei - Brădicești Forest, on soil, 1966-1969 (Plămadă & Vițalariu 1971:166); Repedea-Bârnova Forest Massif, ass. *Lophocoleum heterophyllae* Peciar 1965, ass. *Anomodontetum attenuati* Peciar 1965 (Mihai 1975:105,106, Tabs.1,2); Domnița-Voinești Forest, Voinești and Țibana Communes, on soil (Mititelu & Chifu 1978:377); Mârzești Forest, ass. *Eurhynchietum swartzii* Waldheim 1944 (Mihai 1976c:662, Tab.1).

Giurgeu Mountains, Bicaz Gorges, on rocks, 1957-1960 (Papp & al. 1962:147).

Harghita County, 26.07.1901, sub var. *erosa* (Barth 1905:13).

Harghita Mountains, Greu Mountain, 1100 m alt., 11.07.2000, Asău Valley, 1000-1100 m alt., 22.10.2000, leg. Bálint L. & Csízi K., sub *Chiloscyphus* (Bálint & Orbán 2003:14; Bálint & Orbán 2006:468).

Neamț County, Cuejdiu Valley, sub var. *erosa* (Papp 1932:462); Măgura Pietricica, on soil (Papp 1937d:238,240); Măgura Pietricica, on soil, sub var. *erosa* (Papp 1937d:235,236,240); Tâmpeschi (Papp 1942b:525); Recea, Muncelașul and Poarta Poienilor Forests, sub var. *erosa* (Papp 1947a:159; Papp 1947b:185,186,188,190); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242,243); Dobreanului Culm, on soil (Mihai 1974c:23; Ștefureac & al. 1973:144).

Ceahlău Mountain, Ceahlău, sub var. *erosa* (Papp 1934b:66; Zanoschi 1970:280; Manoliu & al. 1998:337); Ceahlău, 650-1200 m *alt.* (Mihai 1979b).

Nemira Mountain, on wet soil (Barabaș V. 1974:31).

Bacău County, *s* - Măgura Hill, north-west to Târgu Ocna, on soil, 680 m *alt.*, frequent (Mihai & Barabaș V. 1971:676); *s* - Buhoci Forest, on soil, 1970-1971 (Mihai & Barabaș V. 1972:87).

Tulcea County, Babadag Forest, 220 m *alt.*, 20-23.07.1968 (Ștefureac & Mohan 1969:140,144; Ștefureac, Mihai & Pascal 1970:123).

Ciucaș Mountains, Chirușca Mountain, Bratocea Peak, the Culm of Stâna Valley (Mohan 1990b:43).

Prahova County, Doftana Valley [PHHM 7744/3873](Mohan 1971a:8; Mohan 1971b:47), Secăria Valley (Mohan 1971b:47).

Brașov County, ♀ - Predeal, BV, 45°30'13"N / 25°34'01"E, 800-900 m *alt.*, 6.09.1997, *leg. & det.* Ștefănuț S. [BUCA B2557].

Gârbova Massif, Azuga Valley, 1967-1970 (Lungu & Ștefureac 1970:5).

Giurgiu County, *s* - Comana, on wet soil, 1968-1969 (Ștefureac & Mohan 1970a:353).

Făgăraș Mountains, Arpaș Valley, subalpine zone (Heufler 1853:50-51; Fuss 1854:20; Schur 1866:872; Fuss 1878:654; Hazslinszky 1885:48; Drăgulescu 2003:11).

Vâlcea County, Stroești, on soil, 400-500 m *alt.*, 16.03.2002, 1.04.2003 (Dihoru G. & Răduțoiu 2004:79).

Gorj County, Lupei Valley, Rovinari, on wet soil, 160 m *alt.* (Papp 1942a:51).

Domogled Mountain, Domogled (Degen 1901:14); Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8).

Mehedinți County, Orșova, *ex* Simonkai L. (Hazslinszky 1885:48); on the left side of Eșelnița Valley, upstream the village, in oak forest, on sandy-clayey soil, in *Alnetum glutinosae* and *Salicetum purpurae* (Plămadă 1970b:206,214); Danube Defile, between Orșova and Cerna Valley, wet valley, in forest, on soil, frequent, 1966-1968 (Plămadă 1970c:393).

Caraș-Severin County, Mehadia (Simonkai; Hazslinszky 1885:48).

Arad County, mountain zone of Arăneag and Troiaș, near Săvârșin, incl. sub var. *erosa* (Simonkai 1893:362; Hazslinszky 1885:48); Radna (Hazslinszky 1885:48).

Zarand Mountains, Arăneag, in beech forest, on stone (Csűrös M. 1978:76; Ardelean 2006:105).

Codru-Moma Mountains, Monesei Valley, Măgura Diecilor, Brihenilor Valley, on wet soil (Mohan 1996:49; Ardelean 2006:105);

Alba County, Valea Lungă, on wet calyey soil, 23.02.1869, *leg. & det.* Barth J. [SIB HF 1529](Schur 1866:872; Fuss 1878:654; Hazslinszky 1885:48; Borza & Lupșa 1964:151; Drăgulescu 1983:58); at 20,5 km to Zlatna, right slope, downstream, oak grove (Plămadă 1986a:59, Tab.1).

Mureș County, Sighișoara, on trees roots, 17.08.1869, *leg. & det.* Barth J., sub var. *erosa* [SIB HF 1528](Schur 1866:872; Fuss 1878:655; Demeter 1886:111; Drăgulescu 1983:58).

Cluj County, Piatra Calului, 550 m *alt.* (Péterfi M. 1908:274); Cluj, *leg. & det.* Péterfi M. (Györffy 1924b:38); Cluj, on soil, 1961-1966 (Plămadă 1967:470); Pușcașului Valley, on soil, trees bark and rotten woods, 1963-1965 (Plămadă 1968:25); Făget, Sălicea, Someș Bank, *leg. & det.* Péterfi M. (Boros 1958:4,8; Plămadă 1969:170); Turzii Gorges, on soil, pine forest (Plămadă & Goia 1994:87) Făget-Sf. Ion, Hoia (Goia 2002:115, Tab.1)..

Sălaj County, Podișul Someșan, Bălțișeni Forest from Ungur Valley, near Popteleac (Gârbău Commune), on soil, frequent in *Querco-Fagetea*, 430-500 m *alt.* (Plămadă & Coldea 1989b:121).

Bihor County, Aleșd, Peștiș, 300-400 m *alt.* (Péterfi M. 1908:274).

Satu Mare County, Noroieni, Ghiarmat, on soil, in *Querco-Fagetea* (Plămadă 1987a:63).

Lophocolea sp.

Neamț County, Cuejdiu Valley (Papp 1933a:102).

Lophozia ascendens (Warnst.) R.M. Schust.

Syn.:

- *Lophozia gracillima* H. Buch
- *Lophozia longidens* Schiffn.
- *Lophozia porphyroleuca* (C. Hartm.) Schiffn.
- *Sphenolobus ascendens* Warnst.

First citation for Romania: Boros 1951.

Muntenia (Mohan 1988b:103).

Romania (Müller 1954:654; Schuster 1969:543; Ștefănuț 2003b:238, Fig.5; Frey & al. 2006:79).

Obs.: This species was cited from Maramureș, by Boros (1951:372), according Plămadă (1973:378), but this locality is in Ukrainian part of Maramureș.

Ecology: humicolous, saprologenic, acidophytic, xero-mesophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: No, Se, Fi, Fr, Ad, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Hr, Ro, Bg, Lv, By, Ua, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Harghita Mountains, near Harghita Spa, sub *L. gracillima* (Boros 1951:372); above Sâncrăieni, 1200 m *alt.*, *det.* Vajda L., sub *L. gracillima* (Pócs 1958:109; Bálint & Orbán 2006:469); Pietros Mountain, 1295 m *alt.*, 15.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:469).

Harghita County, Lacul Roșu, sub *L. gracillima* (Boros 1951:372; Plămadă 1973a:378; Goia 2001:57; Ștefănuț 2003b:234, Fig.5).

? - **Ciucaș Mountains**, Chirușca Mountain, Ciucaș Peak, Gropșoarele Peak (Mohan 1990b:41; Ștefănuț 2003b:234, Fig.5).

Piatra Mare Mountain, „Șapte Scări”, Tamina, *leg. & det.* Vajda L. (Boros & Vajda 1967:219; Plămadă 1973a:378; Goia 2001:57; Ștefănuț 2003b:234, Fig.5).

Cristianul Mare Mountain, 1200 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:219; Plămadă 1973a:378; Goia 2001:57; Ștefănuț 2003b:234, Fig.5).

Bucegi Massif, above Mălăiești Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:219; Plămadă 1973a:378; Goia 2001:57; Ștefănuț 2003b:234, Fig.5); the peatbog from the right side of Lăptici Brook, 45°22'34"N / 25°26'45"E, 1500 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3230].

Cindrel Mountains, Păltiniș, 1200 m *alt.*, Găușoara, 1750 m *alt.* (Gündisch 1977:48; Goia 2001:57; Ștefănuț 2003b:234, Fig.5; Drăgulescu 2003:12).

Retzat Mountains, Pârgului Valley, Zlătuia Valley, Tăul Negru, on rotten woods and soil, 1964-1971 (Plămadă 1973a:378, Fig.3a-d; Goia 2001:57; Ștefănuț 2003b:234, Fig.5).

Alba County, Morii Valley, on rotten wood, 600 m *alt.*, 22.10.1995, ass. *Riccardio-Nowellietum curvifoliae* Koppe 1956, ass. *Lophocolo-Dolichothecetum seligeri* Philippi 1965, ass. *Dicrano scoparii-Hypnetum cupressiformis* Barkman 1958 (Goia 1998:260,261,263, Tabs.9,10,12); Morii Valley, 600 m *alt.*, 22.10.1995, Scărișoara Cave, 1340 m *alt.*, 11.08.1996, Vârciorog Valley, 780 m and 1385 m *alt.*, 3.06.1995, 13.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Morii Valley, 950 m *alt.*, 07.08.1994, Galbena Valley, 780 m *alt.*, 12.09.1996, ass. *Lophocolo-Dolichothecetum seligeri* Philippi 1965, Scărișoara Cave, 1200 m *alt.*, 12.08.1996, ass. *Cephalozio bicuspidatae-Nowellietum curvifoliae* Philippi 1965, Iarba Rea Valley, 790 m *alt.*, 25.08.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958, Lupșa, 1160 m *alt.*, 15.05.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ștefur. 1941, Morii Valley, 700 m *alt.*, 22.10.1995, ass. *Dicrano scoparii-Hypnetum filiformis* Barkman 1958, Iarba Rea Valley, 800 m *alt.*, 25.08.1996, ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia 2000:112,113,115,116,119, Tabs.2-5,7); Arieșul Mic Basin (Goia & Schumacker 2000:92); Vârciorog Valley, Galbena Valley, Iarba Rea Valley, Cepelor Valley, Arieșul Mare – upstream Arieșeni, Gârda Seacă – upstream Casa de Piatră, Mătișești – towards Ursoaia Saddle, Morii Valley, on rotten wood (Goia 2001:56-57, Figs.10,11; Ștefănuț 2003b:234, Fig.5); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:85,86,89,90); Cetățile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3825, B3872].

Cluj County, Răcătău, 750 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:219; Plămadă 1973a:378; Plămadă 1985b:40; Ștefănuț 2003b:234, Fig.5).

Bihar County, Izbucul Ponorului (Boros & Vajda 1974:6); Someșul Cald Gorges, on decaying wood (Goia & Mătase 2001:17).

***Lophozia bicrenata* (Schmidel ex Hoffm.) Dumort.**

Syn.:

- *Isopaches bicrenatus* (Schmidel ex Hoffm.) H. Buch
- *Jungermannia bicrenata* Schmidel ex Hoffm.
- *Jungermannia commutata* Huebener

First citation for Romania: Schur 1866.

Moldova, sub *Isopaches* (Ștefureac & al. 1973:145).

Transylvania (Pax 1908:129).

Ecology: epigeaic, slightly acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, It, Si, Hr, Ro, Sb, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Re, Rc, Ma, Cn.

Distribution in Romania:

Rodna Mountains, Iezerul Pietrosului, MM, 47°35'53"N / 24°38'53"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2203].

Țibleș Mountains, Bumbului Hill, Piciorul Mesteacănului, Păltiniș Peak, 1984-1985 (Mohan 1988a:20).

Suceava County, Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, on soil and rotten woods, sub *Isopaches* (Lungu 1971; Lungu 1973b:72; Lungu 1981c:92; Ștefureac & Pascal 1981:480).

Giumalău Mountain, Giumalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3682].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, sub *Isopaches* (Ștefureac, Mihai & Pascal 1976:36).

Căliman Mountains, Răchitiș Peak, on humus, 1981-1984 (Mihai 1985:96).

Bistrița-Năsăud County, Jelna Forest, Râpa Mare, Piatra Corbului, Simionești, Budacul de Jos, 1980-1981, sub *Isopaches* (Mohan & Hodoroga 1983:52).

Iași County, Breazu Forest, 160-180 m *alt.*, sub *Isopaches* (Mihai & Pascal 1973a:266,271, 273,275, Tab.2).

Harghita Mountains, Minei Valley, 1100-1200 m *alt.*, on soil, 11.07.2000, Pietros Mountain, 1295 m *alt.*, on rocks, 15.08.2001, *leg.* Bălint L. & Csizi K. (Orbán & Bălint 2002:60; Bălint & Orbán 2003:14).

Nemira Mountains, near lakes, on clayey soil, 1970-1977, sub *Isopaches* (Mihai & Barabaș V. 1978:116).

Bucegi Massif, Piatra Arsă, sub *Jungermannia* (Loitlesberger 1898:194).

Făgăraș Mountains, Cârțișoara Mountains, sub *Jungermannia intermedia* var. *bicrenata* (Schur 1866:871; Fuss 1878:656; Hazslinszky 1885:59; Drăgulescu 2003:12); Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2071](Ștefănuț 2002:190).

Cindrel Mountains, Păltiniș, 1500 m *alt.*, Foltea, 1950 m *alt.*, sub *Isopaches* (Gündisch 1977:48; Drăgulescu 2003:12); Foltea Peak, 14.10.1957, *leg. & det.* Gündisch F. [BUCA B5485].

Parâng Mountains, *fer* - Curmătura Vidruței, 1350 m *alt.*, 26.07.1955 (Ștefureac, Popescu & Lungu 1957a:63,64,68,69, Tab.1); *fer* - the water shed between Lotru Valley and Jiu Valley, the way from Obârșia to Lonea, before Poiana Muierii, 1600 m *alt.*, 16.08.1955, *leg.* Ștefureac T. (Ștefureac, Popescu & Lungu 1957a:63,64,68,69, Tab.1).

Retzat Mountains, Păpușa Peak, HD, 45°22'15"N / 22°54'07"E, 18.08.2004, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3059].

Alba County, Lăpuș, sub *Jungermannia* (Péterfi M. 1908:272).

Bihar County, Stâna de Vale, 1000 m *alt.*, sub *Jungermannia* (Péterfi M. 1908:272).

***Lophozia excisa* (Dicks.) Dumort.**

Syn.:

- *Jungermannia alpestris* var. *latior* Nees
- *Jungermannia alpestris* var. *major* C.E.O. Jensen
- *Jungermannia arenaria* Nees
- *Jungermannia cylindracea* Dumort.
- *Jungermannia excisa* Dicks.
- *Jungermannia excisa* var. *crispata* Hook.
- *Jungermannia excisa* var. *limprichtii* Lindb. ex C. Massal. & Carestia

- *Jungermannia intermedia* Lindenb.
- *Jungermannia limprichtii* Lindb.
- *Jungermannia propagulifera* Gottsche
- *Jungermannia socia* Nees
- *Lophozia alpestris* var. *major* (C.E.O. Jensen) Müll. Frib.
- *Lophozia cylindracea* (Dumort.) Dumort.
- *Lophozia excisa* var. *arenaria* (Nees) Schiffn.
- *Lophozia excisa* var. *cylindracea* (Dumort.) Müll. Frib.
- *Lophozia excisa* var. *jurensis* (Meyl. ex Müll. Frib.) Müll. Frib.
- *Lophozia excisa* var. *limprichtii* (Lindb. ex C. Massal. & Carestia) Schiffn.
- *Lophozia intermedia* Dumort.
- *Lophozia jurensis* Meyl. ex Müll. Frib.
- *Lophozia kiaeri* Jørg.
- *Lophozia limprichtii* (Lindb. ex C. Massal. & Carestia) Steph.
- *Lophozia major* (C.E.O. Jensen) Schljakov
- *Lophozia propagulifera* (Gottsche) Steph.
- *Lophozia socia* (Nees) Mig.

First citation for Romania: Baumgarten 1846.

Romania, sub var. *cylindrica* (Papp 1967a:17).

Bucovina (Müller 1954:667; Schuster 1969:514).

Moldova (Papp 1943:656; Ştefureac & al. 1973:145).

Muntenia (Mohan 1988b:104).

Transylvania, incl. sub *Lophozia intermedia* (Pax 1908:129).

Ecology: epigeaic, epilithic, saprolignicolous, indifferent, mesophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Nz, Fl, Rn, Rw, Rc, Re, Cn.

Distribution in Romania:

Maramureş County, Săpâncioara, 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2303].

Țibleş Mountains, Izvorul Țibleşului, Bran Peak, Mesteacănul Valley, 1984-1985 (Mohan 1988a:20).

Suceava County, Adam and Eva Mountains, Pojorâta Commune, in hay-field, on wet sandy soil (Mihai & Pascal 1973b:156); Barnar Gorges, on soil (Pascal & Seghedin 1977:141).

Rarău Mountain, Codrul Secular Slătioara, 1380 m *alt.* (Ştefureac 1941:1154,1281, Tab.7; Papp 1969b:188; Ştefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve (Ştefureac & Raclaru 1978:196).

Giupalău Mountain, Giupalău, 1800 m *alt.*, east-north-eastern slope, 22.08.1936 (Ştefureac 1936:297; Ştefureac 1938:258); Piciorul Pietrii, 1700 m *alt.* (Ştefureac 1942b:91); Giupalău, north-western slope, 1550 m *alt.* (Ştefureac 1945:175).

Bistrița-Năsăud County, Jelna Forest, La Fântână, Piatra Corbului, Budacul de Sus, 1980-1981 (Mohan & Hodoroga 1983:52).

Bărgău Mountains, Piatra Fântânele, Măgura Calului, Muncel Peak, Tomnatec Peak, Arșiței Peak, 1983-1984 (Mohan & Hodoroga 1986:212).

Iași County, Uricani Forest (Mihai 1973b:412).

Harghita County, Puturosu Mountain (Schur 1866:872; Fuss 1878:656; Hazslinszky 1885:59; Bálint & Orbán 2006:469); Puturosu, Cl. *Pino-Quercetea* (Ştefureac & Kovács 1981:117).

Neamț County, Chiriacului Culm (Papp 1959a:112).

Ciucaș Mountains, Berii Brook Valley, Roșu Mountain (Mohan 1990b:41).

Bucegi Massif, south-eastern side of massif (Ştefureac 1972c:102); Cota 1400, PH, 8.05.2004, *leg.* Ciolac C., *det.* Ştefănuţ S. [BUCA B2946]; Curmătura Lăptici, DB, 45°22'27"N / 25°27'57"E, 1830 m *alt.*, 28.07.2005, *leg. & det.* Ştefănuţ S. [BUCA B3240], 45°22'25"N / 25°28'03"E, 1840 m *alt.*, 28.07.2005, *leg. & det.* Ştefănuţ S. [BUCA B3224]; Babele Mountain, PH, 45°24'44"N / 25°28'41"E, 2185 m *alt.*, 7.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3626]; Peștera Hermitage, DB, 1540 m *alt.*, 7.09.2006, *leg. & det.* Ştefănuţ S. [BUCA B3583].

? - **Giurgiu County**, s - Comana, on wet soil, 1968-1969 (Ştefureac & Mohan 1970a:353).

Făgăraș Mountains, Arpaș Mountain, sub *Jungermannia excisa*, *J. socia* (Schur 1866:871,872; Fuss 1878:656; Hazslinszky 1885:59,60; Drăgulescu 2003:12).

Cindrel Mountains, Păltiniș, 1400 m *alt.* (Gündisch 1977:48; Drăgulescu 2003:12).

Retezat Mountains, Retezat, sub *Jungermannia* (Simonkai 1872:67; Fuss 1878:656; Hazslinszky 1885:59);

Țarcu Mountains, Muntele Mic, 1000-1800 m *alt.*, 03.-08.1943, *leg.* Boșcaiu N. (Ștefureac 1948a:220).

Poiana Ruscă Mountains, Rusca (Simonkai 1872:67; Fuss 1878:656; Hazslinszky 1885:59).

Caraș-Severin County, Caransebeș, 300 m *alt.*, 03.-08.1943, *leg.* Boșcaiu N. (Ștefureac 1948a:220,221).

Arad County, above Hălmașiul Mare on Muntele Mare, sub *Jungermannia intermedia* (Simonkai 1893:362).

Codru-Moma Mountains, Monesei Valley, Lungă Valley, Crișul Văratecului Valley, on wet soil (Mohan 1996:49; Ardelean 2006:104).

Alba County, Galbena Valley, 900 m *alt.*, sub *Jungermannia* (Péterfi M. 1908:273); Ursoaia Saddle, on rotten wood (Goia 2001:59); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89).

Mureș County, Sighișoara, sub *Jungermannia* (Baumgarten 1846:224; Schur 1866:871; Fuss 1878:656; Hazslinszky 1885:59; Höhr 1914:87).

Bihar County, Stâna de Vale, 1100-1200 m *alt.*, Buteasa, 1300 m *alt.*, Bulz, sub *Jungermannia* (Péterfi M. 1908:273).

Lophozia incisa (Schrad.) Dumort.

Syn.:

- *Cephalozia supina* (Taylor) Steph.
- *Jungermannia incisa* Schrad.
- *Jungermannia supina* Taylor
- *Jungermannia viridissima* Nees
- *Lophozia incisa* var. *inermis* Müll. Frib.
- *Massula incisa* (Schrad.) Schljakov

First citation for Romania: Schur 1866.

Bucovina (Müller 1954:681; Schuster 1969:443).

Moldova (Papp 1943:656; Ștefureac & al. 1973:145).

Transylvania (Pax 1908:129).

Ecology: humicolous, saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Hr, Yu, Ba, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Rc, Re, Ca, Az.

Distribution in Romania:

Maramureș County, Prislop and Bistrița Aurie Valley, sub *Jungermannia* (Warnstorf 1895b:142; Pax 1908:129).

Rodna Mountains, Pietrosul Borșei, the north-western slope, 2270 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:391, Tab.1); Pietrosul Borșei, Piciorul Moșului, the northern slope, in forest, 1400-1500 m *alt.*, 08.1948 (Ștefureac 1958a:110); Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2084, B2085, B2361], 47°35'50"N / 24°38'50"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2008, B2293].

Suceava County, Coșna, at Preluca Ulmului, 1200-1330 m *alt.*, sub *Jungermannia* (Braidler 1890a:149); Argeștrul, 16.05.1910, Izvorul Alb, 14.05.1910, Poiana Stampei, 17.05.1910, sub *Jungermannia* (Lilienfeldówna 1911:733-735); Criștor-Neagra Broștenilor, Borcut Meadow (Lungu 1973b:72).

Giupalău Mountain, Poiana Ițcani Reserve, 900 m *alt.*, 1946-1957 (Ștefureac 1969a: Tab.16); Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 11.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3691], ♀ - 1200 m *alt.*, 13.10.2006, *leg. & det.* Ștefănuț S. [BUCA B3635], s - 1210 m *alt.*, 19.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3878, B3879], ♀ - 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3936].

Rarău Mountain, Rarău, 14.05.1910, Pietrele Doamnei, 15.05.1910, sub *Jungermannia* (Lilienfeldówna 1911:731,734); Codrul Secular Slătioara (Ștefureac 1941:1154,1272; Ștefureac 1969a: Tab.16; Papp 1969b:188; Ștefureac 1986f:193); Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3753].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphidulum pellucidum* (Barkman 1958) Maurer 1961 (Ștefureac, Mihai & Pascal 1976:36, Tab.1); Piatra Fântânele, Strâmba Peak, Muncel Peak, Arșiței Peak, 1983-1984 (Mohan & Hodoroga 1986:212).

- Căliman Mountains**, on humus and rotten trees trunks, 1981-1984 (Mihai 1985:96).
- Hășmaș Mountains**, Hășmaș (Schiffner 1914:306); Hășmașul Mare (Degen 1930:976).
- Harghita County**, above Sâncrăieni, 1200 m *alt.*, *det.* Vajda L., Tușnad (Pócs 1958:109; Bálint & Orbán 2006:469).
- Nemira Mountain**, 1550 m *alt.*, on gritstone (Barabaș V. 1974:23).
- Neamț County**, Chiriacului Culm (Papp 1959a:112).
- Penteleu Mountain**, Izvorul Bălescu, 07.1935, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B0958].
- Brașov County**, Predeal, sub *Jungermannia* (Loitlesberger 1898:195).
- Bucegi Massif**, Mălăiești Valley, sub *Jungermannia* (Matouschek 1905:81); *fer* - Mălăiești Valley, Jepi Valley, 08-09.1911 (Degen 1914:217); Gaura Glacial Ring, BV, 45°26'22"N / 25°26'24"E, 2250 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2061, B2888]; Lăptici Peatbog, PH, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3226].
- Piatra Craiului Mountains, s** - Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2693, B2754], ♀ - [BUCA B2705] (Ștefănuț & Pop O.G. 2006:78); Marele Grohotiș, AG, 45°30'36"N / 25°11'38"E, *alt.* 1550 m, 8.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2629, B2636] (Ștefănuț & Pop O.G. 2006:78).
- Făgăraș Mountains, ?** - Căprăreasa Lake, Arpaș Mountain, sub *Jungermannia*, *leg.* & *det.* Heufler L.R. (Schur 1866:871; Fuss 1878:656; Hazslinszky 1885:52; Drăgulescu 2003:12); Urlea Lake, BV, 45°35'44"N / 24°50'31"E, 2200 m *alt.*, 17.09.2001, *leg.* & *det.* Ștefănuț S. [BUCA B2360, B2515], 45°35'43"N / 24°50'29"E, 2195 m *alt.* [BUCA B2065], 45°35'42"N / 24°50'25"E, 2194 m *alt.* [BUCA B2145, B2399, B2893] (Ștefănuț 2002:190).
- Cozia Mountain**, Păușa Valley, on rotten woods, 1975-1976 (Dihoru G. 1990:52).
- Cindrel Mountains**, Păltiniș, 1500 m *alt.* (Gündisch 1977:48; Drăgulescu 2003:12).
- Retezat Mountains**, Valereasca, upper side (Schiffner 1914:306); towards Tăul Negru (Páll 1964a:108); Pângului Valley, in beech forest zone, 9.07.1968, *leg.* Vajda L., sub var. *inermis* (Plămadă 1973a:378); Păpușa Peak, 45°22'15"N / 22°54'07"E, 18.08.2004, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3056].
- Alba County**, Piatra Runcului Mountain (Schiffner 1914:306); Ursoaia Saddle, 1270 m *alt.*, 11.08, 24.08.1996, Cepelor Valley, 1370 m *alt.*, 16.05.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958, Lupșa, 1160 m *alt.*, 15.05.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ștefur. 1941 (Goia 2000:116, Tab.5); Galbena Valley, Iarba Rea Valley, Cepelor Valley, Arieșul Mare – upstream Arieșeni, Ursoaia Saddle, on rotten wood (Goia 2001:59); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89); Cetățile Ponorului, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3831, B3836].
- Cluj County**, Dobrin Mountain (Péterfi M. 1918:61); the peatbogs from spring and upper course of Someșul Rece, incl. Muntele Mare and Dobrin (Pop E. 1960:397).
- Vlădeasa Massif**, Vlădeasa-Micău, *det.* Ștefureac T. (Resmeriță, Nemeș & Csűrös Ș. 1963:135; Resmeriță 1970a:44);
- Bihar County**, Someșul Cald Gorges, on soil and rotten logs (Goia & Mătase 2001:17).

Lophozia longidens (Lindb.) Macoun

Syn.:

- *Jungermannia longidens* Lindb.
- *Jungermannia porphyroleuca* var. *attenuata* Nees
- *Jungermannia ventricosa* Dicks. var. *longidens* Lindb.

First citation for Romania: Loitlesberger 1898.

Bucovina (Müller 1954:664; Schuster 1969:534).

Muntenia (Mohan 1988b:104).

Ecology: epilithic, corticolous, rarely saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, No, Dk, Se, Fi, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Sb, Ro, Bg, Ee, Lv, Lt, Ua, Nz, Fl, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Maramureș County, Arinieș Spa, mineral springs, 1000 m *alt.*, 9.08.1948, *leg.* Ștefureac T., *det.* Ștefănuț S. [BUCA B5484].

Rodna Mountains, Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2876].

Țibleș Mountains, Arsuri Peak, Țibleș Peak, 1984-1985 (Mohan 1988a:20).

Suceava County, Cristișor-Neagra Broștenilor, Borcut Meadow, on soil and rotten woods (Lungu 1973b:72; Lungu 1981c:92; Ștefureac 1986f:193).

Rarău Mountain, Codrul Secular Slătioara, 850 m *alt.* (Ștefureac 1941:1154,1281, Tab.7; Papp 1969b:188; Ștefureac 1986f:193).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, *ass. Tetraphidetum pellucidae* (Barkman 1958) Maurer 1961 (Ștefureac, Mihai & Pascal 1976:36, Tab.1); Cârțibavu Mare Valley, Muncel Peak, Tomnatec Peak, Arșiței Peak, 1983-1984 (Mohan & Hodoroga 1986:212).

Ciucaș Mountains, Căzăturii Culm, Caprei Brook Valley, Ciucaș Peak, Bratocea Peak (Mohan 1990b:41).

Brașov County, Predeal, sub *Jungermannia ventricosa* var. *longidens* (Loitlesberger 1898:194).

Postăvaru Mountain, *fer* – Păstăvaru, on rotten woods (Schiffner 1914:306).

Făgăraș Mountains, Izvorul and Stâna Mozgavului on Negoiu Mountain, sub *Jungermannia ventricosa* var. *longidens* (Loitlesberger 1898:194); Topolog Valley, 1600 m *alt.* (Herzog 1919:295).

Alba County, Vârciorog Valley, Galbena Valley, Cepelor Valley, on rotten wood (Goia 2001:59,61); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89); Detunata Mountains, 1055-1100 m *alt.*, *det.* Pócs T. (Sass-Gyarmati, Pócs & Orbán 2005:127,128).

Cluj County, Făget (Boros 1958:4,7).

Lophozia longiflora (Nees) Schiffn.

Syn.:

- *Jungermannia guttulata* Lindb. & Arnell
- *Jungermannia longiflora* Nees
- *Jungermannia porphyroleuca* Nees
- *Jungermannia porphyroleuca* var. *guttulata* (Lindb. & Arnell) Warnst.
- *Jungermannia ventricosa* var. *longiflora* (Nees) Macoun
- *Jungermannia ventricosa* var. *porphyroleuca* C. Hartm.
- *Lophozia guttulata* (Lindb. & Arnell) A. Evans
- *Lophozia longiflora* var. *guttulata* (Lindb. & Arnell) Schljakov
- *Lophozia porphyroleuca* (C. Hartm.) Schiffn.
- *Lophozia porphyroleuca* var. *guttulata* (Lindb. & Arnell) Warnst.
- *Lophozia ventricosa* var. *porphyroleuca* (C. Hartm.) Macoun
- *Lophozia ventricosa* var. *longiflora* (Nees) Macoun

First citation for Romania: Heufler 1853.

Transylvania, sub *L. porphyroleuca* (Pax 1908:129).

Muntenia, sub *Lophozia porphyroleuca* var. *guttulata* (Lindb. & Arnell) Warnst. (Mohan 1988b:104).

Ecology: humicolous-saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Fo, No, Se, Fi, Br, Fr, Ad, Be, De, Li, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, It, Si, Hr, Sb, ?Me, Ba, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ka, Ca, Az.

Distribution in Romania:

Rodna Mountains, Pietrosul Borșei, north-west slope, 2260-2280 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:389-392, Tab.1; Ștefureac 1967b:308; Ștefureac 1968:304; Ștefureac 1977c:167; Ștefureac 1983g:177,181; Goia 2001:63).

Suceava County, Rodna Nouă, on Perșa Mountain, 1400 m *alt.*, sub *Jungermannia ventricosa* var. *porphyroleuca* (Breidler 1890a:149,150; Pax 1908:129); Muncelu-Pojorâta, 15.05.1910, Argeștrul, 16.05.1910, sub *Jungermannia ventricosa* var. *porphyroleuca* (Lilienfeldówna 1911:733); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, on rotten woods, sub *L. porphyroleuca* (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:92); Neagra Șarului Peatbog, 26.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3783].

Giumalău Mountain, Poiana Ițcani Reserve, 880-920 m *alt.*, 1946-1957, sub *L. porphyroleuca* (Ștefureac 1969a: Tab.16).

Rarău Mountain, Pietrele Doamnei, 15.05.1910, sub *Jungermannia ventricosa* var. *porphyroleuca* (Lilienfeldówna 1911:733); Slătioara Reserve, 900 m *alt.*, sub *L. porphyroleuca* (Ștefureac 1969a: Tab.16).

Hășmaș Mountains, Hășmaș, sub *L. porphyroleuca* (Schiffner 1914:306); Hășmașul Mare, sub *L. porphyroleuca* (Degen 1930:976).

Piatra Mare Mountain, „Șapte Scări”, *leg. & det.* Vajda L., sub *L. porphyroleuca* (Boros & Vajda 1967:219; Goia 2001:63).

Postăvaru Mountain, sub *L. porphyroleuca* (Schiffner 1914:306).

Cristianul Mare Mountain, 1600 m *alt.*, *leg. & det.* Vajda L., sub *L. porphyroleuca* (Boros & Vajda 1967:219); Doamnei Peak, *leg. & det.* Vajda L., sub *L. porphyroleuca* var. *guttulata* (Boros & Vajda 1967:219; Goia 2001:63).

Bucegi Massif, fer - Mălăiești Valley, sub *J. porphyroleuca* (Matouschek 1905:81); **fer** - Mălăiești Valley, 08-09.1911, sub *L. porphyroleuca* (Degen 1914:217); Izvorul Nucet, 1800 m *alt.*, sub Blana, 1800 m *alt.*, sub *L. guttulata*, ass. *Sphagnetum acutifolii* (Pușcaru D. & al. 1956:200,246, Tab.85; Buia 1963:126); Mălăiești Valley, *leg. & det.* Vajda L., sub *L. porphyroleuca* var. *guttulata* (Boros & Vajda 1967:219; Goia 2001:63); Horoaba Valley, DB, 45°23'28"N / 25°26'02"E, 1520 m *alt.*, 23.10.2006, *leg. & det.* Ștefănuț S. [BUCA B3608].

Piatra Craiului Mountains, Crăpătura Valley, 1400 m *alt.*, Plaiul Foi, 1200 m *alt.*, *leg. & det.* Vajda L., sub *L. porphyroleuca* (Boros & Vajda 1967:219; Goia 2001:63; Ștefănuț & Pop O.G. 2006:78); Marele Grohotiș, AG, 45°30'34"N / 25°11'46"E, 1650 m *alt.*, 8.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2634] (Ștefănuț & Pop O.G. 2006:78).

Făgăraș Mountains, Arpaș Valley, subalpine zone, sub *Jungermannia porphyroleuca* (Heufler 1853:50-51; Fuss 1854:20; Schur 1866:872; Fuss 1878:657; Hazslinszky 1885:58; Drăgulescu 2003:12); Capra Lake, AG, 45°36'00"N / 24°37'44"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2164], 45°36'00"N / 24°37'49"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2298, B2379], 45°36'00"N / 24°37'46"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2374].

Cindrel Mountains, Găușoara, 1600 m *alt.*, *leg. & det.* Vajda L., sub *L. porphyroleuca* var. *guttulata* (Boros & Vajda 1967:219; Gündisch 1977:48; Goia 2001:63; Drăgulescu 2003:12); Păltiniș, 1500 m *alt.*, Cotorești, 1750 m *alt.*, sub *L. porphyroleuca* (Gündisch 1977:48; Goia 2001:63).

Retezat Mountains, Casa Laborator Gemele, sub *L. porphyroleuca* (Plămadă 1976a; Plămadă 1976b:8; Goia 2001:63); Gemele Valley (Plămadă 1993:49; Goia 2001:63).

Alba County, Piatra Runcului Mountain, sub *L. porphyroleuca* (Schiffner 1914:306; Goia 2001:63); Ursoaia Saddle, 1270 m *alt.*, 11.08, 24.08.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958 (Goia 2000:117, Tab.5); Gârda Seacă – upstream Casa de Piatră, Mătișești, Scărișoara Cave, on rotten wood (Goia 2001:61-63, Figs.16,17); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89).

Bihor County, Someșul Cald Gorges (Goia & Mătase 2001:17).

Lophozia obtusa (Lindb.) A. Evans

Syn.:

- *Barbilophozia obtusa* (Lindb.) H. Buch
- *Jungermannia obtusa* Lindb.
- *Leiocolea obtusa* (Lindb.) H. Buch
- *Lophozia obtusa* var. *acutiloba* Müll. Frib.
- *Obtusifolium obtusum* (Lindb.) S.W. Arnell

First citation for Romania: Ștefureac 1941.

Maramureș (Ștefureac 1979c:59).

Bucovina (Müller 1954:672; Schuster 1969:429).

Muntenia (Mohan 1988b:104).

Ecology: epigeaic, epilithic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, PHHM

Distribution in Europe: Is, Fo, No, Se, Fi, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Sb, Ro, Bg, Gr, Ee, Ua, Rn, Rw, Re.

Distribution in Romania:

? - **Rodna and Maramureș Mountains**, (Ștefureac 1986f:192).

Rodna Mountains, Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2191].

Țibleș Mountains, Piciorul Arsuri, Mesteacănu Valley, 1984-1985 (Mohan 1988a:20).

Rarău Mountain, Codrul Secular Slătioara, 1100 m *alt.* (Ștefureac 1941:1154, Tab.3).

Căliman Mountains, Pietrosul Peak, on rocks (Mihai 1968a:204).

Giurgeu Mountains, Bicz Gorges, 1978, 1979, ass. *Tortello-Ctenidietum* (Gams 1927) Stodiek 1937 (Mihai 1981a:18, Tab.5).

Prahova County, Doftana Valley, Secăria Valley [PHHM 7745/3873](Mohan 1971a:8; Mohan 1971b:47); Brebului Gorges, 26.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3408, B3438, B3439].

Gârbova Massif, Azuga Valley, 1967-1970 (Lungu & Ștefureac 1970:5,8).

Cozia Mountain, Turnu towards Stănișoara, 08.2005, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3485].

Parâng Mountains, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,34).

Retezat Mountains, Râul Mare Brook Valley (Plămadă 1993:49).

Domogled Mountain, ♀ - Crucea Albă, 500 m *alt.*, 9.08.2004, *leg. & det.* Ștefănuț S. [BUCA B2978], s - [BUCA B2979].

Lophozia opacifolia Culm. ex Meyl.

Syn.:

– *Lophozia incisa* subsp. *opacifolia* (Culm. ex Meyl.) R.M. Schust. et Damsh.

– *Massula opacifolia* (Culm. ex Meyl.) Schljakov

– *Schistochilopsis opacifolia* (Culm. ex Meyl.) Konstantinova

First citation for Romania: Ștefănuț 2004a.

Romania (Söderström, Urmî & Váňa 2007:323).

Ecology: humicolous, acidophyt-subneutrophytic, hygrophytic, cryophytic, photo-sciophytic; circumpolar; arctic-alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, No, Se, Fi, Ie, Br, Fr, Ad, Po, Ch, At, Cz, Sk, Es, It, Ro, Ee, Nz, Rn.

Distribution in Romania:

Bucegi Massif, Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S., *conf.* Blockeel T. 2003 [BUCA B0945] (Ștefănuț 2004a:63; Ștefănuț 2004g:157-160; Dihoru G. 2004:167; Söderström, Urmî & Váňa 2007:323); Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3110]; Mălăiești Glacial Ring, BV, 45°27'06"N / 25°27'04"E, 2260 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2255, B2258].

Lophozia silvicola H. Buch

Syn.:

– *Lophozia silvicola* var. *grandiretis* H. Buch & S.W. Arnell

– *Lophozia ventricosa* var. *grandiretis* (H. Buch & S.W. Arnell) R.M. Schust. & Damsh.

– *Lophozia ventricosa* var. *silvicola* (H. Buch) E.W. Jones ex R.M. Schust.

First citation for Romania: Bakalin 2005.

Romania (Bakalin 2005; Söderström, Urmî & Váňa 2007:324).

Ecology: humicolous, hygro-mesophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: LE

Distribution in Europe: Sj, Is, No, Se, Fi, Ie, Br, Fr, Po, Ch, At, Cz, Sk, Es, It, Hu, Ro, Ee, Lt, Nz, Rn, Rc.

Distribution in Romania:

Romania, *without localization*, in forest, 07.1900, *leg.* Schmidt A. [LE] (Bakalin 2005; Söderström, Urmî & Váňa 2007:324).

Lophozia sudetica (Nees ex Huebener) Grolle

Syn.:

– *Jungermannia alpestris* auct., non Schleich. ex F. Weber

– *Jungermannia alpestris* var. *amphigastriata* C.E.O. Jensen

– *Jungermannia alpestris* var. *gelida* (Taylor) Cooke

– *Jungermannia curvula* Nees

– *Jungermannia gelida* Taylor

– *Jungermannia goeppertiana* Huebener

– *Jungermannia sicca* Nees

– *Jungermannia sudetica* Nees ex Huebener

– *Jungermannia tumidula* Nees

– *Lophozia alpestris* auct.

– *Lophozia alpestris* var. *amphigastriata* (C.E.O. Jensen) Kaal.

– *Lophozia alpestris* var. *gelida* (Taylor) Macvicar

– *Lophozia ehrhartiana* auct.

– *Lophozia gelida* (Taylor) Steph.

First citation for Romania: Schur 1866.

Muntenia (Mohan 1988b:104).

Ecology: humicolous-epilithic, acidophytic, mesophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, It, Si, Sb, Mk, Ro, Bg, Ee, Lv, Ua, Nz, Fl, Rn, Re, Ca, Ma.

Distribution in Romania:

Rodna Mountains, Pietrosul Rodnei, 2260 m alt., 31.08.1983, leg. & det. Ștefureac T., ass. *Bucegetum romanicae* Ștefur. 1984 subass. *jungermannietosum sphaerocarphae* Ștefur. 1986 (Ștefureac 1986h:105-107, Tab.2); Iezerul Pietrosului, MM, 47°35'53"N / 24°38'49"E, 1835 m alt., 28.08.1999, leg. & det. Ștefănuț S. [BUCA B2407, B3122, B3363], 47°35'50"N / 24°38'48"E, 1845 m alt., 28.08.1999, leg. & det. Ștefănuț S. [BUCA B2364], 47°35'50"N / 24°38'50"E, 1840 m alt., 28.08.1999, leg. & det. Ștefănuț S. [BUCA B2133], 47°35'51"N / 24°38'48"E, 1840 m alt., 28.08.1999, leg. & det. Ștefănuț S. [BUCA B3370]; Iezelele Buhăescu, MM, 47°35'19"N / 24°38'37"E, 1910 m alt., 29.08.1999, leg. & det. Ștefănuț S. [BUCA B2367].

Căliman Mountains, on soil, in wet places, 1981-1984 (Mihai 1985:96; Ștefureac 1986f:194); Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m alt., 26.07.2007, leg. & det. Ștefănuț S. [BUCA B3730, B3733].

Ciucaș Mountains, Ciucaș Peak, Chirușca Mountain (Mohan 1990b:41).

Bucegi Massif, Bucegi (Ștefureac 1955:599; Ștefureac 1991:114); Gaura Glacial Ring, BV, 45°26'52"N / 25°26'32"E, 2290 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2106, B3380]; Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2038].

Făgăraș Mountains, Urlea Lake, BV, 45°35'42"N / 24°50'25"E, 2194 m alt., 17.09.2001, leg. & det. Ștefănuț S. [BUCA B2129] (Ștefănuț 2002:190).

Cozia Mountain, Șirul de Pietre Culm, on rocks, 1987, leg. Negrean G. (Dihoru G. 1990:52).

Sibiu County, Cisnădioara and Sadu Valley, sub *Jungermannia curvula* (Schur 1866:871; Fuss 1878:656; Drăgulescu 2003:13).

Alba County, Galbena Valley, on rotten wood (Goia 2001:63); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89).

Lophozia ventricosa (Dicks.) Dumort.

Syn.:

- *Jungermannia globulifera* Roth
- *Jungermannia ehrhartiana* F. Weber
- *Jungermannia ventricosa* Dicks.
- *Jungermannia ventricosa* var. *laxa* Lindenb.
- *Lophozia confertifolia* Schiffn.
- *Lophozia ehrhartiana* (F. Web.) Inoue & Steere
- *Lophozia ehrhartiana* F. Web.
- *Lophozia fauriana* Steph.
- *Lophozia ventricosa* var. *confertifolia* (Schiffn.) Husn.
- *Lophozia ventricosa* var. *laxa* (Lindenb.) Cogn.
- *Lophozia ventricosa* var. *longiflora* auct., non (Nees) Macoun
- *Lophozia ventricosa* var. *subarctica* Schljakov
- *Lophozia ventricosa* var. *uliginosa* Breidl. ex Schiffn.

First citation for Romania: Heufler 1853.

Romania (Müller 1954:649; Smith A.J.E. 1990:104).

Bucovina (Müller 1954:649).

Moldova (Papp 1943:656).

Muntenia (Mohan 1988b:104).

Transylvania (Pax 1908:129).

Ecology: humicolous, saprolignic, epilithic, turficolous, acidophytic, mesophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA, PHHM, SIB

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, NL, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Nz, Fl, Rn, Rw, Rc, Re, Ca, Az.

Distribution in Romania:

Maramureș County, Pop Ivan Mountain (Boros 1951:373); Șerban Mountain, leg. & det. Boros Á. (Boros & Vajda 1969:413); Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, Ineu Peak, 2250 m alt., sub *Jungermannia* (Breidler 1890a:149; Pax 1908:129); Pietrosul Rodnei, 23.08.1942, leg. & det. Boros Á., sub var. *confertifolia* (Györffy 1943d:321); Pietrosul Rodnei (Boros 1951:373); Pietrosul Rodnei, north-western slope, 2280 m alt., 8-9.08.1948, sub *L. confertifolia* (Ștefureac 1952a:391-391, Tab.1; Ștefureac 1963c:168,170).

Suceava County, Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, on soil and rotten woods (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:92).

Giupalău Mountain, Giupalău, subalpine zone, *det.* Ștefureac T. (Cristurean 2000:175); Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 12.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3642].

Rarău Mountain, Rarău, 14.05.1910, Pietrele Doamnei, 15.05.1910, *Jungermannia* (Lilienfeldówna 1911:733); Codrul Secular Slătioara, Ursului Brook, 850-1600 m *alt.*, incl. sub *L. confertifolia* (Ștefureac 1941:1154,1273, Tabs.5,7,9; Papp 1969b:188; Ștefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:196).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ștefureac, Mihai & Pascal 1976:36); Piatra Fântânele, Măgura Calului, Străjii Peak, Heniu Mare Peak, 1983-1984 (Mohan & Hodoroga 1986:212).

Căliman Mountains, in common spruce forest, in marshy places, on humus, vegetable remains on soil and fallen rotten trees trunks, 1981-1984 (Mihai 1985:96); Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m *alt.*, 26.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3740].

Bistrița-Năsăud County, Piatra Corbului, Monari, Simionești, Budacul de Sus, 1980-1981 (Mohan & Hodoroga 1983:52).

Hășmaș Mountains, Piatra Ascuțită, on stone, Oii Valley, on soil, 13.08.1953 (Bîrcă & Mihai 1963:127).

Harghita Mountains, Olt Valley near Bălan Spa, sub *Jungermannia* (Matouschek 1903b:160; Degen 1930:976); Cetatea Făgetului Mountain near Bălan, sub *Jungermannia* (Matouschek 1903b:160).

Harghita County, Bălan, Olt Valley (Schiffner 1914:306); Mohoș (Boros 1943c:114; Pop E. 1960:322); Tușnad Spa (Bálint & Orbán 2006:469).

Ciucaș Mountains, Gropșoarele Peak, Bratocea Peak, Roșu Mountain (Mohan 1990b:41); Zăgan Mountain, PH, 45°29'39"N / 25°58'33"E, 1850 m *alt.*, 4.07.2004, *leg. & det.* Ștefănuț S. [BUCA B3047, B3051].

Brașov County, Predeal, sub *Jungermannia* (Loitlesberger 1898:194).

Postăvaru Mountain, Postăvaru (Schiffner 1914:306).

Bucegi Massif, Piatra Arsă, 2000 m *alt.*, sub *Jungermannia* (Loitlesberger 1898:194); Mălăiești Valley, *fer* - Bucșoiu, 08-09.1911 (Degen 1914:217); in the alpine zone, 2100-2500 m *alt.* (Pușcaru E. & al. 1950:9); Bucșoiu Saddle, 2420 m *alt.*, the Saddle above Țigănești Valley towards Gaura, 2320 m *alt.*, the Saddle between Gaura and Mălăiești, 2390 m *alt.* (Ștefureac 1955:559,560, Tab.2; Ștefureac 1991:114); north-western side of the Massif, 2300-2400 m *alt.* (Ștefureac 1972c:104).

Prahova County, Sinaia, sub *Jungermannia* (Loitlesberger 1898:194); Doftana Valley, Păltinoasa Valley [PHHM 7746/3873](Mohan 1971a:8; Mohan 1971b:47).

? - **Giurgiu County**, *s* - Comana, on rotten wood, 1968-1969 (Ștefureac & Mohan 1970a:353).

Iezer-Păpușa Mountains, Iezer Mountain and Bratia Valley, sub *Jungermannia* (Loitlesberger 1898:194).

Făgăraș Mountains, Arpaș Valley, in beech forest, sub *Jungermannia* (Heufler 1853:50-51; Fuss 1854:20; Fuss 1878:656; Drăgulescu 2003:13); ♂ - Capra Lake, AG, 45°36'01"N / 24°37'48"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2146], ♀ - [BUCA B2147], *s* - [BUCA B2487], ♀ - 45°36'00"N / 24°37'49"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2940].

Cozia Mountain, Cozia Peak, on rotten woods, 1668 m *alt.*, 1975-1976 (Dihoru G. 1990:52).

Cindrel Mountains, Rozdești Peak (Gündisch 1962; Drăgulescu 2003:13); Păltiniș, 1500 m *alt.*, Oncești, 1700 m *alt.*, Cotorești, 1750 m *alt.*, Jujbea, 1800 m *alt.* (Gündisch 1977:48; Drăgulescu 2003:13); Frumoasa – Platoul Diavolului, 2200 m *alt.* [SIB HG](Drăgulescu 1992:55; Drăgulescu 2003:13).

Vâlcea County, Ciunagi on Viilor Hill, on soil, 180 m *alt.*, 15.09.2002 (Dihoru G. & Răduțoiu 2004:79).

Parâng Mountains, Latorița Valley, on vertical calcareous slope, 900 m *alt.*, 31.08.1954, sub *L. confertifolia* (Ștefureac, Popescu & Lungu 1956a:514, Tab.1); The water shed between Lotru Valley and Jiu Valley, way from Obârșia towards Lonea, before Poiana Muierii, 1600 m *alt.*, 16.08.1955, *leg.* Ștefureac T. sub *L. confertifolia* (Ștefureac, Popescu & Lungu 1957a:64,65,68,69); Latorița Valley, 08-09.1954, sub *L. confertifolia* (Ștefureac, Popescu & Lungu 1959:8,19,25); Latorița Valley, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,20,37,39, Tab.7); at south and east to the

peatbog on the border of Călcescu Lake (Ștefureac 1969a:104,106); around the peatbog near Călcescu Lake, sub *L. confertifolia* (Ștefureac 1969a:108).

Hunedoara County, Deva, *leg. & det.* Péterfi M., sub *Jungermannia* (Györfy 1924b:38).

Retezat Mountains, Valereasca, upper side, Retezat Peak, 2000 m *alt.*, sub *Lophozia confertifolia* (Schiffner 1914:305); Valereasca, upper side (Schiffner 1914:306).

Tarcu Mountains, Muntele Mic, 1000-1800 m *alt.*, 03.-08.1943, *leg.* Boșcaiu N. (Ștefureac 1948a:220).

Domogled Mountain, Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8).

Alba County, Lăpuș, 1000 m *alt.*, sub *Jungermannia* (Péterfi M. 1908:272; Goia 2001:63); Scărișoara Cave, 950 m and 1350 m *alt.*, 11.08.1996, Vârciorog Valley, 1385 m *alt.*, 3.06.1995, 13.09.1996, Galbena Valley, 875 m *alt.*, 12.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Cepelor Valley, 1380 m *alt.*, 16.05.1996, Scărișoara Cave, 1200 m *alt.*, 12.08.1996, ass. *Cephalozio bicuspidatae-Nowellietum curvifoliae* Philippi 1965, Ursoaia Saddle, 1270 m *alt.*, 11.08, 24.08.1996, Cepelor Valley, 1370 m *alt.*, 16.05.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958, Lupșa, 1160 m *alt.*, 15.05.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ștefur. 1941 (Goia 2000:112,115,117, Tabs.2,4,5); Cepelor Valley, Vârciorog Valley, Galbena Valley, Arieșul Mare upstream to Arieșeni, Cobleș Valley-Arieșeni, Iarba Rea Valley, Gârda Seacă upstream Casa de Piatră, Scărișoara Cave, Ocoale, Horea, Mățișești, on rotten wood (Goia 2001:63); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86).

Cluj County, Dobrin Mountain (Péterfi M. 1918:61); Făget Forest, *leg.* Péterfi M. 7.11.1916, *det.* Boros Á., sub *Gymnocolea inflata*, *rev.* Plămadă E. (Boros 1958:4,7; Plămadă 1973b:102); the peatbogs from spring and upper course of Someșul Rece, incl. Muntele Mare and Dobrin (Pop E. 1960:397).

Bihor Mountains, Cetatea Rădesei Cave, 1971, ass. *Cratoneuro (filicini)-Chiloscyphetum pallescentis* Ștefur. 1985 (Ștefureac 1985e:111,112,115, Tab.1); Someșul Cald Gorges, 4.08.1998 (Coldea & Wagner 1999:85, Tab.1); Someșul Cald Gorges, on soil and decaying woods (Goia & Mătase 2001:17).

Lophozia wenzelii (Nees) Steph.

Syn.:

- *Jungermannia groenlandica* Nees
- *Jungermannia wenzelii* Nees
- *Lophozia groenlandica* (Nees) Macoun
- *Sphenolobus groenlandicus* (Nees) Steph.

First citation for Romania: Ștefureac 1941.

Maramureș (Müller 1954:658).

Bucovina (Müller 1954:658).

Muntenia (Mohan 1988b:104,105).

Ecology: truficolous, acidophytic, meso-hygrophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA, SIB

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, It, Ro, Bg, Lt, Ua, Nz, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Maramureș County, Șerban Mountain, *leg. & det.* Boros Á. (Boros & Vajda 1969:413).

Rodna Mountains, Vinului Valley (Boros 1951:372); Rodnei Mountain (Ștefureac 1963c:168, 170); the peatbogs from Știol, 1850 m *alt.*, 16.07.1975, ass. *Carici dacicae-Drepanocladetum exannulatae* Boșcaiu et al. 1972 (Coldea, Plămadă & Bartók 1977:75, Tab.4); Pietrosul Mare Glacial Ring, 2000 m *alt.*, 19.07.1975, ass. *Luzuletum alpino-pilosae* Br.-Bl. 1926, Pietrosul Mare Peak, 2275 m *alt.*, 17.07.1977, ass. *Soldanello pusillae-Ranunculetum crenati* Borza 1931 (Coldea, Täuber & Pînzaru 1981:439,440, Tabs.3,4); Anieșul Mare Peak, 2000 m *alt.*, near the snow places, 17.07.1975 (Plămadă & Coldea 1982:109); Pietrosul Rodnei, 2260 m *alt.*, 31.08.1983, *leg. & det.* Ștefureac T., ass. *Bucegietum romanicae* Ștefur. 1984 subass. *jungermannietosum sphaerocarpae* Ștefur. 1986 (Ștefureac 1986h:105-107, Tab.2); Anieșul Mare Peak, 1980-2000 m *alt.*, 17.07.1975, 7.08.1977, ass. *Salicetum herbaceae* Br.-Bl. 1931, Pietrosul Mare Peak, 2270 m *alt.*, 21.08.1983, ass. *Luzuletum alpino-pilosae* Br.-Bl. 1926, Pietrosul Mare Peak, 2240-2260 m *alt.*, 31.08.1983, ass. *Aconitetum taurici* Borza 1934 (Coldea 1990:56,57,62,112, Tabs.18,22,51); Ineu Glacial Ring, BN, 47°31'37"N / 24°53'36"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2423].

Suceava County, Criștișor-Neagra Broștenilor, Borcut Meadow, in peatbogs, ass. *Campylopo-Dicranielletum cerviculatae* Herzog 1943 (Lungu 1973b:72; Lungu 1976:235, Tab.1; Lungu 1981c:92; Ștefureac 1986f:193).

Rarău Mountain, Codrul Secular Slătioara (Ștefureac 1941:1154; Papp 1969b:188; Ștefureac 1986f:193).

Bârgău Mountains, Heniu Mare Peak, 1983-1984 (Mohan & Hodoroga 1986:212).

Ciucaș Mountains, Bratocea, Muntele Roșu Hut, *leg. & det.* Vajda L. (Boros & Vajda 1967:219); Bratocea Peak, Ciucaș Peak, Roșu Mountain, Balaban Mountain, Piatra Laptelui Culm (Mohan 1990b:38,41).

Bucegi Massif, ♀ - Babele Valley, PH, 45°24'41"N / 25°28'37"E, 2110 m *alt.*, 14.07.2008, *leg. & det.* Ștefănuț S. [BUCA B3907].

Făgăraș Mountains, Cârțișoara Valley, Arpaș Valley, 1900 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:219).

Cindrel Mountains, Găușoara, Bătrâna, *leg. & det.* Vajda L. (Boros & Vajda 1967:219; Gündisch 1977:49; Drăgulescu 2003:13); Bătrâna, 1870 m *alt.*, Cânaia, 2000 m *alt.* (Gündisch 1977:49); Cindrel, 2200 m *alt.* (Gündisch 1977:49; Drăgulescu 1992:55; Drăgulescu 2003:13); Frumoasa – Platoul Diavolului, 2200 m *alt.* [SIB HG](Drăgulescu 1992:55; Drăgulescu 2003:13).

Parâng Mountains, the edge of Câlcescu Lake, in peatbog (Ștefureac 1969a:89,95, Tab.14); east to the peatbog on Câlcescu Lake edge (Ștefureac 1969a:106); below Mohor's ridge, 2300 m *alt.*, small alpine oligotrophic bog (Ștefureac 1969a:117,118, Tab.15).

Retezat Mountains, the bank of Galeșu Lake (Páll 1964a:108); Stânișoara Valley at Pietrele Chalet, 1870 m *alt.*, 7.08.1970 (Plămadă 1973c:134); Șesele Plateau and Coama Șesele, 2100 m *alt.*, 8.07.1969, ass. *Rhododendro kotschyi-Pinetum mugii* (Borza 1959) em. Coldea 1985 (Plămadă & Coldea 1985a:124,125, Tab.2); Bucura Lake, 18.08.2004, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3063]; Păpușa Peak, 18.08.2004, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3055].

***Lophozia* sp.**

Maramureș Mountains, Arinieș Spa, peatbog, 1948 (Ștefureac 1958a:106).

Covasna County, the peatbog Apa Roșie (Ștefureac & Barabaș V. 1976:231).

Bucegi Massif, Lăptici Peatbog, 1500 m *alt.*, 1946 (Ștefureac 1949c:692; Pop E. 1960:349; Godeanu S. 1970:45).

Giurgiu County, s - Comana, on rotten wood, 1968-1969 (Ștefureac & Mohan 1970a:353).

Parâng Mountains, the bank of Câlcescu Lake, sub *Lophozia* (Oltean 1963:40).

Gorj County, Rovinari, „Valea lui Lupe”, 10.1938, *det.* Papp C. (Racoviță A. 1941b:251).

Cluj County, Muntele Mare, Dobrin, Mărișel, *leg. & det.* Györfly I. & Péterfi M. (Györfly 1924b:38); Mera Pasture, on wet soil, 1963-1965 (Plămadă 1968:25).

***Lunularia cruciata* (L.) Lindb.**

Syn.:

- *Cyathophora cucullata* Kuntze
- *Dichominum cruciatum* (L.) Trevis.
- *Dichominum vulgare* Trevis.
- *Lunularia dillenii* Le Jol.
- *Lunularia michelii* Le Jol.
- *Lunularia vulgaris* P. Micheli
- *Marchantia cruciata* L.
- *Marsilia cucullata* Kuntze
- *Preissia cucullata* Mont. & Nees
- *Sedgwickia hemisphaerica* Bowdich
- *Staurophora pulchella* Willd.

First citation for Romania: Schiffner 1914.

Muntenia (Mohan 1988b:114).

Ecology: epigeaic, acidophytic, hygro-mesophytic, sciophytic; cosmopolitan; submediterranean; Hth.

Herbaria and Exsiccate: BUCA, FRE

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Yu, Ba, Mk, Ro, Bg, Al, Gr, Ct, Tu, Lt, Rc, Az, Ma, Cn.

Distribution in Romania:

? - **Prahova County**, Teleajen Valley, (Mohan 1990a:25).

? - **Iezer-Păpușa Mountains**, Iezer Valley, Bătrâna Valley, Dâmbovița Valley (Mohan 1988b:114; Mohan 1990a:25).

Caraș-Severin County, Rusca Montană, sub *L. vulgaris* (Pančić 1861:94; Hazslinszky 1885:27); Grota cu aburi Cave („Schwitzhöhle”), near Herculane Spa (Schiffner 1914:303; Radian 1920:77; Ștefureac 1947a:132); ♀ - Grota cu Aburi, 44°54'03"N / 22°25'05"E, 400 m *alt.*, 6.08.2004, *leg. & det.* Ștefănuț S. [BUCA B2970], s - [BUCA B2971].

In greenhouses:

Bucharest, Botanical Garden - Cotroceni, in greenhouse, on soil, in flower pot (Radian 1915:193).

Cluj County, Cluj-Napoca Botanical Garden, in greenhouse, 350 m *alt.*, *leg. & det.* Péterfi M., 18.07.1915 [FRE 312] (Györffy 1924b:38; Borza 1924:41; Boros 1958:5,7; Plămadă 1963:179; Plămadă 1969:170; Ștefureac 1982c:196,197, Tab.2).

Mannia fragrans (Balb.) Frye et L. Clark

Syn.:

- *Duvalia fragrans* Lindb.
- *Grimaldia barbifrons* Bisch.
- *Grimaldia controversa* Meyl.
- *Grimaldia fragrans* (Balb.) Corda
- *Grimaldia fragrans* var. *brevipes* Kaal.
- *Grimaldia inodora* Wallr.
- *Mannia fragrans* var. *inodora* (Wallr.) S.W. Amell
- *Marchantia fragrans* Balb.

First citation for Romania: Pančić 1861.

Romania (Müller 1954:343, Fig.61).

Transylvania (Müller 1954:344).

Dobrogea (Ștefureac, Mihai & Pascal 1970:120,121).

Muntenia (Mohan 1988b:115).

Ecology: epigeic-humicolous, calcicolous, xerophytic, photophytic; circumpolar; Hth.

Herbaria and Exsiccate: PHHM, BRHE

Distribution in Europe: No, Se, Fi, Fr, De, Po, Ch, At, Cz, Sk, Hu, Es, Sc, It, Si, Hr, Sb, Ba, Mk, Ro, Bg, Lv, Ua, Cm, Rn, Rc, Re, Ma.

Distribution in Romania:

Bistrița-Năsăud County, Măgheruș Valley on Arșiță (in glade), al. *Festucion sulcatae*, sub *Grimaldia* (Ștefureac & Cristurean 1973:313-315).

Tulcea County, *fer* - Iacobdeal, Piatra Roșie, Consul Hill (Vlădescu A. 1939:59; Ștefureac, Mihai & Pascal 1970:121).

Măcin Mountains, the bottom of Țuțuiatu Mountain, Greci-Măcin granitic zone, 8.05.1916, *leg.* Săvulescu T., sub *Grimaldia* (Radian 1920:73-76; Papp 1938:300; Vlădescu A. 1939:59; Ștefureac, Mihai & Pascal 1970:121); Pricopan Culm, *det.* Lungu L., sub *Grimaldia* (Andrei & Popescu A. 1967:261); Țuțuiatu Peak (Mihai & Pascal 1968:112; Ștefureac, Mihai & Pascal 1970:121); Cheia Hill-Măcin, *leg. & det.* Ștefureac T., sub *Grimaldia* (Ștefureac, Mihai & Pascal 1970:121).

Constanța County, Cărpiniș Forest, west to Băneasa Commune, on calcareous stone, sub *Grimaldia* (Mihai & Pascal 1963:263; Ștefureac, Mihai & Pascal 1970:121); Gura Dobrogei Natural Reserve, sub *Grimaldia* (Andrei & Popescu A. 1966:166).

Brașov County, Brașov, *leg.* Barth ap. Rouppert 1939, sub *Grimaldia* (Boros & Kazimierz 1941:52); Cetății (Lempes) Hill – La Coastă, sandy and sunny places, 05.1961, sub *Grimaldia* (Mihai 1962:278).

Cozia Mountain, on soil, 1975-1976 (Dihoru G. 1990:52).

Hunedoara County, Cigmău Cave, 22.04.1916, *leg. & det.* Györffy I., sub *Grimaldia* (Györffy 1924b:38,39; Boros & Kazimierz 1941:52).

Caraș-Severin County, Cerna Valley, sub *Grimaldia* (Herzog 1919:290).

Poiana Ruscă Mountains, Rusca Montană, sub *Grimaldia barbifrons* (Pančić 1861:94; Hazslinszky 1885:28; Boros & Kazimierz 1941:52; Sabovljević & Sérgio 2002:67, Fig.2);

Codru-Moma Mountains, Valea Lungă, Măgura Diecilor, Brihenilor Valley, on soil (Mohan 1996:50; Ardelean 2006:109).

Alba County, near Scărișoara in Ordencușa Valley, 800 m *alt.*, near Vidra, 700 m *alt.*, sub *Grimaldia barbifrons* (Péterfi M. 1908:267); Piatra Piatra, Râmeț Gorges, on limestone, 1250 m *alt.*,

2.12.1940, *leg.* Bunea T., *det.* Ștefureac T., sub *Grimaldia* [PHHM 6207431](Borza, Gergely & Rațiu O. 1969:437).

Cluj County, Southern Ciucea on Surduc Valley, 300 m *alt.*, sub *Grimaldia barbifrons* (Péterfi M. 1908:267; Boros 1942a:34; Boșcaiu & Gergely 1966:103); Tur Gorges, 16.10.1914, *leg. & det.* Györffy I. & Péterfi M., sub *Grimaldia* [BRHE] (Györffy 1924b:38; Boros & Kazimierz 1941:52; Páll 1960b:90; Mihai 1962:278).

Bihar County, Drăgan Valley, 900 m *alt.*, sub *Grimaldia barbifrons* (Péterfi M. 1908:267; Boros 1942a:35; Mihai 1962:278).

Mannia pilosa (Hornem.) Frye et L. Clark

Syn.:

- *Duvalia pilosa* (Hornem.) Lindb.
- *Grimaldia carnica* C. Massal.
- *Grimaldia pilosa* (Hornem.) Lindb.
- *Marchantia pilosa* Hornem.
- *Neesiella pilosa* (Hornem.) Schiffn.

First citation for Romania: Radian 1915.

Romania (Frey & al. 2006:24).

Muntenia (Mohan 1988b:115).

Ecology: epigeaic-humicolous, calcicolous, xerophytic, photophytic; circumpolar; arctic-alpine; Hth.

Herbaria and Exsiccate: BUCA

Distribution in Europe: No, Se, Fi, De, Po, Ch, At, Sk, It, Si, Ro, Bg, Ee, Ua, Rn, Re.

Distribution in Romania:

? - **Ciucaș Mountains**, Ciucaș Peak, Zăgan Mountain, Chirușca Mountain (Mohan 1990b:45).

Bucegi Massif, fer - Cerbului Valley, in alpine zone, 11.08.1903, sub *Grimaldia* and *Neesiella* (Radian 1915:191; Radian 1920:76-77; Radian 1923:10); Bucegi, sub *Grimaldia* (Ștefureac 1972c:104); ♀ - Gaura Glacial Ring, BV, 45°26'22"N / 25°26'24"E, 2250 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3721].

Piatra Craiului Mountains, Curmătura Valley, 1900 m *alt.*, sub *Grimaldia* (Ștefureac 1951b:254,255; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:78).

Mannia triandra (Scop.) Grolle

Syn.:

- *Duvalia rupestris* Nees
- *Grimaldia rupestris* (Nees) Lindenb.
- *Mannia rupestris* (Nees) Frye & L. Clark
- *Neesiella rupestris* (Nees) Schiffn.

First citation for Romania: Radian 1915.

Romania, chorology (Ștefănuț 2003b:238, Fig.6).

Ecology: epigeaic, epilithic, calcicolous, mesophytic, photo-sciophytic; circumpolar; Hth.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Fr, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Hr, Yu, Me, Ba, Mk, Ro, Bg, Al, Ua.

Distribution in Romania:

? - **Ciucaș Mountains**, Zăgan Mountain, Tigăile Mari Culm, sub *M. rupestris* (Mohan 1990b:45; Ștefănuț 2003b:234, Fig.6).

Bucegi Massif, fer - Cerbului Valley, in alpine region, 11.08.1903, sub *Neesiella rupestris* (Radian 1915:192; Papp 1967a:10; Ștefănuț 2003b:234, Fig.6); Bucșoiu Mountain (Papp 1967a:10; Ștefănuț 2003b:234, Fig.6); Bucegi, sub *Grimaldia rupestris* (Ștefureac 1972c:104).

Piatra Craiului Mountains, Brăul de Mijloc al Ciorângii, 1830 m *alt.*, sub *Grimaldia rupestris* (Ștefureac 1951b:254,255; Dihoru G. & al. 2003:70; Ștefănuț 2003b:234, Fig.6; Pop O.G. 2006:124, Tab.6; Ștefănuț & Pop O.G. 2006:78); ♀ - Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B0942](Ștefănuț 2001:129; Dihoru G. & al. 2003:70; Ștefănuț 2003b:235, Fig.6; Pop O.G. 2006:123, Tab.5; Ștefănuț & Pop O.G. 2006:78); ♀ - Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S., sub *M. fragrans*, rev. Ștefănuț S. [BUCA B2567] (Ștefănuț & Pop O.G. 2006:78); Crăpătura Pietrei Craiului, BV, 45°33'16"N / 25°15'28"E, 1550 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2807] (Ștefănuț & Pop O.G. 2006:78).

Făgăraş Mountains, s - above Avrig Lake, calcareous scree, 2100 m *alt.*, 15.07.1946, sub *Grimaldia rupestris* (Ştefureac 1949a:291; Papp 1967a:10; Ştefănuţ 2003b:235, Fig.6); Râiosu Mountain, Igheabul Văros, sub *Grimaldia rupestris* (Ştefureac 1977d:138).

Marchantia polymorpha* L. subsp. *polymorpha

Syn.:

- *Marchantia polymorpha* fo. *angustifrons* Péterfi
- *Marchantia polymorpha* var. *dilatata*
- *Marchantia polymorpha* var. *mamillata* I. Hagen
- *Marchantia polymorpha* var. *minor*
- *Marchantia polymorpha* var. *muralis*
- *Marchantia polymorpha* var. *stellulata*

First citation for Romania: Baumgarten 1846.

Popular name: Muşchiul de fântână, Fierea-pământului (Iacobescu 1920:41); Coadă rândunicii, Colbează (Buia 1948:18); Fierea pământului (Jucovschi 1953:266); Funuces (Papp 1972:113); Triercii (Papp 1972:113).

Romania, without locality, incl. sub var. *minor* (Baumgarten 1846:233,234; Schur 1866:873; Fuss 1878:651); without locality, leg. & det. Lerchenfeld J. [SIB HL 33709-33710] (Drăgulescu 1983:56); without locality, sub var. *dilatata* and *muralis* (Schur 1866:873; Fuss 1878:651; Müller 1954:392).

Moldova (Papp 1943:650; Ştefureac & al. 1973:140).

Dobrogea (Ştefureac, Mihai & Pascal 1970:121).

Muntenia (Mohan 1988b:116).

Transylvania, leg. Baumgarten J.C.G., det. Juratzka J. [HF 1491] (Drăgulescu 1983:56); Carpathians (Pax 1908:128).

Ecology: epigeaic-humicolous, indifferent, mesophytic, sciophytic; cosmopolitan; Hth.

Herbaria and Exsiccate: BUCA, CSH, I, PHHM, SIB, FMDE, FRE

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Sa, It, Hr, Sb, Me, Mk, Ro, Bg, Gr, Ee, Lv, Lt, Ua, Rn, Rw, Rc, Re, Rs, Az, Ma, Cn.

Distribution in Romania:

Maramureş County, Iapa (Bades Kabolapolyana), in park, 1835 (Müller B. 1863:555); Vlăşchinescu ("Izvoarele") Peatbog, ass. *Junco-Molinietum* Prsg. 1950 *nardosum strictae* Kovács M. 1956, ap. Soó 1957, ass. *Junco-Molinietum* (Raţiu O. & Moldovan 1972a:155, Tab.5); Săpâncioara, Şipot Waterfall, 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, Rodna (Pax 1908:128); Rebra Valley, 630 m *alt.*, 13.06.1981, ass. *Symphyto-Fagetum* Vida 1959 (Coldea 1990:138, Tab.67).

Țibleş Mountains, Mesteacănul Valley, Piciorul Arsurii, Bumbului Hill, Izvorul Țibleşului, 1984-1985 (Mohan 1988a:15).

Botoşani County, ♂ - Botoşani, 06.07.1900, leg. Bâznoşanu P.A., det. Radian S.Ş. (Radian 1901b:41; Radian 1915:194); Şendriceni Forest, 100 m *alt.*, leg. Băncescu Eugenia (Papp 1942b:524; Papp 1956a:259; Ştefureac & al. 1973:140); Mitoc, Prut Valley, on sandy-argillaceous alluvial deposits, 90 m *alt.*, 27.10.1961 (Papp, Mihai & Vişalariu 1962:150); Ştefăneşti (Mihai 1968b:137); the peatbog from Lozna-Dersca, the edge of the ditch, on peat, det. Barabaş Victoria (Mititelu, Barabaş N. & Haja 1974:183); Lozna-Dersca Peatbog, 9.05.2004, leg. Oprea A., Sârbu I., Sîrbu C. & Mardari C., det. Goia I., rev. Sârbu I. [FMDE 801](Oprea & Mititiuc 2005:5).

Suceava County, Suceava and in vicinity (Knauer 1863; Ştefureac & Pascal 1981:476); Poiana Stampei, 17.05.1910 (Lilienfeldówna 1911:730); Țoleşti [I](Papp 1942b:524); Bistriţa Aurie Valley, between Iacobeni and Ciocăneşti, the edge of Suhărzul and Suhărzul Mare Brooks (Pascal 1969:106; Pascal & Mititelu 1971); Cârlibaba Brook Valley, Cârlibaba, Iedu, Țibău, Deaca Brook, Liţu Brook, Țibău Brook, Argestru, Vatra Dornei (Pascal & Mititelu 1971; Ştefureac & Pascal 1981:476); Cristişor-Neagra Broştenilor, Borcut Meadow, on soil, ass. *Funarietum hygrometricae* Gams 1927 (Lungu 1973b:72; Lungu 1976:239, Tab.3; Lungu 1981c:94); the bog from Neagra Broştenilor Meadow, ass. *Chrysosplenium-Cardaminetum* (Tx. 1937) Maas 1959 subass. *circaetosum lutetianae* Maas 1959, ass. *Cratoneuretum filicino-commutati* (Kuhn 1937) Oberd. 1977 (Lungu 1974:75, Tabs.1,2; Lungu 1981b:416,417, Tabs.1,2); Ouşorul Mountain, on soil, 1971 (Mihai 1974b:318,320); Barnar Gorges, on wet soil (Pascal & Seghedin 1977:141).

Rarău Mountain, Rarău, 08.1913, leg. Mălinescu O. (Radian 1915:195); Rarău (Papp 1924a:101); Codrul Secular Slătioara, 860-1250 m *alt.* (Ştefureac 1941:1154,1245,1280, Tab.7); between Dealul Colbului and Pietrele Doamnei, 1520 m *alt.*, 27-28.08.1949, 27.08.1950 (Ştefureac 1951a:66,67); Codrul Secular Slătioara, Rarău Peak (Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ştefureac & Raclaru 1978:196).

Bârgău Mountains, Străja Valley, Poiana Ilvei, Lunca Ilvei, Secu Brook, Măgura Calului, Tureac Brook, Leșu Commune, Iliuța Bozghi Brook, Cârțișavu Mare Valley, 1983-1984 (Mohan & Hodoroga 1986:210).

Bistrița-Năsăud County, Orheiul Bistriței, Budacul de Sus, 1980-1981 (Mohan & Hodoroga 1983:51).

Căliman Mountains, upper side of Dorna Valley, near the forest hut (Mihai 1968a:204); below Ariniș Peak, at Șoimu, downstream, 800 m *alt.*, 12.09.1959, ass. *Symphyto (cordato)-Fagetum* Vida (1959) 1963 (Rațiu O. 1970:200, Tab.3).

Stânișoara Mountains, the edge of Ostra Brook at Ostra, Stânișoarei Culm and Pietrelor Brook Valley at Tarnița, 1974 (Pascal & Toma M. 1977:42).

Iași County, Repedea, 1874-1875, *leg. & det.* Brândză D. (Brândză 1876a; Brândză 1876b; Kanitz 1881:146; Radian 1901a:137; Radian 1915:194; Ștefureac & al. 1973:140); Iași University, in garden, 30.04.1890, 3.07.1890, *leg.* Vlădescu M. (Radian 1915:194; Ștefureac 1982c:196); Repedea-Bârnova Forest Massif, on soil (Papp 1924a:101; Papp 1929:555-557,560; Papp 1935a:431; Papp 1939a:354,355; Papp & Eftimie 1963:108,110), 1975-1976, ass. *Bracythecio (rutabuli)-Fissidentetum minutuli* Mihai 1977 (Mihai 1977a:138); Repedea-Bârnova Forest Massif, on wet soil, along the brook vales, ass. *Eurhynchietum swartzii* Waldheim 1944 (Mihai 1978:127,128, Tab.1).

Vaslui County, Târzii, in fountains, on stones, Bunești in Hrusca Strâmbă Forest, on wet soil, 1966-1969 (Plămadă & Vițalariu 1971:165).

Ceahlău Mountain, Măcărescu, Ceahlău (Papp 1924a:101; Papp 1924b:391; Papp 1934b:66,67; Zanoschi 1970:279; Manoliu & al. 1998:337); Ceahlău, 650-1700 m *alt.* (Mihai 1979b).

Neamț County, Sihla, *leg. & det.* Grecescu D. (Grecescu 1880:65; Radian 1901a:136,138,139; Radian 1915:194); Agapia, 21.25.08.1914, *leg.* Săvulescu T. (Radian 1915:195); Tarcău, Tâmpesți and Poieni Forests (Papp 1924a:101); Peste Recea and Poarta Poienilor Hills, in forests (Papp 1947b:185,186,190); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.*, 08.1959 (Lungu 1963a:242,244).

Giurgeu Mountains, Bicz Gorges, 1957-1960 (Papp & al. 1962:147).

Giurgeu Depression, (Lungu & Rațiu F. 1975:49, Tab.1); Voșlăbeni, După Luncă Peatbog, ass. *Caricetum paniculatae* Wangerin 1916 (Rațiu F. 1971: 287, Tab.9); Delnițe Peatbog, ass. *Caricetum rostratae* Rübél 1912 (Rațiu F. 1971: 290, Tab.10); *without locality*, ass. *Caricetum fuscae* (Br.-Bl. 1915 s.l.) W. Koch 1928 (Rațiu F. 1972: 171, Tab.2).

Harghita Mountains, Asău Valley, 1000-1100 m *alt.*, Groapa Mare, 1300 m *alt.*, 16.08.2001, 22.10.2000, Pietros Valley, 900 m *alt.*, 28.08.2001, Borsáros, 650 m *alt.*, 6.04.2001, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2002:38; Bálint & Orbán 2003:14; Bálint & Orbán 2006:469).

Hășmaș Mountains, Hășmaș (Schiffner 1914:303).

Harghita County, Tușnad Spa (Schur 1859:115; Fuss 1878:651); Cetatea Făgetului Mountain near Bălan (Matouschek 1903b:160); Bălan, on Olt Valley (Degen 1930:975); the peatbogs from the edges of “Nagyvész” and “Aszó” vales, 650 m *alt.* (Pop E.1960:162); Valea Mijlocie peatbog („Középpatak”), 637 m *alt.* (Pop E.1960:167); the peatbogs from Gheorgheni Basin (Pop E.1960:180); Pârâul Dobreanului, *det.* Ștefureac T. (Pop E. 1958:33; Pop E. 1959:223; Pop E.1960:200,201); Pârâul Dobreanului Peatbog, 05-06.1966, *leg.* Trică Valeria, *det.* Lungu Lucia (Trică 1971:233); Pârâul Dobreanului Peatbog, *det.* Plămadă E., ass. *Caricetum fuscae* (Pop I., Hodișan I. & Rațiu O. 1982:168, Tab.2); the peatbogs from Trei Scaune Basin (Pop E.1960:209); the peatbogs from Vlăhița-Lueta (Pop E.1960:236); Dumbrava Harghitei Peatbog (Pop E.1960:238); Dumbrava Harghitei Peatbog, 789 m *alt.*, 24.06.1976, ass. *Caricetum diandrae* (Jon. 1932) Oberd. 1957 (Coldea, Plămadă & Bartók 1977:71, Tab.1); Luci Reserve and in common spruce forest, around the Reserve (Mititelu & Elekes E.S. 1984:124,126); Lacul Roșu (Dobrescu & Ghenciu 1974:33); Târnava Mare Valley, between springs and Odorhei, in wet places, 1958-1962 (Páll 1963b:16); Voșlăbeni Peatbog, 770 m *alt.*, 27.06.1968, ass. *Caricetum fuscae* (Coldea & Plămadă 1970a:110, Tab.3); Vrabia (Nagy Csömő) Peatbog, 24.06.1978, Sînsimion (Honcsok) Peatbog, 24.06.1977 (Rațiu F. & Gergely 1981:79, Tab.8); Tușnadul Nou (Varsavész) Peatbog, 25.06.1976 (Rațiu F. & Gergely 1981:81, Tab.9).

Gurghiu Mountains, Dealu, Mlaștina fără fund, 700 m *alt.*, 26.06.1976, ass. *Caricetum diandrae* (Coldea, Plămadă & Bartók 1977:71, Tab.1).

Nemira Mountains, on edge of Nemira lakes, in wet places, on soil and stone, 1970-1977 (Mihai & Barabaş V. 1978:113,114); Ciunget, Şandru (Barabaş V. 1982b:72, Tab.23); Fagul Rotund Peatbog, 2.08.1996, ass. *Sphagno-Caricetum rostratae* Steffen. *filipendulosum ulmariae* (Kató 2000:74, Tab.1).

Bacău County, Ceardac (Papp 1958b:392); Caşin-Şandru Mare Mountains, in peatbogs (Pop E.1960:341); Seaca Forest, *det.* Mihai G. (Mititelu, Barabaş N. & al. 1968:168; Ştefureac & al. 1973:140; Costică 1995:252); Uzului Valley, Gura Bărzăuței, on soil, 1966-1967 (Mihai & Barabaş V. 1969:70,73,77); *s* - Măgura Hill, north-west to Târgu Ocna, on wet soil, 680 m *alt.* (Mihai & Barabaş V. 1971:675,682); Slănic Brook, Slănicel Brook, Cheşcheş Culm, on wet soil, 2.05-8.11.1971 (Ştefureac & Barabaş V. 1972:78,82); *s* - Hemeiuşi Dendrologic Park, Hemeiuşi Commune, on wet soil, 10.06.1971 (Mihai & Barabaş V. 1972:86); Buciumi, Buciaş, on wet soil (Eftimie 1972:152).

Vrancea County, Vrancea Mountains (Mihai 1984a:91); Negru Lake, *leg.* Sîrbu I. & Lupu I., 29.05.1983 (Mihai 1984a:91; Sârbu & al. 1997:237); ♂ - Tişiței Gorges, 2005, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3196, B3198].

Bodoc Mountains, Beşeneu Brook Valley, around the spring, Cereş Brook Valley, Bodoc Peak (Ştefureac & Kovács 1981:117).

Covasna County, Zagon (Hargitai 1943a:75); Ozunca Spa, 620 m *alt.* (Danciu 1972:93, Tab.3).

Tulcea County, Taiţa Valley, Iazul Mânăstirii, on soil (Papp 1938:288,293,298; Ştefureac, Mihai & Pascal 1970:121); Babadag – Forest Hut, *leg.* Zahariadi C., *det.* Ştefureac T. (Ştefureac, Mihai & Pascal 1970:121).

Penteleu Mountain, Roşu Lake, western side, 1510 m *alt.*, on peaty soil, 11.10.1983 (Dihoru G. 1987b:94,96).

Siriu Mountain, „Lacul dintre Pietre” Peatbog, north-east to Siriu-Spa, 1070 m *alt.*, *det.* Ştefureac T. (Dihoru G. 1965:42; Dihoru G. 1975:24); Poiana Mreaja, Coada Golului, Mălăia Peak, 1663.5 m *alt.*, *Chenopodieta* (Dihoru G. 1975:24).

Buzău County, Chiojd Commune, in marsh (Dihoru G. 1984c:81).

Ciucaş Mountains, ♀ - Cheia, 15.08.1960, *leg.* & *det.* Moşneagă M. [PHHM 6207665] (Mohan 1971a:7); ♂ - Cheia, 15.08.1960, *leg.* & *det.* Moşneagă M. [PHHM 6207663] (Mohan 1971a:7); Berii Brook Valley, Zăgan Mountain, Caprei Brook Valley, Roşu Mountain, Chiruşca Mountain (Mohan 1990b:46).

Braşov County, Homorod Spa, 20.07.1901 (Barth 1905:12); the marsh from Mândra-Şercaia (Pop E.1960:223); Poiana Braşov, below Poiana Mică, in marshy places, 9.06.1966, ass. *Caricetum fuscae* (Br.-Bl. 1915) Koch 1928 (Morariu & al. 1969:144, Tab.10); Tărlung Valley, between dam and Babarunca, 750 m *alt.*, 8.07.1983, Zănoaga Valley, 900 m *alt.*, 1.09.1983, ass. *Caricetum rostratae* (Rübel 1912) Dagys 1933 (Morariu, Ularu & Danciu 1985:105, Tab.3); ♂ - Strâmba Valley, 14.05.2006, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3447, B3448]; Strâmba Valley, 13.09.2006, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3598]; between Strâmba Valley and Lupului Valley, 13.09.2006, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3613]; Braşov, 67 Nicolae Bălcescu Street, 19.08.2008, *leg.* Onete Marilena, *det.* Ştefănuţ S. [BUCA B3813].

Piatra Mare Mountain, ♀ - Tamina Waterfall, BV, 45°32'58"N / 25°38'33"E, 6.09.1997, *leg.* & *det.* Ştefănuţ S. [BUCA B2082], *s* - [BUCA B2535].

Gârbova Massif, Piscul Căinelui, 08.1920, *leg.* Brândză M., *det.* Ştefureac T. (Ştefureac 1942a:3); Azuga Valley, Tufa Valley, Rea Valley, on soil, 1967-1970 (Lungu & Ştefureac 1970:6).

Prahova County, towards Suzana Monastery, 31.08.1900 (Radian 1915:194); Cumpătul Mountain, 06-07.1944, *leg.* Tăzlaşuanu I. (Papp 1945b:92); Doftana Valley (Mohan 1971a:7; Mohan 1971b:45; Mohan 1990a:25, Fig.4); Teleajen Valley, Negraşului Valley, Ordojoaia Valley (Mohan 1990a:25, Fig.4); ♀ - Valea Largă, 14.05.2008, *leg.* & *det.* Ştefănuţ S. [BUCA B4002], ♂ - [BUCA B4003].

Bucegi Massif, Sinaia, Peleş Valley, 4.08.1868, *leg.* & *det.* Grecescu D. (Grecescu 1869; Grecescu 1880:65; Kanitz 1881:146; Radian 1901a:135,136,139; Radian 1915:194); Ialomiţa Valley near Peştera Hermitage, 1500 m *alt.*, 20.07.1897, *leg.* & *det.* Loitlesberger K. (Loitlesberger 1898:196; Radian 1915:194); Cerbului Valley, on soil, 1500-1800 m *alt.*, 4.07.1899, *leg.* & *det.* Radian S.Ş. (Radian 1903:4; Schiffner 1908b:275); Mălăieşti Valley (Degen 1914:216); Ialomiţa Valley, around Hermitage, 13.14.06.1894, 21.08.1897, 5.07.1899, 29.07.1904, *leg.* Moisescu N., Sinaia towards Peleş Castle, 17.08.1897, *leg.* Moisescu N., Cerbului Valley, 7.06.1896, *leg.* Moisescu N., 4.07.1899, 11.08.1903, 30.08.1908, *leg.* Radian S.Ş. (Radian 1915:194); Bucegi (Radian 1923:10); Sinaia, 08.1920, *leg.* Brândză

M., *det.* Ștefureac T. (Ștefureac 1942a:3); ♀, ♂ - Sinaia, 20.08.1939, *leg. & det.* Popescu A. [PHHM 6207664]; Furnica Mountain, 06-07.1944, *leg.* Tăzlăuanu I. (Papp 1945b:92); Caraiman, 2100 m *alt.*, Horoaba Valley, 1850 *alt.*, Tătarului Gorges, 1600 m *alt.*, Obârșia, 1750 m *alt.* (Pușcaru D. & al. 1956:251,404, Tab.87); Ialomița Valley (Ștefureac 1972c:101); Colții Morarului, 23.08.1959 (Racoviță A. 1963:188,191); Ialomița Valley (Mohan 1990a:25, Fig.4); Cota 1400, 1350 m *alt.*, 25.09.1985, *leg. & det.* Lungu L. [CSH]; Peleş Valley, 09.1994, *leg. & det.* Constantinescu A. [PHHM 6207443, 6207663]; ♂ - Jepi Valley, PH, 5.06.1932, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B0964, B0965]; Gaura Glacial Ring, BV, 45°26'49"N / 25°26'35"E, 2250 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2446], 45°26'26"N / 25°26'24"E, 2150 m *alt.* [BUCA B2310], 45°26'23"N / 25°26'25"E, 2240 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2235, B2239] (Mihăilescu & Ștefănuț 2000a:14); the glacial ring from Cerbului Valley, PH, 45°26'21"N / 25°27'40"E, 2150 m *alt.*, 11.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2257], 45°26'31"N / 25°27'41"E, 2250 m *alt.*, 11.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2285]; The glacial rings of Ialomița Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2311, B2326, B2474, B2475], 45°26'06"N / 25°26'48"E, 2190 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2035, B3123]; Mălăiești Glacial Ring, BV, 45°27'07"N / 25°27'02"E, 2225 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2347], 45°27'06"N / 25°27'00"E, 2200 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2269], 45°27'03"N / 25°27'08"E, 2300 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3468]; Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3284].

Piatra Craiului Mountains, way towards Vlădușca Pasture, BV, 1100 m *alt.*, 30.10.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2828] (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:78); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2581] (Ștefănuț & Pop O.G. 2006:78); ♂ - Crăpătura Pietrei Craiului, BV, 45°33'35"N / 25°15'46"E, 1250 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2771] (Ștefănuț & Pop O.G. 2006:78); ♀ - below Garofița Pietrei Craiului Hut, AG, 45°30'45"N / 25°10'12"E, 1030 m *alt.*, 26.08.2004, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3103], ♂ - [BUCA B3104], s - [BUCA B3105, B3106] (Ștefănuț & Pop O.G. 2006:78).

Bucharest, Cotroceni, Botanical Institute and Botanical Garden, 04.1896, 14.01.1909 (Radian 1915:194); Artillery School, in court, 20.04.1901, *leg.* Calafeteanu S. (Radian 1915:194); Știrbei Vodă Street, in courts, 15.05.1903 (Grințescu G.P. 1922a:142); Botanical Garden, 1960 (Ștefureac & Lungu 1961:273-275; Ștefureac 1982c:197,200, Tab.2).

Leaota Mountain, Deleanu Mountain, the edge of springs, 1100-1400 m *alt.* (Papp & Diaconescu 1968:386,387).

Făgăraș Mountains, Arpaș Mountain, 1849-1850, *leg. & det.* Schur F. (Schur 1852:92); Bâlea Waterfall (Schur 1866:873; Fuss 1878:651; Drăgulescu 2003:7); Poiana Neamțului, *leg. & det.* Fuss M. (Fuss 1878:651; Drăgulescu 2003:7); Cârțișoara, *leg. & det.* Fronius F., *leg. & det.* Fuss M. (Fuss 1878:651; Drăgulescu 2003:7); Racovița Mountains, *leg. & det.* Sigerus, sub var. *stellulata* (Fuss 1878:651; Drăgulescu 2003:7); Bâlea Valley (Fronius 1856; Drăgulescu 2003:7); **fer** - Viștea Valley, 900-1100 m *alt.*, 12.08.1908, *leg.* Nyárády E.I. (Györffy 1911b:334); Caprei Valley, 06.1941 (Racoviță A. 1942:507); below Bâlea Lake, the edge of peatbog, 1950 m *alt.*, 10.07.1946 (Ștefureac 1949a:292); Arpaș Mountains, *leg. & det.* Kayser G.A. [SIB HK 29046] (Drăgulescu 1983:56); ♀ - Bâlea Lake, SB, 45°36'08"N / 24°37'00"E, 2060 m *alt.*, 18.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2098]; Capra Lake, AG, 45°36'01"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2150] (Ștefănuț 2001:129); Vidraru Lake, AG, 6.07.1998, *leg. & det.* Ștefănuț S. [BUCA B3391].

Iezer-Păpușa Mountains, Iezer Valley, Bătrâna Valley, Dâmbovița Valley (Mohan 1990a:25, Fig.4).

Argeș County, Groape and Jupâneasa Mountains, 07.1890, *leg.* Vlădescu M. (Radian 1915:194); Trivale Forest (Mohan 1990a:25, Fig.4).

Cozia Mountain, Păușa Valley, on wet soil, 1975-1976 (Dihoru G. 1990:52).

Sibiu County, Csnădie, Ursului Brook, *leg. & det.* Sigerus P. [SIB HF 1492] (Fuss 1865:28; Fuss 1878:651; Gündisch 1977:45; Drăgulescu 1983:56; Drăgulescu 2003:7); Tâlmăciu, *leg. & det.* Fuss M. [SIB HF 999] (Fuss 1878:651; Gündisch 1977:45; Drăgulescu 1983:56; Drăgulescu 1995; Drăgulescu 2003:7); Bradu, *leg. & det.* Fuss M. (Fuss 1878:651; Drăgulescu 2003:7); Rășinari (Păcală 1915; Drăgulescu 2003:7); the bogs from Rora Coveșului and Bârghișului (Pop E.1960:246; Drăgulescu

2003:7); Măgura Cisnădiei [SIB HL](Drăgulescu 2003:7); Dobârca at the waterfall [SIB](Drăgulescu 2003:7); Sadu (Drăgulescu 1995; Drăgulescu 2003:7); Sibiu [SIB](Drăgulescu 2003:7).

Cindrel Mountains, Crinț, 1100 m *alt.*, Păltiniș 1400 m *alt.*, Cănaia 1700 m *alt.* (Gündisch 1977:45; Drăgulescu 2003:7).

Sebeșului Mountains, Sebeș Valley, towards Cibán, in common spruce forest, 19.09.1950, Oașa Mare, on wet soil, in fountain (Borza 1959:68,252, Tab.14; Drăgulescu 2003:7).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Parâng Mountains, “Munții Vâlcei și ai Gorjului”, 1864, *leg. & det.* Hoffmann U. (Kanitz 1881:146; Brândză 1883: LXVI; Radian 1901a:134,139; Radian 1915:194).

Șureanu Mountain, Râului Mare Valley (Greguss 1930:7).

Hunedoara County, Hunedoara (Peicea 1973:437,438, 442,446, Tabs.1,3).

Retezat Mountains, Bucura Glacial Ring, 2000 m *alt.*, Zănoaga Glacial Ring, 1900-2000 m *alt.*, ass. *Aconitum tauricum retezaticum* (Borza 1934:30,64, Tab.4); Zlătuia Valley, Râul Mare Valley, wet and shady places (Páll 1962a:121); Dobrun Brook Valley, Radeșul Mare Valley, Piule (Páll 1964a:108); Judele Glacial Ring, in peatbogs, on peat, 2050 m *alt.* (Plămadă 1973b:102); Turcului Valley, 10.09.1969, ass. *Pogonatum urnigeri* Krusenstjerna 1945 *retezaticum* Plămadă 1978 (Plămadă 1978:243, Tab.3; Plămadă 1993:54, Tab.3); Albele Mountain, 1800 m *alt.*, 24.06.1971 (Schneider-Binder 1980a:139,140); ♀ - Râușor, 1050 m *alt.*, 5.06.2003, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3095]; ♂ - Râul Mare Valley, 860 m *alt.*, 23.05.2006, *leg.* Avramescu C., *det.* Ștefănuț S. [BUCA B3536].

Țarcu Mountains, Muntele Mic, 1000-1800 m *alt.*, 03.-08.1943, *leg.* Boșcaiu N. (Ștefureac 1948a:219).

Gorj County, Polovraci Monastery, 17.06.1887, *leg.* Brândză D. (Radian 1915:194); Olanu Mountain and on Sucevele from Gura Olanului, 7,8.08.1899 (Radian 1915:194).

Mehedinți County, Slătinicul Mare Brook spring, between Gura Văii and Vârciorova, 27.06.1945, Jidostiței Valley, between Gura Văii and Schela Cladovei, 28.06.1945, „Apa verde”, Coșușta affluent, Godeanu Village, 7.07.1945 (Ștefureac 1947a:138,148); †, s - Ada-Kaleh Isle, in wet and shady places (Ștefureac & Mihai 1968a:298,303); Eșelnița Valley near village, on bank of brook and in forest, on left side of the valley, on soil, in wet and shady places, ass. *Salicetum purpurae* (Plămadă 1970b:203,205); Danube Defile, between Orșova and Cerna Valley, in forest, along vales, in wet places, on soil, 1966-1968 (Plămadă 1970c:393); Eșelnița Valley, between Berzasca and Svinița, on wet soil, Cazanele Mari of Danube, on wet sandy soil, 1966 (Ștefureac & Mihai 1970:500).

Caraș-Severin County, Secășeni, 1964, *leg.* Ionescu E. (Ștefureac 1970h:478, Tab.3); Găurii Brook Valley, Valea Mare Reserve-Moldova Nouă (Plămadă 1990:75); Țesnei Gorges, 2.05.1999, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2569, B2570].

Semenic Mountain, Semenic, 25.07.1943, *leg.* Pop E. & Ciobanu I. (Ștefureac 1948a:219,221, 222); in peatbogs (Pop E. 1960:363).

Poiana Ruscă Mountains, Rusca Montană (Pančić 1861:94); Luncani (Simonkai 1872:66; Fuss 1878:651).

Arad County, near Arad in Park and in fountains in vicinity, along Șoimoș Valley, above Nădălbeștilor, Ocoli Springs, Dezna Veche Valley, along Moneasa Brook Valley (Simonkai 1893:360).

Mureș County, Sighișoara, sub var. *minor* (Schur 1866:873; Fuss 1878:651); Sighișoara (Höhr 1914:85,86); Deda Commune, in hay-fields, ass. *Caricetum gracilis* (Graebn. et Hueck) Tx. 1937 (Diaconeasa & Șuteu 1980:58).

Alba County, Pietra Ceții, Trascău Mountains, 3.07.1868 (Barth 1868:141); Mihalt, Galda de Sus, *leg. & det.* Barth J. (Fuss 1878:651); above Avram Iancu Village toward Tomnatec, on wet soil and in fountain (Simonkai 1893:360); Mihalt, in forest, wet places, *leg. & det.* Fuss M. (Borza & Lupșa 1964:150); Găina Mountain, 1300 m *alt.*, sub fo. *angustifrons* (Péterfi M. 1908:268; Péterfi M. 1909:97); Alba (Papp 1945a:167); Ordencușa Valley, Poarta lui Ionele, on soil (Papp 1942a:51); Colții Trascăului (Páll 1960b:90); Întregalde Gorges, near Întregalde Brook, 06.1960 (Páll 1964b:25); Blaj, *leg. & det.* Barth J. [SIB HF 1493] (Drăgulescu 1983:56); Trascău Depression, Colțești, Rimetea, on peaty soil, 5.4-7.0 pH, ass. *Caricetum rostratae* Rübél 1912 (Gergely 1966:60, Tab.2); Trascău Depression, Colțești Village, peatbog (Diaconeasa, Buz & Crișan-Mitroescu 1985:77); Cheia Valley, 700 m *alt.*, 31.07.1994, ass. *Pellio-Cratoneuretum filicini* v.Dunk 1972 (Goia 1998:249, Tab.1).

Zarand Mountains, Milova Valley, in beech forest and oak grove, Jernova Valley (Csűrös M. 1978:77; Ardelean 2006:109, Fig.26).

Codru-Moma Mountains, Monesei Valley, Lungă Valley, Crișul Văratecului Valley, Brihenilor Valley, on wet soil (Mohan 1996:50; Ardelean 2006:109, Fig.26).

Cluj County, Dobrin Mountain (Péterfi M. 1918:61); Cluj, *leg. & det.* Péterfi M. (Györffy 1924b:38); ♀, ♂ - Cluj-Napoca Botanical Garden, 350 m *alt.*, 18.06.1915, *leg. & det.* Péterfi M. [FRE 705b] (Borza 1935:64; Boros 1958:5,7; Borza & Nyárády E.I. 1940:11); Turda's Gorges, on wet soil, on stone, 400-450 m *alt.*, 07.1929 (Papp 1946a:13); ♀ - Cluj-Napoca, on walls, 26.06.1946, *leg. & det.* Morariu I. [PHHM 6207327, 6207335, 6207336]; Cluj-Napoca Botanical Garden (Györffy 1947a:173,175,178-180; Boros 1958:5,7); Cluj-Napoca Botanical Garden (Boros 1958:5,7; Plămadă 1963:179,189; Plămadă 1969:170; Ștefureac 1982c:197,200, Tab.2); the peatbogs from spring and upper course of Someșul Rece, incl. Muntele Mare and Dobrin (Pop E. 1960:397); the peatbog from the left side of Izbuț (Pop E. 1960:375); the peatbogs and marshes from upper course of Someșul Cald and Bălăcești-Călățele zone (Pop E. 1960:385); Pușcașului Valley and in Mera Forest, on wet soil, 1963-1965 (Plămadă 1968:24); Cluj, Someșul Valley at Gat, Petőfi A. France Street (Plămadă 1969:170); Someșul Cald Valley (Boros & Vajda 1974:8); Turzii Gorges (Plămadă & Goia 1994:87); Valea Popii (Goia 2002:115, Tab.1).

Bihar County, Vadu Crișului Cave (Boros 1942e:154); Crișul Repede Defile, near waterfall, on soil (Viehmänn, Pleșa & Rusu 1964; Boșcaiu & Gergely 1966:103); Mădăraș, Marțihaz, Tulca, in fountains, *det.* Ștefureac T. (Pop I. 1968:69); Ponor Hill, 450-590 m *alt.*, 11.05.1967, ass. *Chrysosplenio-Cardaminetum amarae* (Tx. 1937) Mass 1959 (Coldea 1978:127, Tab.1; Sanda & Popescu A. 1991a:42, Tab.1); Iadului Valley, Stâna de Vale, peatbogs, associations with *Eriophorum* and *Sphagnum* (Rațiu O. & al. 1982:9); Lacul Vărgat, at 4 km south-east to Săcueni, floating reed islet, 145 m *alt.*, 05-09.1980, *det.* Dihoru G., ass. *Carici-Menyanthetum* Soó (1938) 1955, ass. *Thelypteridi-Alnetum* Klika 1940, ass. *Calamagrosti-Salicetum cinerae* Soó & Zólyomi 1955, ass. *Salici cinerae-Sphagnetum recurvi* (Zólyomi 1931) Soó 1954 (Karácsonyi 1982:30,33,35, Tabs.1,2); Someșul Cald Gorges, on soil and rocks (Goia & Mătase 2001:16).

Pădurea Craiului Mountains, Ieduțului Valley, ass. *Carici stellulatae-Sphagnetum (recurvipalustris)* (Soó 1934) Soó 1954 (Rațiu O. & Boșcaiu 1967:37).

Bihar Mountains, Izbuțul Ponorului, in wet places, 2-9.07.1961 (Páll 1963a:8); Sighiștel Valley, ass. *Carpino-Fagetum* Paucă 1941 (Pop I. & Hodișan I. 1969:36); Ponor's Spring, 1000 m *alt.*, 08.1999 (Jakab 2000a:93; Jakab 2000b:67).

Satu Mare County, † - Ecedea marsh, near Berveni, 1859, *leg. & det.* Pokorný A. (Pokorný 1860:286; Pop E. 1957b:174; Pop E. 1960:144).

subsp. *montivagans* Bischl. et Boisselier

Syn.:

– *Marchantia alpestris* (Nees) Burgeff

– *Marchantia polymorpha* var. *alpestris* Nees

First citation for Romania: Schur 1852.

Ecology: epigeaic, meso-hygrophytic, euryion, photo-sciophytic; subalpine-alpine, circumpolar, Hth.

Herbaria and Exsiccate: BUCA, SIB

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, De, Po, Ch, At, Cz, Sk, Es, It, Si, Hr, Sb, Me, Ro, Bg, Gr, Ee, Ua, Nz, Fl, Rn, Re, Ma, Cn.

Distribution in Romania:

Postăvaru Mountain, 4.07.1880, *leg. & det.* Fuss M., sub *M. alpestris* [SIB HF 1487] (Drăgulescu 1983:56), sub var. *alpestris* (Schiffner 1914:303).

Bucegi Massif, Bucegi, *leg. & det.* Fuss M., sub var. *alpestris* (Fuss 1878:651); Bucșoiu, sub var. *alpestris* (Degen 1914:216); Babele Mountain, 45°24'42"N / 25°28'37"E, 2170 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3500]; Babele Mountain, PH, 45°24'49"N / 25°28'43"E, 2220 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3561]; ♀ - Caraiman Mountain, PH, 45°24'56"N / 25°29'02"E, 2330 m *alt.*, 20.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3913]; Babele Valley, PH, 45°24'43"N / 25°28'44"E, 2150 m *alt.*, 14.07.2008, *leg. & det.* Ștefănuț S. [BUCA B3912].

Făgăraș Mountains, Arpaș Mountain, 1849-1850, *leg. & det.* Schur F., sub var. *alpestris* [SIB HK] (Schur 1852:92; Heufler 1853:64,65; Schur 1866:873; Fuss 1878:651; Ștefureac 1949a:287,288; Drăgulescu 2003:7); ♀, ♂ - Arpaș Valley, common spruce forest, sub var. *alpestris* (Heufler 1853:52-53;

Fuss 1854:20; Ștefureac 1949a:288; Drăgulescu 2003:7); *fer* - Bâlea Lake, *leg. Zsák Z.*, sub var. *alpestris* (Schiffner 1914:303; Ștefureac 1949a:288; Drăgulescu 2003:7).

subsp. *ruderalis* Bischl. et Boisselier

Syn.:

- *Marchantia aquatica* (Nees) Burgeff
- *Marchantia polymorpha* fo. *aquatica* Nees
- *Marchantia polymorpha* var. *aquatica* Nees

First citation for Romania: Matouschek 1903b.

Moldova, sub fo. *aquatica* Nees (Papp 1943:650).

Muntenia, sub fo. *aquatica* Nees (Mohan 1988b:116).

Ecology: epigeic, meso-xerophytic, euryion, photophytic; circumpolar, Hth.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Al, Gr, Ct, Tu, Ee, Lv, Lt, By, Md, Ua, Cm, Nz, Fl, Rw, Rc, Re, Ca, Az, Ma, Cn.

Distribution in Romania:

Suceava County, Siminicea, 08.1892, *leg. Vlădescu M.*, sub fo. *aquatica* (Radian 1915:194); Camionca Valley, below Chicera Hill Peak, 1300 m *alt.*, 1-4.09.1953, sub var. *aquatica* (Ștefureac 1956a:255); Drăgoiasa Fen, 1020-1030 m *alt.*, 1959, *leg. Ștefureac T.*, sub fo. *aquatica* (Ștefureac 1962b:70,71; Ștefureac 1967b:308); Adam and Eva Mountains, Pojorâta Commune, in marshy places, in hay-fields, on soil, sub var. *aquatica* (Mihai & Pascal 1973b:156,161); Criștor-Neagra Broștenilor, Borcut Meadow, ditch edge, sub var. *aquatica* (Lungu 1973b:72; Lungu 1981c:94).

Rarău Massif, Codrul Secular Slătioara, sub fo. *aquatica* (Papp 1969b:188).

Hășmaș Mountains, Hășmaș, sub var. *aquatica* (Schiffner 1914:303).

Harghita County, Rotund Mountain between Borsec and Toplița, sub var. *aquatica* (Matouschek 1903b:160); the peatbog from Jigodin, below Cetății Hill ("Várhegy"), *det. Ștefureac T.*, sub var. *aquatica* (Pop E.1960:155); the peatbog from Ciuc Basin, sub var. *aquatica* (Pop E.1960:168).

Neamț County, Văratec, 21.25.08.1914, *leg. Săvulescu T.*, sub fo. *aquatica* (Radian 1915:195); Tâmpeshti, sub fo. *aquatica* Nees (Papp 1925c:155); Peste Recea Hill, in forest, sub fo. *aquatica* (Papp 1947b:185,186,190).

Bacău County, Ceardac on Slănic, 05.1892, *leg. Vlădescu M.*, sub fo. *aquatica* (Radian 1915:194,195; Papp 1957:284); Ruginii Brook (Eftimie 1972:152); Slănic Moldova, small fens on hills near Slănic Valley, 07.1907, *leg. Brândză M.*, *det. Ștefureac T.*, sub fo. *aquatica* (Ștefureac 1942a:3; Papp 1957:284).

Tulcea County, near Letea Village, on floating reed islet, sub *M. polymorpha* (Tarnavski & Nedelcu 1970:172).

Siriu Mountain, Lacul dintre Pietre, sub fo. *aquatica* Nees (Dihoru G. 1975:24).

Brașov County, Predeal, 2.06.1883, *leg. Brândză D.*, sub fo. *aquatica* (Radian 1915:194,195); ♀ - Făgăraș railway station, 440 m *alt.*, 25.08.2005, *leg. & det. Ștefănuț S.* [BUCA B3201], ♂ - [BUCA B3202], ♀ - 30.10.2004, *leg. & det. Ștefănuț S.* [BUCA B3322], ♀ - 3.04.2006, *leg. & det. Ștefănuț S.* [BUCA B3388], ♂ - 3.04.2006, *leg. & det. Ștefănuț S.* [BUCA B3389]; Făgăraș railway station, 440 m *alt.*, 1.08.2006, *leg. & det. Ștefănuț S.* [BUCA B3543].

Prahova County, Sinaia railway station, 3.04.2006, *leg. & det. Ștefănuț S.* [BUCA B3390].

Piatra Craiului National Park, Great Gorges of Dâmbovița River, AG, 45°23'19"N / 25°11'45"E, 800 m *alt.*, 7.07.1998, *leg. & det. Ștefănuț S.* [BUCA B2901] (Ștefănuț & Pop O.G. 2006:78); below Garofița Pietrei Craiului Cahlet, AG, 45°30'45"N / 25°10'12"E, 1030 m *alt.*, 26.08.2004, *leg. Onete Marilena, det. Ștefănuț S.* [BUCA B3099] (Ștefănuț & Pop O.G. 2006:78).

Leaota Mountain, Vaca Valley, 900 m *alt.*, Mitarca Valley, 1300-1500 m *alt.*, sub fo. *aquatica* Nees (Papp & Diaconescu 1968:387).

Bucharest, ♂ - Cișmigiu Park, 3.04.2004, *leg. & det. Ștefănuț S.* [BUCA B2937], ♂ - 6.07.2005, *leg. & det. Ștefănuț S.* [BUCA B3178]; Grădina Botanică, *det. Ștefănuț S.* (!).

Făgăraș Mountains, Pojorta Valley, 800-1000 m *alt.*, 18.09.2001, *leg. & det. Ștefănuț S.* [BUCA B2554] (Ștefănuț 2002:190).

Vâlcea County, Bistra Monastery, 16.06.1887, *leg. Brândză D.*, sub fo. *aquatica* (Radian 1915:194,195); Puturoasă Valley at Călimănești, 08.1908, *leg. Colceag N.*, sub fo. *aquatica* (Radian 1915:194,195).

Parâng Mountains, Sărăcinul Mic, peatbog, th left side of Lotru Valley, near Puru Forest Hut, Voineasa Commune, 1956, sub fo. *aquatica* (Ștefureac, Popescu & Lungu 1957b:872).

Hunedoara County, Săcărîmb Sat, Certeju de Sus, below Haitău Hill-Săcărîmb, 2,6.09.1953, sub var. *aquatica* (Ștefureac 1956a:240,241, Tab.1).

Gorj County, Tismana Monastery, at waterfall, 4.07.1905, sub fo. *aquatica* (Radian 1915:194,195).

Alba County, Scărișoara, Ordencușa Valley, sub var. *aquatica* (Schiffner 1914:303).

Mureș County, Ciobotani, 8.08.1995, sub *M. polymorpha aquatica*, ass. *Carici flavae-Eriophoretum latifolii* Soó 1944 (Oroian 1996:243, Tab.16).

Cluj County, Morii Valley, on soil, 1961-1966, sub var. *aquatica* (Plămadă 1967:470).

Marsupella boeckii (Austin) Kaal.

Syn.:

- *Cephalozia divaricata* var. *latifolia* (Lindb.) Müll. Frib.
- *Cephalozia nevicensis* (Carrington) C. Massal.
- *Hygrobrella nevicensis* (Carrington) Spruce
- *Jungermannia divaricata* var. *latifolia* Lindb.
- *Jungermannia nevicensis* Carrington
- *Marsupella boeckii* var. *incrassata* Arnell & C.E.O. Jensen
- *Marsupella boeckii* var. *intricata* (Lindb.) Arnell & C.E.O. Jensen
- *Marsupella boeckii* var. *latifolia* (Lindb.) Kaal.
- *Marsupella boeckii* var. *nevicensis* (Carrington) Kaal. ex Jørg.
- *Marsupella capillaris* (Limpr.) Bernet
- *Marsupella filiformis* (Lindb.) Lindb. ex Kaal.
- *Marsupella intricata* (Lindb.) Steph.
- *Marsupella lapponica* Limpr. ex Loitl.
- *Marsupella latifolia* Lindb.
- *Marsupella nevicensis* (Carrington) Pearson
- *Nardia boeckii* (Aust.) Lindb.
- *Nardia capillaris* (Limpr.) C. Massal. & Cărestia
- *Nardia filiformis* Lindb.
- *Nardia intricata* Lindb.
- *Nardia latifolia* Lindb.
- *Sarcoscyphus boeckii* Aust.
- *Sarcoscyphus capillaris* Limpr.

First citation for Romania: Loitlesberger 1898.

Ecology: epigeic, calcicolous, mesophytic, photophytic; circumpolar; arctic-alpine; Hch.

Distribution in Europe: No, Se, Fi, Br, Fr, De, Po, Ch, At, Sk, Mt, It, Ro, Rn, Re.

Distribution in Romania:

? - **Giurnalău Mountain**, Giurnalău, subalpine zone, *det.* Ștefureac T. (Cristurean 2000:173).

Făgăraș Mountains, Negoiu, 2200 m *alt.*, sub *M. lapponica* (Loitlesberger 1898:192,193; Radian 1901a:139; Pax 1908:128; Müller 1957:791; Papp 1967a:22).

Marsupella brevissima (Dumort.) Grolle

Syn.:

- *Acolea brevissima* Dumort.
- *Acolea cochlearis* (Lindb.) Steph.
- *Acolea conferta* (Limpr.) C. Massal. & Cărestia
- *Acolea crassifolia* (Carrington) Steph.
- *Acolea varians* (Lindb.) Steph.
- *Cesia cochlearis* (Lindb.) Lindb.
- *Cesia conferta* (Limpr.) Pearson
- *Cesia crassifolia* (Carrington) Lindb.
- *Cesia varians* (Limpr.) Lindb.
- *Cesia varians* var. *cochlearis* (Lindb.) Jørg.
- *Cesia varians* var. *crassifolia* (Carrington) Jørg.
- *Gymnomitrium ambiguum* Limpr. ex C. Massal. & Cărestia
- *Gymnomitrium brevissimum* (Dumort.) Warnst.
- *Gymnomitrium cochleare* (Lindb.) Müll. Frib.
- *Gymnomitrium confertum* (Limpr.) Limpr.
- *Gymnomitrium crassifolium* Carrington
- *Gymnomitrium varians* (Lindb.) Schiffn.
- *Marsupella cochlearis* (Lindb.) Spruce
- *Marsupella conferta* (Limpr.) Spruce
- *Marsupella varians* (Lindb.) Müll. Frib.
- *Marsupella varians* var. *crassifolia* (Carrington) Jørg. ex S.W. Arnell

- *Nardia brevissima* (Dumort.) Lindb.
- *Nardia cochlearis* Lindb.
- *Nardia varians* Lindb.
- *Sarcoscyphus confertus* Limpr.
- *Jungermannia emarginata* Ehrh.
- *Jungermannia macrorhiza* Dicks.
- *Jungermannia pulvinata* Raddi
- *Marsupella emarginata* var. *densifolia* (Nees) Müll. Frib.
- *Marsupella emarginata* var. *ligurica* (Gottsche) Schiffn.
- *Marsupella robusta* (De Not.) A. Evans
- *Marsupella ustulata* (Huebener) Spruce ex Pearson
- *Nardia densifolia* (Nees) Trevis.
- *Nardia emarginata* (Ehrh.) Gray
- *Nardia emarginata* var. *picea* Carrington
- *Nardia emarginata* var. *robusta* Carrington
- *Nardia picea* (Carrington) Carrington
- *Nardia robusta* (De Not.) Lindb. ex Carrington
- *Sarcoscyphus densifolius* Nees
- *Sarcoscyphus ehrhardtii* Corda
- *Sarcoscyphus ehrhardtii* var. *robustus* De Not.
- *Sarcoscyphus emarginatus* (Ehrh.) Spruce
- *Sarcoscyphus piceus* De Not. ex Carrington

First citation for Romania: Puşcaru E. & al. 1950.

Romania (Smith A.J.E. 1990:163; Frey & al. 2006:95).

Muntenia (Mohan 1988b:106).

Ecology: epigaeic, acidophytic, mesophytic, photophytic; circumpolar; arctic-alpine; Hch.

Threatened species in Romania: Plămadă 1977b:113

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fo, No, Se, Fi, Br, Fr, Ad, Po, Ch, At, Cz, Sk, Es, It, Ro, Bg, Rn.

Distribution in Romania:

Rodna Mountains, Pietrosul Rodnei, 2280 m *alt.*, 4.09.1982, *leg. & det.* Ştefureac T., ass. *Bucegetum romanicae* Ştefur. 1984 subass. *jungermannietosum sphaerocarpace* Ştefur. 1986 (Ştefureac 1986h:105-107, Tab.2; Ştefănuţ 2007b:429).

Căliman Mountains, ♀♂ - Răchitiş Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m *alt.*, 26.07.2007, *leg. & det.* Ştefănuţ S. [BUCA B3724] (Ştefănuţ 2007b:429).

Bucegi Massif, in alpine zone, 2100-2500 m *alt.*, sub *M. varians* (Puşcaru E. & al. 1950:11); Bucşoiu Saddle, 2420 m *alt.*, The Saddle above Țigăneşti Valley towards Gaura, 2320 m *alt.*, the Saddle between Gaura and Mălăieşti, 2390 m *alt.*, sub *M. varians* (Ştefureac 1955:558-560, Tab.2; Plămadă 1973a:380; Plămadă 1977b:113; Ştefureac 1991:114); The Saddle between Caraiman and Coştila, 2380 m *alt.*, Coştila Peak, 2400 m *alt.*, Bucura Peak, 2480 m *alt.*, Moraru, 2470 m *alt.*, ass. *Caricetum curvulae* Brockm.-Jer. 1907, sub *M. varians* (Puşcaru D. & al. 1956:59,60,64,149, Tab.12; Ştefureac 1972c:103; Resmeriţă 1973a:317, Tab.2; Sanda, Popescu A. & Fişteag 1989:100, Tab.1); Pietrosul Peak, 1900 m *alt.*, sub *M. varians*, ass. *Festucetum supinae juncetosum* (Puşcaru D. & al. 1956:71, Tab.16); Bucegi, ass. *Loisleurietum procumbentis* (Puşcaru D. & al. 1956:260); Bucegi, 17.07.1947, *leg.* Ştefureac T., *det.* Ştefănuţ S. [BUCA B2943]; Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m *alt.*, 8.07.1999, *leg. & det.* Ştefănuţ S. [BUCA B3115].

Retezat Mountains, Retezat Saddle, in alpine pasture, on wet soil, 1964-1971, sub *M. varians* (Plămadă 1973a:380, Fig.7a-i; Plămadă 1976a; Plămadă 1976b:8,24; Plămadă 1993:49,56; Ştefureac 1986f:191); Zănoaga Glacial Ring, northern slope, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

Marsupella commutata (Limpr.) Bernet

Syn.:

- *Gymnomitrium commutatum* (Limpr.) Schiffn.
- *Nardia commutata* C. Massal. & Carestia
- *Sarcoscyphus commutatus* Limpr.
- *Sarcoscyphus densifolius* Nees var. *fascicularis* Gottsche

First citation for Romania: Ştefănuţ 2004e.

Romania (Söderström, Urmi & Vána 2007:326).

Ecology: epigaeic, acidophytic, hygrophytic, photophytic; circumpolar; arctic-alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fr, Po, Ch, At, Sk, It, Ro.

Distribution in Romania:

Bucegi Massif, Babele Mountain, PH, 45°24'38"N / 25°28'36"E, 2140 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3549] (Ștefănuț 2007a:103).

Făgăraș Mountains, Urlea Lake, BV, 45°35'44"N / 24°50'32"E, 2200 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S., *conf.* Blockeel T. 2003 [BUCA B0947] (Ștefănuț 2004e:306; Söderström, Urmi & Váňa 2007:326).

Marsupella emarginata* (Ehrh.) Dumort. subsp. *emarginata

Syn.:

- *Jungermannia emarginata* Ehrh.
- *Jungermannia macrorhiza* Dicks.
- *Jungermannia pulvinata* Raddi
- *Marsupella emarginata* var. *densifolia* (Nees) Müll. Frib.
- *Marsupella emarginata* var. *ligurica* (Gottsche) Schiffn.
- *Marsupella robusta* (De Not.) A.W. Evans
- *Marsupella ustulata* (Huebener) Spruce ex Pearson
- *Nardia densifolia* (Nees) Trevis.
- *Nardia emarginata* (Ehrh.) Gray
- *Nardia emarginata* var. *picea* Carrington
- *Nardia emarginata* var. *robusta* Carrington
- *Nardia picea* (Carrington) Carrington
- *Nardia robusta* (De Not.) Lindb. ex Carrington
- *Sarcoscyphus densifolius* Nees
- *Sarcoscyphus ehrhardtii* Corda
- *Sarcoscyphus ehrhardtii* var. *robustus* De Not.
- *Sarcoscyphus emarginatus* (Ehrh.) Spruce
- *Sarcoscyphus piceus* De Not. ex Carrington

First citation for Romania: Heufler 1853.

Moldova (Ștefureac & al. 1973:147).

Muntenia (Mohan 1988b:106).

Transylvania (Pax 1908:128).

Ecology: epilithic, acidophytic, meso-hygrophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, PHHM, SIB

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Ro, Bg, Gr, Ct, Ua, Rn, Re, Az, Ma, Cn.

Distribution in Romania:

Maramureș County, Tătaru at Mara, 700 m *alt.* (Boros & Vajda 1967:220).

Maramureș Mountains, Vaser Valley, sub *Sarcoscyphus ehrhartii* (Hazslinszky 1885:71).

Toroioaga Mountain, Toroioaga, 1800-1830 m *alt.* (Boros & Vajda 1967:220).

Rodna Mountains, Ineu Peak, on Coasta Netedă, 1900 m *alt.*, sub *Sarcoscyphus ehrhardtii* (Breidler 1890a:150; Pax 1908:128); Pietrosul Rodnei (Ștefureac 1983g:177; Nădișan & Chercheș 2002:58).

Suceava County, Țapu Mountain, on rocks, between Țibău and Cârlibaba, on rocks, *conf.* Mihai G. (Pascal 1970a:198,199); Adam and Eva Mountains, Pojorâta Commune, on rocks (Mihai & Pascal 1973b:156,161).

Harghita County, Olt Valley near Bălan Spa (Matouschek 1903b:160; Degen 1930:975; Bálint & Orbán 2006:473).

Nemira Mountains, Nemira, on siliceous rocks (Barabaș V. 1974:31); Nemira, on humus, 1970-1977 (Mihai & Barabaș V. 1978:116).

Bacău County, Slănic Brook, on gritstone, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:76,77,82).

Ciucaș Mountains, Bratocea Peak, Ciucaș Valley, Roșu Mountain (Mohan 1990b:42).

Prahova County, Doftana Valley, Secăria Valley, on rocks [PHHM 7732/3873](Mohan 1971a:9; Mohan 1971b:48).

Gârbova Massif, Azuga Valley, on stone, 1967-1970 (Lungu & Ștefureac 1970:5,8).

Iezer-Păpușa Mountains, Bratia Valley (Loitlesberger 1898:192).

Făgăraș Mountains, Arpaș Valley, in beech forest, sub *Sarcoscyphus ehrhardtii* (Heufler 1853:48-49; Fuss 1854:20; Schur 1866:870; Fuss 1878:658; Hazslinszky 1885:71; Drăgulescu 2003:15); Ciorteza Mountain, sub *Sarcoscyphus ehrhardtii* (Fuss 1878:658; Hazslinszky 1885:71; Drăgulescu 2003:15); Negoiu, 1600-2000 m *alt.* (Loitlesberger 1898:192; Drăgulescu 2003:15); Topolog Valley (Herzog

1919:295); Ciortea Mountain, on wet rocks, 26.08.1868, *leg. & det.* Barth J., sub *Sarcoscyphus ehrhardtii* [SIB HF 1544](Drăgulescu 1983:58; Drăgulescu 2003:15); Cârțișoara Valley, 1200-1500 m *alt.* (Boros & Vajda 1967:220); Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2551], ♀ - [BUCA B2666] (Ștefănuț 2002:190).

Cozia Mountain, Mocirle, wet places, western side of Omul Peak, 1558 m *alt.*, 1975-1976 (Dihoru G. 1990:52); Turnu towards Stânișoara, 08.2005, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3207].

Cindrel Mountains, Râul Mare, 900 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:15).

Parâng Mountains, Repedea Valley, 08-09.1954, incl. sub var. *densifolia* (Ștefureac, Popescu & Lungu 1959:9,16,19,31,33, Tab.6, Pl.I, Figs.1-9).

Alba County, Găina, 900-1200 m *alt.* (Péterfi M. 1908:271; Goia 2001:66); Galbena Valley, on rotten wood (Goia 2001:66); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87).

Cluj County, Drăgan Valley (Boros 1942a:35); Tranișu, Drăgan Valley, 600 m *alt.* (Boros & Vajda 1967:220).

Bihor County, Stâna de Vale, Poiana Peak (Schiffner 1914:304); Remetea, Iadului Valley, *leg.* Péterfi M. (Boros & Vajda 1967:220).

Bihor Mountains, Cornu Munților and Boteasa, 1400 m *alt.*, Piatra Boghii, 1000 m *alt.* (Péterfi M. 1908:271; Ștefureac 1975b:313).

subsp. *aquatica* (Lindenb.) Meyl.

Syn.:

- *Jungermannia emarginata* var. *aquatica* Lindenb.
- *Marsupella aquatica* (Lindenb.) Schiffn.
- *Marsupella aquatica* var. *gracilis* C.E.O. Jensen
- *Marsupella aquatica* var. *submersa* Arnell ex Schiffn.
- *Marsupella emarginata* subsp. *aquatica* (Lindenb.) Jørg.
- *Marsupella emarginata* var. *attenuata* Kaal.
- *Nardia emarginata* var. *aquatica* (Lindenb.) Carrington
- *Sarcoscyphus aquaticus* (Lindenb.) Breidl.
- *Sarcoscyphus ehrhardtii* var. *aquaticus* (Nees) Gottsche et al.
- *Sarcoscyphus emarginatus* var. *aquaticus* (Nees) Aust.

First citation for Romania: Loitlesberger 1898.

Ecology: epigaeic, acidophytic, hydrophytic, sciophytic; circumpolar; mountain; Hch.

Distribution in Europe: Is, Fo, No, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, Pt, Es, It, Ro, Ua, Rn, Az.

Distribution in Romania:

Făgăraș Mountains, Negoiu, 2000 m *alt.*, sub *M. aquatica* (Loitlesberger 1898:192; Pax 1908:128; Schiffner 1914:304; Müller 1957:775; Drăgulescu 2003:15); Bălea Lake, 2000 m *alt.*, *leg. & det.* Vajda L., sub *M. aquatica* (Boros & Vajda 1967:221).

Marsupella funckii (F. Weber et D. Mohr) Dumort.

Syn.:

- *Jungermannia funckii* F. Web. & D. Mohr
- *Marsupella hungarica* (Limpr.) J.J. Amann
- *Marsupella pygmaea* (Limpr.) Steph.
- *Nardia funckii* (F. Web. & D. Mohr) Carrington ex Lindb.
- *Nardia muelleri* (Nees) C. Massal.
- *Sarcoscyphus funckii* (F. Web. & D. Mohr) Nees
- *Sarcoscyphus muelleri* Nees
- *Sarcoscyphus pygmaeus* Limpr.

First citation for Romania: Hazslinszky 1885.

Romania, Frey & al. 2006:96.

Muntenia (Mohan 1988b:106).

Ecology: epigaeic, acidophytic, mesophytic, photo-sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: BUCA, CL

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, It, Si, Hr, Sb, Ro, Bg, Gr, Lt, By, Ua, Ca, Az, Ma, Cn.

Distribution in Romania:

Maramureș County, Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, Pietrosul Rodnei, sub *Sarcoscyphus* (Hazslinszky 1885:71); Ineu, 15.08.1888, *leg.* Demeter K. [CL](Igmándy 1943:56; Plămadă 1973a:380); Rodna Mountain (Ștefureac 1963c:168,170).

Țibleş Mountains, Păltiniș Peak, Bumbului Hill, 1984-1985 (Mohan 1988a:21).

Căliman Mountains, Gruiu Peak, on soil (Mihai 1968a:204).

Bistrița-Năsăud County, Râpa Mare, Piatra Corbului, Budacul de Jos, 1980-1981 (Mohan & Hodoroga 1983:52).

Bârgău Mountains, Heniu Mare Peak, 1983-1984 (Mohan & Hodoroga 1986:213).

Harghita County, Odorhei, in oak forest, on soil, 1958-1962 (Páll 1963b:17).

Ciucăș Mountains, Ciucăș Mountain, 1600 m *alt.* (Boros & Vajda 1967:220; Plămadă 1973a:380); Caprei Brook Valley, Ciucăș Peak, Roșu Mountain, Berii Brook Valley (Mohan 1990b:38,42).

Bucegi Massif, Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. (Ștefănuț 2004a:63; Ștefănuț 2004g:158); Gaura Glacial Ring, BV, 45°26'26"N / 25°26'26"E, 2175 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2432], 45°26'52"N / 25°26'32"E, 2290 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3317, B3378]; The glacial rings of Ialomița Valley, DB, 45°26'13"N / 25°27'05"E, 2250 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2110, B3153], 45°26'07"N / 25°26'57"E, 2205 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3145]; Curmătura Lăptici, DB, 45°22'27"N / 25°27'57"E, 1830 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3242]; *fer* - [BUCA B3252]; Dorului Valley, PH, 45°21'51"N / 25°28'37"E, 1830 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3215]; Babele Mountain, PH, 45°24'40"N / 25°28'32"E, 2150 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3272], 45°24'43"N / 25°28'37"E, 2180 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3622].

Piatra Craiului Mountains, Ascuțit Peak, BV, 45°32'50"N / 25°13'57"E, 2100 m *alt.*, 8.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2998] (Ștefănuț & Pop O.G. 2006:78); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2809], s - on rotten wood [BUCA B2616, B2642], ♀ - on soil [BUCA B2808] (Ștefănuț & Pop O.G. 2006:78).

Iezer-Păpușa Mountains, Iezer, 2400 m *alt.* (Loitlesberger 1898:193; Pax 1908:128; Plămadă 1973a:380).

Făgăraș Mountains, Topolog Valley, 1600-1900 m *alt.* (Herzog 1919:295).

Retezat Mountains, Coasta Bârlei, on soil, 1964-1971 (Plămadă 1973a:380, Fig.6a-f; Plămadă 1976a; Plămadă 1976b:8).

Gilău Mountains, Dobrin Mountain, 16.10.1916, *leg. & det.* Györffy I. & Péterfi M. (Györffy 1924b:38; Plămadă 1973a:380).

Marsupella ramosa Müll. Frib.

First citation for Romania: Ștefureac 1936.

Romania, Frey & al. 2006:95.

Ecology: epigeaic; calcicolous, mesophytic, photo-sciophytic; European; alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: De, Ch, At, Sk, Ro.

Distribution in Romania:

Giupalău Mountain, Giupalău, east-north-eastern slope, 1800 m *alt.*, 22.08.1936 (Ștefureac 1936:294-296, Ștefureac 1938:258); Giupalău, subalpine zone, *det.* Ștefureac T. (Cristurean 2000:175); Giupalău Peak, 1853 m *alt.*, 12.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3505, B3639].

Marsupella sphaclata (Gieseke ex Lindenb.) Dumort.

Syn.:

- *Jungermannia sphaclata* Gieseke ex Lindenb.
- *Marsupella erythrorhiza* (Limpr.) Schiffn.
- *Marsupella joergensenii* Schiffn.
- *Marsupella media* (Gottsche & Rabenh.) Schiffn.
- *Marsupella sphaclata* var. *erythrorhiza* (Limpr.) Loitl.
- *Marsupella sphaclata* var. *eusphaclata* Schiffn.
- *Marsupella sphaclata* var. *inundata* Müll. Frib.
- *Marsupella sphaclata* var. *joergensenii* (Schiffn.) Schiffn.
- *Marsupella sphaclata* var. *media* (Gottsche & Rabenh.) Trevis.
- *Marsupella sphaclata* var. *rosea* Kaal.
- *Marsupella sphaclata* var. *saccata* (Nees) Jørg.
- *Marsupella sphaclata* var. *sullivantii* (De Not.) C. Massal.
- *Marsupella sullivantii* (De Not.) A. Evans
- *Nardia sphaclata* (Gieseke ex Lindenb.) Carrington
- *Nardia sullivantii* (De Not.) Trevis.
- *Sarcoscyphus ehrhardtii* var. *erythrorhiza* Limpr.
- *Sarcoscyphus jackii* Limpr.
- *Sarcoscyphus sphaclatus* (Gieseke ex Lindenb.) Nees

- *Sarcoscyphus sphacelatus* var. *medius* Gottsche & Rabenh.
- *Sarcoscyphus sullivantii* De Not.

First citation for Romania: Simonkai 1872.

Transylvanian Alps: Müller 1957:778.

Ecology: epilithic, acidophytic, hygrophytic, sciophytic; circumpolar; alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: No, Se, Fi, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Pt, Es, Co, It, Ro, Bg, Gr, Ua, Rn, Rw, Re, Az.

Distribution in Romania:

Făgăraş Mountains, Negoiu, 1800-2000 m *alt.*, incl. sub var. *erythrorhiza* (Loitlesberger 1898:192; Drăgulescu 2003:15); Topolog Valley, 1600-1900 m *alt.*, sub *M. sullivantii* (Herzog 1919:295); Negoiu, 1600 m *alt.*, Călţun Lake, 2350 m *alt.* (Pócs 1958:109); Cârţişoara Valley towards Bălea Lake, 1500-2000 m *alt.* (Boros & Vajda 1967:221); Arpaş Valley towards Podragu Lake, 1800 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:221); Bălea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2016], 45°36'09"N / 24°37'00"E, 2050 m *alt.*, 18.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2296], *alt.* 2055 m [BUCA B2295], 45°36'07"N / 24°37'02"E, *alt.* 2040 m, 18.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2290].

Parâng Mountains, the edge of the peatbog near Câlcescu Lake, 11.08.1955 (Ştefureac 1959:756; Ştefureac 1969a:105,112,113, Pl. V, 2.a-b),

Retezat Mountains, Zănoaga, sub *Sarcoscyphus* (Simonkai 1872:67; Fuss 1878:658); Retezat, sub *Sarcoscyphus* (Prodan 1939:94; Ştefureac 1971b:15); Judele Glacial Valley, on wet rocks or in alpine brooks, the vales between Muchia Ascuţită and Slăvei Culm – Judele 2 Valley, 2000-2200 m *alt.* (Plămadă 1973b:102); Judele Valley, between Slăvei and Muchia Ascuţită, 1900 m *alt.*, ass. *Scapanietum undulatae* Schwick. 1944, Adăpătoarele Caprelor, 2100 m *alt.*, 12.07.1971, ass. *Rhacomitrio-Andreaeetum nivalis* (Krajina 1933) Plămadă 1974, Ştirbului Brook, 1950 m *alt.*, 12.07.1971, ass. *Philonotido-Hygrohypnetum dilatati* Plămadă 1974 (Plămadă 1974b:100, Tabs.1,3; Plămadă 1993:55,56, Tabs.5,6); Zănoaga Lake and Zănoaga Glacial Ring, northern slope, 2200 m *alt.*, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

Țarcu Mountain, Țarcu Mountain, 2190 m *alt.*, 03.-08.1943, *leg.* Boşcaiu N., sub *M. Sullivantii* (Ştefureac 1948a:220).

Cluj County, Tranişu, Drăgan Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:221; Plămadă 1985b:40).

Marsupella sprucei (Limpr.) Bernet.

Syn.:

- *Marsupella gracilis* (C. Massal. & Carestia) Pearson
- *Marsupella neglecta* (Limpr.) Lindb.
- *Marsupella sprucei* var. *ustulata* (Spruce)
- *Marsupella ustulata* Spruce
- *Marsupella ustulata* subsp. *sprucei* (Limpr.) Meyl.
- *Marsupella ustulata* var. *neglecta* (Limpr.) Müll. Frib.
- *Marsupella ustulata* var. *sprucei* (Limpr.) R.M. Schust.
- *Nardia gracilis* C. Massal. & Carestia
- *Nardia sprucei* (Limpr.) C. Massal. & Carestia
- *Nardia ustulata* (Spruce) Lindb.
- *Sarcoscyphus neglectus* Limpr.
- *Sarcoscyphus sprucei* Limpr.
- *Sarcoscyphus sprucei* var. *decepiens* Limpr.
- *Sarcoscyphus ustulatus* (Spruce) Kær
- *Sarcoscyphus ustulatus* var. *ustulatus* (Spruce) Breidl.

First citation for Romania: Papp 1940b.

Ecology: epilithic, acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Distribution in Europe: Is, Fo, No, Se, Fi, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Pt, It, Si, Ro, Bg, Ua, Rn, Re, Ma.

Distribution in Romania:

Bucegi Massif, Bucşoiu, 2200-2500 m *alt.*, *leg.* Nyárády E.I., *det.* Papp C., sub *M. ustulata* var. *neglecta* (Papp 1940b:117).

Făgăraş Mountains, Negoiu, 2250 m *alt.* (Ştefureac 1949c:707; Drăgulescu 2003:15); Cârţişoara Valley, 1200 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:220; Ştefureac 1986f:192); Cârţişoara Valley, 1600 m *alt.*, *leg. & det.* Vajda L., sub *M. ustulata* (Boros & Vajda 1967:221); Podragu Valley, 1800-2000 m *alt.*, sub *M. ustulata* (Vajda 1975:120).

Cozia Mountain, Bolu, on rocks, 1975-1976, *det.* Schljakov R., sub fo. *ustulata* (Dihoru G. 1990:52).

Caraș-Severin County, the left bank of Cociului Brook, near Herculane Spa, 2.06.1945, sub *M. ustulata* (Ștefureac 1947a:138,150,151).

Metzgeria conjugata Lindb.

Syn.:

– *Jungermannia furcata* var. *elongata* Hook.

– *Metzgeria conjugata* var. *alipila* Kaal.

– *Metzgeria conjugata* var. *macvicari* Kaal.

First citation for Romania: Warnstorf 1895b.

Moldova (Papp 1943:653; Ștefureac & al. 1973:142).

Muntenia (Mohan 1988b:114).

Ecology: epilithic-epigaeic, acidophytic, mesophytic, sciophytic; cosmopolitan; mountain; Hth. Frequent in *Quercus-Fagetes*.

Herbaria and Exsiccate: BUCA, CSH, PHHM, Bryotheca romanica, FRE

Distribution in Europe: Is, Fo, No, Dk, Se, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Sa, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Gr, Ee, Lt, Md, Ua, Ca, Ma, Cn.

Distribution in Romania:

Maramureș County, Coștiui, between Vișeu and Făina (Warnstorf 1895b:143); Surduc Gorges, Cavnice, Poiana Botizii (Boros 1943e:144,146,148); Runc Waterfall, Covatar Waterfall near Săpânța, 900 m *alt.*, 15-21.06.1997, Tocila Valley, 600 m *alt.*, 16-18.10.1998 (Jakab 1999:55).

Botoșani County, Tiscovăț Brook, Tudora, *leg.* Țopa E. (Papp 1956a:259; Ștefureac & al. 1973:142).

Suceava County, Criștor-Neagra Broștenilor, Borcut Meadow, in common spruce forest (Lungu 1973b:72; Lungu 1981c:90).

Rarău Mountain, Codrul Secular Slătioara, 800-1250 m *alt.* (Ștefureac 1941:1154,1165,1269, 1282, Tabs.1,3,8,9; Mickiewicz 1968:30,31; Papp 1969b:188).

Bistrița-Năsăud County, Măgherușului Valley, Gropii Hill, Cl. *Quercus-Fagetes* (Ștefureac & Cristurean 1973:314,315); Jelna Forest, Piatra Corbului, Budacul de Jos, 1980-1981 (Mohan & Hodoroga 1983:51); Satului Valley, in forest, near Rebra, on rocks and bark tree, 470-570 m *alt.*, frequent in *Quercus-Fagetes* (Plămadă & Coldea 1989b:121).

Bârgău Mountains, Tureac Brook, Strâmba Valley, Cârțibavu Mare Valley, Măgura Ilvei, Șanț Commune, Piatra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:211).

Iași County, Repedea, 7.04.1891, 7.07.1891, 7.10.1891, *leg.* Vlădescu M., *det.* Radian S.Ș., incl. sub var. *elongata* (Radian 1915:196; Papp 1929:555; Papp 1934a:193; Papp & Eftimie 1963:105).

Harghita County, Odorhei, in beech forest, on bark tree, 1958-1962 (Páll 1963b:16).

Harghita Mountains, Greu Mountain, 1100 m *alt.*, 11.07.2000, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Cifrabuc, 1200 m *alt.*, 16.08.2001, Mic Valley, 1050-1150 m, 16.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14).

Neamț County, Piatra Neamț, 06.1890, *leg.* Vlădescu M., incl. sub var. *elongata* (Radian 1915:196; Papp 1934a:193); Cernegura Mountain (Papp 1934a:193; Lungu 1963a:241); Neamț Monastery, on bark tree and stone, 07-08.1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.*, 08.1959 (Lungu 1963a:242-244); Pângărăcior Brook Valley, on soil (Mihai 1973d:28).

Nemira Mountains, Nemira, on siliceous rocks (Barabaș V. 1974:31); in common spruce forest, on humus and rocks, 1970-1977 (Mihai & Barabaș V. 1978:115); Nemira Mountain, on maple, 1000-1500 m *alt.*, above „Lacurilor Nemirei”, 1500 m *alt.* (Barabaș V. 1982b:59,60,74, Tabs.7,8,25).

Bacău County, Slănic, *leg.* Vlădescu M., 04.1890, 05.1892, incl. sub var. *elongata* (Radian 1915:196; Papp 1934a:193); Slănic Brook Valley (Papp 1956a; Ștefureac & al. 1973:142); Ciungetul, Dofteana, Sălăria and Slănic Brooks (Papp 1957:284); Seaca Forest, *det.* Mihai G. (Mititelu, Barabaș N. & al. 1968:147,168; Costică 1995:252); Uzului Valley, on wet soil, rare, 1966-1967 (Mihai & Barabaș V. 1969:70); s - Măgura Hill, north-west to Târgu Ocna, on wet soil, 680 m *alt.*, rare (Mihai & Barabaș V. 1971:675); Slănic Brook, Cheșcheș Culm, Piciorul Dobru, on hornbeam, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:77,82).

Vrancea County, Cioara Forest, 207 m *alt.* (Mihai & Barabaș V. 1970:66,72); Tișței Gorges, on wet rocks, 1977 (Mihai & Pascal 1986:46,48).

Siriu Mountain, Poiana din Fundul Muntelui, common spruce forest, Dealul Scurt, 1280 m *alt.*, Piatra Zăpezii, Cl. *Quercus-Fagetum* (Dihoru G. 1975:23).

Ciucaș Mountains, Teleajen Gorges at Bratocea, 2.10.1900 (Radian 1915:196); Alb Brook Valley, Zăgan Mountain, Piscul Caprei, Balaban Mountain, Căzăturii Culm, Chirușca Mountain (Mohan 1990b:45).

Prahova County, Doftana Valley [PHHM 6207635](Mohan 1971a:7; Mohan 1971b:45).

Brașov County, Pietrele lui Solomon, 780 m *alt.*, 20.06.1938, ass. *Saxifraga cuneifolia-Campanula carpatica* (Zólyomi 1939:137, Tab.6).

Postăvaru Mountain, Dracului Valley, 850 m *alt.*, 14.03.1999, *leg.* Mihăilescu Simona, *det.* Ștefănuț S. [BUCA B3482].

Gârbova Massif, Rea Valley, 1000-1300 m *alt.* (Mickiewicz 1968:30,31); Azuga Valley, Tufa Valley, Rea Valley, Valea lui Bogdan, on rocks, 1967-1970 (Lungu & Ștefureac 1970:5).

Bucegi Massif, Mălăiești Valley, *det.* Loeske (Degen 1914:216); Cerbului Valley, 7.06.1896, *leg.* Moisescu N. (Radian 1915:196); Jepi Valley, 27.10.1935, *leg.* Cretzoiu P. & Clement O. (Papp 1937a:159,163); Gura-Dihamului and Poiana Bătrânilor, 5.12.1937, *leg.* Cretzoiu P., *det.* Pilous Z. [Bryotheca romanica 13] (Pilous 1938:3); Peleş Valley, on trees, rotten fir and rocks, 07-08.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Urlătoarea Valley, on soil, 850 m *alt.*, 5.10.1985, *leg.* & *det.* Lungu L. [CSH].

Piatra Craiului Mountains, Vlădușca, BV, 45°32'53"N / 25°11'48"E, 1000 m *alt.*, 21.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2871] (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:78); towards Padina lui Călineț, BV, 45°33'48"N / 25°12'31"E, 850 m *alt.*, 7.08.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2681, B2690] (Ștefănuț & Pop O.G. 2006:78); Crăpătura Pietrei Craiului, BV, 45°33'49"N / 25°15'54"E, 1050 m *alt.*, 21.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2788], 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2711, B2715, B2896] (Ștefănuț & Pop O.G. 2006:78).

Făgăraș Mountains, Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg.* & *det.* Ștefănuț S. (Ștefănuț 2002:190, Fig.3).

Iezer-Păpușa Mountains, Caprei Valley, Bratia Valley, 23.05.1899 (Radian 1915:196).

Argeș County, Boteni, 06.1891, 03.1893, *leg.* Vlădescu M., incl. sub var. *elongata, opuntia* (Radian 1915:196).

Sibiu County, Turnu Roșu Defile, Moghișului Valley, 3.05.1967, ass. *Asplenio (trichomanes-bivalens)-Poetum nemoralis* Boșcaiu 1970 subass. *veronicetosum bachofeni* (Borza 1959) Boșcaiu 1970 (Schneider-Binder 1972: Tab.B; Drăgulescu 2003:8).

Cozia Mountain, Roșiei Gorges, on rocks, 1987, *leg.* Negrean G. (Dihoru G. 1990:52).

Cindrel Mountains, Cibinului Gorges, 950 m *alt.*, Păltiniș, 1000 m *alt.* (Gündisch 1977:46; Drăgulescu 2003:8).

Vâlcea County, s – Băița, in *Carpino-Fagetum*, Căciulata, on wet soil (Ștefureac & Peicea 1973:45,46).

Sebeșului Mountains, Sebeș Valley, at Loman, on wet soil, Tonea Hill (Borza 1959:68).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Parâng Mountains, Latorița Valley, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,20,31,39, Tabs.6,7).

Retezat Mountains, Râu de Mori (Schiffner 1914:303); Dobrun Brook Valley (Páll 1964a:108).

Gorj County, Bold Mountain in Dosul Cernei, 5.08.1899, incl. sub var. *opuntia* (Radian 1915:196); Sucevele on left side of Cerna, at Gura Olanului, 8.08.1899, incl. sub var. *opuntia* (Radian 1915:196); Tismana Monastery towards Cioclovina Hermitage, 4.07.1905 (Radian 1915:196).

Mehedinți County, Vărănic Hill, the way from Breznița Commune towards Gura Văii, 400 m *alt.*, 29.04.1945 (Ștefureac 1947a:138,146); Eșelnița Valley, in forest, on rocks (Plămadă 1970b:205); Eșelnița Valley, 90 m *alt.*, ass. *Hypno-Polypodietum* Jko et Pec. 1963 (Schneider-Binder & al. 1970:315, Tab.3).

Semenic Mountains, below the Chalet and below Gozna, in peatbogs, 26-28.07.1962 (Ștefureac & Mihai 1967:14); near Carașova (Vajda & Orbán 1975:116).

Caraș-Severin County, Caransebeș-Crucea Verde, 250-300 m *alt.*, 03.-08.1943, *leg.* Boșcaiu N. (Ștefureac 1948a:219,222); Cerna Valley, Herculan Spa, 100 m *alt.*, 20.10.1941, *leg.* Borza A. & Buia

A., *det.* Ştefureac T. [FRE 2924a](Ghişa & Gergely 1962:358; Ştefureac 1967a:420); Cerna Valley (Boros, Vajda & Debreczy 1969:6); Ruschiţa, 1971, *leg.* Vajda L. (Boros & Járαι-Komlódi 1975:28).

Codru-Moma Mountains, Monesei Valley, Valea Lungă, Crişul Văratecului Valley, on rocks (Mohan 1996:50; Ardelean 2006:107, Fig.24).

Alba County, Vidra, 690-800 m *alt.*, Piatra Struţu, 1000 m *alt.*, Bulz Valley and Galbena Valley, 300-400 m *alt.* (Péterfi M. 1908:269; Goia 2001:49); Câmpeni, Poduri Forest (Schiffner 1909a:25,30; Goia 2001:49); Valea lui Lal, 450-630 m *alt.*, Mureş Valley at Drâmbari, Dumbrăviţa Hill at Zlatna, in forest, 600 m *alt.*, Feneş Gorges (Papp 1944b:236; Papp 1945a:161,163,165); Bărăşti, Albac Commune, on bark tree, 656 m *alt.* (Papp 1946a:13,15); Colţii Trascăului (Páll 1960b:90); at 12,5 km to Zlatna, hornbeam with beech forest, upstream on left slope, 880 m *alt.* (Plămadă 1986a:59,65, Tab.1); Stearpă Valley, on rotten wood (Goia 2001:49); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:86).

Mureş County, Sighişoara (Höhr 1914:87).

Cluj County, Ciucea, 300-400 m *alt.* (Péterfi M. 1908:269); Southern Ciucea on Surduc Valley (Boros 1942a:34); Pleşca Valley (Boros 1958:3,7); Ierii Valley, “Valea Măgurii”, 980 m *alt.*, 14.08.1946, *leg.* Ghişa E., *det.* Ştefureac T. [FRE 2924b] (Ghişa & Gergely 1962:358); Făget Forest, on bark, 1961-1966 (Plămadă 1967:470); Puşcaşului Valley, on soil, 1963-1965 (Plămadă 1968:24); Huza Forest on Filii Mountain, near the Chalet (Muntele Mare), on rocks and bark tree, 700-750 m *alt.*, frequent in *Quercus-Fagetea* (Plămadă & Coldea 1989b:121); Turda’s Gorges (Plămadă & Goia 1994:87).

Gilău Mountains, in beech forest (Plămadă 1985b:41).

Bihor County, Băiţa, 450-700 m *alt.*, Stâna de Vale, 1000 m *alt.*, Peştiş, 320 m *alt.* (Péterfi M. 1908:269); Drăgan Valley (Boros 1942a:35); Sebeş Valley at Crişul Repede springs (Soó 1944a; Ştefureac, Popescu & Lungu 1954:236); Crişul Repede Defile, around the lake from Peştera cu Apă, on wet shady rocks, ass. *Phyllitidi-Aceretum* (Boros 1942a:31; Boşcaiu & Gergely 1966:103).

Bihor Mountains, Galbena Valley, 750 m *alt.*, 08.1999 (Jakab 2000b:66); Cetăţile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ştefănuţ S. [BUCA B3832].

Metzgeria furcata (L.) Dumort. var. *furcata*

Syn.:

– *Jungermannia furcata* L.

– *Metzgeria furcata* var. *flexipilis* Kaal.

First citation for Romania: Baumgarten 1846.

Romania, *without locality*, sub *Jungermannia* (Baumgarten 1846:233; Schur 1866:873; Fuss 1878:652; Müller 1954:484; Schuster 1992a:681).

Moldova (Papp 1943:652; Ştefureac & al. 1973:142).

Dobrogea (Ştefureac, Mihai & Pascal 1970:122).

Muntenia (Mohan 1988b:114).

Transylvania (Pax 1908:128).

Ecology: epilithic-humicolous, corticolous, acidophytic, mesophytic, sciophytic; cosmopolitan; mountain; Hth.

Herbaria and Exsiccate: BUCA, SIB, FRE

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Yu, Ba, Mk, Ro, Bg, Al, Gr, Ct, Tu, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Rc, Re, Ca, Az, Ma, Cn.

Distribution in Romania:

Maramureş County, Vaser Valley, sub var. *major* (Hazslinszky 1885:32); Peteritea, 300 m *alt.*, 29.06.1923, *leg.* Nyárády E.I. & *det.* Papp C. [FRE 1614] (Borza 1938:23; Borza & Nyárády E.I. 1940:11).

Rodna Mountains, (Pax 1908:128).

Ţibleş Mountains, Piciorul Ţiglei, Mesteacănu Valley, 1984-1985 (Mohan 1988a:16).

Suceava County, Izvorul Alb, 14.05.1910 (Lilienfeldówna 1911:731); Cârlibaba Brook Valley, 1967 (Ştefureac & Pascal 1970a:246,249); Cârlibaba, Şesuri, Ţibău, Ciocăneşti, Mestecăniş (Pascal & Mititelu 1971; Ştefureac & Pascal 1981:477); Barnar Gorges (Pascal & Seghedin 1977:141).

Rarău Mountain, Codrul Secular Slătioara, 800-1240 m *alt.* (Ştefureac 1941:1154,1185,1282, Tabs.3,8; Mickiewicz 1968:30,31; Papp 1969b:188).

Bărgău Mountains, Cucureasa Reserve, Coşna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Orthodicraneto-Plagiotheciellatum* Barkman 1958; ass. *Neckerieto-Isothecietum myosuroides* Barkman 1958, subass. *isothecietosum myuri* Barkman 1958 (Ştefureac, Mihai & Pascal 1976:40,41, Tabs.2,3).

Iași County, below Repedea, 7.10.1891, *leg.* Vlădescu M. (Radian 1915:196; Papp & Eftimie 1963:105); Bârnova Forest (Papp 1924a:101; Papp 1929:555,557,560; Papp 1939a:347); Stavnice Brook Valley, in forest, on bark (Papp 1950:400,403,405); Repedea Forest, on bark (Papp & Eftimie 1963:110); Repedea-Bârnova Forest Massif, ass. *Madotheceto-Leskeetum nervosae* (Gams 1927) Barkaman 1958 (Mihai 1974a:128, Tab.2), bryocoenosis with *Brachythecium velutinum* (Mihai 1976b:283, Tab.4); Domnița-Voinești Forest (Voinești and Țibana Communes), on hornbeam and beech bark and humus (Mititelu & Chifu 1978:377,378); Humosu Natural Reserve, ass. *Madotheco-Leskeetum nervosae* (Mihai 1983c:349,354,355, Tab.5).

Bistrița-Năsăud County, Satului Valley, in forest, near Rebra, on rocks and base of bark, 470-570 m *alt.*, in *Leucodontetalia* and *Fagetalia* (Plămadă & Coldea 1989b:120-121); Măgherușului Valley at Lupiște, north-eastern slope of Hederiș Hill, incl. fo. *gracilescens*, Ord. *Fagetalia* (Ștefureac & Cristorean 1973:315).

Harghita County, Odorhei, Vlăhița, on bark, *leg.* Borza A., *det.* Papp C. (Papp 1944a:98); Vârșag, in common spruce forest, on bark, 1958-1962 (Páll 1963b:16).

Harghita Mountains, Vermet Valley, 1050-1250 m *alt.*, 2.07.2000, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Cifrabuc, 1200 m *alt.*, 16.08.2001, Rotund Mountain, 1100 m *alt.*, 28.08.2001, Cormoș Valley, 900 m *alt.*, 28.08.2001, Boitor Forest, 1000-1100 m *alt.*, 28.08.2001, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, Luci Meleche Forest, 1050 m *alt.*, 13.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:469).

Neamț County, Neamț Monastery, on bark, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Tarcău-Grinduș Mountain (Papp 1942b:524); Pângărăcior Brook Valley, on wet soil (Mihai 1973d:28,32).

Ceahlău Mountain, Ceahlău (Papp 1924b:391; Papp 1934b:66,67; Zanoschi 1970:279; Manoliu & al. 1998:337); Ceahlău, 650-1200 m *alt.* (Mihai 1979b).

Nemira Mountains, Nemira Mountain, on bark of *Acer pseudoplatanus*, 1100 m *alt.* (Barabaș V. 1974:30); in common spruce forest, on stones, 1970-1977 (Mihai & Barabaș V. 1978:115); Nemira Mountain, 900-1550 m *alt.* (Barabaș V. 1982b:58,76, Tabs.6,27).

Bacău County, Porcului Hill towards Hârja, Pufu Hill, in forest, 900 m *alt.*, Cerbu Brook, Ciungetul Brook (Papp 1957:284); Porcului Hill, 600 m *alt.*, Pufu Peak, 800 m *alt.*, Cleja Mountain, 1025 m *alt.* (Papp 1958b:394,396,404); s - Seaca Forest, Mărgineni Commune, the base of beech bark, *det.* Mihai G. (Mititelu, Barabaș N. & al. 1968:168; Mihai & Barabaș V. 1972:87; Ștefureac & al. 1973:142; Costică 1995:252); s - Măgura Hill, north-west to Târgu Ocna, on soil, 680 m *alt.*, rare (Mihai & Barabaș V. 1971:675); Picioru Dobru, on beech tree, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:77); Ghioina Forest, the forest way from Întărcătoare towards Zboina Verde, Scorboraia, on *Fagus sylvatica* and *Acer campestre* barks (Eftimie 1972:150); Codrul Secular Runc-Racova, the base of beech bark (Barabaș V. 1982a:49).

Vrancea County, Tișiței Gorges, on rotten woods, 1977 (Mihai & Pascal 1986:46).

Măcin Mountains, Țuțuiatu, on granite, 400 m *alt.* (Papp 1938:288,293,299; Ștefureac, Mihai & Pascal 1970:122).

Ciucăș Mountains, Cheia Monastery at the base of Zăgan Mountain, 1.09.1900 (Radian 1915:196); Zăgan Mountain, Roșu Mountain, Gropșoarele Peak, Piscul Chirușca, Balaban Mountain (Mohan 1990b:45).

Brașov County, Strâmba Valley, 14.05.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3807].

Gârbova Massif, Rea Valley, 1000-1300 m *alt.*, Cumpătul Peak, 1651 m *alt.* (Mickiewicz 1968:30,31); Azuga Valley, 1967-1970 (Lungu & Ștefureac 1970:5).

Bucegi Massif, Jepi Valley, in forest, on rotten wood, 8.07.1900, *leg.* Dumitrescu M., *det.* Radian S.Ș. (Radian 1901b:41; Radian 1915:196); Peleș Valley, on bark, wet rocks and limestone, 07-08.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Vârful cu Dor, 1891 m *alt.*, Urlătoarea Valley, 900-1000 m *alt.* (Mickiewicz 1968:30,31).

Piatra Craiului Mountains, Diana, BV, 1100 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2820, B2821](Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:79).

Leota Mountain, Vaca Valley, 900 m *alt.* (Papp & Diaconescu 1968:386,387).

Bucharest, on bark of *Ginkgo biloba* (Țopa 1978:47).

Giurgiu County, s - Comana, on soil, 1968-1969 (Ștefureac & Mohan 1970a:352); Călugăreni Forest, 10.05.2005, *leg.* Ivănescu Cristina, *det.* Ștefănuț S. [BUCA B3183];

Făgăraș Mountains, Arpaș Valley, in beech forest (Heufler 1853:50-51; Fuss 1854:20; Schur 1866:873; Fuss 1878:652; Drăgulescu 2003:8); Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2544] (Ștefănuț 2002:190).

Cozia Mountain, Stânișoara Monastery, Turnu Monastery, on stones, 1975-1976 (Dihoru G. 1990:52).

Sibiu County, Cislădie, Cislădioara (Schur 1866:873; Fuss 1878:652; Drăgulescu 2003:8); Cislădie, *leg. & det.* Sigerus (Fuss 1878:652); Măgura Cislădiei, Ursului Brook, *leg. & det.* Lerchenfeld J., sub *Jungermannia* [SIB HL 33715](Fuss 1878:652; Gündisch 1977:46; Drăgulescu 1983:57; Drăgulescu 2003:8); Măgura Cislădiei, on soil, 9.06.1868, *leg. & det.* Barth J. [SIB HF 1495](Fuss 1878:652; Drăgulescu 1983:57; Drăgulescu 2003:8); Prejba [SIB SCHUR 4601](Schur 1866:873; Fuss 1878:652; Gündisch 1977:46; Drăgulescu 2003:8).

Cindrel Mountains, Păltiniș, 1200 m *alt.* (Gündisch 1977:46; Drăgulescu 2003:8).

Vâlcea County, Brezoi, 9.05.2005, *leg.* Ivănescu Cristina, *det.* Ștefănuț S. [BUCA B3185].

Sebeșului Mountains, Oașa (Greguss 1930:7; Borza 1959:68; Drăgulescu 2003:8).

Șureanu Mountain, Râul Mare Valley (Greguss 1930:7).

Parâng Mountains, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,20).

Hunedoara County, Geoagiu-Băi, 2.04.1915, *leg. & det.* Györfly I. (Györfly 1924b:38); Hills from Șoimuș, Făeragului Valley and Piscului Brook (Certejul de Sus) and Hunedoara on Sânpetru Hill, ass. *Carpino-Fagetum* Paucă 1941 (Sanda, Popescu & Peicea 1972:315, Tab.7); Certeju de Sus (Peicea 1973:441,443, Tabs.2,3).

Retezat Mountains, Retezat (Simonkai 1872:66; Fuss 1878:652); Cărligului Valley (Páll 1964a:108); Retezat National Park, ass. *Neckero complanatae-Leucodontetum* (Lippmaa 1935) Plămadă 1982, ass. *Anomodontetum attenuati* (Barkm. 1939) Peciar 1965, ass. *Neckeretum crispae* Ștefur. 1941 (Plămadă 1976a; Plămadă 1976b:20, Tab.2); Zlătuia Valley, 800-1100 m *alt.*, 6-7.09.1969, ass. *Neckero complanatae-Leucodontetum*, Zlătuia Valley, 1100 m *alt.*, 7.09.1969, ass. *Anomodonto attenuati-Neckeretum crispae* Plămadă 1982 (Plămadă 1982a:304,309, Tabs.1,5; Plămadă 1993:51, Tab.1).

Mehedinți County, Ogașul lui Nichici Valley, on bark (Plămadă 1970b:205); Eșelnița Valley, 90 m *alt.*, ass. *Hypno-Polypodietum* Jko et Pec. 1963 (Schneider-Binder & al. 1970:315, Tab.3).

Domogled Mountain, Domogled (Degen 1901:14).

Caraș Severin County, Cerna Valley (Boros, Vajda & Debreczy 1969:6).

Poiana Ruscă Mountains, Rusca (Simonkai 1872:66; Fuss 1878:652); Poiana Ruscă, Luncani, on bark, 600 m *alt.*, Gladna Montană, *leg.* Pteancu P., *det.* Papp C. (Papp 1944a:98).

Zarand Mountains, Arăneag, in beech forest, on bark (Csűrös M. 1978:76; Ardelean 2006:107).

Codru-Moma Mountains, Monesei Valley, Valea Lungă, Crișul Văratecului Valley, Brihenilor Valley, on rocks (Mohan 1996:50; Ardelean 2006:107).

Arad County, Săvârșin (Simonkai 1872:66); Arăneag, Chișindia, Drocea, Hălmagiu, Cladova Valley, Zam Valley, Bot Valley, the forests above Nădălbeștilor on Codru, Moneasa, Dezna Veche, Rășiratele, Dulcele, Zimbru, Aciuva (Simonkai 1893:360; Fuss 1878:652); Runcu-Groși Reserve, 46°10'12"N / 22°07'34"E, 444 m *alt.*, 21.08.2008, *leg. & det.* Ștefănuț S. [BUCA B3925, B3930].

Mureș County, Lechința, on bark, 700 m *alt.*, *leg.* Borza A., *det.* Papp C. (Papp 1944a:98); at west to Șaeș, 500-580 m *alt.*, *det.* Páll Ș., ass. *Fagetum silvaticae transsilvanicum* (Csűrös & Kovács 1962:220).

Alba County, Galda de Sus, *leg. & det.* Barth J. (Schur 1866:873; Fuss 1878:652); Pietra Ceții, Trascău Mountains, 3.07.1868 (Barth 1868:141); Găina, 1400 m *alt.*, Pietra Tâlharului, 1600 m *alt.*, Scărișoara Cave, 1100 m *alt.* (Péterfi M. 1908:269; Goia 2001:51); Pietra Caprei, in beech forest, the base of bark trees, 06.1960 (Páll 1964b:25); Runcului Gorges, on bark, 900-1000 m *alt.*, *det.* Páll Ș., ass. *Fagetum silvaticae transsilvanicum* (Pop I. & al. 1964:221); Măgina, Pădurea Școlii Hill, above the way, 15.08.1967, *det.* Plămadă E., ass. *Lathyro (hallersteinii)-Fagetum* (Gergely 1968:344); Poiana Ponorului (Boros & Vajda 1974:7); Valea Lungă, *leg. & det.* Barth J., sub *Jungermannia* [SIB HF 1477](Drăgulescu 1983:57); Pojar Hill, on hornbeam tree, 580 m *alt.*, 25.08.1994, ass. *Madotheco-Leskeetum nervosae* (Gams 1927) Barkman 1958 (Goia 1998:259, Tab.8; Goia 2001:49,51); Arieșul Mic Basin (Goia & Schumacker 2000:91); Gârda Seacă Valley, 1225 m *alt.*, 8.08.1996, bryocoenosis with *Brachythecium reflexum*, Măgura Valley, 1300 m *alt.*, ass. *Pterygynandretum filiformis* Hilitzer 1925 (Goia 2000:119,120, Tabs.7,8); Gogii-Cobleș Brook, Scărișoara-Gârda interfluve, Scărișoara Cave, Măgura Valley, Măgura-Obârșia interfluve, Divaia Valley, Vidrișoara Valley, Băii Brook – Drăghia

Valley, Arieșul Mic – upstream mine, on beech, Ordâncușa Valley, Gârda Seacă – upstream Casa de Piatră, Galbena Valley, Drăghița Valley, Pătroșeilor Valley, on beech and rotten woods, Morii Valley, on beech, common spruce and rotten woods, Izbucul Chiobului, Vârciorog Valley, Stearpă Valley, on rotten wood (Goia 2001:49,51); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86); Divaia Valley, 21.08.1994, Pojar Hill, 25.08.1994, Vidrișoara Valley, 20.08.1992, Cheia Valley, 31.07.1994, Arieșul Mic Valley, 20.08.1994, ass. *Pterigynandretum filiformis*, Vidrișoara Valley, 20.08.1992, Morii Valley, 7.08.1994, ass. *Homalothecium sericei-Porelletum platyphyllae* Størmer 1938, Pătroieștilor Valley, 22.08.1992, Morii Valley, 13.08.1994, Divaia Valley, 21.08.1994, ass. *Anomodontetum attenuati* Cain et Sharp 1938, Băii Valley, 20.08.1994, Arieșul Mic Valley, 20.08.1994, Drăghița Valley, 20.08.1994, ass. *Isothecium myuri* Hilitzer 1925, Divaia Valley, 21.08.1994, Drăghița Valley, 20.08.1996, ass. *Anomodonto viticulosi-Leucodontetum sciuroidis* Wisn. 1930, Pătroieștilor Valley, 22.08.1992, Divaia Valley, 21.08.1994, ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia & Schumacker 2003:60-64, Tabs.2-5); Gârda Seacă Valley, 1460 m alt., 08.08.1996, ass. *Orthotrichetum pallentis* Ochs. 1928, Gârda Seacă Valley, 1000 m alt., 8.08.1996, Scărișoara cave, 1080 m alt., 11.08.1996, Ordâncușa Valley, 1150-1180 m alt., 11.08.1996, Galbena Valley, 980 m alt., 12.09.1996, between Măgura and Obârșia Valley, 980-1000 m alt., 27.09.1996, between Gârda Valley and Scărișoara cave, 11.08.1996, ass. *Pterigynandretum filiformis*, Scărișoara cave, 1080 m alt., 11.08.1996, ass. *Homalothecio sericei-Porelletum platyphyllae*, between Gârda Seacă and Scărișoara Cave, 1100 m alt., 11.08.1996, Pârâul Gogii Valley, 1300 m alt., 9.08.1996, ass. *Isothecium myuri*, Ordâncușa Valley, 1060 m alt., 11.08.1996, between Măgura Valley and Obârșia Valley, 700 m alt., 27.09.1996, ass. *Anomodonto viticulosi-Leucodontetum sciuroides* (Goia & Schumacker 2004:107-110, Tabs.1-3).

Cluj County, Făget Forest, 600 m alt., 21.09.1921, leg. & det. Péterfi M. [FRE 313] (Borza 1924:41; Borza & Nyárady E.I. 1940:11; Boros 1958:3,7); Cluj-Napoca (Soó 1951:33; Boros 1958:7); Pleșca Valley (Boros 1958:3,7); Huza Forest on Filii Mountain, near the Chalet (Muntele Mare), on rocks and the base of bark, 700-750 m alt., in *Leucodontetalia* and *Fagetalia* (Plămadă & Coldea 1989b:120-121); Mera Forest Basin, on soil, bark and rotten woods, 1963-1965 (Plămadă 1968:24); Turda's Gorges (Plămadă & Goia 1994:87).

Gilău Mountains, beech forest (Plămadă 1985b:41).

Bihor County, Someșul Rece Valley, Tălișoara zone, at Stânca Bethlen, Răcătău, the waterfall from Răchițele, Șiclău, 09.1902 (Györffy 1903a:147); Vlădeasa Mountains, 1600-1700 m alt., 10.09.1902, leg. Györffy I. (Schiffner 1909a:25,30); Stâna de Vale, ass. *Piceetum montanum* Br.-Bl. 1939, Baia Popii Hill, below Poieni, 1500 m alt., 22.07.1965, below Prelucii Peak, 1130 m alt., 8.08.1964, below Custurilor Peak, 1380 m alt., 4.08.1965, Băița, 1150 m alt., 4.08.1965, Stâna de Vale, ass. *Piceeto-Fagetum carpaticum* Svoboda 1939, in the back of the forest hut and towards Custurilor Peak, 1150 m alt., 19.07.1964, below Prelucii Peak, 1250 m alt., 2.08.1964 (Rațiu O. 1967:330,335, Tabs.1,2); Someșul Cald Gorges (Goia & Mătase 2001:17).

Satu Mare County, on bark of *Ginkgo biloba* (Țopa 1978:47).

var. *ulvula* Nees

Syn.:

- *Metzgeria furcata* fo. *prolifera* Nees
- *Metzgeria furcata* var. *pinnata* Dumort.
- *Metzgeria furcata* var. *prolifera* (Nees) ?
- *Metzgeria furcata* var. *ulvula* fo. *pinnata* Dumort.

Moldova (Papp 1943:652; Ștefureac & al. 1973:142).

Muntenia (Mohan 1988b:114).

Herbaria and Exsiccate: BUCA, PHHM, SIB, FRE

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Yu, Ba, Mk, Ro, Bg, Al, Gr, Ct, Tu, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Rc, Re, Ca, Az, Ma, Cn.

Distribution in Romania:

Botoșani County, Comănești, Lișna and Suhărâu Forests, on beech trees (Mihai 1966:147, Tab.2).

Suceava County, Bistrița Aurie Valley, between Iacobeni and Ciocănești, north-western slope of Brezuța Peak, the edge of Suhărzelul and Suhărzelul Mare Brooks, sub fo. *pinnata* (Pascal 1969:106); Brezuța Peak, Suhărzelul and Suhărzelul Mare Brooks near Ciocănești, sub var. *pinnata* (Pascal & Mititelu 1971; Pascal 1973; Ștefureac & Pascal 1981:477).

Rarău Mountain, Codrul Secular Slătioara (Mickiewicz 1968:30,31).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Neckerieto-Isothecietum myosuroides* Barkman 1958, subass. *isothecietosum myuri* Barkman 1958 (Ștefureac, Mihai & Pascal 1976:35, Tab.3).

Iași County, below Repedea, 7.10.1891, *leg.* Vlădescu M. (Radian 1915:196; Papp 1929:555); Bârnova Forest, sub var. *pinnata* (Papp 1925c:156; Papp 1929:555); Repedea and Bârnova forests, sub var. *pinnata* (Papp 1939a:354,355); Repedea Forest, sub var. *pinnata* (Papp 1942b:524); Bârnova Forest, on beech bark, 400 m *alt.*, 29.03.1925, *leg. & det.* Papp C. [FRE 2386] (Borza 1943:22); Bârnova, 400 m *alt.*, 29.03.1925, *leg. & det.* Papp C. [PHHM 6207962](Mohan 1971a:7); Repedea-Bârnova Forest Massif, ass. *Metzgerietum furcatae* Størmer 1938 (Mihai 1974a:130, Tab.6).

Harghita Mountains, 30.08.1901, sub var. *prolifera* (Barth 1905:12).

Harghita County, Mărtiniș, 2.10.2007, *leg. & det.* Ștefănuț S. [BUCA B3997].

Neamț County, Neamț Monastery, on common spruce bark, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Pângăracior Brook Valley, on wet soil (Mihai 1973d:28).

Nemira Mountains, Șandru, Nemira, in beech forest, on beech bark, in common spruce forest, on rotten trunk tree and stones, 1970-1977 (Mihai & Barabaș V. 1978:115).

Bacău County, Cerbu Brook, sub var. *pinnata* (Papp 1957:284); Berzunț Culm, 400-800 m *alt.*, sub var. *pinnata* (Papp & Bîrcă 1960:316,325); Ghioina Forest, on rotten beech trunk (Eftimie 1972:150).

Ciucăș Mountains, Cheia Monastery, at the base of Zăgan Mountain, 1.09.1900 (Radian 1915:196).

Brașov County, Predeal, 6.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3397]; Tâmpa, 18.06.2006, *leg. & det.* Ștefănuț S. [BUCA B3509, B3510](Ștefănuț 2008b:28).

Postăvaru Mountain, Dracului Valley, 850 m *alt.*, 14.03.1999, *leg.* Mihăilescu Simona, *det.* Ștefănuț S. [BUCA B2220].

Piatra Mare Mountain, ♀ - Chiva Valley, 17.05.2006, *leg.* Avramescu C., *det.* Ștefănuț S. [BUCA B3430], s - [BUCA B3431].

Gârbova Massif, Rea Valley, 1000-1300 m *alt.*, Cumpătul Peak, 1651 m *alt.* (Mickiewicz 1968:30-35).

Prahova County, Doftana Valley, in *Quercus petraea* forest, 45°10'11,8"N / 25°45'04,6"E, 26.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3415, B3419] (Vasiliu-Oromulu 2008:87); Doftana Valley, in mixed *Quercus petraea* with *Fagus sylvatica* forest, 45°10'01,6"N / 25°45'09,2"E, 27.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3424] (Vasiliu-Oromulu 2008:87).

Bucegi Massif, Sinaia, on bark, 08.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Vârful cu Dor, 1891 m *alt.*, Urlătoarea Valley, 900-1000 m *alt.* (Mickiewicz 1968:30-35).

Piatra Craiului National Park, Diana, BV, 1100 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2815, B2824-B2826](Ștefănuț & Pop O.G. 2006:79); Great Gorges of Dâmbovița River, AG, 45°23'19"N / 25°11'45"E, 800 m *alt.*, 7.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2576] (Ștefănuț & Pop O.G. 2006:79); Great Gorges of Dâmbovița River, AG, 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2799] (Ștefănuț & Pop O.G. 2006:79); Gura Râului, BV, 45°33'07"N / 25°17'50"E, 900 m *alt.*, 9.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2725] (Ștefănuț & Pop O.G. 2006:79); Garofița Pietrei Craiului Hut, AG, on beech, 45°30'39"N / 25°10'27"E, 1200 m *alt.*, 9.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2724] (Ștefănuț & Pop O.G. 2006:79); Crăpătura Pietrei Craiului, BV, 45°33'49"N / 25°15'54"E, 1050 m *alt.*, 21.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2761] (Ștefănuț & Pop O.G. 2006:79); Crăpătura Pietrei Craiului, BV, on rotten wood, 45°33'44"N / 25°15'51"E, 1100 m *alt.*, 21.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2762] (Ștefănuț & Pop O.G. 2006:79); Crăpătura Pietrei Craiului, BV, 45°33'44"N / 25°15'51"E, 1100 m *alt.*, 21.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2763] (Ștefănuț & Pop O.G. 2006:79).

Hunedoara County, Deva (Péterfi M. 1910:320); between Deva and Șoimuș Commune, sub var. *pinnata* (Peicea 1973:441,443, Tabs.2,3).

Caraș-Severin County, Grota cu Aburi, 400 m *alt.*, 6.08.2004, *leg. & det.* Ștefănuț S. [BUCA B2975].

Domogled Mountain, Crucea Albă, 500 m *alt.*, 9.08.2004, *leg. & det.* Ștefănuț S. [BUCA B2985].

Arad County, Runcu-Groși Reserve, 46°10'14"N / 22°07'34"E, 428 m *alt.*, 20.08.2008, *leg. & det.* Ștefănuț S. [BUCA B3928], 46°10'12"N / 22°07'34"E, 444 m *alt.*, 21.08.2008, *leg. & det.* Ștefănuț S. [BUCA B3929].

Mureș County, Lechința, on bark, *leg.* Borza A., *det.* Papp C., sub fo. *pinnata* (Papp 1944a:98).

Alba County, Valea Lungă, 10.02.1868 *leg. & det.* Barth J., sub var. *prolifera* [SIB HF 1498](Drăgulescu 1983:57).

Cluj County, Feneșul Săsec, *leg.* Borza A., *det.* Papp C., sub fo. *pinnata* (Papp 1944a:98; Boros 1958:7); Cluj-Napoca Botanical Garden, Țiganilor Brook, on common spruce, sub var. *pinnata* (Plămadă 1963:179; Plămadă 1969:170; Ștefureac 1982c:197, Tab.2); Hoiia Forest, north-west to Cluj, on soil and bark, 1961-1963, sub var. *pinnata* (Plămadă 1966:60); Cluj, on bark, 1961-1966, sub var. *pinnata* (Plămadă 1967:470); Mera Forest Basin, on soil, bark and rotten woods, 1963-1965 (Plămadă 1968:24).

Metzgeria violacea (Ach.) Dumort.

Syn.:

- *Jungermannia fruticulosa* (Dicks.) Sm.
- *Jungermannia furcata* var. *aeruginosa* Hook.
- *Jungermannia furcata* var. *violacea* (Ach.) Nees
- *Jungermannia violacea* Ach.
- *Metzgeria fruticulosa* (Dicks.) A. Evans
- *Metzgeria furcata* var. *aeruginosa* (Hook.) Gottsche et al.
- *Metzgeria furcata* var. *fruticulosa* (Dicks.) Lindb.
- *Riccia fruticulosa* Dicks.

First citation for Romania: Boros & Vajda 1967.

Ecology: corticolous, epilithic, mesoacidophytic, mesophytic, sciophytic; circumpolar; suboceanic; Hth.

Distribution in Europe: Fo, No, Dk, Se, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Me, Ro, Lt, Ua, Ma.

Distribution in Romania:

Cindrel Mountains, Păltiniș, 1200-1300 m *alt.*, *leg. & det.* Boros Á., sub *M. fruticulosa* (Boros & Vajda 1967:217; Gündisch 1977:46; Ștefureac 1986f:192; Drăgulescu 2003:8); Păltiniș, 1250 m *alt.*, *leg.* Boros Á., sub *M. fruticulosa* (Gündisch 1977:46; Drăgulescu 2003:8; Goia & Ștefănuț 2004a:33-35, Fig.1).

Bihor Mountains, Cobleș Valley, Arieșeni, on willow bark, sub *M. fruticulosa* (Goia 2001:49-51, Figs.6,7; Goia & Ștefănuț 2004a:33-35, Fig.1; Sass-Gyarmati, Goia & Pócs 2008:121); Cobleș Valley, 1060 m *alt.*, 11.08.1996, ass. *Anomodonto viticulosi-Leucodontetum sciuroides* Wisn. 1930, Cobleș Valley close to spring, 860 m *alt.*, ass. *Brachythecio salebroși-Drepanocladetum uncinati* Marst. 1989, sub *M. fruticulosa* (Goia & Schumacker 2004:110,111, Tabs.3,4). Galbena's Gorges, gorge below the bridge, on shady limestone rocks and on decaying wood near the river, 46°33'11"N / 22°40'20"E, 700 m *alt.*, 8.09.2006, *leg.* Goia I. & Pócs T. (Sass-Gyarmati, Goia & Pócs 2008:121); Gârda Seacă Valley, on twigs of *Viburnum lantana* along a creek of Izbuc Cotețul Dobreștilor, NW of Dobrești village, in shady bush, 46°28'41"N / 22°48'32"E, 763 m *alt.*, 13.06.2006, *leg.* Sass-Gyarmati A. (Sass-Gyarmati, Goia & Pócs 2008:121); Ordâncușa's Gorges, NE of Gârda, at several points of this deep gorge, along the trail to the entrance of Poarta lui Ionele Cave near a creek, in *Piceo-Fagetum*, on *Picea* and on *Acer pseudoplatanus* twigs and bark, 46°27'59"N / 22°50'18"E, 770 m *alt.*, 27.06.2006, *leg.* Sass-Gyarmati A., at the narrowest part of the Gorge, on *Salix caprea* twigs along streamlet, 830-840 m *alt.*, 20.04.2007, *leg.* Pócs S. & T., in the upper part of the Gorge, on twigs of different shrubs in streamside *Alnetum incanae* and *Petasitetum* stands, 46°28'41-43"N / 22°50'51"E, 860-870 m *alt.*, 27.06.2006, *leg.* Sass-Gyarmati A. (Sass-Gyarmati, Goia & Pócs 2008:121,122).

Pădurea Craiului Mountains, Toplița Valley, East of Vida Lake and Luncasprie Village, in streamside *Fagetum-Carpinetum*, small patches on bark of *Carpinus betulus*, 250 m *alt.*, 2006, *leg.* Pócs T. & R. Rico, *det.* Pócs T., sub *M. temperata*, rev. Pócs T. 2007 (Pócs 2006:9,11,14-16,24, Figs.6-8; Sass-Gyarmati, Goia & Pócs 2007:13; Sass-Gyarmati, Goia & Pócs 2008:121,122).

Metzgeria sp.

Rarău Mountain, Codrul Secular Slătioara (Ștefureac 1941:1177,1265).

Cluj County, Fenișel, *leg.* Péterfi M. (Györfy 1924b:38).

Moerckia blyttii (Moerch) Brockm.

Syn.:

- *Blyttia moerkii* Nees
- *Calycularia blyttii* (Moerch) Steph.
- *Cordaea blyttii* (Moerch) Corda
- *Diplomitrium blyttii* (Moerch) Nees
- *Jungermannia blyttii* Moerch
- *Moerckia norvegica* Gottsche
- *Pallavicinia blyttii* (Moerch) Lindb.

First citation for Romania: Borza 1921a.

Romania (Müller 1954:524; Schuster 1992a:524).

Ecology: epilithic-epigaeic, acidophytic, hygrophytic, sciophytic; circumpolar; arctic-alpine; Hth. Characteristic species to glacial rings.

Herbaria and Exsiccate: BUCA, FRE

Distribution in Europe: Is, Fo, No, Se, Fi, Br, Fr, De, Po, Ch, At, Cz, Sk, It, Ro, Ua, Nz, Rn.

Distribution in Romania:

? - **Maramureş County**, Lăpuş (Papp 1967a:13).

Rodna Mountains, below Ineu Peak, 1920 m *alt.*, 13.08.1918, *leg.* Péterfi M. [FRE 17](Borza 1921a:6; Györfy 1924b:39; Borza & Nyárády E.I. 1940:11; Ştefureac 1951a:58); Ineu, above Lala Lake, 1920 m *alt.*, 19.08.1917, *leg.* Mühlendorf A. (Ştefureac 1951a:58); Ineu (Ştefureac 1951a:58); Pietrosul Rodnei, the edge of Pietrosu Lake, on stones, 7.08.1948 (Ştefureac 1951a:58; Ştefureac 1983g:177,178,181; Nădişan & Chercheş 2002:58); Rodna Mountains, ass. *Polytrichetum sexangularis* (Ştefureac 1957b:331); Rodna Mountains, the edge of glacial lakes (Ştefureac 1963c:166,170; Ştefureac 1967b:315; Ştefureac 1979c:59); Iezerale Buhăescu, MM, 47°35'18"N / 24°38'40"E, 29.08.1999, 1880 m *alt.*, *leg. & det.* Ştefănuţ S. (Ştefănuţ 2000a:141; Ştefănuţ 2000b:11-12); *s* - Iezerul Pietrosului, MM, 47°35'52"N / 24°38'53"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2018, B2500], ♀ - [BUCA B2019], *s* - 47°35'50"N / 24°38'48"E, 1845 m *alt.* [BUCA B2363, B2365]; Ineu Glacial Ring, BN, 47°31'35"N / 24°53'35"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2223, B2227, B2409, B2410, B2413], 47°31'37"N / 24°53'36"E, 1920 m *alt.* [BUCA B2421, B2424-B2426] (Ştefănuţ 2000b:11-12).

Făgăraş Mountains, ♀ - Bâlea Lake, SB, 45°36'17"N / 24°37'07"E, 2040 m *alt.*, 6.07.1998, *leg. & det.* Ştefănuţ S. [BUCA B2021], ♂ - [BUCA B2022] (Ştefănuţ 2000b:12; Ştefănuţ 2001:129; Ştefănuţ 2002:190); Bâlea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2015], 45°36'14"N / 24°37'04"E, 2040 m *alt.* [BUCA B2017], ♀ - 45°36'07"N / 24°37'03"E, 2050 m *alt.* [BUCA B2176] (Ştefănuţ 2000b:12; Ştefănuţ 2001:129); ♀ - The glacial ring from Doamnei Valley, SB, 45°36'05"N / 24°36'27"E, 2150 m *alt.*, 16.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2171], ♂ - [BUCA B2172] (Ştefănuţ 2001:129); Urlea Lake, BV, 45°35'42"N / 24°50'28"E, 2200 m *alt.*, 17.09.2001, *leg. & det.* Ştefănuţ S. [BUCA B2344], 45°35'44"N / 24°50'31"E, 2200 m *alt.*, 17.09.2001, *leg. & det.* Ştefănuţ S. [BUCA B2048], 45°35'42"N / 24°50'25"E, 2194 m *alt.*, 17.09.2001, *leg. & det.* Ştefănuţ S. [BUCA B2402, B2891] (Ştefănuţ 2002:190,195).

Moerckia hibernica (Hook.) Gottsche

Syn.:

- *Blyttia lyellii* var. *flotoviana* Nees
- *Blyttia lyellii* var. *hibernica* (Hook.) Nees
- *Calycularia hibernica* (Hook.) Steph.
- *Cordaea flotoviana* Nees
- *Dilaena hibernica* (Hook.) Dumort.
- *Diplolaena hibernica* (Hook.) Dumort.
- *Diplomitrium hibernicum* (Hook.) Corda
- *Jungermannia hibernica* Hook.
- *Moerckia flotoviana* (Nees) Schiffn.
- *Moerckia hibernica* var. *flotoviana* (Nees) Hartm.
- *Moerckia hibernica* var. *wilsoniana* Gottsche
- *Pallavicinia flotoviana* (Nees) Lindb.
- *Pallavicinia flotoviana* var. *hibernica* (Hook.) Lindb.
- *Pallavicinia hibernica* (Hook.) Gray
- *Pallavicinia flotowii* Lindb.

First citation for Romania: Radian 1915.

Romania (Müller 1954:526; Schuster 1992a:517).

Muntenia (Mohan 1988b:112).

Ecology: epigaeic, truficolous, neutro-basiphytic, hygrophytic, sciophytic; circumpolar; Hth.

Herbaria and Exsiccate: CL, FRE

Distribution in Europe: Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, It, Si, Ro, Ee, Lv, Lt, By, Rn, Rw.

Distribution in Romania:

Maramureş County, Vinişoara Valley, Cizla affluent, at Izvoarele Alexandru, on calcareous tufa (Boros 1943b:123; Ştefureac 1951a:59; Ştefureac 1963b:88; Ştefureac 1967b:315; Ştefureac 1967d:246; Ştefureac 1973c:151; Plămadă 1977b:113; Ştefureac 1979c:59; Ştefureac 1986f:192,196; Dihoru G. 1987a:88).

Rarău Massif, between Dealul Colbului and Pietrele Doamnei, 1520 m *alt.*, 10.09.1948, 27-28.08.1949, 27.08.1950, sub *M. flutowiana* (Ștefureac 1951a:59-69, Tabs.1,2, Pl.I, Fig.1a-c, Pl.II, Figs.1,2; Ștefureac 1963b:88, Fig.3a-c; Ștefureac 1967b:315,317; Ștefureac 1967c:98; Ștefureac 1967d:246; Ștefureac 1970d:24,39, Fig.1; Ștefureac 1973c:135,136,151,158; Plămadă 1977b:113 Ștefureac 1986f:196; Dihoru G. 1987a:88); Rarău Peak, sub *M. flutowiana* (Papp 1969b:188).

Bucegi Massif, ♀, ♂ - Sinaia, towards Castelul Peleş, in forest, 960 m *alt.*, 17.07.1897, 12.08.1903, 24.04.1914, *leg.* Radian S.Ș. (Radian 1915:196, Ștefureac 1951a:58; Ștefureac 1963b:88,101,102; Ștefureac 1967b:315,317; Ștefureac 1967d:246; Ștefureac 1973c:151; Plămadă 1977b:113; Ștefureac 1986f:190,191; Dihoru G. 1987a:88).

Alba County, Vârciorog Valley, on rotten wood (Goia 2001:53); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89).

†**Cluj County**, Apahida, Tăul Rotund (Darvastó) Lake, 370 m *alt.*, 15.05.1916, *leg.* Péterfi M., 25.05.1916, *leg.* Györfy I. & Péterfi M., *det.* Péterfi M., sub *M. flutowiana* [CL 114276, FRE 16](Borza 1921a:6; Prodan 1923:53; Györfy 1924b:39; Prodan 1931:52,225, Pl.II; Prodan 1939:202; Borza & Nyárady E.I. 1940:11; Nyárady E.I. 1941:5; Ștefureac 1951a:58; Müller 1954:526; Boros 1958:7; Ștefureac 1963b:88; Ștefureac 1967b:315,318; Ștefureac 1967d:246; Ștefureac 1971b:16; Ștefureac 1973c:151; Ștefureac 1976a:318; Plămadă 1977b:113; Dihoru G. 1987a:88). *Obs.* The species was not recovered by Ștefureac T., Pop E. & Țopa E. in June 1950, because the lake has been drained (Ștefureac 1951a:58; Plămadă 1977b:113; Ștefureac 1986f:189,196; Dihoru G. 1987a:88).

Retezat Mountains, towards Tăul Judele, sub *M. flutowiana* (Páll 1964a:108); *Obs.* Unconfirmed by Ștefureac T. or Plămadă E. (Ștefureac 1973c:151; Plămadă 1977b:113).

Mylia anomala (Hook.) Gray

Syn.:

- *Jungermannia anomala* Hook.
- *Jungermannia anomala* var. *vagans* Hartm.
- *Jungermannia taylorii* var. *anomalus* (Hook.) Nees
- *Leioscyphus anomalus* (Hook.) Steph.
- *Leptoscyphus anomalus* (Hook.) Lindb.
- *Leptoscyphus anomalus* var. *subremotus* Schiffn.
- *Leptoscyphus anomalus* var. *turfosus* Schiffn.
- *Mylia anomala* var. *laxa* (Nees) Jørg.
- *Mylia anomala* var. *subremota* (Schiffn.) Jørg.
- *Mylia anomala* var. *turfosa* (Schiffn.) Jørg.
- *Mylia anomala* var. *vagans* (Hartm.) Kaal.
- *Mylia taylorii* var. *anomalus* (Hook.) Bernet

First citation for Romania: Péterfi M. 1908.

Moldova, sub *Leptoschyphus* (Papp 1943:659).

Muntenia (Mohan 1988b:105).

Ecology: epigaeic, truficolous, humicolous, highly acidophytic, hygrophytic, sciophytic; circumpolar; mountain-suboceanic; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Es, It, Si, Ba, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re.

Distribution in Romania:

? - **Țibleș Mountains**, Mesteacănul Valley, „La Borcut”, small peatbog, 1650 m *alt.*, 1984-1985 (Mohan 1988a:20).

Suceava County, Poiana Stampei, 17.05.1910, sub *Aplozia* (Lilienfeldówna 1911:732); Tinovul Mare (Papp 1931a:217-219, Figs.1-5); Tinovul Mare de la Șaru Dornei, 890 m *alt.*, sub *Leptoscyphus* (Pop E. 1960:286); Valea Stâniei Peatbog, between Fundul-Moldovei and Cârlibaba, peatbog, 1100 m *alt.* (Diaconeasa & Ștefureac 1971a:381); Cristișor-Neagra Broștenilor, Borcut Meadow, in peatbogs, ass. *Campylopo-Dicranielletum cerviculatae* Herzog 1943 (Lungu 1973b:70,72; Lungu 1974:74, Tabs.1,2; Lungu 1976:235, Tab.1; Lungu 1981c:93,95; Ștefureac 1986f:193); Neagra Broștenilor Meadow at Cristișor, in peatbogs, ass. *Eriophoro-Sphagnetum recurvi* Hueck 1925, ass. *Sphagnetum medii* Kästn., Flossn. & Uhl. 1933, ass. *Sphagnetum acutifolii* Pușcariu & al. 1956, ass. *Sphagnetum fusci* Luqu. 1926 (Lungu 1977:232,234, Tab.1).

Harghita County, Mohoş, sub *Leptoscyphus* (Boros 1943c:114; Pop E. 1960:322; Boros & Vajda 1967:222; Bálint & Orbán 2006:469); Búdösfüördö Peatbogs from Sântimbru, *leg. & det.* Boros Á., Topliţa, *leg. & det.* Zólyomi B. (Boros & Vajda 1967:222); Mohoş Peatbog, 1050 m *alt.*, 3.06.2004, *leg.* Mihăilescu Simona, *det.* Ştefănuţ S. [BUCA B2216].

Bodoc Mountains, Zombor Brook Valley - Cereş Spa (Ştefureac & Kovács 1981:117).

Penteleu Massif, Roşu Lake, in peatbogs, 1510 m *alt.*, 11.10.1983 (Dihoru G. 1987b:94).

Bucegi Massif, Ialomiţa Valley, 1500 m *alt.*, Izvorul Nucet, 1800 m *alt.*, below Blana, 1800 m *alt.*, sub *Leptoscyphus*, ass. *Sphagnetum acutifolii* (Puşcaru D. & al. 1956:246, Tab.85; Ştefureac 1972c:101); Lăptici Peatbog, 1500 m *alt.*, 1946, sub *Leptoscyphus* (Ştefureac 1949c:691; Pop E. 1960:349; Godeanu S. 1970:45); Lăptici Peatbog, 1470 m *alt.* (Ştefureac 1972c:100).

Făgăraş Mountains, Podragu Valley, 1700 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222).

Alba County, Ponor at "Mluha", *leg.* Péterfi M. (Boros & Vajda 1967:222).

Cluj County, Dobrin Mountain, sub *Leptoscyphus* (Péterfi M. 1918:61); Muntele Mare, 15.06.1915, *leg. & det.* Györfy I. & Péterfi M. (Györfy 1924b:39); the peatbogs from spring and upper course of Someşul Rece, incl. Muntele Mare and Dobrin, sub *Leptoscyphus* (Pop E. 1960:397).

Bihar County, the peatbogs from Onceasa-Piatra Grăitoare (Péterfi M. 1908:274; Pop E. 1960:371).

Mylia taylorii (Hook.) Gray

Syn.:

– *Jungermannia taylorii* Hook.

– *Leioscyphus taylorii* (Hook.) Steph.

– *Leptoscyphus taylorii* (Hook.) Mitt.

– *Leptoscyphus taylorii* var. *demissus* Schiffn.

– *Mylia taylorii* var. *demissa* (Schiffn.) Jørg.

First citation for Romania: ?Grecescu 1869; Hazslinszky 1885.

Romania (Ştefureac 1969a:145, Fig.39).

Maramureş (Ştefureac 1979c:59).

Moldova, sub *Leptoschyphus* (Papp 1943:659).

Muntenia (Mohan 1988b:105).

Ecology: saprolognic, turficolous, epilithic, acidophytic, hygrophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccatae: BUCA, CL, Herb. Boros, PHHM, FRE

Distribution in Europe: Sj, Fo, No, Se, Fi, Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, It, Si, Hr, Sb, Ro, Lv, Ua, Rn, Rw.

Distribution in Romania:

Maramureş County, Vaser Valley, sub *Jungermannia* (Hazslinszky 1885:63); Vişeu, sub *Jungermannia* (Warnstorf 1895b:142); Vaser Valley, *leg. & det.* Péterfi M., sub *Leptoscyphus* (Ştefureac 1969a:124); Şerban Mountain, *leg. & det.* Boros Á. (Boros & Vajda 1969:415).

Rodna Mountains, *without locality* (Pax 1908:129; Ştefureac 1969a:124); Galaţi Mountain, 1800-1900 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:221; Ştefureac 1969a:125); Pietrosul Rodnei (Ştefureac 1983g:177,179; Plămadă 1987b:336; Nădişan & Chercheş 2002:58).

Suceava County, Cârlibaba Brook Valley, 15.07.1966, *leg.* Pascal P., *det.* Ştefureac T. (Ştefureac 1969a:125; Pascal 1970b:112); Cârlibaba Brook Valley, 1967 (Ştefureac & Pascal 1970a:245,246,249).

Giuralău Mountain, Poiana Iţcani Reserve, on western slope, on rotten common spruce wood, 880-920 m *alt.*, 1946-1957 (Ştefureac 1969a:125, Tab.16; Ştefureac 1970d:25; Boşcaiu 1970:134; Ştefureac & Mohan 1970b:151); Giuralău (Ştefureac 1973c:135,136,152,158).

Rarău Mountain, Rarău, 15.05.1910, sub *Aplozia* (Lilienfeldówna 1911:732); Rarău, 14.05.1910, *leg. & det.* Wycieczka Z., *conf.* Ştefureac T. [CL 21401] (Ştefureac 1969a:124,139); Codrul Secular Slătioara, Valea lui Ion Brook, 820-1000 m *alt.*, sub *Leptoscyphus* (Ştefureac 1941:1154,1284,1303, Tabs.3,9; Ştefureac 1965c:63; Ştefureac 1967c:98; Papp 1969b:188; Ştefureac 1969a:125, Tab.16; Ştefureac 1970d:25; Ştefureac 1973c:135,136,152,158); Valea lui Ion Brook, 1050 m *alt.*, 19.08.1940, *leg. & det.* Ştefureac T., sub *Leptoscyphus* [FRE 2610; PHHM 6207715] (Borza 1945:247; Mohan 1971a:8; Dihoru G. 1987a:88); Slătioara, Valea lui Ion Brook, 20.07.1949, *leg. & det.* Ştefureac T. (Racoviţă A. 1960:1113); Rarău Mountain, north-western slope, 1350 m *alt.*, 1950-1959 (Ştefureac 1969a:125, Tab.16); Codrul Secular Slătioara (Ştefureac 1965f; Raclaru 1970; Ştefureac & Pascal 1981:482); Pietrele Doamnei (Ştefureac 1973c:135,136,152,158); ♀♂ - Rarău Mountain, SV, 47°27'21"N / 25°34'52"E, 25.07.2007, *leg. & det.* Ştefănuţ S. [BUCA B3750].

Harghita County, Harghita Spa, on rotten wood, 1300 m *alt.*, sub *Leptoscyphus* (Boros 1951:373; Boros & Vajda 1967:221; Ștefureac 1969a:125); the peatbog from Tușnad, 1887, *leg. & det.* Demeter K. [Herb. Boros] (Boros & Vajda 1967:221; Bálint & Orbán 2006:469,473); the peatbog from Tușnad, *leg. & det.* Felföldy L. [Herb. Boros] (Boros & Vajda 1967:221; Ștefureac 1969a:125; Bálint & Orbán 2006:469,473).

Hășmaș Mountains, Hășmașul Mic, 1887, *leg. & det.* Demeter K., 1942, Felföldy L. [Herb. Boros] (Boros & Vajda 1967:221; Ștefureac 1969a:125).

? - **Ciucaș Mountains**, Caprei Brook Valley, Berii Brook Valley (Mohan 1990b:41).

? - **Bucegi Massif**, Sinaia, Peleș Valley, on shady stumps, 3-18.08.1868, *det.* Grecescu D., sub *Jungermannia* (Grecescu 1869:311; Grecescu 1876a; Grecescu 1880:65; Radian 1901a:136,138; Ștefureac 1969a:122); *Obs.* The species was published as *Jungermannia taylori* in 1869 and, in 1880, Grecescu D. noted at this record: “*Calipogea tomentata* Monitorul Of.”

? - **Iezer-Păpușa Mountains**, (Mohan 1978b:335,342).

Retezat Mountains, Retezat Peaks, sub *Jungermannia* (Hazslinszky 1885:63; Ștefureac 1969a:124; Plămadă 1985a:52); near Casa Laborator Gemenele, 1750 m *alt.*, 5.07.1965, 30.07.1966, *leg.* Plămadă E., *det.* Ștefureac T. (Ștefureac 1969a:124,136; Plămadă 1985a:52, Fig.2; Plămadă 1993:49).

Bihor County, Moara Dracului near Stâna de Vale, 1283 m *alt.*, *leg.* Simon T. (Boros & Vajda 1967:221; Ștefureac 1969a:125; Ștefureac 1975b:313).

Bihor Mountains, Izbucul Ponorului, Padiș Mountain (Vajda 1973:291); Izbucul Ponorului (Boros & Vajda 1974:6); Padiș, 18.08.1999 (Jakab 2000a:91; Jakab 2000b:67,68,71); Someșul Cald Gorges, 4.08.1998 (Coldea & Wagner 1999:85, Tab.1); Someșul Cald Gorges (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3848, B3854].

Nardia geoscyphus (De Not.) Lindb.

Syn.:

- *Alicularia geoscypha* De Not.
- *Alicularia minor* (Nees) Limpr.
- *Alicularia scalaris* var. *minor* (Nees) Nees
- *Jungermannia dovrensis* Limpr.
- *Jungermannia minor* (Nees) Hartm.
- *Jungermannia scalaris* var. *minor* Nees
- *Jungermannia scalaris* var. *repanda* Huebener
- *Marsupella silvrettae* Gottsche ex Dumort.
- *Mesophylla minor* (Nees) Corb. ex Bouvet
- *Nardia geoscyphus* var. *dovrensis* (Limpr.) Schiffn.
- *Nardia geoscyphus* var. *suberecta* Lindb. ex C. Massal. & Carestia
- *Nardia haematosticta* Nees ex Kaal.
- *Nardia haematosticta* var. *suberecta* Lindb. ex Kaal.
- *Nardia minor* (Nees) Trevis.
- *Nardia repanda* (Huebener) Lindb.
- *Nardia silvrettae* (Gottsche ex Dumort.) Trevis.
- *Sarcoscyphus silvrettae* (Gottsche ex Dumort.) Steph.

First citation for Romania: Loitlesberger 1898.

Transylvania, sub *N. minor* (Pax 1908:128).

Muntenia (Mohan 1988b:105).

Ecology: epigeaic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, PHHM, FRE

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sc, It, Si, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Rc, Re, Ca, Az, Ma, Cn.

Distribution in Romania:

Rodna Mountains, Ineu, Crestele Găgii, Tăul Mare, 2000 m *alt.*, sub *Alicularia* (Ștefureac 1942b:91); Pietrosul Borșei, Piciorul Moșului, northern slope, in forest, 1400-1500 m *alt.*, 08.1948 (Ștefureac 1958a:110); Rodna Mountains (Ștefureac 1963c:166).

? - **Ciucaș Mountains**, Gropșoarele Peak, Tigăile Mari Culm, Căzăturii Culm, Roșu Mountain, Chirușca Saddle, Alb Brook Valley (Mohan 1990b:41).

? - **Prahova County**, Doftana Valley (Mohan 1971a:8; Mohan 1971b:47).

Cristianul Mare Mountain, 1700 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:221).

Bucegi Massif, Caraiman, sub *N. minor* (Loitlesberger 1898:193); Mălăiești Valley (Degen 1914:216; Pócs 1958:109); Obârșia Ialomiței, on calcareous rocks, 1830 m *alt.*, 5.08.1941, *leg. & det.* Ștefureac T., sub *Alicularia* [FRE 2602; PHHM 7752/3873] (Borza 1945:246; Mohan 1971a:8); Bucșoiu,

sub *Alicularia* (Papp 1967a:15); Gaura Glacial Ring, BV, 45°26'27"N / 25°26'19"E, 2120 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2253].

Leaota Mountain, Mitarca Valley, 1300-1600 m *alt.*, sub *Alicularia* (Papp & Diaconescu 1968:387).

Făgăraș Mountains, Negoiu Peak, sub *Alicularia* (Papp 1967a:15); ♀ - Urlea Lake, BV, 45°35'42"N / 24°50'28"E, 2200 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2498].

Parâng Mountains, Parâng Peak, 2050 m *alt.* (Pócs 1958:109); Repedea Valley, 08-09.1954, sub *Alicularia* (Ștefureac, Popescu & Lungu 1959:9,34).

Țarcu Mountains, Muntele Mic, 1000-1800 m *alt.*, 03.-08.1943, *leg.* Boșcaiu N., sub *Alicularia* (Ștefureac 1948a:220; Pócs 1958:109).

Cluj County, Muntele Mare, Dobrin, *leg.* Péterfi M., sub *Alicularia minor* (Györffy 1924b:37).

Nardia insecta Lindb.

Syn.:

- *Alicularia geoscypha* var. *insecta* (Lindb.) Macvicar
- *Nardia crassula* Lorbeer ex H. Buch et al.
- *Nardia geoscyphus* subsp. *insecta* (Lindb.) Jørg.
- *Nardia geoscyphus* var. *insecta* (Lindb.) Schiffn.

First citation for Romania: Boros 1951.

Distribution in Europe: No, Se, Fi, Br, Fr, NI, Be, De, ?Po, Ch, At, Cz, Hu, Ro, Ee, Rn, Rw, Rc, Re.

Ecology: humicolous, acidophytic, mesophytic, photophytic; circumpolar; mountain; Hch.

Maramureș Mountains, Șerban Mountain, 1600 m *alt.* (Boros 1951:370; Müller 1957:856; Vajda 1960:158; Boros & Vajda 1969:415).

Nardia scalaris S.F. Gray

Syn.:

- *Alicularia rotaeana* De Not.
- *Alicularia scalaris* (Gray) Corda
- *Jungermannia scalaris* Hook.
- *Jungermannia wallrothiana* Huebener
- *Mesophylla rotaeana* (De Not.) Dumort.
- *Mesophylla scalaris* (Gray) Dumort.
- *Nardia macrostipa* Kaal. ex Jørg.
- *Nardia scalaris* var. *distans* Carrington
- *Nardia scalaris* var. *gracilis* Kaal.
- *Nardia scalaris* var. *procerior* Schiffn.
- *Nardia scalaris* var. *tenera* Jørg.

First citation for Romania: Baumgarten 1846.

Muntenia (Mohan 1988b:105).

Transylvania (Pax 1908:128; Schuster 1969:857).

Ecology: epigaeic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, CL, SIB

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, NI, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sc, It, Si, Hr, Sb, Ro, Bg, Gr, Lv, Lt, By, Ua, Rn, Rw, Ka, Az, Ma, Cn.

Distribution in Romania:

Maramureș Mountains, Tâjla Valley, towards Borșa Spa, 08.1948 (Ștefureac 1958a:111); the Fountain below Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Maramureș County, Prislop, 24.08.1915, *leg.* Péterfi M., sub *Alicularia* (Györffy 1924b:37); Țibleș, *leg.* Demeter K. & *det.* Hagen, sub *Alicularia* [CL](Igmándy 1943:56); Lăpuș, sub *Alicularia* (Papp 1967a:15).

Rodna Mountains, (Pax 1908:128); Ineu, Crestele Găgii, Tăul Mare, 2000 m *alt.*, sub *Alicularia* (Ștefureac 1942b:91); Pietrosul Borșei, north-western slope, 2260-2290 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:390,391, Tab.1); Rodna Mountain (Ștefureac 1963c:166,170); Anieșul Mare Peak, 2000 m *alt.*, 17.07.1975 (Plămadă & Coldea 1982:109); Iezerul Pietrosului, MM, 47°35'50"N / 24°38'50"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2294]; Ineu Glacial Ring, BN, 47°31'37"N / 24°53'36"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2420].

Suceava County, Criștișor-Neagra Broștenilor, Borcut Meadow, on wet soil (Lungu 1973b:72; Lungu 1981c:93).

Căliman Mountains, in alpine zone, on soil, Pietrosul Peak, on soil (Mihai 1968a:204); Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m alt., 26.07.2007, leg. & det. Ștefănuț S. [BUCA B3728, B3729, B3738].

Ciucaș Mountains, Zăgan Mountain, PH, 45°29'39"N / 25°58'33"E, 1850 m alt., 4.07.2004, leg. & det. Ștefănuț S. [BUCA B3052].

Bucegi Massif, Ialomița Valley (Loitlesberger 1898:193); Bucșoiu (Degen 1914:216); Bucșoiu Saddle, 2420 m alt., The Saddle above Țigănești Valley towards Gaura, 2320 m alt., The Saddle between Gaura and Mălăiești, 2390 m alt. (Ștefureac 1955:558-560, Tab.2; Ștefureac 1991:114); Moraru, 2470 m alt., Scara Plateau, 2470 m alt., Baba Mare, 2300 alt., ass. *Caricetum curvulae* Brockm.-Jer. 1907 (Pușcaru D. & al. 1956:59,60,149, Tab.12; Resmeriță 1973a:316, Tab.2; Sanda, Popescu A. & Fișteag 1989:100, Tab.1); between Blana and Nucet Valley, 1850 m alt. (Pușcaru D. & al. 1956:396, Tab.174; Ștefureac 1972c:101,102); Bucegi, 1950-2350 m alt. (Ștefureac 1963b:99); in the north-western slope of Massif, 1900-2350 m alt. (Ștefureac 1972c:103); Gaura Glacial Ring, BV, 45°26'52"N / 25°26'32"E, 2290 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2104], 45°26'49"N / 25°26'33"E, 2270 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2438], 45°26'27"N / 25°26'19"E, 2120 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2042] (Mihăilescu & Ștefănuț 2000a:14); Gaura Glacial Ring, BV, 45°26'52"N / 25°26'32"E, 2290 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3148, B3316]; The glacial rings of Ialomița Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m alt., 10.07.1999, leg. & det. Ștefănuț S. [BUCA B2323], 45°26'13"N / 25°27'05"E, 2250 m alt. [BUCA B2193, B3311]; Mălăiești Glacial Ring, BV, 45°27'04"N / 25°26'51"E, 2100 m alt., 9.07.1999, leg. & det. Ștefănuț S. [BUCA B2116]; Curmătura Lăptici, DB, 45°22'27"N / 25°27'57"E, 1830 m alt., 28.07.2005, leg. & det. Ștefănuț S. [BUCA B3239, B3243], 45°22'25"N / 25°28'03"E, 1840 m alt., 28.07.2005, leg. & det. Ștefănuț S. [BUCA B3223]; ♀ - Lăptici Valley, DB, 45°22'34"N / 25°27'32"E, 1700 m alt., 28.07.2005, leg. & det. Ștefănuț S. [BUCA B3246], ♂ - [BUCA B3247], s - [BUCA B3233, B3236]; Babele Mountain, PH, 45°24'43"N / 25°28'37"E, 2180 m alt., 7.09.2006, leg. & det. Ștefănuț S. [BUCA B3618].

Piatra Craiului Mountains, Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m alt., 8.07.1998, leg. & det. Ștefănuț S. [BUCA B2833](Ștefănuț & Pop O.G. 2006:79); Crăpătura Pietrei Craiului, BV, 45°33'16"N / 25°15'28"E, 1550 m alt., 22.08.2003, leg. & det. Ștefănuț S. [BUCA B2741] (Ștefănuț & Pop O.G. 2006:79).

Iezer-Păpușa Mountains, Păpău Mountain (Loitlesberger 1898:193).

Făgăraș Mountains, Arpaș Valley, common spruce forest, sub *Alicularia* (Heufler 1853:48-49; Fuss 1854:20; Fuss 1878:658; Drăgulescu 2003:14); Negoiu, 1800 m alt. (Loitlesberger 1898:193; Papp 1967a:15; Drăgulescu 2003:14); Bâlea Lake, leg. & det. Zsák Z. (Schiffner 1914:305; Drăgulescu 2003:14); above Bâlea Lake, Paltina Mountain, on sandy soil, 2100 m alt., 13.07.1946 (Ștefureac 1949a:289); Urlea Lake, BV, 45°35'42"N / 24°50'28"E, 2200 m alt., 17.09.2001, leg. Ștefănuț S. & Ștefănuț Mirela, det. Ștefănuț S. [BUCA B2499], 45°35'44"N / 24°50'31"E, 2200 m alt., 17.09.2001, leg. Ștefănuț S. & Ștefănuț Mirela, det. Ștefănuț S. [BUCA B2395], 45°35'43"N / 24°50'29"E, 2195 m alt., 17.09.2001, leg. Ștefănuț S. & Ștefănuț Mirela, det. Ștefănuț S. [BUCA B2066, B2067], 45°35'42"N / 24°50'25"E, 2194 m alt., 17.09.2001, leg. Ștefănuț S. & Ștefănuț Mirela, det. Ștefănuț S. [BUCA B2341, B2403] (Ștefănuț 2002:190; Ștefănuț & Ștefănuț M. 2003:80); Bâlea Lake, SB, 45°36'17"N / 24°37'07"E, 2040 m alt., 6.07.1998, leg. & det. Ștefănuț S. [BUCA B2020]; Capra Lake, AG, 45°36'02"N / 24°37'41"E, 2250 m alt., 17.07.2000, leg. & det. Ștefănuț S. [BUCA B2077], 45°36'01"N / 24°37'48"E, 2250 m alt., 17.07.2000, leg. & det. Ștefănuț S. [BUCA B2169], 45°36'00"N / 24°37'49"E, 2250 m alt., 17.07.2000, leg. & det. Ștefănuț S. [BUCA B2299], 45°36'01"N / 24°37'47"E, 2250 m alt., 17.07.2000, leg. & det. Ștefănuț S. [BUCA B2372], 45°36'02"N / 24°37'50"E, 2250 m alt., 17.07.2000, leg. & det. Ștefănuț S. [BUCA B0954]; The glacial ring from Doamnei Valley, SB, 45°36'05"N / 24°36'27"E, 2150 m alt., 16.07.2000, leg. & det. Ștefănuț S. [BUCA B2173, B2180], 45°36'08"N / 24°36'26"E, 2120 m alt., 16.07.2000, leg. & det. Ștefănuț S. [BUCA B2095].

Cindrel Mountains, Iezerul Mare, 2000 m alt., det. Gündisch F., sub *Alicularia* [SIB HG](Niedermaier 1965:46; Gündisch 1977:49; Drăgulescu 1992:55; Drăgulescu 2003:14); Păltiniș, 1500 m alt., Oncești, 1700 m alt. (Gündisch 1977:49; Drăgulescu 2003:14); Iezerul Mic, 1900 m alt. [SIB HG](Gündisch 1977:49; Drăgulescu 1992:55; Drăgulescu 2003:14).

Sibiu County, Sibiu, sub *Alicularia* (Schur 1866:869; Fuss 1878:658; Hazslinszky 1885:72; Drăgulescu 2003:14).

Mureş County, Sighișoara, sub *Jungermannia* (Baumgarten 1846:221; Schur 1866:869; Fuss 1878:658; Hazslinszky 1885:72; Höhr 1914:87).

Retezat Mountains, Retezat, sub *Alicularia* (Hazslinszky 1885:72); Valereasca, alpine zone, Retezat Peak, 2000 m *alt.* (Schiffner 1914:305); Retezat, sub *Alicularia* (Prodan 1939:94; Ștefureac 1971b:15); Păpușa Peak, HD, 45°22'15"N / 22°54'07"E, 18.08.2004, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3057, B3060].

Țarcu Mountains, sub *Alicularia* (Hazslinszky 1885:72).

Alba County, Găina Mountain, 800-1000 m *alt.* (Péterfi M. 1908:271).

Cluj County, Pietros, 480 m *alt.*, Dealul Mare, 600 m *alt.* (Péterfi M. 1908:271); Gilăului Mountains, Lunca Valley, sub *Alicularia* (Ujvárosi 1944:34); Sălicea (Boros 1958:7).

Bihor County, Stâna de Vale, 900 m *alt.*, Bulz, 700 m *alt.* (Péterfi M. 1908:271).

Bihor Mountains, Prislop, 24.08.1915, *leg.* & *det.* Péterfi M. (Györffy 1924b:37); Padiș, 1200 m *alt.*, 08.1999 (Jakab 2000b:69).

Nardia sp.

Cluj County, Muntele Mare, 15.06.1917, *leg.* Györffy I. & Péterfi M., sub *Alicularia* (Györffy 1924b:37).

Nowellia curvifolia (Dicks.) Mitt.

Syn.:

– *Cephalozia curvifolia* (Dicks.) Dumort.

– *Jungermannia curvifolia* Dicks.

– *Trigonanthus curvifolius* (Dicks.) C. Hartm.

First citation for Romania: Simonkai 1872.

Romania (Petrov 1958:408; Schuster 1974:820).

Moldova (Papp 1943:662; Ștefureac & al. 1973:148).

Muntenia (Mohan 1988b:101).

Transylvania (Pax 1908:129).

Ecology: corticolous, saprolognicolous, epigeaic, humicolous, acidophytic, mesophytic, photophytic; circumpolar; mountain; Hch. Characteristic species to common spruce forest.

Herbaria and Exsiccate: BUCA, CSH, PHHM

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, Ni, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Rn, Rc, Ca, Az, Ma.

Distribution in Romania:

Maramureș County, Vaser Valley, Șuligu Peak, sub *Jungermannia* (Hazslinszky 1885:55); Covatar Waterfall from Săpânța, *leg.* & *det.* Boros Á. (Jakab 1999:51).

Țibleș Mountains, Țibleș Valley, Mesteacănul Valley, 1984-1985 (Mohan 1988a:22).

Suceava County, Poiana Stampei, 17.05.1910, Breaza, 3.06.1910, sub *Cephalozia* (Lilienfeldówna 1911:734); Bistrița Aurie Basin (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:485); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:92).

Rarău Mountain, Rarău, 14.05.1910, sub *Cephalozia* (Lilienfeldówna 1911:734); Codrul Secular Slătioara (Tarnavschi 1936:284,285,289; Ștefureac & Pascal 1981:485); Codrul Secular Slătioara, 800-1150 m *alt.* (Ștefureac 1941:1154,1284, Tabs.8,9; Ștefureac 1969a: Tab.16); Rarău Mountain, SV, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3775], ♀ - [BUCA B3777].

Giupalău Mountain, Poiana Ițcani Reserve, 920 m *alt.*, 1946-1957 (Ștefureac 1969a: Tab.16); ♀ - Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 11.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3695], 12.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3643], 1200 m *alt.*, 13.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3702, B3704], s - 1200 m *alt.*, 13.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3645, B3650, B3657, B3665, B3668, B3707], ♂ - 1210 m *alt.*, 1.09.2008, *leg.* & *det.* Ștefănuț S. [BUCA B3947], s - [BUCA B3952, B3960].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphidetum pellucidae* (Barkman 1958) Maurer 1961, ass. *Lophocolea heterophylla*-*Ptilidium pulcherrimum* Maurer 1961 (Ștefureac, Mihai & Pascal 1976:36,39, Tab.1); Muncel Peak, Heniu Mare Peak, Măgura Calului, Leșului Valley, 1983-1984 (Mohan & Hodoroga 1986:214).

Stânișoara Mountains, Suha Mare Brook Valley from Poiana Mărului, on rotten wood, 1974 (Pascal & Toma M. 1977:42).

Bistrița-Năsăud County, Jelna Forest, Piatra Corbului, Monari, Simionești, 1980-1981 (Mohan & Hodoroga 1983:53).

Neamț County, Neamț Monastery, on rotten wood, 07-08.1919,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Tarcău-Grinduș Mountain (Papp 1942b:525).

Ceahlău Mountain, Patapi (Papp 1924b:392; Papp 1934b:68; Zanoschi 1970:280; Manoliu & al. 1998:337); Ceahlău, 1200-1700 m *alt.* (Mihai 1979b).

Harghita County, Roșu Lake (Boros 1951:374).

Harghita Mountains, Minei Valley, 1100-1200 m *alt.*, 11.07.2000, Groapa Mare, 1300 m *alt.*, 16.08.2001, Rotund Mountain, 1100 m *alt.*, 28.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2002:38; Bálint & Orbán 2003:14).

Nemira Mountains, Nemira Mountain, on common spruce tree trunks, 1500-1550 m *alt.* (Barabaș V. 1974:28,29); Șandru, Nemira, on common spruce tree stumps, 1970-1977 (Mihai & Barabaș V. 1978:114,117); Țiganca Mountain, 1400 m *alt.*, *ass.* *Dicrano scopari-Hypnetum cupressiformis* Will. 1962, Nemira Mountain, Șandru Mountain, 750-1500 m *alt.* (Barabaș V. 1982b:62-65,75, Tabs.10,12-14,27).

Bacău County, Slănic Moldova, on rotten fir trees, 07.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5; Papp 1957:285); Slănic Brook, Slănicel Brook, on common spruce tree stumps, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:77,82); Tălâmba Brook, on rotten fir (Eftimie 1972:151,158).

Ciucaș Mountains, Roșu Mountain, Balaban Mountain, Tigăile Mici Culm, Bratocea Culm, Chirușca Saddle, Piscul Groșoarele (Mohan 1990b:40).

Brașov County, Predeal, sub *Cephalozia* (Loitlesberger 1898:195).

Prahova County, Doftana Valley, Secăria Valley, on soil [PHHM 7754/3873](Mohan 1971a:9; Mohan 1971b:48).

Gârbova Massif, Azuga Valley, Tufa Valley, Rea Valley, on humus, 1967-1970 (Lungu & Ștefureac 1970:5,9); Cumpătu Mountain, on rotten wood, 850 m *alt.*, 11.10.1985, *leg.* & *det.* Lungu L. [CSH].

Bucegi Massif, Peleş, sub *Cephalozia* (Loitlesberger 1898:195); Mălăiești Valley, sub *Cephalozia* (Matouschek 1905:81).

? - **Giurgiu County**, *fer* - Comana, on rotten woods, 1968-1969 (Ștefureac & Mohan 1970a:353,361).

Piatra Craiului Mountains, *fer* – above Zărnești, sub *Cephalozia* (Matouschek 1905:82; Ștefureac 1951b:250; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:79); Șpirlea Valley, *leg.* Pop O., *det.* Wallfisch R. (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:79); Crăpătura Pietrei Craiului, BV, 45°33'55"N / 25°15'57"E, 1000 m *alt.*, 21.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2898], 45°33'35"N / 25°15'46"E, 1250 m *alt.*, 22.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2744] (Ștefănuț & Pop O.G. 2006:79).

Făgăraș Mountains, Arpășel Valley, 1000 m *alt.* (Pócs 1958:108).

Argeș County, Valea cu Pești, 750 m *alt.* (Herzog 1919:295).

Vâlcea County, Poiana Lungă, 1000 m *alt.* (Herzog 1919:295).

Cozia Mountain, Slavei Brook, on rotten woods, 1975-1976 (Dihoru G. 1990:53).

Cindrel Mountains, Păltiniș, 1000-1450 m *alt.* (Gündisch 1977:51; Drăgulescu 2003:17).

Parâng Mountains, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,37, Tab.7).

Retezat Mountains, Zănoaga Mountain, on common spruce trees, sub *Jungermannia* (Simonkai 1872:67; Fuss 1878:655; Hazslinszky 1885:55); Zlătuia Valley, 800-1400 m *alt.*, 6-8.09.1969, *ass.* *Nowellio-Ptilidietum pulcherrimi* Plămadă 1982, Zlătuia Valley, 8.09.1969, 11.07.1970, *ass.* *Isopterygio seligeri-Dicranetum scoparii* Ježek et Vondr. 1962, Zlătuia Valley, 1200 m *alt.*, 7-8.09.1969, *ass.* *Dicrano scoparii-Hypnetum cupressiformis* (v. Krusenst. 1945) Barkm. 1958 (Plămadă 1982a:312,313,316, Tabs.6,7,9; Plămadă 1993:52, Tab.2); Paroș Valley, 45°29'44"N / 22°58'13"E, 1050 m *alt.*, 2003, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3090].

Domogled Mountain, Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8).

Zarand Mountains, Highiș Brook, along the brook (Csűrös M. 1978:76); Arăneag Valley (Csűrös M. 1978:76; Ardelean 2006:103).

Arad County, Highiş Brook above Arăneag, above Nădălbeştilor, in Hălmagiu zone below Geina, sub *Cephalozia* (Simonkai 1893:362).

Alba County, Morii Valley, on rotten wood, 600 m *alt.*, 22.10.1995, ass. *Riccardio-Nowellietum curvifoliae* Koppe 1956 (Goia 1998:260, Tab.9; Goia 2001:76); Scărişoara Cave, 1340 m *alt.*, 11.08.1996, Vârciorog Valley, 1385 m *alt.*, 13.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Galbena Valley, 780 m *alt.*, 12.09.1996, Scărişoara Cave, 1340 m *alt.*, 11.08.1996, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965 (Goia 2000:112,113, Tabs.2,3); Arieşul Mic Basin (Goia & Schumacker 2000:92); Galbena Valley, Arieşul Mare upstream to Arieşeni, Scărişoara, Iarba Rea Valley, Cobleş Valley - downstream, on rotten wood (Goia 2001:76); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

Cluj County, Dobrin Mountain (Péterfi M. 1918:61); Southern Ciucea on Surduc Valley (Boros 1942a:34); Făget Forest (Boros 1958:8); the peatbogs from spring and upper course of Someşul Rece, incl. Muntele Mare and Dobrin (Pop E. 1960:397).

Bihar County, Iadului Valley between Remetea and Bulz, 26.05.1915, *leg.* Györfy I. & Péterfi M., sub *Cephalozia* (Györfy 1924b:37; Boros 1942a:33).

Bihar Mountains, Cetăţile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:92; Jakab 2000b:67); Galbena Valley, 750 m *alt.*, 08.1999 (Jakab 2000b:66).

Odontoschisma denudatum (Mart.) Dumort.

Syn.:

- *Cephalozia denudata* (Mart.) Spruce
- *Jungermannia denudata* (Mart.) Nees
- *Jungermannia scalaris* var. *denudata* Mart.
- *Odontoschisma cavifolium* Steph.
- *Odontoschisma excipulatum* Steph.
- *Odontoschisma guadelupense* Steph.
- *Odontoschisma huebneriana* (Rabenh.) Aust.
- *Odontoschisma sphagni* var. *denudatum* (Mart.) C. Massal. & Carestia
- *Odontoschisma sphagni* var. *macrior* Bernet
- *Odontoschisma subrotundifolium* Steph.
- *Pleuroschisma denudatum* (Mart.) Dumort.
- *Sphagnocetis communis* var. *macrior* Hartm.
- *Sphagnocetis huebneriana* Rabenh.

First citation for Romania: Gündisch F. ex Drăgulescu 1983.

Ecology: humicolous, truficolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch. In mountain *Sphagnum* peatbogs.

Herbaria and Exsiccatae: BUCA, SIB

Distribution in Europe: Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Es, It, Si, Hr, Ro, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Ca, Az, Ma.

Distribution in Romania:

Harghita Mountains, Puturosul Peak, on peat, 4.08.1869, *leg. & det.* Barth J., sub *Sphagnoecetis communis*, *rev.* Gündisch F. [SIB HF 1538](Drăgulescu 1983:59); *Obs.* Probable the species *O. sphagni*, quoted by Plămadă E. from this area, is also *O. denudatum* (Drăgulescu 1983:59).

Bihar Mountains, Molhaşul Mare de la Izbuç, 1200 m *alt.*, 4.09.2007, *leg. & det.* Ştefănuţ S. [BUCA B3816].

Odontoschisma sphagni (Dicks.) Dumort.

Syn.:

- *Cephalozia sphagni* (Dicks.) Spruce
- *Cephalozia sphagni* var. *europaea* (Spruce) Spruce
- *Jungermannia sphagni* Dicks.
- *Jungermannia sphagni* var. *vegetior* Nees
- *Odontoschisma remotifolium* Warnst.
- *Odontoschisma sphagni* var. *europaeum* Spruce
- *Pleuroschisma sphagni* (Dicks.) Dumort.
- *Sphagnocetis communis* Nees
- *Sphagnocetis communis* var. *vegetior* Gottsche et al.
- *Sphagnocetis sphagni* (Dicks.) Fr.

First citation for Romania: Baumgarten 1846.

Maramureş (Ştefureac 1979c:59).

Moldova (Papp 1943:662).

Transylvania (Pax 1908:130).

Ecology: humicolous, acidophytic, hydro-hygrophytic, sciophytic; circumpolar; mountain; Hch. In mountain *Sphagnum* peatbogs.

Distribution in Europe: Is, Fo, No, Dk, Se, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Es, Co, It, Si, Ro, Bg, Lv, Lt, Ka.

Distribution in Romania:

Maramureş County, Vlăşchinescu Peatbog, *det.* Papp C. (Pop E. 1942:108; Ştefureac 1976b:1018); the peatbogs from Oaş-Maramureş region (Pop E. 1960:312; Ştefureac 1967b:316,317, Fig.4; Ştefureac 1967d:246,247; Ştefureac 1970d:24,25,39, Fig.2; Ştefureac 1976b:1018; Plămadă 1977b:113; Ştefureac 1979b:184; Ştefureac 1979c:59,65; Ştefureac 1986f:196).

Suceava County, Tinovul Mare de la Şaru Dornei, 890 m *alt.* (Papp 1931a:217,219, Fig.6; Pop E. 1960:286); Tinovul Mare de la Poiana Stampei (Ştefureac 1965d; Ştefureac 1967b:316,317, Fig.4; Ştefureac 1967d:246,247; Ştefureac 1970d:24,25,39, Fig.2; Plămadă 1977b:113; Ştefureac 1979b:184; Ştefureac & Pascal 1981:485; Ştefureac 1986f:196).

Harghita County, Lueta and Căpâlăniţa peatbogs, sub *Jungermannia*, incl. *Sphagnoecetis communis* (Baumgarten 1846:221,222; Schur 1866:875; Fuss 1878:655; Hazslinszky 1885:49; Plămadă 1977b:113; Ştefureac 1986i:159); Puturosu Mountain, Būdös Peatbog, incl. sub *Sphagnoecetis communis* (Schur 1866:875; Fuss 1878:655; Hazslinszky 1885:49; Plămadă 1977b:113; Ştefureac 1986f:196; Ştefureac 1986i:159).

Oxymitra incrassata (Brot.) Sérgio et Sim-Sim

Syn.:

- *Oxymitra androgyna* M. Howe
- *Oxymitra paleacea* Bisch.
- *Oxymitra pyramidata* Huebener
- *Pycnoscenus pyramidatus* Lindb.
- *Riccia incrassata* Brot.
- *Riccia linkii* Lindenb.
- *Riccia pyramidata* Corda
- *Rupinia pyramidata* Corda
- *Tessellina pyramidata* Müll. Frib.

First citation for Romania: Simonkai 1892.

Romania (Müller 1954:412; Szweykowski & Mendelak 1969:69, Fig.4); west part of Romania (Ştefureac 1969a:66).

Dobrogea (Müller 1954:412; Papp 1956b:34; Ştefureac, Mihai & Pascal 1970:122).

Transylvania (Papp 1956b:34).

Ecology: epigaeic, basiphytic, xerophytic, photophytic; circumpolar; submediterranean; Hth.

Herbaria and Exsiccatae: FRE

Distribution in Europe: Fr, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, Mt, It, Hr, Me, Ro, Bg, Al, Gr, Ct, Ua, Ma, Cn.

Distribution in Romania:

Măcin Mountains, at base of Țuțuiatu Mountain, Greci-Măcin granitic region, 8.05.1916, *leg.* Săvulescu T., sub *Tessellina pyramidata* (Radian 1920:73-75; Györfy 1926a:54; Györfy K. 1933; Papp 1938:300; Ştefureac, Mihai & Pascal 1970:122); Greci, *leg. & det.* Radian S.Ş., sub *Tessellina pyramidata* (Vlădescu A. 1939:59; Ştefureac, Mihai & Pascal 1970:122).

Tulcea County, Consul Hill, 250 m *alt.*, 10.09.1921, *leg. & det.* Prodan I., sub *Tessellina pyramidata* var. *paleacea* [FRE 126](Borza 1922a:23; Györfy 1926a:54; Györfy K. 1933; Vlădescu A. 1939:59; Borza & Nyárády E.I. 1940:12; Ştefureac, Mihai & Pascal 1970:122; Ştefureac 1971b:16); Iacobdeal, Piatra Roşie, sub *Tessellina pyramidata* (Vlădescu A. 1939:59; Ştefureac, Mihai & Pascal 1970:122); Cocoş Monastery, 12.11.1957, 23-24.11.1957, *leg.* Şerbănescu I., *det.* Ştefureac T. sub *Grimaldia fragrans*, *rev.* Dihoru G. 1994, sub *O. paleacea* (Ştefureac, Mihai & Pascal 1970:121; Dihoru G. 1994a:5-6).

Hunedoara County, “Pîrîul Cheia” from Almaşul Mic de Munte, *leg. & det.* Bunea T., sub *Tessellina pyramidata* (Ştefureac 1969b:15).

Arad County, near Ineu, sub *Tessellina pyramidata* (Simonkai 1892:386; Mágócsy-Dietz 1892:362; Simonkai 1893:359,360; Degen 1894:172; Györfy 1908d:261; Radian 1920:75; Györfy K. 1933; Müller 1954:412).

Apuseni Mountains, sub *O. paleacea* (Ştefureac 1975b:313).

Pallavicinia lyellii (Hook.) Carruth.

Syn.:

- *Blyttia lyellii* (Hook.) Lindeb., Gottsche & Nees
- *Dilaena lyellii* (Hook.) Dumort.

- *Diplolaena lyellii* (Hook.) Dumort.
- *Diplomitrium lyellii* (Hook.) Corda
- *Gymnomitrium lyellii* (Hook.) Huebener
- *Jungermannia lyellii* Hook.
- *Hollia lyellii* (Hook.) Sull.
- *Pallavicinia husnotii* Steph.
- *Pallavicinia cylindrica* (Austin) A. Evans
- *Jungermannia sinuata* Dicks.
- *Jungermannia oblonga* Schwein.
- *Pallavicinia pilifera* Steph.
- *Pallavicinia simplex* Steph.
- *Podomitrium majus* Schiffn.
- *Steetzia cylindrica* Austin
- *Steetzia lyellii* (Hook.) Lehm
- *Symphyogyna oblonga* (Schwein.) Gottsche Lindenb. & Nees
- *Symphyogyna schweinitzii* Mont. & Nees.

First citation for Romania: Ștefănuț 2003a.

Romania (Ștefănuț 2003b:237, Fig.3; Söderström, Urmi & Váňa 2007:328).

Ecology: humicolous, turficolous, acidophytic, hygrophytic, sciophytic; circumpolar; suboceanic; Hth.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Dk, Se, Ie, Br, Fr, Nl, Be, De, Po, At, Cz, Sk, Pt, Es, It, Ro, Gr, Lt, Ua, Az, Ma.

Distribution in Romania:

Făgăraș Depression, ♂ - Mlaca Mică from Arpașu de Sus near Lacul Tătarilor Peatbog, SB, 45°43'30"N / 24°28'52"E, 530 m alt., 12.10.2001, leg. & det. Ștefănuț S., conf. Dihoru G. [BUCA B0931] (Ștefănuț 2003a:71-78; Ștefănuț 2003b:231,235, Fig.3; Ștefănuț, Kirkpatrick & Boșcaiu 2003:81; Ștefănuț 2004f:73,74,77; Dihoru G. 2004:167; Mihăilescu S. & Ștefănuț 2004a:88).

Pedinophyllum interruptum (Nees) Kaal.

Syn.:

- *Jungermannia interrupta* Nees
- *Pedinophyllum interruptum* var. *pyrenaicum* (Spruce) Kaal.

First citation for Romania: Baumgarten 1846.

Moldova (Ștefureac & al. 1973:146).

Muntenia (Mohan 1988b:109).

Ecology: epilithic, basiphytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, PHHM

Distribution in Europe: Ie, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ua, Ca.

Distribution in Romania:

Maramureș County, Surduc Gorges, Poiana Botizii (Boros 1943e:144,148).

Țibleș Mountains, Bran Peak, Dealul Arsurii, Izvorul Țibleșului, Mesteacănul Valley, 1984-1985 (Mohan 1988a:21).

Suceava County, the peatbogs from Cristișor on Neagra-Broștenilor, on rotten woods, 06.1964 (Lungu 1967c:329; Lungu 1973b:72; Lungu 1981c:93); Piatra Țibău, on rocks, sub var. *pyrenaicum*, conf. Mihai G. (Pascal 1970a:198).

Rarău Mountain, Rarău, 15.05.1910, sub „*Plagiochile*” (Lilienfeldówna 1911:733); Codrul Secular Slătioara, 800-1370 m alt. (Ștefureac 1941:1154,1183,1192,1194-1196,1198,1245,1263,1265, 1267,1294, Tabs.1,3,7, Fig.15; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:197).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m alt., 1967, 1969 (Ștefureac, Mihai & Pascal 1976:36); Strâmba Valley, Cârțișavu Mare Valley, Tomnatec Peak, Piatra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:213).

Bistrița-Năsăud County, Râpa Mare, Piatra Corbului, Simionești, 1980-1981 (Mohan & Hodoroga 1983:52).

Neamț County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m alt. (Lungu 1963a:242,243).

Giurgeu Mountains, Bicz Gorges, 1978, 1979, ass. *Tortello-Ctenidietum* (Gams 1927) Stodiek 1937 (Mihai 1981a:18, Tab.5).

Harghita County, Puturosu Mountain, sub *Plagiochila* (Schur 1866:874; Fuss 1878:658; Hazslinszky 1885:70; Bálint & Orbán 2006:469); Odorhei, Budvár, 1958-1962, ass. *Festucetum glaucae* (Páll 1963b:17).

Bacău County, Slănic Brook (Papp 1957:284; Papp 1958b:417).

Buzău County, Argintăria (Lacul cel Mare and Lăcuț), *Seslerietalia* and *Fagetalia* (Dihoru G. 1975:23).

Ciucaș Mountains, Tigăile Mici Culm, Chirușca Mountain, Ciucaș Peak, Piscul Caprei, Bratocea Peak, Chirușca Saddle (Mohan 1990b:43).

Prahova County, Doftana Valley, Păltinoasa Valley [PHHM 7761/3873](Mohan 1971a:9; Mohan 1971b:48).

Brașov County, Brașov, Rupea, sub *Jungermannia viticulosa* (Baumgarten 1846:220; Schur 1866:874; Fuss 1878:658; Hazslinszky 1885:70); Tâmpa, 18.06.2006, *leg. & det.* Ștefănuț S. [BUCA B3517] (Ștefănuț 2006b:33; Ștefănuț 2008b:28).

Gârbova Massif, Azuga Valley, on rocks, 1967-1970 (Lungu & Ștefureac 1970:5,8).

Bucegi Massif, Ialomița Valley, sub *Plagiochila* (Loitlesberger 1898:193); Padina, DB, 45°23'05"N / 25°25'46"E, 6.07.1948, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B3018]; The glacial rings of Ialomița Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2319, B2320]; Furnica Mountain, PH, 45°21'35"N / 25°31'54"E, 1010 m *alt.*, 27.10.2005, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3306].

Piatra Craiului Mountains, Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2701] (Ștefănuț & Pop O.G. 2006:79); Crăpătura Pietrei Craiului, BV, 45°33'12"N / 25°15'24"E, 1550 m *alt.*, 8.06.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2868] (Ștefănuț & Pop O.G. 2006:79).

Argeș County, Dâmbovicioara, sub *Plagiochila* (Loitlesberger 1898:193).

Cozia Mountain, Slavei Brook, in wet places, 1975-1976 (Dihoru G. 1990:53).

Sibiu County, Sibiu, sub *Plagiochila* (Schur 1866:874; Fuss 1878:658; Hazslinszky 1885:70; Drăgulescu 2003:14).

Parâng Mountains, Călinești Valley, on soil, ass. *Parmelietum conspersae* Klem. 1931, on rocks, ass. *Sempervivum heuffelii* Schneider 1969, the edge of forests, ass. *Poaetum nemoralis veronicetosum bachofenii* Borza 1959 *olteanicum* Ciurchea 1970 (Ciurchea 1970:150,151,154,155); Latorița Valley, on calcareous rocks, 900 m *alt.*, 31.08.1954 (Ștefureac, Popescu & Lungu 1956a:512-513, Tab.1); Latorița Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,15,16,19,24,25).

Retezat Mountains, Coama Șesele, 12.07.1968, ass. *Pterigynandro-Isothecium myuri* Plămadă 1978 (Plămadă 1978:242, Tab.2; Plămadă 1993:54, Tab.4).

Mehedinți County, Danube Defile, between Orșova and Cerna Valley, in forest, wet vales, 1966-1968 (Plămadă 1970c:393); Sohodoarele Mari, near Baia de Aramă, *leg.* Decu V., *det.* Ștefureac T. (Ștefureac 1970h:480).

Caraș-Severin County, south to Reșița, Gaura Cave-Capul Baciului, 1970, *leg.* Negrea A. & Negrea Ș., *det.* Ștefureac T. (Ștefureac 1985e:110,111,113-116, Tab.1).

Timiș County, upstream Bega River, sub *Plagiochila* (Hazslinszky 1885:70).

Poiana Ruscă Mountains, Luncani, Tăul Ursului, *leg. & det.* Simonkai L., sub *Plagiochila* (Hazslinszky 1885:70).

Zarand Mountains, Arăneag, beech forest, on stones (Csürös M. 1978:76; Ardelean 2006:105).

Arad County, above Arăneag towards Cladova boundary, along Dezna Veche Valley and Monesei Mountain below Piatra Mare, sub *Plagiochila* (Simonkai 1893:362).

Codru-Moma Mountains, Liliecilor Cave, Ponoarele, on calcareous rocks (Mohan 1996:49; Ardelean 2006:105).

Alba County, Runcului Gorges, 500-850 m *alt.*, *det.* Páll Ș., ass. *Seslerietum rigidae* (Pop I. & al. 1964:216, Tab.3); Piatra Caprei, 960 m *alt.*, 06.1960, ass. *Seslerietum rigidae* (Páll 1964b:25); at 20,5 km to Zlatna, right slope, downstream, oak grove (Plămadă 1986a:59, Tab.1); in the Scărișoara Cave aven (Boros & Vajda 1974:4; Goia 2001:66); Cheia Valley, on calcareous rocks, 700 m *alt.*, 31.07.1994, ass. *Pedinophylletum interrupti* Herzog et Höfler ex Neumayr 1971 (Goia 1998:253, Tab.4); Gârda Valley, upstream Casa de Piatră at Izbucul Gura Apei, on rotten wood (Goia 2001:66); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87).

Mureș County, Sighișoara, sub *Jungermannia viticulosa* (Baumgarten 1846; Schur 1866:874; Fuss 1878:658; Hazslinszky 1885:70; Höhr 1914:87).

Cluj County, Tur Gorges (Páll 1960b:90); Someșul Cald Valley, Șurii Cave (Boros & Vajda 1974:8,9).

Bihor County, Iadului Valley between Remetea and Bulz, 300 m *alt.*, sub *Plagiochila* (Péterfi M. 1908:273; Boros 1942a:33); Vadu Crișului, 24.05.1915, *leg. & det.* Györfy I. & Péterfi M. (Györfy 1924b:39); Crișul Repede Defile (Boros 1942a:31; Boros 1942e:154), on shady rocks, ass. *Phyllitidi-Aceretum* (Boșcaiu & Gergely 1966:104); Șuncuiș (Boros 1942e:153); Vadu Crișului Cave, 1968, *leg.* Neacșu M., *det.* Ștefureac T. (Ștefureac 1970h:482; Ștefureac 1975b:313; Ștefureac 1985e:110,111,113-116, Tab.1).

Bihor Mountains, 300-1000 m *alt.*, sub *Plagiochila* (Péterfi M. 1908:273); Izbuclul Ponorului, Padiș Mountain (Vajda 1973:291); Izbuclul Ponorului (Boros & Vajda 1974:5,6); Cetatea Rădesei Cave, 1971 (Ștefureac 1985e:110,111,113-116, Tab.1); Galbena Valley, 750 m *alt.*, Ponor, 1100 m *alt.*, 08.1999 (Jakab 2000b:66); Someșul Cald Gorges (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Goia I. & Ștefănuț S. [BUCA B3847].

***Pellia endiviifolia* (Dicks.) Dumort.**

Syn.:

- *Jungermannia calycina* Nees
- *Jungermannia endiviifolia* Dicks.
- *Jungermannia epiphylla* var. *furcigera* Hook.
- *Marsilia endiviifolia* (Dicks.) Lindb.
- *Pellia calycina* (Taylor) Nees
- *Pellia calycina* var. *furcigera* (Hook.) Nees
- *Pellia endiviifolia* var. *furcigera* (Hook.) Heeg
- *Pellia fabbroniana* auct.
- *Pellia fabbroniana* fo. *furcigera* (Hook.) C. Massal.
- *Pellia fabbroniana* var. *lorea* Nees
- *Pellia fabbroniana* var. *undulata* Nees
- *Pellia furcigera* Hook.

First citation for Romania: Fuss 1865.

Romania (Müller 1954:517; Schuster 1992a:448).

Moldova, sub *P. fabbroniana*, incl. sub var. *lorea* and fo. *furcigera* (Papp 1943:654; Ștefureac & al. 1973:142,143).

Dorboega (Ștefureac, Mihai & Pascal 1970:123).

Muntenia, incl. sub var. *lorea*, fo. *furcigera* (Mohan 1988b:112).

Transylvania, sub *P. fabbroniana* (Pax 1908:128).

Ecology: epigeaic, basiphytic, hygro-hydrophytic, photo-sciophytic; circumpolar; mountain; Hth. Characteristic to *Cardamino-Montion* Br.-Bl. 1925.

Herbaria and Exsiccatae: BUCA, CSH, PHHM, SIB, H.A.T.R.

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ct, Tu, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Rc, Re, Ka, Ca, Ma.

Distribution in Romania:

Maramureș County, Surduc Gorges, sub fo. *furcigera* (Boros 1943e:144); Sâlhoi Mountain, 1280 m *alt.*, 24.07.1971, sub *P. fabbroniana* (Ștefureac 1973i:66; Ștefureac & Pânzaru 1978:40; Ștefureac & Pascal 1981:477); Poiana Colibii, Poiana Runcului, 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, Corongiș, sub *P. calycina* var. *furcigera* (Matouschek 1905:79); Rodna Mountains, sub *P. fabbroniana* (Pax 1908:128; Soó 1944b:75); Livezi, 1600 m *alt.*, 15.07.1977, ass. *Chrysosplenio alpini-Saxifragetum stellaris* Pawl. & Walas 1949 (Coldea 1990:52, Tab.15).

Țibleș Mountains, Bran Peak, Piciorul Arsurii, Bumbului Hill, Fiad Commune, 1984-1985, sub *P. fabbroniana* (Mohan 1988a:16).

Botoșani County, Alba Forest, the edge of Ursoaiei Brook, Comănești Forest, on wet soil, incl. sub fo. *furcigera* (Mihai 1968c:391); Cracu Ciofului Valley, Suharău Forest, on wet soil, sub *P. fabbroniana* (Mihai 1969a:197).

Suceava County, Poiana Stampei, 14.04.1910, sub *P. fabbroniana* (Lilienfeldówna 1911:731); Siminicea, 08.1892, *leg.* Vlădescu M., sub *P. fabbroniana*, incl. var. *undulata* (Radian 1915:197); Brădățelu Forest, the edge of Brădățelu Brook, 23.08.1900, *leg.* Popovici A. Băznoșanu, *det. & rev.* Radian S.Ș., sub *P. fabbroniana*, incl. sub var. *lorea* (Radian 1901b:41; Radian 1915:197,198); Panaci, sub *P. fabbroniana* var. *lorea* (Papp 1927b:148; Papp 1931a:218; Papp 1942b:524); Panaci, sub *P. fabbroniana* (Papp 1942b:524); Adam and Eva Mountains, Pojorâta Commune, in marshy places, sub *P. fabbroniana* (Mihai & Pascal 1973b:156,161); the peatbog from Neagra Broștenilor Meadow, sub *P. fabbroniana*, ass. *Cratoneuretum filicino-commutati* (Kuhn 1937) Oberd. 1977 (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981b:417, Tab.2; Lungu 1981c:90).

Rarău Mountain, Codrul Secular Slătioara, 800-1400 m *alt.*, sub *P. fabbroniana* (Ștefureac 1941:1154,1245,1279, Tabs.3,7; Papp 1969b:188); between Colbului Hill and Pietrele Doamnei, 1520 m *alt.*, 27-28.08.1949, 27.08.1950 (Ștefureac 1951a:59,65,66), sub *P. fabbroniana* var. *furcigera* (Ștefureac 1951a:65); Plaiul Todirescu-Slătioara Reserve, sub *P. fabbroniana* (Ștefureac & Raclaru 1978:196).

Stânișoara Mountains, the edge of Ostra Brook, below Puzdrele and Pietrelor Brook Valley at Tarnița, on wet soil, 1974, sub *P. fabbroniana* (Pascal & Toma M. 1977:42).

Bistrița-Năsăud County, Piatra Corbului, Budacul de Jos, Pârloagele, La Fântână, 1980-1981, sub *P. fabbroniana* (Mohan & Hodoroga 1983:51; Mohan 1990a:24).

Bărgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, sub *P. fabbroniana* (Ștefureac, Mihai & Pascal 1976:35); Cârțibavu Mare Valley, Secu Brook, Tureac Brook, Muncel Peak, Piatra Fântânele, 1983-1984, sub *P. fabbroniana* (Mohan & Hodoroga 1986:211).

Iași County, Bârnova Forest, sub *P. fabbroniana* fo. *furcigera* (Papp 1924a:101); Repedea-Bârnova Forest Massif, on wet soil, sub *P. fabbroniana* fo. *furcigera* (Papp 1929:555-557; Papp & Eftimie 1963:108), 1975-1976, sub *P. fabbroniana*, ass. *Conocephaletum conicae* Schade 1934; *Bracythecio (rutabuli)-Fissidentetum minutuli* Mihai 1977 (Mihai 1977a:138, Tabs.1,2); Repedea-Bârnova Forest Massif, on wet soil, along brook vales, ass. *Eurhynchietum swartzii* Waldheim 1944, sub *P. fabbroniana* and in hornbeam with beech grove, on clayey-sandy soil, along brooks, sub *P. fabbroniana* fo. *furcigera* (Mihai 1978:127-129, Tabs.1,3); Domnița-Voinești Forest, Voinești and Țibana Commune, on the edge brook, on wet soil, sub *P. fabbroniana* (Mititelu & Chifu 1978:378,394); Humosu Natural Reserve (Mihai 1980:8).

Vaslui County, Bunești, around the spring, on wet soil, sub *P. fabbroniana*, 1966-1969 (Plămadă & Vițalariu 1971:166).

Harghita County, Vlăhița, 20.07.1901, sub *P. calycina* (Barth 1905:13); the bogs between Joseni and Remetea, *leg. & det.* Boros Á. (Pop E.1960:176); the peatbogs from Gheorgheni Basin (Pop E.1960:180); Feliceni, on the edge of Târnava River, 1958-1962, sub fo. *furcigera* (Páll 1963b:17); Szejke Swamp, 3.10.2007, *leg. & det.* Ștefănuț S. [BUCA B3996].

Harghita Mountains, Minei Valley, 1100-1200 m *alt.*, 11.07.2000, Groapa Mare, 1300 m *alt.*, 16.08.2001, Borsáros, 650 m *alt.*, 6.04.2001, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, Luci Meleche forest, 1050 m *alt.*, 13.08.2001, Cucu Mountain, 1550 m *alt.*, 15.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2002:38; Bálint & Orbán 2003:15; Bálint & Orbán 2006:469).

Giurgeu Depression, sub *P. fabbroniana* (Lungu & Rațiu F. 1975:49, Tab.1).

Neamț County, Agapia, 31.08.1914, *leg.* Săvulescu T., sub *P. fabbroniana* (Radian 1915:197); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.*, sub *P. fabbroniana* (Lungu 1963a:242,243); s - Botoșanu Hill, beech forest, sub *P. fabbroniana* (Mihai 1971e:406); Pângărăcior Brook Valley, on wet soil and wet rotten woods, sub *P. fabbroniana*, incl. fo. *furcigera* (Mihai 1973d:29,32).

Ceahlău Mountain, Ceahlău, sub *P. fabbroniana*, Durău Hermitage, sub *P. fabbroniana* fo. *furcigera* (Papp 1924b:391; Papp 1931a:218; Papp 1934b:66,67; Zanoschi 1970:279; Manoliu & al. 1998:337,338); Ceahlău, 1200-1700 m *alt.*, sub *P. fabbroniana* (Mihai 1979b).

Nemira Mountains, Nemira Mountain, 900-1000 m *alt.*, sub *P. fabbroniana* (Barabaș V. 1974:30); Șandru, in common spruce forest, on wet soil, Nemira, in common spruce forest, on wet marshy soil, 1970-1977, incl. sub fo. *furcigera* (Mihai & Barabaș V. 1978:115).

Bacău County, Slănic, 04.1890, *leg.* Vlădescu M., sub *P. fabbroniana*, incl. sub var. *undulata* (Radian 1915:197; Papp 1931a:217); Ceardac on Slănic, 05.1892, *leg.* Vlădescu M., sub *P. fabbroniana* var. *lorea* (Radian 1915:197; Papp 1931a:217); Ceardac, Șurei Brook, Slănic, Izvorul Negru Brook, Ciungetul Brook, Dobru Brook, Slănic Brook, Sălăria Brook, sub *P. fabbroniana* incl. var. *lorea* and fo. *furcigera* (Papp 1957:284); Cleja Mountains, 1025 m *alt.*, sub *P. fabbroniana* (Papp 1958b:404); Șurei Hill, in forest, near Slănic-Moldova Spa, on the right side of Slănic Brook, 500 m *alt.*, sub *P. fabbroniana* (Papp 1969a:181); Gura Bărzăuței, on soil, 1966-1967, sub *P. fabbroniana* (Mihai & Barabaș V. 1969:70,77); s - Măgura Hill, north-west to Târgu Ocna, on wet soil, in birch grove, 680 m *alt.*, rare, sub *P. fabbroniana* (Mihai & Barabaș V. 1971:675); Ghioina Forest, Catana, Dosul lui Urzică, Scorboroiaia, sub *P. fabbroniana* (Eftimie 1972:150); Slănic Brook, Slănicel Brook, on wet soil, 2.05-8.11.1971, sub *P. fabbroniana* (Ștefureac & Barabaș V. 1972:77,82); Codrul Secular Runc-Racova, on soil (Barabaș V. 1982a:49).

Măcin Mountains, at base of Țuțuiatu Mountain, Greci-Măcin granitic region, 8.05.1916, *leg.* Săvulescu T., sub *P. fabbroniana* (Radian 1920:73; Ștefureac, Mihai & Pascal 1970:123).

Penteleu Massif, Bâsca Roziliei at Nemertea, on bank, on wet sandy soil, 1.09.1985 (Dihoru G. 1987b:94).

Ciucaș Mountains, Roșu Mountain, Berii Brook Valley, Zăgan Mountain, Caprei Brook Valley, Balaban Mountain, Cucului Brook Valley (Mohan 1990b:44).

Brașov County, Prejmer, Stupini, Hărman, sub *P. fabbroniana* (Ștefureac 1979d:118,120); ♀ - Strâmba Valley, 14.05.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3446]; between Strâmba Valley and Lupului Valley, 13.09.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3615]; ♀ - Șinca Nouă, 24.07.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3711]; Strâmba Valley, 14.05.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3805]; Șinca Nouă, 11.10.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3811].

Piatra Mare Mountain, Tamina Waterfall, BV, 45°32'58"N / 25°38'33"E, 6.09.1997, *leg.* Ștefănuț S., *det.* Dihoru G. & Ștefănuț S. [BUCA B2054].

Prahova County, Doftana near Câmpina (Loitlesberger 1898:196; Radian 1915:197); from Azuga towards Predeal, 20.08.1897, sub *P. fabbroniana*, Sinaia towards Predeal, 20.08.1897, incl. sub *P. fabbroniana* fo. *furcigera* (Radian 1915:197,198); Doftana Valley, sub *P. fabbroniana* [PHHM 7762/3873](Mohan 1971a:8; Mohan 1971b:45; Mohan 1990a:24); Doftana Valley, Secăria Valley, sub *P. fabbroniana* fo. *furcigera* (Mohan 1971b:45); Ordojoaia Valley, sub *P. fabbroniana* (Mohan 1990a:24); Puchenii Moșneni, Predești, Stăncești (Dihoru A. 1994:4); Peleş Valley at Pelieșor, 45°21'02"N / 25°33'29"E, 23.01.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3179].

Gârbova Massif, Azuga Valley, Tufa Valley, Rea Valley, 1967-1970, sub *P. fabbroniana* (Lungu & Ștefureac 1970:5).

Bucegi Massif, s - Mălăiești Valley, Bucșoiu (Degen 1914:216); Cerbului Valley, 7.06.1896, *leg.* Moiescu N., sub *P. fabbroniana* (Radian 1915:197); Peștera Ialomiței Hermitage, 21.06.1897, Jepi Valley towards Caraiman, 9,10.08.1903, 4.07.1914, sub *P. fabbroniana* (Radian 1915:197); Azuga on Grecului Valley, 17.08.1897, Urlătoarea Waterfall, 12.08.1903, Jepi Valley at Bușteni, 9,10.08.1903, Bușteni at the base of Caraiman Mountain, 30.08.1908, sub *P. fabbroniana*, incl. sub var. *undulata* (Radian 1915:197); Sinaia towards Peleş Castle, 17.08.1897, 12.08.1903, 24.04.1914, Urlătoarea, 12.08.1903, sub *P. fabbroniana* var. *lorea* (Radian 1915:197,198); Urlătoarea, Jepi Valley, incl. sub *P. fabbroniana* fo. *furcigera* (Radian 1915:197,198); Sinaia, on soil and rocks, 07-08.1920, *leg.* Brândză M., *det.* Ștefureac T., sub *P. fabbroniana* (Ștefureac 1942a:4); Albă Valley, 20.08.1959, *leg.* Racoviță A., *det.* Ștefureac T., sub *P. fabbroniana* (Racoviță A. 1960:1112); Ialomița Valley, sub *P. fabbroniana* (Mohan 1990a:24); Urlătoarea Valley, on soil, 850 m *alt.*, 5.10.1985, *leg.* & *det.* Lungu L., sub *P. fabbroniana* [CSH]; Cocora, DB, 6.08.1937, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B3489]; ♂ - Peștera Hermitage, DB, 1540 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3567].

Piatra Craiului Mountains, Crăpătura, 4-8.06.2001, *leg.* Pop O., *det.* Ștefănuț S., towards Vlădușca, 21.08.2001, *leg.* Pop O., *det.* Ștefănuț S., Gura Bârsei, 28.09.2001, *leg.* Pop O., *det.* Ștefănuț S., the way towards Vlădușca Pasture, 30.10.2001, *leg.* Pop O., *det.* Ștefănuț S. (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:79); ♂ - Padina Bădoaia, BV, 45°33'57"N / 25°13'45"E, 1040 m *alt.*, 8.08.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2678] (Ștefănuț & Pop O.G. 2006:79); towards Crăpătura Pietrei Craiului, BV, 45°34'15"N / 25°16'17"E, 850 m *alt.*, 21.08.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2789] (Ștefănuț & Pop O.G. 2006:79); Diana, towards Brâna Caprelor, BV, 45°33'09"N / 25°14'35"E, 2000 m *alt.*, 23.05.2002, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2854] (Ștefănuț & Pop O.G. 2006:79); ♂ - below Garofița Pietrei Craiului Hut, 1030 m *alt.*, 26.08.2004, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3100-B3102] (Ștefănuț & Pop O.G. 2006:79); towards Padina lui Călineț, BV, 45°33'48"N / 25°12'31"E, 850 m *alt.*, 7.08.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2685] (Ștefănuț & Pop O.G. 2006:79); Marele Grohotiș, AG, 45°30'36"N / 25°11'38"E, 1550 m *alt.*, 8.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2637] (Ștefănuț & Pop O.G. 2006:79); ♂ - Poiana Lespezilor, BV, 1330 m *alt.*, 8.08.2003, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3330], s - [BUCA B3337, B3346, B3350] (Ștefănuț & Pop O.G. 2006:79); ♂ - towards Funduri Saddle, common spruce forest, AG, 1480 m *alt.*, 7.08.2003, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3344] (Ștefănuț & Pop O.G. 2006:79).

Leaota Mountain, Vaca Valley, 900 m *alt.*, sub *P. fabbroniana* (Papp & Diaconescu 1968:386,387).

Argeș County, Rucăr, sub var. *lorea* (Loitlesberger 1898:196; Radian 1915:197); Boteni, 1888, 06.1891, *leg.* Vlădescu M., incl. sub *P. fabbroniana*, fo. *furcigera*, var. *undulata* Nees (Radian

1915:197,198); Căndești, 07.1891, Căndești, Brătioarei Valley, 26.09.1899, Văleni Hermitage, 20.08.1891, sub *P. fabbroniana* (Radian 1915:197); Great Gorges of Dâmbovița River, 45°23'04"N / 25°11'43"E, 750 m alt., 8.06.2005, leg. Pop O., det. Ștefănuț S. [BUCA B3169] (Ștefănuț & Pop O.G. 2006:79).

Giurgiu County, ♂ - Comana Forest, 31.05.2006, leg. & det. Ștefănuț S. [BUCA B3533], s - [BUCA B3532].

Făgăraș Mountains, The glacial ring from Doamnei Valley, SB, 45°36'10"N / 24°36'23"E, 2100 m alt., 16.07.2000, leg. & det. Ștefănuț S. [BUCA B2177]; ♀ - Pojorta Valley, BV, 800-1000 m alt., 18.09.2001, leg. & det. Ștefănuț S. [BUCA B2669] (Ștefănuț 2002:190).

Iezer-Păpușa Mountains, Bratia Valley, 900 m alt., 6.08.1897, leg. & det. Loitlesberger K., sub var. *lorea* [H.A.T.R. 125](Loitlesberger 1898:196; Radian 1915:198); Bratiei Valley, 07.1891, leg. Vlădescu M., sub *P. fabbroniana* var. *lorea* Nees (Radian 1915:197,198); Iezer Valley, Bătrâna Valley, Dâmbovița Valley, sub *P. fabbroniana* (Mohan 1990a:24).

Cozia Mountain, Păușa Waterfall, in the north-east side of Jgheabul Bulzului, Păușa Valley, on wet soil, 1975-1976 (Dihoru G. 1990:53); Roșiei Gorges, on rocks, 1987, leg. Negrean G. (Dihoru G. 1990:53).

Sibiu County, Turnu Roșu, on wet rocks, 24.06.1845, leg. Fuss M. & det. Juratzka J., sub *P. calycina* [SIB HF 1510](Fuss 1865:28; Fuss 1878:652; Drăgulescu 1983:57; Drăgulescu 2003:9); Cârțișoara, Glăjărie, on wet rocks, 9.08.1856, leg. Fuss M. & det. Juratzka J., sub *P. calycina* [SIB HF 1509](Fuss 1865:28; Fuss 1878:652; Hazslinszky 1885:35; Drăgulescu 1983:57; Drăgulescu 2003:9).

Vâlcea County, Greblești, "la Olt" (Loitlesberger 1898:196; Radian 1915:197).

Sebeșului Mountains, Sebeș Valley, below Fetița Mountain, in common spruce forest, near the brook, sub *P. fabbroniana* (Borza 1959:68).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub *P. fabbroniana* (Ștefureac, Popescu & Lungu 1955:526).

Retezat Mountains, Râu de Mori, Valereasca, alpine zone (Schiffner 1914:304); Dobrun Brook Valley (Páll 1964a:108); the Big Peatbogs below Zănoaga Lake, 1880 m alt., 1971, sub *P. fabbroniana*, ass. *Philonotido-Saxifragetum stellaris* Horv. 1949 (Boșcaiu, Plămadă & Péterfi Ș. 1972:178, Tab.1); Judele Glacial Valley, in peatbogs, on peat, 2050 m alt., sub *P. fabbroniana* (Plămadă 1973b:102); near Gemenea Lake, 2100 m alt., 7.07.1969, ass. *Scapanietum undulatae* Schwick. 1944, near Zănoaga Lake, 1920 m alt., 7.07.1971, sub *P. fabbroniana*, ass. *Philonotido-Saxifragetum stellaris* Horv. 1949 (Plămadă 1974b:Tab.5; Plămadă 1993:55, Tabs.5,6); Retezat National Park, 1800-1810 m alt., sub *P. fabbroniana*, ass. *Bruckenthalio spiculifoliae-Piceetum* Borhidi 1971 (Coldea, Lupșa & Plămadă 1984:97, Tab.2); Retezat, 800-1200 m alt., ass. *Chrysosplenio-Cardaminetum amarae* (Tx. 1937) Mass 1959, 1750-2050 m alt., ass. *Philonotido-Saxifragetum stellaris* Horv. 1949, 1750-2050 m alt., *Calthaetum laetae* Krajina 1933, sub *P. fabbroniana* (Coldea 1993:40, Tab.7).

Țarcu Mountains, Muntele Mic, 1000-1800 m alt., 03-08.1943, leg. Boșcaiu N., sub *P. fabbroniana* (Ștefureac 1948a:220).

Godeanu Mountains, Lăpușnicului Mare Valley and Lunca Berhinei, 28.06.1967, sub *P. fabbroniana*, ass. *Chrysosplenio-Cardaminetum* (Tx. 1937) Maas 1959 (Boșcaiu 1971a:124, Tab.1).

Gorj County, Fața Osliei Mountain, 6.08.1899, sub *P. fabbroniana* var. *lorea* (Radian 1915:197,198); Tismana Monastery at the Waterfall, 4.07.1905, sub *P. fabbroniana* incl. sub var. *undulata* and var. *lorea* (Radian 1915:197).

Mehedinți County, Jidostiței Valley, the boundary between Gura Văii and Schela Cladovei, 28.06.1945, sub *P. fabbroniana*, Vărănic Hill, the way from Breznița Commune towards Gura Văii, 400 m alt., 29.04.1945, sub fo. *furcigera* (Ștefureac 1947a:138,146,148); Ogașul lui Nichici Valley, on wet soil, on brook, sub *P. fabbroniana* (Plămadă 1970b:205); Cerna Valley, Orșova Forest, in wet vales, on wet soil, 1966-1968, incl. sub fo. *furcigera* (Plămadă 1970c:393-395); Tricule, the second valley towards east, on wet stone and clayey soil, 1966 (Ștefureac & Mihai 1970:500,506); along the vales between Svișița and Tricule, sub *P. fabbroniana* (Ștefureac & Mihai 1972a:117,120,121: Tabs.4,5).

Domogled Mountain, sub *P. calycina* (Degen 1901:14).

Carăș Severin County, Caransebeș, on soil, 120 m alt., leg. Borza A., det. Papp C., sub *P. fabbroniana* var. *lorea* (Papp 1944a:98); Cerna Bank, between „Șapte Izvoare” and „Crucea Ghizelei”, 250 m alt., sub *P. fabbroniana* (Ștefureac 1947a:137,138; Bujorean & Popescu P.C. 1966:21); Găurii

Brook Valley, Valea Mare-Moldova Nouă Reserve, sub *P. fabbroniana* (Plămadă 1990:75); ♂ - Peștera cu Muscă, 14.08.2006, *leg.* Cogălniceanu Gina, *det.* Ștefănuț S. [BUCA B3712].

Semenic Mountain, Semenice, 25.07.1943, *leg.* Pop E. & Ciobanu I., sub *P. fabbroniana* (Ștefureac 1948a:220); in peatbogs, sub *P. fabbroniana* (Pop E. 1960:363).

Codru-Moma Mountains, Monesei Valley, Lungă Valley, Crișul Văratecului Valley, on wet soil (Mohan 1996:50; Ardelean 2006:106, Fig.23).

Arad County, Cladova Brook's springs, above Arăneag towards Cladovei Ridge and towards Highiș, near the springs from Geinan above Hălmagiu, sub *P. furcigera* (Simonkai 1893:360).

Zarand Mountains, Arăneag Valley, Highiș Hill, in beech forest, near the springs, sub *P. fabbroniana* fo. *furcifera* (Csűrös M. 1978:76);

Alba County, Valea Lungă, on wet clayey soil, 24.04.1858, *leg. & det.* Barth J., sub *P. calycina* [SIB HF 1508](Fuss 1878:652; Drăgulescu 1983:57); Lal's Valley, 450-630 m *alt.*, incl. sub *P. fabbroniana* var. *lorea* (Papp 1944b:236; Papp 1945a:161); Izbuclul Ponorului, sub *P. fabbroniana* (Boros & Vajda 1974:6); right slope of Ampoiului Valley, hornbeam grove, downstream Găureni, at 16 km to Zlatna (Plămadă 1986a:59, Tab.1); Cheia Valley, 700 m *alt.*, 31.07.1994, ass. *Pellio-Cratoneuretum filicini* v. Dunk 1972 (Goia 1998:249, Tab.1).

Cluj County, Cluj-Napoca, Sălicea Brook, *leg.* Péterfi M., sub *P. fabbroniana* (Györffy 1924b:39); Southern Ciucea on Surduc Valley (Boros 1942a:34); Cluj-Napoca, Someș Valley (Soó 1951:46; Boros 1958:7); Pleșca Valley, Cluj-Napoca, sub *P. fabbroniana* (Soó 1949:53; Boros 1958:7); Făget, Greben Valley, Feleac Hill, sub *P. fabbroniana* (Boros 1958:3,7); Cluj-Napoca Botanical Garden, sub *P. fabbroniana*, incl. fo. *furcigera* (Plămadă 1963:179; Plămadă 1969:170; Ștefureac 1982c:197, Tab.2); Cluj, on soil, 1961-1966, sub *P. fabbroniana*, incl. fo. *furcigera* (Plămadă 1967:470); Mera Forest Basin, on soil and wet stones, 1963-1965, sub *P. fabbroniana*, incl. fo. *furcigera* (Plămadă 1968:24); Someș Valley, in wet places, sub *P. fabbroniana* (Plămadă 1969:170); Turda's Gorges (Plămadă & Goia 1994:87).

Bihar County, Crișul Repede Defile (Boros 1942a:31; Boros 1942e:154); Aștileu (Boros 1942e:154); Tălharului Cave (Boros 1942e:154); Crișul Repede Defile, on the edge of Lake from Peștera cu Apă and near the Waterfall, sub *P. fabbroniana*, ass. *Glycerio-Sparganietum* (Boșcaiu & Gergely 1966:104); Victoria Spa - Oradea, 1948, *det.* Ștefureac T., sub *P. fabbroniana* (Olteanu-Cosma 1959:70); Vadu Crișului Cave, *leg.* Plămadă E. (Viehmann, Pleșa & Rusu 1964; Boșcaiu & Gergely 1966:104); Vadu Crișului Cave, 1968, *leg.* Neacșu M., *det.* Ștefureac T., sub *P. fabbroniana* (Ștefureac 1970h:482; Ștefureac 1985e:110,111, Tab.1).

Bihar Mountains, Izbuclul Ponorului, on edge of Cetăților Brook, 2-9.07.1961 (Páll 1963a:8); Cetatea Rădesei Cave, 1971 (Ștefureac 1985e:110,111, Tab.1); Galbena Valley, 750 m *alt.*, 08.1999 (Jakab 2000b:66); Someșul Cald Gorges (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3869].

Pellia epiphylla (L.) Corda

Syn.:

- *Blasia epiphylla* Fr.
- *Gymnomitrium epiphyllon* Huebener
- *Jungermannia epiphylla* L.
- *Marsilia epiphylla* (L.) Lindb.
- *Pellia epiphylla* var. *undulata* (Nees) Gottsche et al.

First citation for Romania: Baumgarten 1846.

Romania (Müller 1954:513).

Moldova (Papp 1943:654; Plămadă 1968:23,24; Ștefureac & al. 1973:143).

Muntenia (Mohan 1988b:112).

Transylvania (Pax 1908:128).

Ecology: epigeic, acidophytic, hydro-hygrophytic, sciophytic; circumpolar; mountain; Hth.

Herbaria and Exsiccatae: BUCA, PHHM, SIB

Distribution in Europe: Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Gr, Ct, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Az, Ma.

Distribution in Romania:

Maramureș County, Poienile de sub Munte (Warnstorf 1895b:143).

Rodna Mountains, (Pax 1908:128; Plămadă 1968:23,24); Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2358].

Țibleș Mountains, Piciorul Țiglei, Piciorul Mesteacănului, Țibleș Valley, Suplai Commune, 1984-1985 (Mohan 1988a:16).

Botoșani County, Alba Forest – Ursoaiei Valley, on the edge of the brooks, on wet soil (Mihai 1968c:391).

Suceava County, Argestrul, 16.05.1910 (Lilienfeldówna 1911:731,734); Bistrița Aurie Valley, between Iacobeni and Ciocănești, north-wester slope of Brezuța Peak, the edge of Suhârzulul and Suhârzulul Mare Brooks (Pascal 1969:107); Cârlibaba Brook Valley, Iedu, Deaca, Lițu, Țibău, Ciocănești (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:477); Adam and Eva Mountains, Pojorâta Commune, in marshy places (Mihai & Pascal 1973b:156,161); Oușorul Mountain, on soil, 1971 (Mihai 1974b:318,320); the bog from Neagra Broștenilor Meadow, ass. *Cratoneuretum filicino-commutati* (Kuhn 1937) Oberd. 1977 (Lungu 1981b: 417, Tab.2); Cristișor-Neagra Broștenilor, Borcut Meadow, in eutrophic fen, incl. sub fo. *undulata* Nees (Lungu 1973b:72; Lungu 1981c:90).

Rarău Mountain, Codrul Secular Slătioara, 800-1340 m *alt.*, 17.07.1937, incl. sub var. and fo. *undulata* (Ștefureac 1941:1154,1242,1278, Tabs.4,5,7,8,9; Ștefureac 1969a: tab 16; Papp 1969b: 188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:196).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ștefureac, Mihai & Pascal 1976:35,36); Cârțibavu Mare Valley, Sângeorz-Băi, Poiana Ilvei, Secu Brook, Ilva Mică Commune, Ilva Mare Commune, Tureac Brook, Leșului Valley, Măgura Calului, Piatra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:211).

Bistrița-Năsăud County, Piatra Corbului, Monari, Simionești, 1980-1981 (Mohan & Hodoroga 1983:51; Mohan 1990a:24).

Iași County, Bârnova Forest (Papp 1939a:340); Repedeș-Bârnova Forest Massif, on soil umed (Papp & Eftimie 1963:108; Plămadă 1968:23,24).

Neamț County, Cuejdiu Valley, incl. fo. *undulata* (Papp 1932:462,464); Doamna, Gârcina, Cuejdiu (Papp 1934a:193; Lungu 1963a:241); Neamț Monastery, on clayey soil, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4; Plămadă 1968:23,24); Tarcău-Grinđuș Mountain (Papp 1942b:524); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242).

Ceahlău Mountain, Durău Valley, in common spruce forest, on wet soil (Mihai 1984a:89).

Harghita County, Vârșag, on the marshy edge of Târnavă River, 1958-1962 (Páll 1963b:17); around Luci Reserve, in common spruce forest (Mititelu & Elekes E.S. 1984:124).

Harghita Mountains, Minei Valley – riverhead, 1200 m *alt.*, 11.07.2000, on soil, *leg.* Bálint L. & Csizi K. (Orbán & Bálint 2002:60; Bálint & Orbán 2003:14); Groapa Mare, 1300 m *alt.*, 16.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14).

Giurgeu Mountains, Bicăz Gorges, on rocks, 1957-1960, sub fo. *undulata* Nees (Papp & al. 1962:144,147,149).

Nemira Mountains, Șandru, on wet soil, 1970-1977 (Mihai & Barabaș V. 1978:115); Cheșcheș, Șandru (Barabaș V. 1982b:70,72, Tabs.20,23).

Bacău County, Hoțului Brook, at west to Hârja, incl. fo. *undulata* (Papp 1957:284); Gura Dobrilor (Eftimie 1972:150).

Ciucăș Mountains, Roșu Brook Valley, Zăgan Mountain, Albele Culm, Piscul Gropșoarele, Roșu Mountain (Mohan 1990b:44).

Prahova County, Doftana Valley [PHHM 7763/3873](Mohan 1971a:8; Mohan 1971b:45; Mohan 1990a:24); Teleajen Valley, Negrașului Valley, Ordojoaia Valley, sub *P. endiviifolia* (Mohan 1990a:24).

Bucegi Massif, Ialomița Valley, sub *P. endiviifolia* (Mohan 1990a:24).

Piatra Craiului Mountains, Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2605] (Ștefănuț & Pop O.G. 2006:79); Marele Grohotiș, AG, 45°30'34"N / 25°11'46"E, 1650 m *alt.*, 8.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2633] (Ștefănuț & Pop O.G. 2006:79); Pârâul Rece, AG, 45°30'38"N / 25°11'34"E, 1500 m *alt.*, 8.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2631] (Ștefănuț & Pop O.G. 2006:79).

Leota Mountain, Mitarca Valley, 1300-1600 m *alt.* (Papp & Diaconescu 1968:386,387).

Iezer-Păpușa Mountains, Iezer Valley, Bătrâna Valley, Dâmbovița Valley, sub *P. endiviifolia* (Mohan 1990a:24).

Argeș County, ♂ - Boteni, 03.1893, *leg.* Vlădescu M. (Radian 1915:197).

Făgăraș Depression, ♀♂ - Mlaca Mică from Arpașu de Sus, 45°42'47"N / 24°29'25"E, 555 m *alt.*, 30.10.2004, *leg. & det.* Ștefănuț S. [BUCA B3312].

Făgăraș Mountains, Arpaș Valley, in common spruce forest (Heufler 1853:50-51; Fuss 1854:20; Fuss 1878:652; Hazslinszky 1885:35; Drăgulescu 2003:9); Capra Lake, AG, 45°36'01"N / 24°37'48"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2179]; ♀♂ - The glacial ring from Doamnei Valley, SB, 45°36'07"N / 24°36'27"E, 2120 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B3479].

Cozia Mountain, north-eastern of Jgheabul Bulzului, on wet soil, 1975-1976 (Dihoru G. 1990:53).

Sibiu County, Sibiu [SIB *SCHUR 4603*](Schur 1866:873; Fuss 1878:652; Hazslinszky 1885:35; Gündisch 1977:46; Drăgulescu 2003:9); Măgura Cisnădiei, Ursului Brook, *leg. & det.* Lerchenfeld J., sub *Jungermannia* [SIB *HL 33714*](Fuss 1878:652; Hazslinszky 1885:35; Gündisch 1977:46; Drăgulescu 1983:57; Drăgulescu 2003:9); Turnu Roșu (Fuss 1878:652).

Cindrel Mountains, Criș, 1000-1200 m *alt.*, Păltiniș, 1200-1500 m *alt.*, Cănaia, 1700 m *alt.*, Jujbea, 1900 m *alt.* (Gündisch 1977:46; Drăgulescu 2003:9);

Lotrului Mountains, Rudaru, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:8,36; Plămadă 1968:23,24).

Retezat Mountains, Retezat (Simonkai 1872:66; Fuss 1878:652; Hazslinszky 1885:35); Zănoaga Lake, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:138).

Caraș-Severin County, Rusca Montană (Pančić 1861:94; Hazslinszky 1885:35); Rusca (Simonkai 1872:66; Fuss 1878:652; Hazslinszky 1885:35).

Poiana Ruscă Mountains, Luncani (Hazslinszky 1885:35; Ardelean 2006:107).

Arad County, Radna (Hazslinszky 1885:35; Ardelean 2006:107); along Dulcelui's brooks, especially in Valea Mare, above Nădălbeștilor, along Codrului's brooks (Simonkai 1893:360).

Alba County, Piatra Ceții, Trascău Mountains, 3.07.1868 (Barth 1868:141); Galda de Sus (Fuss 1878:652; Hazslinszky 1885:35); Valea Lungă, on clayey soil, 24.04.1868, *leg. & det.* Barth J. [SIB *HF 1506, HNFT 27919*](Fuss 1878:652; Hazslinszky 1885:35; Drăgulescu 1983:57); Avram Iancu, at Izbuc (Simonkai 1893:360); Ordencușa Valley at Scărișoara, 800 m *alt.* (Péterfi M. 1908:270).

Mureș County, Sighișoara, sub *Blasia epiphylla* (Baumgarten 1846:231; Schur 1866:873; Fuss 1878:652; Hazslinszky 1885:35); Sighișoara (Höhr 1914:87).

Cluj County, Pușcașului's Valley, on wet soil, 1963-1965 (Plămadă 1968:23,24).

Pădurea Craiului Mountains, Ieduțului's Valley, 920 m *alt.*, ass. *Scirpetum silvatici* Schwick. 1944, ass. *Carici stellulatae-Sphagnetum (recurvi-palustris)* (Soó 1934) Soó 1954, ass. *Cariceto rostrati-Sphagnetum recurvi* Zóly. 1931 (Rațiu O. & Boșcaiu 1967:35,37,38, Tab.1).

Bihor County, Vadu Crișului Gorges, in cave (Simonkai 1890a:129); Beiuș, 250 m *alt.* (Péterfi M. 1908:270); Tâlharilor Cave (Boros 1942a:32; Plămadă 1968:23,24).

Pellia neesiana (Gottsche) Limpr.

Syn.:

- *Marsilia neesiana* (Gottsche) Lindb.
- *Marsilia neesii* Lindb.
- *Pellia epiphylla* var. *neesiana* (Gottsche) H. Bernet
- *Pellia neesiana* var. *undulata* J.B. Jack
- *Pellia neesii* Lindb.

First citation for Romania: Loitlesberger 1898.

Moldova (Papp 1943:654; Ștefureac & al. 1973:143).

Muntenia, incl. sub fo. *undulata* (Mohan 1988b:112).

Transylvania (Pax 1908:128).

Ecology: epigaeic, saprolignic, mesoacidophytic, hygrophytic, photoindifferent; circumpolar; boreal-mountain; Hth.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Pt, Es, It, Si, Hr, Sb, ?Me, Mk, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Rn, Re, Rs, Ka, Rw, Rc, Ca.

Distribution in Romania:

Rodna Mountains, Ineu Glacial Ring, BN, 47°31'36"N / 24°53'35"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B3146].

Suceava County, Oușorul Mountain, on soil, 1971 (Mihai 1974b:318,320); Poiana Stampei Peatbog, SV, 47°20'33"N / 25°11'14"E, 920 m *alt.*, 28.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3793].

Giupalău Mountain, ♀ - Giupalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 12.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3629].

Rarău Mountain, Codrul Secular Slătioara, 800-1380 m *alt.*, incl. sub fo. *undulata* (Ștefureac 1941:1154,1270,1279, Tabs.3,7; Papp 1969b:188; Ștefureac 1986f:193).

Ceahlău Mountain, Durău Valley, in common spruce forest, on wet soil (Mihai 1984a:89).

Neamț County, Neamț Monastery, on clayey soil, 07-08.1923, *leg.* Brândză M., *det.* Ștefureac T., incl. sub fo. *undulata* (Ștefureac 1942a:4).

Bacău County, Zboina, *leg.* Săvulescu T., 25.07.1914 (Radian 1915:197); between Gura Dobrilor and Fundu Cașin, the edge of Cașin Brook, on soil, 950 m *alt.*, sub fo. *undulata* (Eftimie 1972:150); Upper Basin of Cașinului, between springs of Fata Moartă Brook, Buciaș's affluent, on soil, 1000 m *alt.*, 06.1970 (Eftimie 1973:423).

Ciucăș Mountains, on Tâmpei Bank at Cheia Monastery, Teleajen Gorges and at Bratocea, Berii Brook Valley, 31.08.1900, 2.10.1900 (Radian 1915:197); Berii Brook Valley, Bratocea Peak, Balaban Mountain, Alb Brook Valley (Mohan 1990b:44).

Brașov County, Predeal in Râșnoavei Valley, 4.08.1912, *leg.* Macovei D. (Radian 1915:197); Predeal, 800-900 m *alt.*, 6.09.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2534].

Bucegi Massif, ♂ - Sinaia, sub *P. neesii* (Loitlesberger 1898:196; Radian 1915:197); ♂ - Jepi Valley (Degen 1914:216); Vârful cu Dor and Cerbului Valley, 6-7.06.1896, *leg.* Moiescu N., Jepi Valley at Bușteni and towards Caraiman, 9-10.08.1903, 4.07.1914, Bușteni, at the base of Caraiman Mountain, 30.08.1903 (Radian 1915:197); Sinaia, on soil, 08.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); ♀ - Izvorul Dorului Valley, PH, 45°22'04"N / 25°28'22"E, 1770 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3221].

Piatra Craiului Mountains, ♂ - Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg.* & *det.* Ștefănuț S. [BUCA B2640], ♀ - [BUCA B2641] (Ștefănuț & Pop O.G. 2006:79).

Leota Mountain, Brătei Valley, 1200-1300 m *alt.*, sub fo. *undulata* (Papp & Diaconescu 1968:386,387).

Făgăraș Mountains, ♀ - Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg.* & *det.* Ștefănuț S. [BUCA B2552].

Iezer-Păpușa Mountains, ♀ - Voina Chalet, 20.08.2006, *leg.* Banciu C., *det.* Ștefănuț S. [BUCA B3546].

Cozia Mountain, Cozia Peak, 1668 m *alt.*, 1975-1976 (Dihoru G. 1990:53).

Cindrel Mountains, Găușoara, 1450 m *alt.*, *leg.* Boros Á. (Gündisch 1977:46; Drăgulescu 2003:9).

Gorj County, Dealul lui Frate, Streaja and Braia Mountains, 27,28.07.1896, Bold Mountain in Dosul Cernei, 5.08.1899 (Radian 1915:197).

Codru-Moma Mountains, Monesei Valley, Lungă Valley, Brihenilor Valley, on wet soil (Mohan 1996:50; Ardelean 2006:107).

Alba County, Scărișoara Cave, 950 m *alt.*, 11.08.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965 (Goia 2000:112, Tab.2); Vârciorog Valley, on rotten wood (Goia 2001:53); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89).

Bihor County, Vadu Crișului Cave, 1968, *leg.* Neacșu M., *det.* Ștefureac T. (Ștefureac 1985e:111,114, Tab.1).

Peltolepis quadrata (Saut.) Müll. Frib.

Syn.:

- *Peltolepis grandis* (Lindb.) Lindb.
- *Peltolepis grandis* var. *angustifrons* Lindb.
- *Sauteria grandis* Lindb.
- *Sauteria quadrata* Saut.

First citation for Romania: Degen 1914.

Romania (Zodda 1934:68).

Muntenia (Mohan 1988b:115).

Ecology: humicolous-epilithic, acidophytic, mesophytic, scio-photophytic; circumpolar; mountain; Hth.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, No, Se, Fi, Fr, De, Po, Ch, At, Sk, It, Si, Hr, Ba, Ro, Nz, Rn.

Distribution in Romania:

? - **Ciucăș Mountains**, Chirușca Mountain, Piatra Turiștilor, Stâncoasă Culm (Mohan 1990b:46).

Cristianul Mare Mountain, 1600 m *alt.*, *leg.* & *det.* Boros Á. (Boros & Vajda 1967:217).

Bucegi Massif, ♂, ♀ - Mălăiești Valley, Bucșoiu Mountain (Deubel-Weg) (Degen 1914:216; Györfy & Péterfi M. 1916:23); *fer* - Cerbului Valley, in alpine zone, 7.06.1896, *leg.* Moiescu N., 4.07.1899, 11.08.1903, 30.08.1908, 29.08.1911, 5.07.1914, *leg.* Radian S.Ș., Jepi Valley towards

Caraiman, 10.08.1903, *leg.* Radian S.Ş., Ialomița Valley above Peștera Ialomiței Hermitage, 11.08.1903, *leg.* Radian S.Ş. (Radian 1915:191; Radian 1923:10); Bucșoiu, 1700-1900 m *alt.* (Boros & Vajda 1967:217); Bucegi (Ștefureac 1972c:104); ♀♂ - Mălăiești Glacial Ring, BV, 45°27'22"N / 25°27'19"E, 1940 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2273, B2289]; ♀♂ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3278, B3286], s - [BUCA B3280, B3295, B3296], 45°24'43"N / 25°28'37"E, 2180 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3494]; ♂♀ - Caraiman Mountain, PH, 45°24'42"N / 25°28'37"E, 2129 m *alt.*, 20.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3917]; ♂♀ - Babele Valley, PH, 45°24'41"N / 25°28'37"E, 2110 m *alt.*, 14.07.2008, *leg. & det.* Ștefănuț S. [BUCA B3900, B3901].

Piatra Craiului Mountains, Curmătura, sub *P. grandis* (Ștefureac 1951b:254,255; Boros & Vajda 1967:217; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:79,80).

Făgăraș Mountains, Bâlea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2391], ♀♂ - [BUCA B2493]; ♀♂ - The glacial ring from Doamnei Valley, SB, 45°36'10"N / 24°36'23"E, 2100 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2152, B2156].

Plagiochila asplenioides (L. emend. Taylor) Dumort.

Syn.:

- *Candollea asplenioides* Raddi
- *Jungermannia asplenioides* L. emend. Taylor
- *Plagiochila asplenioides* fo. *arctedenticulata* Lindenb.
- *Plagiochila asplenioides* fo. *cinerea* Papp
- *Plagiochila asplenioides* fo. *feschii* Papp
- *Plagiochila asplenioides* fo. *subintegerrima* Schiffn.
- *Plagiochila asplenioides* fo. *subintegrum* Müll. Frib.
- *Plagiochila asplenioides* fo. *vulgare* Lindb.
- *Plagiochila asplenioides* var. *heterophylla* (Mart.) Lindenb.
- *Plagiochila asplenioides* var. *major* Lindenb.
- *Plagiochila asplenioides* var. *riparia* Breidl.
- *Plagiochila major* S.W. Arnell

First citation for Romania: Baumgarten 1846.

Moldova, incl. fo. *major* (Papp 1943:658,659); incl. var. *major*, *heterophylla* and fo. *vulgaris*, *subintegerrima*, *cinerea*, *feschii* (Ștefureac & al. 1973:146,147),

Muntenia (Mohan 1988b:109),

Ecology: epigaeic, humicolous, epilithic, slightly acidophytic-basiphytic, meso-hygrophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, CSH, PHHM, SIB, BRHE, Bryotheca romanica, FRE

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, ?Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Al, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Maramureș County, Sighetul Marmației, Prislop, Bistrița Aurie Valley (Warnstorff 1895b:142); Surduc Gorges, Poiana Botizii (Boros 1943e:144,148); Runc Waterfall, 900 m *alt.*, 15-21.06.1997, between Tocila Valley and Băiuț, common spruce forest, 600 m *alt.*, 21-23.08.1998, Piatra Sărită near Băiuț, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, below Ineu Peak, 08.1937 (Ștefureac 1945:179; Ștefureac 1952a:392); Pietrosul Rodnei, 2280 m *alt.*, 4.09.1982, 2260 m *alt.*, 31.08.1983, *leg. & det.* Ștefureac T., ass. *Bucegietum romanicae* Ștefur. 1984 subass. *jungermannietosum sphaerocarphae* Ștefur. 1986 (Ștefureac 1986h:105,106, Tab.2); Rebra Valley – Gușatu Valley, 960 m *alt.*, 10.06.1981, ass. *Asplenium-Cystopteridetum fragilis* Oberd. (1939) 1949, Galați Saddle, 1630 m *alt.*, 5.07.1977, ass. *Asplenium-Cystopteridetum fragilis* subass. *veronicetorum baumgartenii* Coldea 1990, Rebra Valley, 630 m *alt.*, 13.06.1981, ass. *Symphyto-Fagetum* Vida 1959 (Coldea 1990:37,138, Tabs.4,67).

Țibleș Mountains, Bran Peak, Piciorul Arsuri, Izvorul Țibleșului, Piciorul Țiglei, Țibleș Valley, Fiad Valley, 1984-1985 (Mohan 1988a:21).

Botoșani County, Albești, on soil, 31.07.1900, *leg.* Popovici A. Bâznoșanu, *det.* Radian S.Ş. (Radian 1901b:41); Suhărau Forest, Tiscovăț Brook, Tudora, *leg.* Țopa E., incl. sub var. *major* fo. *vulgare* (Papp 1956a:258; Ștefureac & al. 1973:146); Comănești Forest (Mihai 1966:147).

Suceava County, Suceava and in vicinity (Knauer 1863; Ștefureac & Pascal 1981:476); Coșna at Preluca Ulmului, 1200 m *alt.*, Câmpulung Moldovenesc, Ceardac Mountain, 1300 m *alt.*, Gura-Humorului at Izvor (Breidler 1890a:150); Izvorul Alb, 14.05.1910, Breaza, 3.06.1910, Poiana Stampei, 05.1910 (Lilienfeldówna 1911:732,733); Drăgoiasa, eutrophic fen, 1020-1030 m *alt.*, 1959, sub var.

major (Ștefureac 1962b:69); Benea-Breaza, 1050 m *alt.* (Ștefureac, Cristurean & Sihota 1964:225, Tab.1); Grădinița Peatbog, 1962-1963, sub var. *maior* (Ștefureac 1968:307); Bistrița Aurie Valley, between Iacobeni and Ciocănești, the edge of Suhărzulul and Suhărzulul Mare Brooks, sub var. *major* (Pascal 1969:107); Cârlibaba Brook Valley, Piatra Țibău, 1967 (Ștefureac & Pascal 1970a:246,249); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, alder tree thicket, on soil, on rotten woods, incl. var. *major* (Lungu 1971; Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:93; Ștefureac & Pascal 1981:483); upper side of Dorna Valley, Mestecăniș, Șesuri, Țibău (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:482); Tinovul Mare de la Poiana Stampei (Toma 1973; Ștefureac & Pascal 1981:478); Oușorul Mountain, on soil, 1971, sub var. *major* (Mihai 1974b:318,320); Barnar Gorges, on wet soil, sub var. *major* (Pascal & Seghedin 1977:142).

Giurnalău Mountain, Poiana Ițcani Reserve, 900 m *alt.*, 1946-1957, sub var. *major* (Ștefureac 1969a: Tab.16).

Rarău Mountain, Rarău, 14.05.1910, Pietrele Doamnei, 15.05.1910 (Lilienfeldówna 1911:733); Rarău (Papp 1924a:101); Rarău, sub var. *major* (Papp 1942b:525); Codrul Secular Slătioara (Tarnavschi 1936:285; Ștefureac & Pascal 1981:482); *fer* - Codrul Secular Slătioara, Ursului Brook, on fixed scree, 800-1600 m *alt.*, sub var. *major* and fo. *vulgaris* (Ștefureac 1941:1154,1183,1245,1249,1263,1265,1270,1272-1274,1276-1279,1282,1284,1288, Tabs.1,3,5,6,7,8,9, Fig.15; Ștefureac 1969a: Tab.16); Codrul Secular Slătioara, Ion's Brook (Ștefureac 1942b:91); Rarău-Todirescu, on stones, 1625 m *alt.*, sub var. *major* fo. *arctedenticulata* (Papp 1946b:149); between Dealul Colbului and Pietrele Doamnei, 1520 m *alt.*, 27-28.08.1949, 27.08.1950 (Ștefureac 1951a:60,65), sub var. *riparia* (Ștefureac 1951a:65); Slătioara Reserve (Leandru & Stanciu 1967:133); Codrul Secular Slătioara, Rarău Peak, Todirescu Peak, sub var. *major* fo. *arctedenticulata* (Papp 1969b:188); Rarău, 1350 m *alt.*, incl. sub var. *major* (Ștefureac 1969a: Tab.16); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:197).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetrarhizetum pellucidum* (Barkman 1958) Maurer 1961, ass. *Orthodicraneto-Plagiothecietum* Barkman 1958, ass. *Neckerieto-Isothecietum myosuroides* Barkman 1958, subass. *isothecietosum myuri* Barkman 1958 (Ștefureac, Mihai & Pascal 1976:36, Tabs.1-3); Străja Valley, Strâmba Valley, Cârțibavu Mare Valley, Piatra Fântânele, Leșului Valley, Ungurului Brook, Muncel Peak, Tureac Brook, 1983-1984 (Mohan & Hodoroga 1986:213).

Căliman Mountains, Dorna Valley, on soil (Mihai 1968a:204).

Stânișoara Mountains, Suha Mare Brook Valley, above Forest Hut, Stânișoarei Culm, Tarnița Brook Valley, on soil, 1974, incl. sub var. *major* (Pascal & Toma M. 1977:42).

Iași County, Repedeș-Bârnova Forest Massif, on wet soil, incl. sub var. *major* (Papp 1924a:101; Papp 1929:555,557,558,560; Papp 1935a:431; Papp 1939a:353; Papp & Eftimie 1963:108, 109,112); Repedeș-Bârnova Forest Massif, 1975-1976, ass. *Conocephaletum conicae* Schade 1934 (Mihai 1977a:139, Tab.1); Domnița-Voinești Forest, Voinești and Țibana Communes, on soil (Mititelu & Chifu 1978:378); Humosu Natural Reserve, ass. *Eurhynchietum striati* Waldheim 1944 (Mihai 1980:8; Mihai 1983c:351, Tab.1).

Bistrița-Năsăud County, Silivașul de Câmpie, „Râmetii” Forest, 430-560 m *alt.*, 16.06.1927, *leg.* Borza A. & Bujorean G., *det.* Pop E. (Borza 1928a:19); Măgherușului Valley, at Lupiște, Hederiș Hill, in *Quercus-Fagetum* (Ștefureac & Cristurean 1973:314,315); Râpa Mare, Piatra Corbului, Monari, Simionești, Budacul de Jos, 1980-1981 (Mohan & Hodoroga 1983:52); Satului Valley near Rebra, beech forest, 540 m *alt.*, 30.06.1986 (Plămadă & Coldea 1989a:48, Tab.1); Satului Valley, in forest, near Rebra, on soil, rocks and bank, 470-570 m *alt.*, frequent in *Quercus-Fagetum* (Plămadă & Coldea 1989b:121).

Vaslui County, Crasna Valley, in forest, on soil, frequent, 1966-1969 (Plămadă & Vițalariu 1971:166).

Neamț County, Văratec Forest, sub var. *major* (Papp 1924a:101); Cujești Valley (Papp 1932:462,465,466); Măgura Pietricica, on sandy soil (Papp 1937d:235,238,240); Neamț Monastery, on rotten wood and soil, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:4); Peste Recea, Muncelașu and Poarta Poienilor Hills, in forests (Papp 1947b:186,190); eastern side of Curăturile Hill, near Țibucani Hermitage, 400 m *alt.* (Papp 1959b:565; Ștefureac & al. 1973:147); Bâta Roșeni, in common spruce forest, 600 m *alt.*, Horștei Hill, western slope of Boului Brook „La Ciungi”, 600 m *alt.*, Verdului Hill, in beech-common spruce mixed forest, 550 m *alt.* (Raclaru & Zanoschi 1968:298,299, Tab.1); La Staniște-Mărgineni (Ștefureac & al. 1973:147); *s* - Botoșanu Hill, beech forest, on soil and rotten woods (Mihai 1971e:406,409); Pângărăciu Brook Valley, on soil and humus (Mihai 1973d:29);

Vacilor Hill, Cărbunelui Hill and Gol Hill, on soil and rotten woods (Mihai 1974c:23; Ștefureac & al. 1973:146,147); Ghindăoani-Tupilați Woodland Massif (Burduja, Mihai & Sîrbu 1973; Ștefureac & al. 1973:147).

Ceahlău Mountain, Ceahlău, Patapi and Durău, incl. sub var. *major* (Papp 1924a:101; Papp 1924b:392; Papp 1934b:66-68; Zanoschi 1970:280; Manoliu & al. 1998:338); Ceahlău, 650-1700 m *alt.* (Mihai 1979b); Ceahlău, in bryocoenosis with *Plagiochila asplenioides* (Mihai 1987b: Tab.5); Ceahlău, ass. *Tortello-Ctenidietum mollusci* (Gams 1927) Stodiek 1937 (Mihai 1987b: Tab.2).

Giurgeu Mountains, Bicaz (Papp 1942b:525); Bicaz Gorges, on soil, 1957-1960 (Papp & al. 1962:144,147,149); Oii Valley, on rotten wood, 12.08.1953, sub fo. *major* (Bîrcă & Mihai 1963:127); Bicaz Gorges, on rocks, Oii Brook Valley, 1978, 1979, ass. *Neckeretum crispae* Ștefur. 1941, ass. *Tortello-Ctenidietum*, Cupașului Valley, 1978, 1979, ass. *Dicrano-Hypnetum cupressiformis* (Ochsner 1928) v. Krunsenstjerna 1945, ass. *Lepidozio-Tetraphidetum pellucidae* (Barkman 1958) Maurer 1961 (Mihai 1981a:17-19, Tabs.3,5-7).

Hășmaș Mountains, ♂ - Hășmaș (Schiffner 1914:306); Hășmașul Mare (Degen 1930:976).

Harghita Mountains, Vermet Valley, 1050-1250 m *alt.*, 2.07.2000, Mic Valley, 1050-1150 m *alt.*, 16.08.2001, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bălînt L. & Csîzi K. (Bălînt & Orbán 2003:14; Bălînt & Orbán 2006:469).

Harghita County, 26.07.1901 (Barth 1905:14); Odorhei, Bükktető Beech Forest, 650 m *alt.*, Csicserlăpos, 520-550 m *alt.*, on soil and bark, Rokalyuk and Mărerđ, 600 m *alt.*, ass. *Carpino-Fagetum caricetosum*, Szejke, 500 m *alt.*, ass. *Fageto-Pinetum* (Páll 1960a: 180-181,185,187); Târnava Mare Valley between springs and Odorhei, frequent, in beech and common spruce forests, 1958-1962 (Páll 1963b:17); Luci Reserve, in common spruce forests (Mititelu & Elekes E.S. 1984:124).

Nemira Mountains, Nemira Mountain, 900-1600 m *alt.*, on beech bark, on gritstone, in common spruce forests (Barabaș V. 1974:23-25,29,30); Nemira, Șandru, Crăcurele, in common spruce forests, on humus and rotten woods, 1970-1977 (Mihai & Barabaș V. 1978:116); Nemira Peak, Șandru Peak, 800-1640 m *alt.*, above Nemira's Lakes, 1500 m *alt.*, Țiganca Mountain, 1400 m *alt.*, Bălătău Lake, 850-900 m *alt.* (Barabaș V. 1982b:54,58-61,63,65,69,74,75, Tabs.1,2,6-9,11,12,20,25,26).

Bacău County, Slănic, *leg.* Oescu C. (Papp 1942b:525); Cleja Mountain, Feșca de Sus Brook Valley, Feșca de Jos, Izvorul Negru Forest, sub fo. *feschii* (Papp 1955; Ștefureac & al. 1973:147); Dobrul Culm, 830 m *alt.*, Sălăria Brook, Slănicului Valley, Cleja Mountain, 1100 m *alt.*, Feșca de Jos Brook, Feșca de Sus Brook, Izvorul Negru Brook, Ciungetul Brook, Cerbu Brook, Doftana Brook, Talianului Valley, incl. var. *major*, fo. *subintegrum*, Sălăria Brook, sub fo. *heterophylla* (Papp 1957:284); Șandru Mountain, Cleja Mountain, 1025 m *alt.*, Feșca de Sus Brook Valley, incl. sub fo. *feschii* (Papp 1958b:399,404,417); Berzunț Culm, 400-800 m *alt.*, around Sava Hermitage (Papp & Bîrcă 1960:316,321,323,325); Tajbuga Culm, on soil, fo. *cinerea* (Papp 1966:219-221); Gura Bărzăuței, on soil, frequent, 1966-1967 (Mihai & Barabaș V. 1969:70,78); *s* - Măgura Hill, north-west to Târgu Ocna, on soil and wet rocks, in birch grove, 680 m *alt.*, frequent (Mihai & Barabaș V. 1971:675,682,684,685); Tălâmba Brook, on rocks, Scorboroiaia, the forest way from Întărcătoare towards Zboina Verde, Fata Moartă Forest, on soil (Eftimie 1972:151); Seaca Forest, *det.* Mihai G. (Mititelu, Barabaș N. & al. 1968:147,168; Costică 1995:252); upper basin of Cașin, between the springs of Fata Moartă Brook, the Buciaș's affluent, on soil, 1000 m *alt.*, 06.1970 (Eftimie 1973:423); Codrul Secular Runc-Racova, on soil and stones (Barabaș V. 1982a:49); near Târgu Ocna, beech forest, 400-500 m *alt.* (Barabaș V. 1982b:68, Tab.18).

Bodoc Mountains, Micfalău-Burde, 15.08.1975, ass. *Symphyto cordato-Fagetum* Vida (1959) 1963, Malnaș, 23.08.1975, ass. *Luzulo luzuloides-Fagetum* Zólyomi 1955, *det.* Ștefureac T. (Kovács 1977:244,247); Beșeneu Brook Valley, the beech forests Burde and Malnaș, in *Quercus-Fagetea*, sub fo. *major* (Ștefureac & Kovács 1981:117).

Vrancea County, *s* – Cioara Forest, 207 m *alt.*, Șișcani Forest, 106 m *alt.*, on soil (Mihai & Barabaș V. 1970:66,69,72).

Penteleu Mountain, Viforîta Reserve, on stumps, 1000 m *alt.* (Dihoru G. 1964:397,398 Tab.2; Dihoru G. 1987b:94); Tisa Reserve, on stumps, 1000 m *alt.* (Dihoru G. 1964:399, Tab.3; Dihoru G. 1987b:94).

Siriu Mountain, Poiana din Fundul Muntelui, common spruce forest, Piatra Zăpezii, Muchia Bradului, 1320 m *alt.*, in *Quercus-Fagetea* (Dihoru G. 1975:23).

Buzău County, Gura Grămăticului, Argintăria, Molidu Valley, in *Quercus-Fagetea* (Dihoru G. 1975:23).

Ciucaș Mountains, Berii Brook Valley, Ciucaș Peak, Ursului Brook Valley, Șuvițelor Culm, Stâncoasă Culm, Piscul Turiștilor (Mohan 1990b:43).

Piatra Mare Mountain, Tamina Waterfall, 45°32'58"N / 25°38'33"E, 6.09.1997, *leg. & det.* Ștefănuț S. [BUCA B2130]; Chiva Valley, 17.05.2006, *leg.* Avramescu C., *det.* Ștefănuț S. [BUCA B3433].

Brașov County, Brașov (Schur 1866:873; Fuss 1878:657); Predeal (Loitlesberger 1898:193); Pietrele lui Solomon, 780 m *alt.*, 20.06.1938, Tâmpa, 740 m *alt.*, 18.06.1938, *ass.* *Saxifraga cuneifolia-Campanula carpatica* (Zólyomi 1939:82,137, Tab.6; Ștefănuț 2006b:33; Ștefănuț 2008b:28); Cetății (Lempeș) Hill - Piatra Coastei, in forest, on wet soil, 05.1961 (Mihai 1962:278); Tâmpa, 18.06.2006, *leg. & det.* Ștefănuț S. [BUCA B3518] (Ștefănuț 2006b:33; Ștefănuț 2008b:28).

Gârbova Massif, Cazacului Valley, the Azuga's affluent, 950 m *alt.*, *det.* Ștefureac T. (Badea & Cretzoiu 1941:285); Cumpătul Mountain, 06-07.1944, *leg.* Tăzlăuanu I. (Papp 1945b:92); Azuga Valley, Tufa Valley, Valea Rea, Valea lui Bogdan, sub var. *major*, 1967-1970 (Lungu & Ștefureac 1970:5); Cumpātu Mountain, on soil, 820 m *alt.*, 30.09.1985, *leg. & det.* Lungu L. [CSH]; ♀ - Tufa Valley, PH, 5.07.1998, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2199, B2651], ♂ - [BUCA B2200, B2652].

Prahova County, Doftana Valley, Păulești-Ploiești Forest (Mohan 1971a:9; Mohan 1971b:48); Păltinoasa Valley, 9.09.1969, *leg.* Moșneagă M., *det.* Mohan G. [PHHM 6207729, 6207697](Mohan 1971a:9; Mohan 1971b:48).

Bucegi Massif, Sinaia, Peleș Valley, in forest, *leg. & det.* Grecescu D., 4.08.1868 (Grecescu 1869; Grecescu 1880:65; Radian 1901a:135,136,138); *fer* - Mălăiești Valley (Matouschek 1905:81); Mălăiești Valley, Jepi Valley, 08-09.1911, *incl.* sub var. *major* (Degen 1914:217); Gura-Dihamului and Poiana Bătrânilor, 5.12.1937, *leg.* Cretzoiu P., *det.* Pilous Z. [Bryotheca romanica 15] (Pilous 1938:3); Peleș Valley, on rocks and rotten woods, 08.1920, *leg.* Brândză M., *det.* Ștefureac T., *incl.* var. *maior* Nees (Ștefureac 1942a:4); Furnica Mountain, 06-07.1944, *leg.* Tăzlăuanu I. (Papp 1945b:92); The Saddle between Gaura and Mălăiești, 2390 m *alt.*, 30.09.1950 (Ștefureac 1955:594,606, Tab.3; Ștefureac 1972c:104); Piatra Arsă, 2000 m *alt.*, Caraiman, 2360 m *alt.*, Moraru, 2490 m *alt.*, Bucșoiu, 2440 m *alt.*, Omu Peak, 2500 m *alt.*, Obârșia, 2300 m *alt.*, *ass.* *Elynetum myosuroides* (Pușcaru D. & al. 1956:220, Tab.24); Cerbului Valley, 21.09, 21.10.1959, *leg.* Racoviță A., *det.* Ștefureac T. (Racoviță A. 1960:1111,1112); Urlătoarea Valley, 900-1000 m *alt.* (Mickiewicz 1968:30-31); in upper side of subalpine zone, in vales (Ștefureac 1972c:102); Gaura Glacial Ring, BV, 45°26'27"N / 25°26'19"E, 2120 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2041] (Mihăilescu & Ștefănuț 2000a:14); Sinaia, 20.02.1998, *leg. & det.* Ștefănuț S. [BUCA B3381]; The glacial rings of Ialomîța Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2458, B2472, B2477], 45°26'05"N / 25°26'50"E, 2190 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2103].

Piatra Craiului Mountains, Prăpăstii, 850 m *alt.*, 29.08.1936, *ass.* *Saxifraga cuneifolia-Campanula carpatica* (Zólyomi 1939:82,137, Tab.6; Ștefănuț & Pop O.G. 2006:80); Bulimani Brook Valley, on rotten wood, 1000 m *alt.* (Ștefureac 1951b:260; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:80); the Ridge between Podurilor Valley and Vlădușca Valley, 1590 m *alt.*, Crăpătura Valley, Râie's Valley, 1280 m *alt.*, Brăul de Mijloc al Ciorângii, 2040 m *alt.*, Padina lui Călineț, 1660 m *alt.*, *leg.* Beldie A., *det.* Ștefureac T. (Beldie 1952:1006,1008,1012,1019; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:80); way towards Vlădușca Pasture, BV, 1100 m *alt.*, 30.10.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2840](Ștefănuț & Pop O.G. 2006:80); Gura Bârsei, *leg.* Pop O., 28.09.2001, *det.* Ștefănuț S., the Ridge from Ascuțit Peak towards Padina Popii Peak, Curmătura Chalet – Curmătura Saddle, 26.06.2001, *leg.* Pop O., *det.* Ștefănuț S., Crăpătura, 4-8.06.2001, *leg.* Pop O., *det.* Ștefănuț S., towards Crăpătura, Prăpăstiile Zărneștiului, 21.08.2001, *leg.* Pop O., *det.* Ștefănuț S., towards Vlădușca, 21.08.2001, *leg.* Pop O., *det.* Ștefănuț S. (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:80); ♂ - towards Padina lui Călineț, BV, 45°33'48"N / 25°12'31"E, 850 m *alt.*, 7.08.1997, *leg. & det.* Ștefănuț S. [BUCA B2682](Ștefănuț & Pop O.G. 2006:80); Crăpătura Valley, BV, 1200 m *alt.*, 22.09.1996, *leg.* Mihailescu Simona, *det.* Ștefănuț S. [BUCA B3157](Ștefănuț & Pop O.G. 2006:80); the Ridge from Ascuțit Peak towards Padina Popii Peak, BV, 2000 m *alt.*, 23.05.2002, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2857](Ștefănuț & Pop O.G. 2006:80); way towards Diana, BV, 950 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2850](Ștefănuț & Pop O.G. 2006:80).

Leaota Mountain, Mitarca Valley, 1300-1600 m *alt.*, sub fo. *arctedenticulata* (Papp & Diaconescu 1968:386,387).

Argeş County, Piatra Nemoeştilor (Loitlesberger 1898:193); Ghimbav Gorges, 810 m *alt.*, 25.08.1994, ass. *Asplenio (quadrivalens)-Poetum nemoralis* Soó 1944 emend. Gergely 1966 (Alexiu 1998:171); Great Gorges of Dâmboviţa River, AG, 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg. & det.* Ştefănuţ S. [BUCA B2794]; ♀ - Great Gorges of Dâmboviţa River, AG, 45°23'04"N / 25°11'43"E, 750 m *alt.*, 8.06.2005, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3173].

Iezer-Păpuşa Mountains, Păpău Mountain, 1800 m *alt.* (Loitlesberger 1898:193).

Giurgiu County, s - Comana, on soil at the base of *Quercus cerris* bark, 1968-1969 (Ştefureac & Mohan 1970a:353).

Făgăraş Mountains, Arpaş Valley, beech forest (Heufler 1853:48-49; Fuss 1854:20; Schur 1866:873; Fuss 1878:657; Drăgulescu 2003:14); Bâlea Lake, *leg.* Zsák Z. (Schiffner 1914:306; Drăgulescu 2003:14); Clăbucet Mountain, AG, 06.1941, sub var. *maior* (Racoviţă A. 1942:510; Racoviţă A. 1944b:34,37); above Bâlea Lake, below Paltina Peak, on sandy soil, 2250 m *alt.*, 13.07.1946, below Ciortea Peak, north-eastern slope, 2320 m *alt.* (Ştefureac 1949a:289,290; Drăgulescu 2003:14); Voila (Mohan 1971a:9); Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ştefănuţ S. [BUCA B2542] (Ştefănuţ 2002:190); Vidraru Lake, AG, 6.07.1998, *leg. & det.* Ştefănuţ S. [BUCA B3352].

Sibiu County, Cisnădioara, Prejba [SIB SCHUR 4604] (Schur 1866:873; Fuss 1878:657; Gündisch 1977:49-50; Drăgulescu 2003:14); Tâlmăciu [SIB HF 1068] (Fuss 1878:657; Gündisch 1977:49-50; Drăgulescu 2003:14); Bradu (Fuss 1878:657; Drăgulescu 2003:14); Sibiu, "in Querceto Cibinensi", *leg. & det.* Lerchenfeld J., sub *Jungermannia* [SIB HL 33711] (Fuss 1878:657; Drăgulescu 1983:58; Drăgulescu 2003:14); Gura Râului, 600 m *alt.* (Gündisch 1977:49-50; Drăgulescu 2003:14).

Cindrel Mountains, Cibin Gorges, 900 m *alt.*, Crinţ, 900-1000 m *alt.*, Săroi, 1300 m *alt.*, Păltiniş, 1300 m *alt.*, Beşineu, 1600 m *alt.* (Gündisch 1977:49-50; Drăgulescu 2003:14).

Vâlcea County, s – Băiţa Valley, Văroasa Valley, in *Carpino-Fagetum*, on soil and bark (Ştefureac & Peicea 1973:45,46,49,50).

Sebeşului Mountains, Sebeş Valley, between Oaşa and Cibin, in common spruce forest, 800-1200 m *alt.*, incl. sub var. *maior* (Borza 1959:68,220,283, Tab.38; Drăgulescu 2003:14).

Căpăţânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ştefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Latoriţa Valley, calcareous rocks, 900 m *alt.*, 31.08.1954 (Ştefureac, Popescu & Lungu 1956a:513, Tab.1); Latoriţa Valley, Repedea Valley, 08-09.1954, incl. sub var. *riparia* (Ştefureac, Popescu & Lungu 1959:9,23-25,29,30,34,39, Tabs.3,4,6,7).

Şureanu Mountains, Godeanu Valley, Tâmpu and Anineş, in beech forest (Balazs 1993:73).

Hunedoara County, the Hills from Şoimuş, on Făeragului Valley and Piscului Brook (Certejul de Sus), Hunedoara on Sânpetru Hill, ass. *Carpino-Fagetum* Paucă 1941 (Sanda, Popescu & Peicea 1972:315, Tab.7); between Deva and Şoimuş Commune, Certeju de Sus (Peicea 1973:440,443,446, Tabs.2,3).

Retezat Mountains, Valereasca, upper region (Schiffner 1914:306); Zlătuia Valley, Râul Mare Valley, in common spruce forest, on wet rocks (Pall 1962:121); Dobrun Brook Valley, Radeşul Mare Valley, towards Tăul Negru (Páll 1964a:108); Zlătuia Valley, in beech-common spruce mixed forest, on soil, 1000-1200 m *alt.*, ass. *Abieto-Fagetum piceetosum*, *det.* Páll Ş. (Csürös, Kovács & Moldovan 1964:172); Şesele Brook, 1050 m *alt.*, 21.06.1968, ass. *Fontinaletum gracilis* Plămadă 1974 (Plămadă 1974b:Tab.3; Plămadă 1993:55, Tab.5); Retezat National Park, ass. *Neckero complanatae-Leucodontetum* (Lippmaa 1935) Plămadă 1982, ass. *Leucodonto-Madothecietum platyphyllae* Plămadă 1982, ass. *Anomodontetum attenuati* (Barkm. 1939) Peciar 1965, ass. *Pterygynandro-Isothecietum myuri* Plămadă (1976) 1978, ass. *Neckeretum crispae* Ştefur. 1941 (Plămadă 1976a; Plămadă 1976b:20, Tab.2); Zlătuia Valley, 16.09.1967, 6-7.09.1969, ass. *Grimmio hartmanii-Isothecietum scabridi* Plămadă 1978, Turcului Valley, 12.07.1968, Coama Şesele, 12.07.1968, ass. *Pterygynandro-Isothecietum myuri* Plămadă 1978, Turcului Valley, 10.09.1969, ass. *Pogonatetum urnigeri* Krusenstjerna 1945 *retezaticum* Plămadă 1978 (Plămadă 1978:241-243, Tabs.1-3; Plămadă 1993:54, Tabs.3,4); Zlătuia Valley, ass. *Homalothecio-Leucodontetum sciuroides* (Størmer 1938) Ježet et Vondr. 1962, 800-1200 m *alt.*, 6-7.09.1969, ass. *Neckero complanatae-Leucodontetum*, between Zlătuia Valley and Turcului Valley, 1100 m *alt.*, 7.09.1969, ass. *Leucodonto-Madothecetum platyphyllae*, Zlătuia Valley, 800-850 m *alt.*, 6-7.09.1969, Şesele Valley, 950 m *alt.*, 9.09.1969, ass. *Anomodontetum attenuati*, Zlătuia Valley, 600 m *alt.*, 6.09.1969, between Zlătuia Valley and Turcului Valley, 900 m *alt.*, 7.09.1969, Şesele Valley, 950 m *alt.*, 14.07.1970, ass. *Pterygynandro-Isothecietum myuri*, Şesele – Pârgului Valley, 950 m *alt.*, 9.09.1969,

Zlătuia Valley, 1100 m *alt.*, 7.09.1970, ass. *Anomodonto attenuati-Neckeretum crispae* Plămadă 1982, Zlătuia Valley, 800 m *alt.*, 6.09.1969, ass. *Brachythecio-rutabuli-Mnietum cuspidati* (Felföldy 1941) Plămadă 1982, Turcului Valley, 950 m *alt.*, 9-10.09.1969, Cârligului Valley, 1000 m *alt.*, 9.09.1969, ass. *Dicrano scoparii-Hypnetum cupressiformis* (v. Krusenst. 1945) Barkm. 1958 (Plămadă 1982a:303-307,309,315,316, Tabs.1-5,8,9; Plămadă 1993:51,52, Tabs.1,2); Retezat National Park, 1600 m *alt.*, ass. *Hieracio rotundatae-Piceetum* Pawl. et Br.-Bl. 1939 (Coldea, Lupşa & Plămadă 1984:95, Tab.1); Gemenea Valley, 1600 m *alt.*, 6.09.1967, ass. *Scapanietum undulatae* Schwick. 1944 (Plămadă 1993:55, Tabs.5,6); Retezat, 800-1200 m *alt.*, ass. *Chrysosplenio-Cardaminetum amarae* (Tx. 1937) Mass 1959, 1650-1750 m *alt.*, ass. *Hieracio rotundatae-Piceetum* (Coldea 1993:41,46, Tabs.7,10).

Țarcu Mountains, Muntele Mic, 1000-1800 m *alt.*, 03.-08.1943, *leg.* Boşcaiu N. (Ştefureac 1948a:220).

Gorj County, Rovinari, „Valea lui Lupe”, 10.1938, *det.* Papp C. (Racoviță A. 1941b:253); Rovinari, Lupei Valley, on wet soil, 160 m *alt.* (Papp 1942a:51).

Godeanu Mountains, Lunca Berhinei, 28.06.1967, ass. *Chrysosplenio-Cardaminetum* (Tx. 1937) Maas 1959 (Boşcaiu 1971a:125, Tab.1).

Mehedinți County, Orşova (Simonkai 1872:67; Hazslinszky 1885:70); in the forest from Sulița towards Gornenți, on rotten wood and rocks, 26.06.1899 (Radian 1901b:41); Vărănic Hill, way from Breznița Commune towards Gura Văii, 400 m *alt.*, 29.04.1945 (Ştefureac 1947a:138,146); Eşelnița Valley, in forest, frequent, on soil (Plămadă 1970b:206); Danube Defile, between Orşova and Cerna Valley, in forest, frequent, on soil, 1966-1968 (Plămadă 1970c:393,395,396); Mraconia Valley, 13.05.1969 (Coldea & al. 1970:473, Tab.2); Eşelnița Valley, 90 m *alt.*, ass. *Hypno-Polypodietum* Jko et Pec. 1963 (Schneider-Binder & al. 1970:315, Tab.3).

Domogled Mountain, Domogled (Degen 1901:14); Domogled, *leg.* & *det.* Papp C. (Papp 1939b:7).

Caraş-Severin County, Mehadia (Simonkai 1872:67); Cerna Valley, 450 m *alt.* (Herzog 1919:290); Herculan Spa, on wet soil, 200 m *alt.*, *leg.* Bujorean G., *det.* Papp C., sub var. *major* fo. *reptans* (Papp 1944a:98); Ruşchița [PHHM 123/1366, 342/2868, 199/1919, 5915/3335, 5954/3345] (Mohan 1971a:9).

Poiana Ruscă Mountains, Rusca Montană (Pančić 1861:94); Luncani, incl. sub var. *major* (Simonkai 1872:67; Fuss 1878:657); Poiana Ruscă, Govăjdia Forest, on soil, 700 m *alt.*, Luncani, Gladna Montană, 600 m *alt.*, *leg.* Pteancu P., *det.* Papp C. (Papp 1944a:98).

Zarand Mountains, Arăneag, beech forest, Milova Valley, on rocks and bark (Csűrös M. 1978:76; Ardelean 2006:105, Fig.21).

Codru-Moma Mountains, Monesei Valley, Măgura Zăgăului, Lungă Valley, on beech bark (Mohan 1996:49; Ardelean 2006:105, Fig.21).

Arad County, Săvârşin (Simonkai 1872:67); Cladova Valley, Fântâna Rece Hill, in montane zone of Arăneag, Rândunicii Valley above Chişindiei, on Chicioara, Drocea, Dezna Veche Valley, Nădălbeşti, Moneasa, Răşirata, Dulcele, Zimbru, Aciuvei's Mountains, Calvaria Hill above Săvârşin, Troiaş Brook, Pietra Albă, Zam Valley, Hălmagiu Mountains zone towards Găina (Simonkai 1893:361,362; Fuss 1878:657).

Mureş County, Sighişoara, *leg.* & *det.* Baumgarten J.C.G. [SIB HF 1516](Baumgarten 1846:220; Schur 1866:873; Fuss 1878:657; Drăgulescu 1983:58); Sighişoara (Höhr 1914:87); west to Şaeş, 500-580 m *alt.*, *det.* Páll Ş, ass. *Fagetum silvaticae transsilvanicum* (Csűrös & Kovács 1962:220).

Alba County, Pietra Ceţii, Trascău Mountains, 3.07.1868 (Barth 1868:141); Galda de Sus, *leg.* & *det.* Barth J. (Fuss 1878:657); Valea Lungă, on soil, 3.04.1866, *leg.* & *det.* Barth J. [SIB HF 1517, 1518](Fuss 1878:657; Drăgulescu 1983:58); Mihai, on old trees trunks, *leg.* & *det.* Fuss M. (Borza & Lupşa 1964:151); Feneş Gorges, Groşilor Brook on Dumbrăvița Hill at Zlatna, 680 m *alt.* (Papp 1944b:236; Papp 1945a:161); Scărişoara, on soil, 1200 m *alt.* (Papp 1942a:51; Goia 2001:67); Feneş Gorges (Papp 1945a:163); Bărăşti, Albac Commune, on wet soil, 656 m *alt.*, sub fo. *major* (Papp 1946a:13,15); Colţii Trascăului, Bedeleu Mountains (Páll 1960b:90); Întregalde Gorges, in beech forests, 06.1960 (Páll 1964b:25); Măgina, Pădurea Şcolii Hill, above the way, ass. *Lathyro (hallersteinii)-Fagetum*, 15.08.1967, *det.* Plămadă E (Gergely 1968:344); right slope of Ampoiului Valley downstream Găureni, hornbeam grove, at 16 km to Zlatna, hornbeam-beech mixed forest on left slope, upstream, at 12,5 km to Zlatna, 880 m *alt.* and at 20,5 km to Zlatna, right slope, downstream, oak grove (Plămadă

1986a:59,60,65, Tab.1); Cheia Valley, on calcareous rocks, 700 m *alt.*, 31.07.1994, ass. *Pedinophylletum interrupti* Herzog et Höfler ex Neumayr 1971 (Goia 1998:253, Tab.4).

Cluj County, s & ♂ - Sălicea, 8.11.1914, *leg.* Györffy I. & Péterfi M., sub var. *major*, fo. *subintegerrima* [BRHE 5], s - Făget, 13.11.1914, *leg.* Péterfi M., sub var. *major*, fo. *vulgaris* [BRHE 6](Györffy & Péterfi M. 1916:34-36; Boros 1958:4,7); Tur Gorges, *leg.* Péterfi M. (Györffy 1924b:39); "Râmeții" Forest from Pruniș, Ciurila Commune, on bark, *ex* Borza A. (Prodan 1931:103); Southern Ciucea on Surduc Valley (Boros 1942a:34); Lomb Forest, Cluj (Soó 1951:33; Boros 1958:7); Făget, Pleșca Valley, Greben Valley, Sălicea, Feleac (Boros 1958:4-8); Tur Gorges (Páll 1960b:90); Cluj, on soil, 1961-1966 (Plămadă 1967:470); Cluj-Napoca Botanical Garden (Boros 1958:5,7; Plămadă 1963:179,189; Plămadă 1969:170; Ștefureac 1982c:197, Tab.2); Someșul Cald Valley (Boros & Vajda 1974:8); Muntele Mare, Huza Forest, beech forest, 700 m *alt.*, 11.07.1986 (Plămadă & Coldea 1989a:48, Tab.1); Huza Forest on Filii Mountain, Muntele Mare, near the Hut, frequent in *Quercus-Fagetum*, on soil, rocks and bark, 700-750 m *alt.* (Plămadă & Coldea 1989b:121); Turda's Gorges, on soil and bark (Plămadă & Goia 1994:87).

Sălaj County, Someșan Plateau, Bălțișeni Forest from Ungur Valley, near Popteleac, Gârbău Forest, on soil, rocks and bark, 430-500 m *alt.*, frequent in *Quercus-Fagetum* (Plămadă & Coldea 1989b:121).

Vlădeasa Mountains, Pietrele Albe, in common spruce forest and pastures, 1450-1500 m *alt.*, 1-3.08.1960, *leg.* Csűrös Ș., ass. *Seslerietum rigidae bihariicum* Csűrös (Páll 1962b:29); Pietrele Albe, ass. *Piceetum excelsae transsilvanicum* (Csűrös Ș. 1963:86); Vlădeasa-Micău, *det.* Ștefureac T. (Resmeriță, Nemeș & Csűrös Ș. 1963:135; Resmeriță 1970a:44); Zârnei Valley, ass. *Piceetum montanum* Br.-Bl. 1939 (Rațiu O. & Gergely 1970:240, Tab.6); northern side of Horaițelor Culm (Csűrös -Káptalan 1971:32).

Bihar County, Crișul Repede Defile, on soil and rocks, ass. *Phyllitidi-Aceretum* and *Tilio-Fraxinetum* (Boros 1942a:31; Boșcaiu & Gergely 1966:104); Stâna de Vale, ass. *Fagetum carpaticum* (Borza 1930) Moor 1938, Paucă 1941, behind Păstrăvărie, 1270 m *alt.*, 5.07.1964, towards Baia Popii Hill, 1320 m *alt.*, 8.07.1964, below Custurilor Peak, 1300 m *alt.*, 2.08.1965 (Rațiu O. 1967:340-341, Tab.3); Stâna de Vale, ass. *Abieti-Fagetum* Knapp 1942, towards Aria Vulturilor, above Izvorului Minunilor, 1230 m *alt.*, 15-17.07.1964 (Rațiu O. 1967:344, Tab.4); above Stâna de Vale Resort, in common spruce forest, 1100 m *alt.*, 21.07.1937, *leg.* Borza et socii, *det.* Ștefureac T. [FRE 605b; PHHM 6207728](Borza, Gergely & Rațiu O. 1968:539); Mărișel towards Beliș, 950 m *alt.*, ass. *Symphyto (cordato)-Fagetum* Vida 1959, 1963, near Tarnița Lake, 650 m *alt.*, ass. *Festuco (drymeiae)-Fagetum* Morariu & al. 1968, on northern and southern slope of mountains, upstream Tarnița Lake and downstream Mărișel, 600-850 m *alt.*, ass. *Deschampsio (flexuosae)-Fagetum* Soó 1962 (Pop I. & Hodișan I. 1981:46,49,53, Tabs.2,3,5).

Bihar Mountains, 230-1700 m *alt.* (Péterfi M. 1908:273; Goia 2001:67); Someșul Cald, Rădesei Brook, on soil, sub var. *maior* (Papp 1942a:51); Padiș Plateau, 12 Dolina, 1250-1280 m *alt.*, on soil (Kovács, Páll & Péterfi Ș. 1962:179); Izbucul Ponorului, Padiș, 2-9.07.1961, in *Piceetum* (Páll 1963a:8); Padiș Plateau, Șivla Hill (Kovács, Coman & Péterfi Ș. 1966:38); Padiș-Biserica Moților, 1436 m *alt.*, 25.07.1971 (Schneider-Binder 1980a:135); Cetățile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:92; Jakab 2000b:67); Galbena Valley, 750 m *alt.*, Padiș, 1050-1200 m *alt.*, 08.1999 (Jakab 2000b:66,68,69); Someșul Cald Gorges, 4.08.1998 (Coldea & Wagner 1999:85, Tab.1); Someșul Cald Gorges (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3860].

Plagiochila porelloides (Torr. ex Nees) Lindenb.

Syn.:

- *Jungermannia dillenii* Taylor
- *Jungermannia porelloides* Torr. ex Nees
- *Plagiochila asplenioides* fo. *compacta* Jur.
- *Plagiochila asplenioides* fo. *dentata* Ștefur.
- *Plagiochila asplenioides* subsp. *porelloides* (Torr. ex Nees) R.M. Schust.
- *Plagiochila asplenioides* var. *arenaria* Kaal.
- *Plagiochila asplenioides* var. *devexa* Carrington
- *Plagiochila asplenioides* var. *humilis* (Nees) Lindenb.
- *Plagiochila asplenioides* var. *minor* Lindenb.
- *Plagiochila asplenioides* var. *porelliformis* (Tomm.) Schiffn.
- *Plagiochila asplenioides* var. *porelloides* (Torr.) Schiffn.

- *Plagiochila dillenii* (Taylor) Taylor
- *Plagiochila nodosa* Taylor
- *Plagiochila porelloides* var. *devexa* (Carrington)
- *Plagiochila porelloides* var. *humilis* (Nees) Lindenb.
- *Plagiochila porelloides* var. *minor* (Lindenb.)
- *Plagiochila porelloides* var. *nodosa* (Taylor) Pearson

First citation for Romania: Loitlesberger 1898.

Moldova, sub *P. asplenioides* fo. *minor*, fo. *porelloides* (Papp 1943:659); sub *P. asplenioides* var. *minor*, var. *porelloides* Ștefureac & al. 1973:147).

Muntenia, sub *P. asplenioides* var. *minor*, var. *porelloides* (Mohan 1988b:109).

Ecology: epigeaic, humicolous, epilithic, euryion, mesophytic, sciophytic; circumpolar; subboreal-mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Tu, Ee, Lv, Lt, By, Ua, Cm, Fl, Rn, Rw, Rc, Re, Ca, Ma, Cn.

Distribution in Romania:

Maramureș County, Poiana Runcului, 15-21.06.1997, near Băiuț, 800 m *alt.*, Fântâna Ursului, 21-23.08.1998, Piatra Sărită, The Fountain below Văratec Mountain, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, Lala Valley, 1200 m *alt.*, 17.08.1937, sub *P. asplenioides* var. *porelloides* (Ștefureac 1938:241,250,258); the edge of Tăul Mic Lake below Ineu, 21.08.1937, sub *P. asplenioides* var. *humilis* (Ștefureac 1945:179).

Botoșani County, Suhărău Forest, sub *P. asplenioides* fo. *minor* (Mihai 1966:147).

Suceava County, Bistrița Aurie Valley, between Iacobeni and Ciocănești, the edge of Suhărzulul and Suhărzulul Mare Brooks, sub *P. asplenioides* var. *minor* (Pascal 1969:107); Oușorul Mountain, on soil, 1971, sub *P. asplenioides* var. *minor* (Mihai 1974b:318); Barnar Gorges, on soil and rocks, sub *P. asplenioides* var. *humilis* and var. *minor* (Pascal & Seghedin 1977:141,142).

Rarău Mountain, Codrul Secular Slătioara, sub *P. asplenioides* var. *porelloides*, var. *humilis* and var. *minor* (Ștefureac 1941:1154,1176; Papp 1969b:188); Rarău, sub *P. asplenioides* var. *minor* (Papp 1942b:525); Codrul Secular Slătioara, incl. sub fo. *devexa* and *P. asplenioides* var. *devexa* (Ștefureac 1941:1154; Ștefureac 1969a: Tab.16; Papp 1969b:188); Rarău, 1350 m *alt.*, sub *P. asplenioides* var. *devexa* (Ștefureac 1969a: Tab.16); between Dealul Colbului and Pietrele Doamnei, 1520 m *alt.*, 27-28.08.1949, 27.08.1950, sub *P. asplenioides* var. *porelloides* (Ștefureac 1951a:66); Rarău Peak, Todirescu Peak, Crestele Turnuri, sub *P. asplenioides* var. *porelloides*, var. *humilis* and var. *minor* (Papp 1969b:188); Rarău Mountain, Pietrele Doamnei, 2003, *leg.* Păunescu Anca, *det.* Ștefănuț S. [BUCA B3319]; Pietrele Doamnei, 47°26'48"N / 25°34'05"E, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3747].

Giulău Mountain, Poiana Ițcani Reserve, 900-920 m *alt.*, 1946-1957, sub *P. asplenioides* var. *devexa* (Ștefureac 1969a: Tab.16); ♀ - Giulău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3949].

Iași County, Bârnova Forest, on beech tree, sub *P. asplenioides* var. *porelloides* (Papp 1939a:340,354,355); Repedea Forest, on soil, sub *P. asplenioides* *porelloides* (Papp & Eftimie 1963:109); Valea lui David, sub *P. asplenioides* var. *porelloides* (Kovacs & al. 1970; Ștefureac & al. 1973:147); Humosu Natural Reserve, sub *P. asplenioides* var. *minor* (Mihai 1980:8).

Bistrița-Năsăud County, Măgherușului Valley, Gropii Hill, Hederiș Hill, Lupiște, sub *P. asplenioides* var. *porelloides*, var. *devexa* and var. *humilis* (Ștefureac & Cristurean 1973:315).

Vaslui County, Hrusca Strâmtă Forest - Bunești, on the rotten woods, sub *P. asplenioides* var. *minor*, 1966-1969 (Plămadă & Vițalariu 1971:166).

Ceahlău Mountain, Ceahlău, alpine zone, sub *P. asplenioides* var. *minor* (Papp 1924b:392; Papp 1934b:67,71; Zanoschi 1970:280; Manoliu & al. 1998:338); upper side of common spruce forests, ass. *Vaccinio-Polytrichetum alpinum* Mihai 1987 (Mihai 1987a:23, Tab.3); Ceahlău, ass. *Neckero-Anomodontetum viticulosi* (Wisn. 1929) Philippi 1965 subass. *homalothecietosum philippeani* Ștefur. 1941 (Mihai 1987b: Tab.3).

Neamț County, Măgura Pietricica, on wet soil, sub *P. asplenioides* var. *minor* (Papp 1937d:235,236,240); Peste Recea, Muncelașu and Poarta Poienilor Hills, in forests, sub *P. asplenioides* var. *minor* (Papp 1947b:186,187,190); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.*, sub *P. asplenioides* var. *minor* and *porelloides* (Lungu 1963a:242,244); Pângărăcior Brook Valley, on soil and wet stones, sub *P. asplenioides* var. *minor* (Mihai 1973d:29).

Giurgeu Mountains, Bicaz Gorges, on soil, 1957-1960, sub *P. asplenioides* fo. *minor* and *porrelliformis* (Papp & al. 1962:144,147,149); Suhardul Mic, on soil and rotten wood, 11.08.1953, sub *P. asplenioides* fo. *minor* (Bîrcă & Mihai 1963:127).

Hășmaș Mountains, Hășmaș, sub *P. asplenioides* var. *minor* and *humilis* (Schiffner 1914:306,307); Hășmașul Mare, sub var. *minor* and *humilis* (Degen 1930:976).

Harghita Mountains, Stâncilor („Terkő”) Peak, sub *P. asplenioides* var. *minor* and *humilis* (Schiffner 1914:306,307); Stâncilor Peak, sub var. *minor* and *humilis* (Degen 1930:976); Minei Valley – riverhead, 1200 m *alt.*, 11.07.2000, Vermet Valley, 1050-1250 m *alt.*, 2.07.2000, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Mic Valley, 1050-1150 m, 16.08.2001, Groapa Mare, 1300 m *alt.*, 16.08.2001, Rotund Mountain, 1100 m *alt.*, 28.08.2001, Cucu Mountain, 1550 m *alt.*, 15.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:469).

Nemira Mountains, in beech and common spruce forests, on soil, 1970-1977, sub var. *minor* (Mihai & Barabaș V. 1978:116).

Bacău County, Șandru Mountain, 1645 m *alt.*, Porcului Hill, in forest, Pufu Hill, in forest, 900 m *alt.*, Colina Măgura, 514 m *alt.*, Doftana Brook Valley, Feșca de Sus Brook Valley, Sălăria Brook Valley, Izvorul Negru Forest, Talianul Brook Valley, sub *P. asplenioides* var. *minor*, Colina Măgura, 514 m *alt.*, Colina Rogojina, 500 m *alt.*, Picioru Șandru Mountain, 1517 m *alt.*, Porcului Hill, in forest, Ciungetul Brook Valley, Cleja Mountain, 1100 m *alt.*, sub *P. asplenioides* var. *porelloides* (Papp 1957:284); Rogojina Peak, 500 m *alt.*, Piciorul Șandru, 1517 m *alt.*, sub *P. asplenioides* *porelliformis*, Pufu Peak, 800 m *alt.*, sub *P. asplenioides* var. *minor* (Papp 1958b:389,396,397); *s* - Măgura Hill, north-west to Târgu Ocna, on soil and wet rocks, in birch grove, 680 m *alt.*, frequent, sub var. *humilis* (Mihai & Barabaș V. 1971:675,682,684,685); Slănic Brook, Slănicel Brook, Picioru Dobru, Cheșcheș Culm, on wet soil, 2.05-8.11.1971, sub *P. asplenioides* var. *minor* (Ștefureac & Barabaș V. 1972:77); Tălâmba Brook, on soil, the forest way from Înțărătoare towards Zboina Verde, on soil, sub *P. asplenioides* var. *minor* (Eftimie 1972:151); Upper Basin of Cașin, between the springs of Fata Moartă Brook, the Buciaș's affluent, on rotten trunk tree, 1000 m *alt.*, 06.1970, sub *P. asplenioides* var. *minor* (Eftimie 1973:424).

Vrancea County, Tișței Gorges, on humus, 1977 (Mihai & Pascal 1986:46).

Brașov County, Tâmpa, 18.06.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3512, B3516, B3523, B3524] (Ștefănuț 2006b:34; Ștefănuț 2008b:28); Predeal, 6.04.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3401]; Strâmba Valley, 14.05.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3808].

Postăvaru Mountain, Dracului Valley, 850 m *alt.*, 14.03.1999, *leg.* Mihăilescu Simona, *det.* Ștefănuț S. [BUCA B3481].

Piatra Mare Mountain, Piatra Mare, sub *P. asplenioides* var. *minor* (Schiffner 1914:307).

Baiului Mountains, ♀ - Tufa Valley, 5.07.1998, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3323], ♂ - [BUCA B3324].

Prahova County, Tătaru Mountain, on left side of Bâlbâitoarea Brook, the edge of Bâlbâitoarea Bog, on soil, 9.07, 20.10.1981 (Dihoru G. 1984c:82,84); Doftana Valley, in mixed *Quercus petraea* with *Fagus sylvatica* forest, 45°10'01,6"N / 25°45'09,2"E, 27.04.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3421, B3422] (Vasilie-Oromulu 2008:87); Valea Largă, 14.05.2008, *leg.* & *det.* Ștefănuț S. [BUCA B4007].

Bucegi Massif, Bucegi, sub *P. asplenioides* var. *humilis* (Loitlesberger 1898:193); *fer* - Bucșoiu Peak, Mălăiești Valley, Jepi Valley, 08-09.1911, sub *P. asplenioides* var. *humilis* (Degen 1914:217); Jepi Valley, 1600 m *alt.*, on soil, 27.10.1935, *leg.* Cretzoiu P. & Clement O., sub *P. asplenioides* var. *minor* (Papp 1937a:160,163); Sinaia, on rocks and rotten trunk trees, 05.1914, *leg.* Brândză M., *det.* Ștefureac T., sub *P. asplenioides* var. *devexa* (Ștefureac 1942a:4); ♂ - Padina, DB, 6.07.1948, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B3015], *s* - [BUCA B3016]; Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 8.07.1999, 2300 m *alt.*, *leg.* & *det.* Ștefănuț S. [BUCA B3131]; Gaura Glacial Ring, BV, 45°26'49"N / 25°26'35"E, 2250 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2448]; The glacial rings of Ialomița Valley, DB, 45°26'05"N / 25°26'50"E, 2190 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3361], 45°26'07"N / 25°26'57"E, 2205 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2350, B3318]; Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3290, B3294]; ♂ - Babele Mountain, PH, 45°24'44"N / 25°28'42"E, 2190 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3623]; ♀ - Horoaba Valley, DB, 45°23'28"N / 25°26'02"E, 1520 m *alt.*, 23.10.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3603]; Peștera Hermitage, DB, 1540 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3582]; Ialomița Valley, DB, 45°22'33"N / 25°26'10"E, 1465 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3586]; Babele Valley, PH, 45°24'43"N / 25°28'44"E, 2150 m *alt.*, 14.07.2008, *leg.* & *det.* Ștefănuț S. [BUCA B3909, B3910].

Piatra Craiului National Park, the way towards Vlădușca Pasture, BV, 45°32'38"N / 25°12'11"E, 1100 m *alt.*, 30.10.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2836], Șpirlea Valley, *leg.* Pop O. & *det.*

Wallfisch R. (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:80); Crăpătura Pietrei Craiului, BV, 45°33'49"N / 25°15'54"E, 1050 m *alt.*, 21.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2780](Ștefănuț & Pop O.G. 2006:80); the way towards Diana, BV, 950 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2806] (Ștefănuț & Pop O.G. 2006:80); Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2712] (Ștefănuț & Pop O.G. 2006:80); ♀ - Crăpătura Pietrei Craiului, BV, 45°33'12"N / 25°15'24"E, 1550 m *alt.*, 8.06.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2860, B2908], s - [BUCA B2909] (Ștefănuț & Pop O.G. 2006:80); towards Padinile Frumoase, common spruce forest, BV, 1600 m *alt.*, 6.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3008] (Ștefănuț & Pop O.G. 2006:80); towards Padinile Frumoase, BV, 1700 m *alt.*, 7.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3001] (Ștefănuț & Pop O.G. 2006:80); towards Padina lui Călineț, BV, 45°33'48"N / 25°12'31"E, 850 m *alt.*, 7.08.1997, *leg. & det.* Ștefănuț S. [BUCA B2691] (Ștefănuț & Pop O.G. 2006:80); Pârâul Rece, AG, 45°30'38"N / 25°11'34"E, 1500 m *alt.*, 8.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2647] (Ștefănuț & Pop O.G. 2006:80); Pietra Mică, BV, 1750 m *alt.*, 10.07.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3039] (Ștefănuț & Pop O.G. 2006:80); Brusturet Gorges, AG, 950 m *alt.*, 26.07.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2964] (Ștefănuț & Pop O.G. 2006:80); towards Funduri Saddle, common spruce forest, AG, 1480 m *alt.*, 7.08.2003, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3328]; Poiana Lespezilor, BV, 1330 m *alt.*, 8.08.2003, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3345, B3351].

Leaota Mountain, Între Văi, 750 m *alt.*, Vaca Valley, 900 m *alt.*, Mitarca Valley, 1300-1600 m *alt.*, sub *P. asplenioides* var. *minor*, var. and fo. *porelloides* (Papp & Diaconescu 1968:386,387).

Făgăraș Mountains, above Avrig Lake, 2150 m *alt.*, 9-19.07.1946, sub *P. asplenioides* var. *humilis* (Ștefureac 1949a:290; Drăgulescu 2003:14); Vidraru Lake, AG, 6.07.1998, *leg. & det.* Ștefănuț S. [BUCA B3066, B3474]; Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2074](Ștefănuț 2002:190); Capra Lake, AG, 45°36'01"N / 24°37'41"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2396]; ♀♂ - The glacial ring from Doamnei Valley, SB, 45°36'19"N / 24°36'07"E, 1870 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2397].

Cozia Mountain, Turnu Monastery, oak forest, on soil, 1975-1976 (Dihoru G. 1990:53); Roșia Valley, beech forest, on soil, 1987, *leg.* Negrean G. (Dihoru G. 1990:53); Turnu towards Stânișoara, 08.2005, *leg.* Onete Marilena, *det.* Ștefănuț S. [BUCA B3487].

Parâng Mountains, Repedea Valley, 08-09.1954, sub *P. asplenioides* var. *devexa* and fo. *dentata* (Ștefureac, Popescu & Lungu 1959:9,15,31, Pl.II, Figs.6-7).

Vâlcea County, Stănești, on soil, Valea lui Nanu Forest, 7.09.2001, *leg.* Răduțoiu D., *det.* Dihoru G. (Dihoru G. & Răduțoiu 2002:23); Stânișoara Valley, on soil, 1400 m *alt.*, 30.04.2003, upstream Cerna, 600-700 m *alt.*, 12.07.2002, 30.04.2003 (Dihoru G. & Răduțoiu 2004:79).

Hunedoara County, Osoi, Brad Commune, on wet soil, 260 m *alt.*, sub *P. asplenioides* var. *porrelloides* (Papp 1946a:13); Porcăreț Valley, 10.06.1961, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B3491].

Rețezat Mountains, Valereasca, upper zone, Râu de Mori, sub *P. asplenioides* var. *minor* and var. *humilis* (Schiffner 1914:306,307); Zănoaga Lake, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139); ♂ - Paroșul Valley, 1050 m *alt.*, 2003, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3089]; Râușor, 1050 m *alt.*, 5.06.2003, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3098]; Gemenele, 2006, *leg.* Cogălniceanu D., *det.* Ștefănuț S. [BUCA B3714].

Țarcu Mountains, Muntele Mic, 1000-1800 m *alt.*, 03.-08.1943, *leg.* Boșcaiu N., sub *P. asplenioides* var. *humilis* (Ștefureac 1948a:220).

Gorj County, Cerna Valley, downstream to Cerna Sat, 1.06.2004, *leg.* Cogălniceanu D., *det.* Ștefănuț S. [BUCA B2217].

Mehedinți County, Zegujani, in grasslands with *Agrostis tenuis*, 24.08.2002, Meriș, in forest, ass. *Quercetum frainetto-cerris*, 6.09.2002 (Costache 2002:55; Dihoru G. & Costache 2004:87); Cerângan, beech forests, 9.07.2003, *leg.* Costache I. (Dihoru G. & Costache 2004:87).

Domogled Mountain, Crucea Albă, CS, 44°53'10"N / 22°25'48"E, 500 m *alt.*, *leg. & det.* Ștefănuț S., 9.08.2004 [BUCA B2990].

Poiana Ruscă Mountains, Rusca Montană, on Pleșu, on beech bark, *alt.* 500-630 m, sub *P. asplenioides* var. *minor* (Papp 1942a:51).

Carăș Severin County, Caransebeș - Crucea Verde, 250-300 m *alt.*, 03.-08.1943, *leg.* Boșcaiu N., sub *P. asplenioides* var. *devexa* and *porelloides* (Ștefureac 1948a:220).

Arad County, Runcu-Groși Reserve, 46°10'12"N / 22°07'34"E, 21.08.2008, *leg. & det.* Ștefănuț S. [BUCA B3923].

Alba County, „Piatra Struțu” Mountain, sub *P. asplenioides* var. *minor* (Schiffner 1914:307; Goia 2001:67); Feneș Gorges, *leg.* Papp C., Alba-Iulia, Popii Valley, *leg.* Borza A., sub *P. asplenioides* var. *minor* (Papp 1944b:236; Papp 1945a:160); Alba-Iulia, Popii Valley, on soil, *leg.* Borza A., *det.* Papp C., sub *P. asplenioides* fo. *minor* (Papp 1944a:98); Feneș Valley, sub *P. asplenioides minor* (Papp 1945a:163); Morii Valley, on calcareous rocks, 700 m *alt.*, 1.06.1995, ass. *Tortello-Ctenidietum mollusci* (Gams 1927) Stodiek 1937, 600 m *alt.*, 7.08.1994, 22.10.1995, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965, ass. *Dicrano scoparii-Hypnetum cupressiformis* Barkman 1958 (Goia 1998:252,261,263, Tabs.3,10,12); Scărișoara Cave, 1340 m *alt.*, 11.08.1996, ass. *Calypogeietum trichomanis* Neumayr 1971, Scărișoara-Ocoale, 600 m *alt.*, 11.08.1996, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965, Gârda Valley, 1200 m *alt.*, 7.08.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ștefur. 1941, Găina, 980 m *alt.*, 21.08.1992, ass. *Brachythecio salebroși-Drepanocladetum uncinati* Marstaller 1989 (Goia 2000:111,114,116,118, Tabs.1,3,5,6); Arieșul Mic Basin (Goia & Schumacker 2000:92); Țoha Mică, Morii Valley, Stearpă Valley, Vârciorog Valley, Cepelor Valley, Gârda Seacă upstream Casa de Piatră, Galbena Valley, on rotten wood, Vidrișoara Valley, Drăghița Valley, Arieșul Mic at Izvoare, Băii Brook, Morii Valley, Divaia Valley, Gogii Brook - Cobleș, Gârda Seacă Valley, Ordâncușa Valley, on beech tree, in the Scărișoara Cave aven, on beech tree and rotten woods, Morii Valley, on rotten woods, beech and common spruce trees (Goia 2001:67); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); Vidrișoara Valley, 20.08.1992, Morii Valley, 13.08.1994, ass. *Pterigynandretum filiformis* Hilitzer 1925, ass. *Anomodontetum attenuati* Cain et Sharp 1938, Băii Valley, 20.08.1994, Arieșul Mic Valley, 20.08.1994, Drăghița Valley, 20.08.1994, ass. *Isothecietum myuri* Hilitzer 1925, Divaia Valley, 21.08.1994, ass. *Anomodonto viticulosi-Leucodontetum sciuroidis* Wisn. 1930 (Goia & Schumacker 2003:60,62,63, Tabs.2-4); Scărișoara cave, 1080 m *alt.*, 11.08.1996, Ordâncușa Valley, 1180 m *alt.*, 11.08.1996, ass. *Pterigynandretum filiformis* Hilitzer 1925, Gogii Brook Valley, 1300 m *alt.*, 9.08.1996, Gârda Seacă Valley, 1035 m *alt.*, 7.08.1996, ass. *Isothecietum myuri* Hilitzer 1925 (Goia & Schumacker 2004:109,110, Tabs.2,3).

Cluj County, Făget Forest, on soil, 1961-1966, sub *P. asplenioides* fo. *porrelliformis* (Plămadă 1967:470); Popești Forest, on soil, 1963-1965, sub *P. asplenioides* fo. *porrelliformis* (Plămadă 1968:25).

Bihor County, Remetea, 26.05.1915, *leg. & det.* Györfy I. & Péterfi M., sub *P. asplenioides* var. *minor* fo. *fagetorum* (Györfy 1924b:40).

Bihor Mountains, Galbena Valley, 750 m *alt.*, 08.1999 (Jakab 2000b:66); Someșul Cald Gorges (Goia & Mătase 2001:17).

Plagiochila sp.

Rarău Mountain, Codrul Secular Slătioara (Ștefureac 1941:1177).

Neamț County, Cuejdiu Valley (Papp 1933a:102).

Pleurocladula albescens (Hook.) Grolle var. *albescens*

Syn.:

- *Cephalozia albescens* (Hook.) Dumort.
- *Cephalozia islandica* var. *albescens* (Hook.) Lindb.
- *Jungermannia albescens* Hook.
- *Pleuroclada albescens* (Hook.) Spruce
- *Pleuroclada albescens* var. *scotica* Spruce
- *Trigonanthus albescens* (Hook.) Lindb. ex C. Hartm.

First citation for Romania: Ștefănuț 2000b.

Romania. Frey & al. 2006:60.

Ecology: epilithic, acidophytic, hygro-hydrophytic, sciophytic; circumpolar; arctic-alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, No, Se, Fi, Br, Fr, De, Po, Ch, At, Sk, ?Es, It, Hr, ?Ba, Ro, Ua, Rn, Rw, Re.

Distribution in Romania:

Rodna Mountains, Ineu Glacial Ring, BN, 47°31'35"N / 24°53'35"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2224, B2408, B2411, B2412, B2414], 47°31'37"N / 24°53'36"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2419], 47°31'36"N / 24°53'35"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2416, B2417, B2445], ♀ - 47°31'36"N / 24°53'35"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2418] (Ștefănuț 2000b:11-12; Ștefănuț 2003a:78; Ștefănuț &

Ștefănuț M. 2003:79); Iezerul Pietrosului, MM, 47°35'50"N / 24°38'50"E, 1840 m *alt.*, 28.08.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3454].

Făgăraș Mountains, Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg.* Ștefănuț S. & Ștefănuț Mirela, *det.* Ștefănuț S. [BUCA B2062, B2088], 45°35'42"N / 24°50'25"E, 2194 m *alt.*, *leg.* Ștefănuț S. & Ștefănuț Mirela, *det.* Ștefănuț S. [BUCA B2892](Ștefănuț 2002:190,195, Fig.2; Ștefănuț & Ștefănuț M. 2003:79-82, Figs.1-4).

Retezat Mountains, Zănoaga Lake, 26.07.1974, Zănoaga Glacial Ring, northern slope, 28.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139).

var. *islandica* (Nees) L. Söderstr. et Váňa

Syn.:

- *Cephalozia albescens* var. *islandica* (Nees) Kaal.
- *Cephalozia islandica* (Nees) Lindb.
- *Jungermannia islandica* Nees
- *Pleuroclada albescens* var. *islandica* (Nees) Spruce
- *Pleuroclada islandica* (Nees) Pearson
- *Pleurocladula islandica* (Nees) Grolle
- *Trigonanthus islandicus* (Nees) C. Hartm.

First citation for Romania: Plămadă 1977b.

Maramureș (Ștefureac 1979c:59).

Ecology: epilithic, acidophytic, hygro-hydrophytic, sciophytic; circumpolar; arctic-alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, Fo, No, Se, Fi, Br, Po, Ch, At, Sk, It, Ro, Rn, Re.

Distribution in Romania:

Rodna Mountains, Anieșul Mare Peak, 2000 m *alt.*, near the snow places, in wet places, 17.07.1975, ass. *Soldanello hungaricae-Ranunculetum crenati* Coldea 1985 (Plămadă 1977b:115; Ștefureac 1979c:59; Ștefureac 1983g:175,179-182; Plămadă & Coldea 1982:107-109; Ștefureac 1986f:195,197; Plămadă 1988:197; Coldea & al. 1997:188, Tab.23; Plămadă, Goia & Dumitru 2000:23; Nădișan & Chercheș 2002:58,122); Anieșul Mare Peak, 2000 m *alt.*, 19.07.1975, *leg.* Coldea G., *det.* Plămadă E., *conf.* Ștefănuț S. [BUCA B2450] (Ștefănuț 2000b:12; Ștefănuț & Ștefănuț M. 2003:79).

***Porella arboris-vitae* (With.) Grolle**

Syn.:

- *Bellincinia montana* Raddi
- *Jungermannia arboris-vitae* Dicks.
- *Jungermannia laevigata* Schrad.
- *Madotheca caucasica* (Steph.) Steph.
- *Madotheca laevigata* (Schrad.) Dumort.
- *Madotheca laevigata* var. *attenuata* (Nees) Gottsche et al.
- *Madotheca laevigata* var. *caucasica* (Steph.) Müll. Frib.
- *Madotheca laevigata* var. *killarniensis* (Pearson) Macvicar
- *Madotheca laevigata* var. *obscura* Nees
- *Madotheca laevigata* var. *subintegra* (Kaal.) Schiffn.
- *Madotheca laevigata* var. *thuja* (Nees) Gottsche et al.
- *Madotheca obscura* (Nees) Boulay
- *Madotheca obscura* (Nees) Warnst.
- *Porella arboris-vitae* var. *obscura* (Nees) M.F.V. Corley
- *Porella arboris-vitae* var. *killarniensis* (Pearson) M.F.V. Corley
- *Porella caucasica* Steph.
- *Porella laevigata* (Schrad.) Pfeiff.
- *Porella laevigata* var. *attenuata* (Nees) Jørg.
- *Porella laevigata* var. *killarniensis* Pearson
- *Porella laevigata* var. *obscura* (Nees) Arnell
- *Porella laevigata* var. *subintegra* Kaal.
- *Porella laevigata* var. *thuja* (Nees) Arnell

First citation for Romania: Baumgarten 1846.

Romania, without locality, sub *Jungermannia laevigata* (Baumgarten 1846:230; Schur 1866:872; Fuss 1878:653).

Moldova, sub *Madotheca laevigata* (Papp 1943:666; Ștefureac & al. 1973:149).

Muntenia, incl. sub var. *obscura* (Mohan 1988b:110).

Transylvania, sub *P. laevigata* (Pax 1908:130).

Ecology: epilithic, indifferent, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA, SIB

Distribution in Europe: Fo, No, Dk, Se, Ie, Br, Fr, Ad, NI, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sc, It, Si, Hr, Sb, Me, Ro, Bg, Al, Gr, Ua, Ca, ?Rc.

Distribution in Romania:

Maramureș County, Coștiui, sub *Madotheca laevigata* (Warnstorff 1895b:142); Surduc Gorges, Cavnic, sub *Madotheca laevigata* (Boros 1943e:144,146); Selnița, 300-400 m alt., Copalnic, 200 m alt., leg. & det. Boros A., sub *Madotheca laevigata* (Boros & Vajda 1967:226); Vișeuul de Jos, 750 m alt., leg. & det. Coman A., sub *Madotheca laevigata* (Boros & Vajda 1967:226); Covatar Waterfall near Săpânța, 900 m alt., 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, without locality, sub *P. laevigata* (Pax 1908:130).

Țibleș Mountains, Țibleș Peak, Izvorul Țibleșului, Mesteacănul Valley, 1984-1985, sub *P. laevigata* (Mohan 1988a:22).

Rarău Mountain, Codrul Secular Slătioara, 800-1250 m alt., sub *Madotheca laevigata* (Ștefureac 1941:1154,1245,1267,1282,1288, Tabs.3,8; Papp 1969b:188).

Bistrița-Năsăud County, Măgherușului Valley, Gropii Hill, Ord. *Acerion pseudoplatani*, sub *Madotheca laevigata* (Ștefureac & Cristurean 1973:314,316).

Neamț County, Neamț Monastery, on soil, 07-08.1921, leg. Brândză M., det. Ștefureac T., sub *Madotheca laevigata* (Ștefureac 1942a:5); Muncelașu Forest, sub *Madotheca laevigata* (Papp 1947a:158,159; Papp 1947b:182-184,191,195); Corni Forest Massif, sub *Madotheca laevigata* (Papp 1959b:567; Ștefureac & al. 1973:149).

Harghita County, 20.07.1901, sub *Madotheca laevigata* (Barth 1905:13).

Siriu Mountain, Scurt Hill, cutted beech forest, 1280 m alt., *Fagetalia*, sub *P. laevigata* var. *obscura* (Dihoru G. 1975:24).

Ciucaș Mountains, Bratocea Mountain towards Ciucaș Mountain, 1300 m alt., sub *Madotheca laevigata* (Boros & Vajda 1967:226; Mohan 1990b:38).

Bucegi Massif, Peleș Valley, on wet rocks, 08.1920, leg. Brândză M., det. Ștefureac T., sub *Madotheca laevigata* (Ștefureac 1942a:5); Bucșoiu Mountain, 1100-1400 m alt., sub *Madotheca laevigata* (Boros & Vajda 1967:226).

Piatra Craiului Mountains, Prăpăstiile Zărneștiului, 800 m alt., leg. & det. Vajda L., sub *Madotheca laevigata* (Boros & Vajda 1967:226; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:80); Brusturet Gorges, AG, 950 m alt., 26.07.2004, leg. Pop O., det. Ștefănuț S. [BUCA B2958] (Ștefănuț & Pop O.G. 2006:80).

Făgăraș Mountains, Arpaș Valley, in beech forest, on bark, sub *Madotheca laevigata* (Heufler 1853:50-51, Pl. IV, Fig.6; Schur 1866:872; Fuss 1878:653; Hazslinszky 1885:39); Argeș Valley, 750 m alt., sub *Madotheca laevigata* (Herzog 1919:296); Arpășel Valley, 1000-1200 m alt., leg. & det. Pócs T., sub *Madotheca laevigata* (Boros & Vajda 1967:226).

Iezer-Păpușa Mountains, Bratia Valley, 1000 m alt., sub *P. laevigata* var. *obscura* (Loitlesberger 1898:196).

Vâlcea County, Poiana Lungă, 900 m alt., sub *Madotheca laevigata* (Herzog 1919:296).

Sibiu County, Măgura Cisnădiei, 9.06.1868, leg. & det. Barth J., sub *Madotheca laevigata* [SIB HF 1574](Schur 1866:872; Fuss 1878:653; Hazslinszky 1885:39; Gündisch 1977:52; Drăgulescu 1983:59).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub *Madotheca laevigata* (Ștefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, leg. Barth J., sub *Madotheca laevigata* (Barth 1883:5; Hazslinszky 1885:39; Ștefureac, Popescu & Lungu 1955:525); Latorița Valley, on calcareous rocks, 900 m alt., 31.08.1954, sub *Madotheca laevigata* (Ștefureac, Popescu & Lungu 1956a:513-514, Tab.1); Latorița Valley, Repedea Valley, 08-09.1954, sub *Madotheca laevigata* (Ștefureac, Popescu & Lungu 1959:9,14, 19-25,29,39, Tabs.3,5,7).

Retezat Mountains, Valereasca, alpine zone, sub *Madotheca laevigata* (Schiffner 1914:309); Retezat National Park, sub *Madotheca laevigata*, ass. *Neckero complanatae-Leucodontetum* (Lippmaa 1935) Plămadă 1982, *Anomodontetum attenuati* (Barkm. 1939) Peciar 1965, *Neckeretum crispae* Ștefur. 1941 (Plămadă 1976a; Plămadă 1976b:20,24, Tab.2); Zlătuia Valley, 6-7.09.1969, sub *Madotheca laevigata*, ass. *Grimmia hartmanii-Isothecietum scabridi* Plămadă 1978 (Plămadă 1978:241, Tab.1; Plămadă 1993:54, Tab.4); Zlătuia Valley, 800 m alt., 6-7.09.1969, ass. *Neckero complanatae-Leucodontetum*, Zlătuia Valley, 800 m alt., 6-7.09.1969, Șesele Valley, 950 m alt., 9.09.1969, ass. *Anomodontetum attenuati*, Șesele- Pârgului Valley, 950 m alt., 9.09.1969, ass. *Anomodonto attenuati-Neckeretum crispae* Plămadă 1982, Turcului Valley, 850 m alt., 9-10.09.1969, ass. *Brachythecio-*

rutabuli-Mnietum cuspidati (Felföldy 1941) Plămadă 1982, sub *Madotheca laevigata* (Plămadă 1982a:304,306,309,315, Tabs.1,3,5,8; Plămadă 1993:51,53 Tab.1,2).

Mehedinți County, Cazanele Mari of Danube, sub *Madotheca laevigata* (Ștefureac & Mihai 1972a:117,121; Tab.6).

Poiana Ruscă Mountains, Luncani, Tăul Ursului (Simonkai 1872:67; Fuss 1878:653); Poiana Ruscă, Luncani, Pietrele Gropilor, on bark, 700 m alt., leg. Pteancu P., det. Papp C., sub *Madotheca laevigata* var. *caucasica* (Papp 1944a:99).

Arad County, above Radna towards Șoimoș Valley, Highiș Brook above Arăneag, Rândunicii Valley above Chișindiei, near Dulcele, Valea Mare, on rocks, sub *Madotheca laevigata* (Simonkai 1893:361).

Zarand Mountains, Highiș Valley, on rocks, sub *Madotheca laevigata* (Csürös M. 1978:77; Ardelean 2006:106).

Alba County, Piatra Ceții, Trascău Mountains, 3.07.1868, sub *Madotheca laevigata* (Barth 1868:141); Galda de Sus, leg. & det. Barth J., sub *Madotheca laevigata* (Fuss 1878:653; Barth 1880:121); Rimetea, sub *Madotheca laevigata* (Barth 1880:121); Colții Trascăului, sub *Madotheca laevigata* (Páll 1960b:90); Runcului Gorges, 500-850 m alt., det. Páll Ș., sub *Madotheca laevigata*, ass. *Seslerietum rigidae* (Pop I. & al. 1964:216, Tab.3).

Cluj County, Turda's Gorges, leg. & det. Barth J., sub *Madotheca laevigata* (Fuss 1878:653; Barth 1880:121); Cluj, 11.07.1905, leg. Györffy I., sub *Madotheca laevigata* (Schiffner 1909a:28,33); Sălicea Forest, on bark, 1961-1966, sub *Madotheca laevigata* (Plămadă 1967:470); between Buru Mountain and Litenii de Sus, Fenișel, leg. & det. Péterfi M., sub *Madotheca laevigata*, Bologa, leg. & det. Harghitai Z. & Soó R., sub *Madotheca laevigata* (Boros & Vajda 1967:226); Cluj-Napoca Botanical Garden, cemetery, Sporting Park, on bark, sub *Madotheca laevigata* (Plămadă 1969:170).

Gilău Mountains, beech forest, sub *P. laevigata* (Plămadă 1985b:41).

Bihor County, Aleșd, Pădurea Neagră, sub *Madotheca laevigata* (Simonkai 1890a:129); Piatra Colibița, Dâlma Mare, sub *Madotheca laevigata* (Györffy 1903a:147); Iadului Valley between Remetea and Bulz, 25.05.1915, leg. & det. Györffy I. & Péterfi, sub *Madotheca laevigata* M. (Györffy 1924b:40; Boros 1942a:33; Boros & Vajda 1967:226); Sebeș Valley from Crișului Repede Springs, sub *Madotheca laevigata* (Ștefureac, Popescu & Lungu 1954:236); Apusenii Mountains, sub *Madotheca laevigata* (Ștefureac 1975b:313).

Bihor Mountains, without locality, sub *P. laevigata* (Péterfi M. 1908:278).

Porella cordaeana (Huebener) Moore

Syn.:

- *Jungermannia cordaeana* Huebener
- *Jungermannia platyphylla* var. *dentata* Hartm.
- *Madotheca cordaeana* (Huebener) Dumort.
- *Madotheca cordaeana* var. *distans* (Müll. Frib.) Müll. Frib.
- *Madotheca cordaeana* var. *faeroensis* (C.E.O. Jensen) Müll. Frib.
- *Madotheca cordaeana* var. *simplicior* (J.E. Zett.) Müll. Frib.
- *Madotheca dentata* (Hartm.) C. Massal.
- *Madotheca rivularis* Nees
- *Madotheca rivularis* var. *distans* Nees ex Limpr.
- *Madotheca rivularis* var. *simplicior* (J.E. Zett.) Müll. Frib.
- *Madotheca simplicior* J.E. Zett.
- *Porella cordaeana* var. *distans* (Müll. Frib.) Jelenc
- *Porella cordaeana* var. *faeroensis* (C.E.O. Jensen) E.W. Jones
- *Porella cordaeana* var. *simplicior* (J.E. Zett.) Arnell
- *Porella dentata* (Hartm.) Lindb.
- *Porella rivularis* (Nees) Pfeiff.
- *Porella rivularis* var. *faeroensis* C.E.O. Jensen
- *Porella rivularis* var. *simplicior* (J.E. Zett.) Lindb.

First citation for Romania: Péterfi M. 1910.

Ecology: epilithic, corticolous, calcicolous, hygrophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ct, Ee, Lv, Ua, Cm, Rn, Ca, Ma.

Distribution in Romania:

Maramureș County, Ursului Fountain below Pleșca Peak, 21-23.08.1998, leg. & det. Jakab G. (Jakab 1999:53,55; Dihoru G. 2004:168).

Rodna Mountains, Vinului Valley, *leg. & det.* Péterfi M., sub *P. rivularis* (Péterfi M. 1910:322; Szurák 1912a:94).

Ciucaș Mountains, ♂ - Cheia, PH, 45°27'13"N / 25°56'20"E, 4.07.2004, *leg. & det.* Ștefănuț S. [BUCA B3044].

Făgăraș Mountains, Cârțișoara Valley, 1300 m *alt.*, *leg. & det.* Vajda L., sub *Madotheca* (Boros & Vajda 1967:226); Pojorta Valley, BV, 45°38'14"N / 24°53'48"E, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2543].

Retezat Mountains, Râul Mare Valley, 19.06.2005, *leg.* Cogălniceanu D., *det.* Ștefănuț S. [BUCA B3393].

Porella platyphylla (L.) Pfeiff.

Syn.:

- *Antoiria vulgaris* Raddi
- *Cavendishia platyphylla* (L.) Gray
- *Lejeunea platyphylla* (L.) Corda
- *Jungermannia platyphylla* L.
- *Jungermannia platyphylla* var. *major* Hook.
- *Madotheca platyphylla* (L.) Dumort.
- *Madotheca platyphylla* fo. *convexifolia* Papp
- *Madotheca platyphylla* fo. *distans* Papp
- *Madotheca platyphylla* fo. *laxa* Papp
- *Madotheca platyphylla* var. *major* (Hook.) Dumort.
- *Madotheca platyphylla* var. *subsquarrosa* Bernet
- *Madotheca platyphylla* var. *subsquarrosa* Schiffn.
- *Madotheca porella* Nees
- *Madotheca porelloides* De Not. ex Lindb.
- *Porella notarisii* Trevis.
- *Porella platyphylla* var. *subsquarrosa* Arnell
- *Porella porelloides* De Not.

First citation for Romania: Baumgarten 1846.

Romania, *without locality*, sub *Jungermannia* (Baumgarten 1846:229).

Moldova, sub *Madotheca*, incl. fo. *distans* and *convexifolia* (Papp 1943:666,667; Ștefureac & al. 1973:149,150).

Dobrogea (Ștefureac, Mihai & Pascal 1970:120,123).

Muntenia, incl. sub *P. platyphylloidea* (Mohan 1988b:110,111).

Transylvania (Pax 1908:130).

Ecology: corticolous, epilithic, indifferent, xero-mesophytic, photo-sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: BUCA, CSH, PHHM, SIB Bryotheca romanica

Distribution in Europe: Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ct, Tu, Ee, Lv, Lt, By, Md, Ua, Cm, Rn, Rw, Rc, Re, Ka, Ca.

Distribution in Romania:

Maramureș County, Vișeu (Warnstorf 1895b:143; Pax 1908:130).

Țibleș Mountains, Dosul Obcinei, Țibleș Valley, Mesteacănul Valley, Piciorul Arsuri, Izvorul Țibleșului, 1984-1985 (Mohan 1988a:22).

Botoșani County, Șendriceni, *leg.* Băncescu Eugenia, sub *Madotheca* (Papp 1942b:526; Papp 1956a; Ștefureac & al. 1973:150); Suhărau Forest, incl. sub *Madotheca platyphylla* var. *subsquarrosa* (Papp 1956a; Ștefureac & al. 1973:150); Cordăreni, Suhărau, on bark, incl. sub *Madotheca platyphylla* var. *major* (Papp 1946b:150; Papp 1956a:259; Ștefureac & al. 1973:150); Șendriceni Forest (Papp 1956a:259); Lișna Forest, on *Acer campestre*, sub *Madotheca* (Mihai 1966:147, Tab.2); Pădureni Forest, sub *Madotheca* (Mihai 1968b:137,143; Mihai 1968c:396); Sadoveni Forest, on *Quercus robur*, sub *Madotheca*, *conf.* Ștefureac T. (Mihai 1969c:91); Lișna Forest, 220-240 m *alt.*, Alba Forest, 230 m *alt.*, ass. *Fagetum carpaticum* (Borza 1930) Moor 1938, Paucă 1941 subass. *collinum* Matuszkiewicz 1958, sub *Madotheca* (Mihai 1971d:719, Tab.6); Liveni, on rocks, sub *Madotheca* (Mihai 1972d:113).

Suceava County, Suceava and in vicinity (Knauer 1863; Ștefureac & Pascal 1981:486); Adam and Eva Mountains, Pojorâta Commune, on humus, sub *Madotheca* (Mihai & Pascal 1973b:157,161); Criștișor-Neagra Broștenilor, Borcut Meadow, sub *Madotheca platyphylla* (Lungu 1973b:72); Barnar Gorges, on rocks, sub *Madotheca platyphylla* var. *subsquarrosa* (Pascal & Seghedini 1977:142).

Rarău Mountain, Codrul Secular Slătioara, 780-1240 m *alt.*, sub *Madotheca platyphylla*, incl. var. *subsquarrosa* (Ștefureac 1941:1154,1282,1288, Tab.8; Papp 1969b:188).

Stânișoara Mountains, Văleni in Suha Mare Brook Valley, on beech tree bark, 1974, sub *Madotheca* (Pascal & Toma M. 1977:42).

Iași County, Mârzești Forest, Bursucăriei Hill, sub *Madotheca platyphylla* fo. *convexifolia* (Papp 1926a:12,13,40,41; Papp 1926b:374; Papp 1929:555,557,559,560); Bârnova Forest, on beech tree, sub *Madotheca platyphylla* fo. *distans* (Papp 1937b:6; Papp 1939a:339,340,355,358); Repedea and Bârnova forests, sub *Madotheca platyphylla* fo. *laxa* and fo. *convexifolia* (Papp 1939a:355,358); Breazu Forest, sub *Madotheca* (Papp 1942b:526); Pârlitura Valley, Carului Valley, in forest, Ciurdea Brook Valley, in forest, on bark, sub *Madotheca platyphylla* fo. *convexifolia* (Papp 1950:400); Repedea-Bârnova Forest Massif, frequent, sub *Madotheca* (Papp 1924a:102; Papp & Eftimie 1963:111); Repedea-Bârnova Forest Massif, ass. *Madotheceto-Leskeetum nervosae* (Gams 1927) Barkaman 1958, ass. *Leucodontetum sciuroides* Hilitzer 1925, sub *Madotheca* (Mihai 1974a:128,130, Tabs.2,5), sub *Madotheca*, ass. *Anomodontetum attenuati* Peciar 1965 (Mihai 1975:106, Tab.2); Repedea-Bârnova Forest Massif, sub *Madotheca*, ass. *Madotheceto-Leskeetum nervosae* subass. *amblystegietosum* Mihai 1974 (Mihai 1976b:282, Tab.1); Mârzești Forest, Fundul Grecului Forest, Carului Valley, sub *Madotheca platyphylla* fo. *convexifolia* (Papp 1955; Ștefureac & al. 1973:150); Uricani Forest, sub *Madotheca platyphylla*, incl. fo. *laxa* (Eftimie 1967:290,292); Bursucăriei Hill, 160-170 m alt., Mârzești Forest, on oak tree, sub *Madotheca platyphylla*, incl. sub fo. *convexifolia* (Dobrescu & al. 1969:170,175,176); Breazu Forest, 160-180 m alt., ass. *Madotheceto-Leskeetum nervosae* (Mihai & Pascal 1973a:267,273,275, Tab.3); Mârzești Forest, sub *Madotheca*, ass. *Madotheceto-Leskeetum nervosae* (Gams 1927) Barkaman 1958, ass. *Leskeetum polycarpae* Horvat 1932 (Mihai 1976c:662,664, Tabs.2,5); Domnița-Voinești Forest (Voinești and Țibana Commune), on maple and ash tree (Mititelu & Chifu 1978:377, 394); Humosu Natural Reserve, ass. *Madotheco-Leskeetum nervosae* (Mihai 1980:8; Mihai 1983c:354, Tabs.5,6).

Bistrița-Năsăud County, Măgherușului Valley, at Lupiște, Hederiș Hill, Gropii Hill at Igheaburi, sub *Madotheca* (Ștefureac & Cristurean 1973:316); Monari, Simionești, Budacul de Sus, 1980-1981 (Mohan & Hodoroga 1983:54); the forest from Satului Valley, near Rebra, on bark, 470-570 m alt., ass. *Leucodonto-Madothecietum platyphyllae*, in *Fagetalia* (Plămadă & Coldea 1989b:121).

Vaslui County, Hârboanca Forest, at 0,7 km south-west to Brăhășoia, 1955-1968, det. Papp C., sub *Madotheca* (Dobrescu 1969b:26,27, Tab.1); Chinan – Bunești Forest, Liești – Știoborâni Forest, on bark, sub *Madotheca*, 1966-1969 (Plămadă & Vișalariu 1971:166).

Ceahlău Mountain, Ceahlău, sub *Madotheca* (Papp 1934b:69; Manoliu & al. 1998:337); Ceahlău, 650-1700 m alt., sub *Madotheca* (Mihai 1979b); Ceahlău, ass. *Neckero-Anomodotetum viticulosi* (Wisn. 1929) Philipp 1965 subass. *leucodontetosum*, *Neckeretum complanatae* (Hilitzer 1925) Peciar 1965 (Mihai 1987b: Tabs.3,4).

Harghita County, Odorhei, Rokalyuk and Márerdő, 600 m alt., sub *Madotheca*, ass. *Carpino-Fagetum caricetosum* (Páll 1960a:185); Târnava Mare Valley, between the springs and Odorhei City, 1958-1962, sub *Madotheca* (Páll 1963b:17).

Neamț County, Poieni Forest, sub *Madotheca platyphylla*, incl. fo. *convexifolia* (Papp 1924a:102; Papp 1926a:13,14,40,41, Figs.3-7; Papp 1926b:375); Neamț Monastery, on bark, 07-08.1921, leg. Brândză M., det. Ștefureac T., sub *Madotheca* (Ștefureac 1942a:5); Recea and Poarta Poienilor Forests, sub *Madotheca* (Papp 1947a:158; Papp 1947b:181-184,191); Poieni Forest, sub *Madotheca platyphylla* fo. *laxa* (Papp 1947a:159; Papp 1947b:181-183,191,197,199; Papp 1959b:568; Eftimie 1967:290; Ștefureac & al. 1973:150); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m alt., sub *Madotheca* (Lungu 1963a:242); s - Botoșanu Hill, beech forest, on beech tree, sub *Madotheca* (Mihai 1971e:407,409); Pângărăcioc Brook Valley, on beech tree bark and soil, sub *Madotheca* (Mihai 1973d:29,32).

Nemira Mountains, Nemira Mountain, on *Acer pseudoplatanus* bark, 1300-1400 m alt., sub *Madotheca* (Barabaș V. 1974:30); Șandru, on beech tree bark, 1970-1977 (Mihai & Barabaș V. 1978:114,117); Nemira Mountain, 1000-1500 m alt., incl. sub *Madotheca* (Barabaș V. 1982b:59, Tab.25).

Bacău County, Slănic Moldova, on wet rocks, 07.1907, leg. Brândză M., det. Ștefureac T., sub *Madotheca* (Ștefureac 1942a:5); Slănic Brook Valley (Papp 1957:285); Târgu Ocna, sub *Madotheca* (Jakucs, Fekete & Gergely 1959; Ștefureac & al. 1973:149); s - Măgura Hill, north-west to Târgu Ocna, on *Quercus petraea* and *Picea abies* bark, 680 m alt., rare, sub *Madotheca* (Mihai & Barabaș V. 1971:676,682); Picioru Dobru, on hornbeam bark, 2.05-8.11.1971, sub *Madotheca* (Ștefureac & Barabaș V. 1972:78); s - Sohodol Forest, Măgura Commune, on beech tree bark, 1970-1971, sub *Madotheca* (Mihai & Barabaș V. 1972:87; Costică 1995:252); Codrul Secular Runc-Racova, on beech tree bark (Barabaș V. 1982a:49).

Bodoc Mountains, Malnaş, 23.08.1975, frequent, sub *Madotheca*, det. Ştefureac T., ass. *Luzulo luzuloides-Fagetum* Zólyomi 1955 (Kovács 1977:244,247; Ştefureac & Kovács 1981:117).

Vrancea County, Tişitei Gorges, on rocks, 1977 (Mihai & Pascal 1986:46).

Măcin Mountains, Tuşuiatu, Piscul Înalt, 456 m alt., on granite, sub *Madotheca* (Papp 1938:288,293,299; Ştefureac, Mihai & Pascal 1970:123).

Tulcea County, Dealul Mare, 240 m alt., Taiţei Valley, Iazul Mănăstirii, Niculiţel Commune, on bark, sub *Madotheca* (Papp 1938:288,293,295,299; Ştefureac, Mihai & Pascal 1970:123); Babadag Forest, 220 m alt., 20-23.07.1968, sub *Madotheca* (Ştefureac & Mohan 1969:140,144; Ştefureac, Mihai & Pascal 1970:123).

Constanţa County, Danube Bank between Galiţa and Ostrov, Canaraua Fetii Forest, 1963, sub *Madotheca* (Mihai 1965:160,161, Tabs.1,2; Ştefureac, Mihai & Pascal 1970:123); Liliiecilor Cave-Gura Dobrogei, sub *Madotheca* (Ştefureac 1969a; Ştefureac, Mihai & Pascal 1970:123); The Cave from Cheia (Ştefureac 1969a; Ştefureac, Mihai & Pascal 1970:123); Liliiecilor Cave, leg. Orghidan T., det. Ştefureac T., sub *Madotheca* (Ştefureac 1970h:480); Sidorman Forest, Mihail Kogălniceanu Commune (Mihai 1981b:10); Canaraua Fetii and Esehioi Forest Reserves, sub *Madotheca* (Miticel, Parincu & Gheorghişă 1993:33); ♂ - Canaraua Fetii, 6.06.2007, leg. & det. Ştefănuţ S. [BUCA B3995]; Cheia, 12.06.2008, leg. & det. Ştefănuţ S. [BUCA B3892].

Siriu Mountain, Buzău Gorges, Cl. *Quercus-Fagetea* (Dihoru G. 1975:24).

Buzău County, Ogoare, incl. Ochi and Uliţă, in *Quercus-Fagetea* (Dihoru G. 1975:24); Spătaru Forest, on *Fraxinus pallisiae* bark, 45°05'22"N / 26°47'03"E, 11.11.2008, leg. & det. Ştefănuţ S. [BUCA B3983].

Ciucuş Mountains, Berii Brook Valley, Ciucuş Peak, Zăgan Mountain, Cucului Brook Valley, Stâncoasă Culm, Piscul Turiştilor (Mohan 1990b:44); Roşu Mountain, 6.10.1974, leg. Ionescu M., det. Wallfisch R. [PHHM, 6207242, 6207221, 6207222, 6207254].

Braşov County, Braşov, sub *Madotheca* (Schur 1866:873; Fuss 1878:653); Predeal, leg. & det. Schur F. (Radian 1901a:132); Grosser-Hangenstein (Nagy-Függökő), 860 m alt., 21.06.1938, Pietrele lui Solomon, 800 m alt., 20.06.1938, sub *Madotheca*, ass. *Seslerietum rigidae burcicum* (Zólyomi 1939:113, Tab.1); Tâmpa, 740 m alt., 18.06.1938, sub *Madotheca*, ass. *Saxifraga cuneifolia-Campanula carpatica* (Zólyomi 1939:82,137, Tab.6; Ştefănuţ 2006b:34; Ştefănuţ 2008b:28); Cetăţii (Lempeş) Hill, on *Tilia cordata* bark, 05.1961, sub *Madotheca* (Mihai 1962:278); ♂ - Tâmpa, 24.04.2006, leg. Pop O., det. Ştefănuţ S. [BUCA B3442-B3444] (Ştefănuţ 2006b:34; Ştefănuţ 2008b:28); ♂ - Tâmpa, 18.06.2006, leg. & det. Ştefănuţ S. [BUCA B3514] (Ştefănuţ 2006b:34; Ştefănuţ 2008b:28); ♀ - Făgăraş, Galaţi Hill, 24.11.2002, leg. & det. Ştefănuţ S. [BUCA B2060]; Strâmba Valley, 14.05.2006, leg. Pop O., det. Ştefănuţ S. [BUCA B3445]; Făgăraş Hospital, 440 m alt., 28.07.2006, leg. & det. Ştefănuţ S. [BUCA B3544].

Postăvaru Mountain, Dracului Valley, 850 m alt., 14.03.1999, leg. Mihăilescu Simona, det. Ştefănuţ S. [BUCA B2219].

Prahova County, Prahova Valley (Loitlesberger 1898:196); Doftana Valley, Păltinoasa Valley, sub *Madotheca*, on beech bark (Mohan 1971a:9; Mohan 1971b:48); Româneşti (Dihoru A. 1994:4); Româneşti Forest, 19.05.1971, leg. & det. Popescu M. [PHHM 6207034, 6207035]; s - Doftana Valley, in *Quercus petraea* forest, 45°10'11,8"N / 25°45'04,6"E, 26.04.2006, leg. & det. Ştefănuţ S. [BUCA B3416], ♂ - [BUCA B3418] (Vasilii-Oromulu 2008:87); ♂ - Doftana Valley, in mixed *Quercus petraea* with *Fagus sylvatica* forest, 45°10'01,6"N / 25°45'09,2"E, 27.04.2006, leg. & det. Ştefănuţ S. [BUCA B3426] (Vasilii-Oromulu 2008:87); the forest behind Prahova railway station, 4.05.2004, leg. & det. Ştefănuţ S. [BUCA B3076, B3077].

Gârbova Massif, Rea Valley, 1000-1300 m alt., sub *Madotheca* (Mickiewicz 1968:30,31); Azuga Valley, Tufa Valley, Rea Valley, Valea lui Bogdan, on *Fagus sylvatica* bark, 1967-1970, sub *Madotheca* (Lungu & Ştefureac 1970:6); Cumpătu Mountain, on beech bark, 830 m alt., 6.10.1985, leg. & det. Lungu L. [CSH]; ♂ - Tufa Valley, 3.11.2002, leg. Atanasiu Paulina, det. Ştefănuţ S. [BUCA B2441].

Bucegi Massif, Poiana Coştilei, 1200 m alt., on *Acer* bark, 5.12.1937, leg. Cretzoiu P., det. Pilous Z., sub *Madotheca* [*Bryotheca romanica* 12] (Pilous 1938:3); Peleş Valley, on wet rocks and rotten trunk tree, 07-08.1920, leg. Brândză M., det. Ştefureac T., sub *Madotheca* (Ştefureac 1942a:5); Vârful cu Dor, 1891 m alt., Urlătoarea Valley, 900-1000 m alt., sub *Madotheca platyphylloidea* (Mickiewicz 1968:30,31); Peleş Valley at Pelişor, PH, 23.01.2005, leg. & det. Ştefănuţ S. [BUCA B3180]; Peleş Valley, PH, 25.10.2003, leg. Atanasiu Paulina, det. Ştefănuţ S. [BUCA B3010]; Coştila Glade, PH,

3.04.2004, *leg.* Atanasiu Paulina, *det.* Ștefănuț S. [BUCA B3011]; Furnica Mountain, PH, 1010 m *alt.*, 27.10.2005, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3303].

Piatra Craiului Mountains, Prăpăstii, 850-860 m *alt.*, 29.08.1936, sub *Madotheca*, ass. *Saxifraga cuneifolia-Campanula carpatica* (Zólyomi 1939:82,137, Tab.6; Ștefănuț & Pop O.G. 2006:80); Gura Bârsei, 28.09.2001, *leg.* Pop O., *det.* Ștefănuț S. (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:80); towards Padina lui Călineț, BV, 45°33'48"N / 25°12'31"E, 850 m *alt.*, 7.08.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2683] (Ștefănuț & Pop O.G. 2006:80); Padina Bădoaia, BV, 45°33'57"N / 25°13'45"E, 1040 m *alt.*, 8.08.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2679] (Ștefănuț & Pop O.G. 2006:80); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg.* & *det.* Ștefănuț S. [BUCA B2611] (Ștefănuț & Pop O.G. 2006:80); Gura Râului, BV, 45°33'07"N / 25°17'50"E, 900 m *alt.*, 7.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2733] (Ștefănuț & Pop O.G. 2006:80,81); Garofița Pietrei Craiului Hut, AG, 45°30'42"N / 25°10'25"E, 1150 m *alt.*, 9.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2722], on rotten beech tree [BUCA B2721] (Ștefănuț & Pop O.G. 2006:81).

Argeș County, Piatra Nemoeștilor (Loitlesberger 1898:196); Great Gorges of Dâmbovița River, 45°23'19"N / 25°11'45"E, 800 m *alt.*, 7.07.1998, *leg.* & *det.* Ștefănuț S. [BUCA B2577, B2619, B2800, B2899, B2900]; ♂ - [BUCA B2024], 45°23'15"N / 25°11'40"E, 800 m *alt.*, 10.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2906] (Ștefănuț 2004c:110; Ștefănuț 2006a:88; Ștefănuț & Pop O.G. 2006:81); Great Gorges of Dâmbovița River, on *Pinus sylvestris* bark, 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2592] (Ștefănuț & Pop O.G. 2006:81).

Leaota Mountain, Marginea Domnească Valley, 850 m *alt.*, sub *Madotheca* (Papp & Diaconescu 1968:387).

Ilfov County, Piscu-Hereasa Forest, Țigănești Forest, sub *Madotheca* (Radian 1901b:41); ♂ - Pasărea Forest, 44°28'33"N / 26°18'31"E, 1.05.2008, *leg.* & *det.* Ștefănuț S. [BUCA B3884].

Bucharest, Botanical Garden, sub *Madotheca* (Ștefureac 1982c:197,200, Tab.2).

Giurgiu County, Comana, 2.05.1899, sub *Madotheca*, incl. fo. *platyphylloidea* (Radian 1901b:41); s - Comana, on *Quercus frainetto*, 1968-1969, sub *Madotheca* (Ștefureac & Mohan 1970a:351,353); Călugăreni Forest, 3.05.2004, *leg.* & *det.* Ștefănuț S. [BUCA B2931]; Căscioarele Forest, 10.05.2005, *leg.* Ivănescu Cristina, *det.* Ștefănuț S. [BUCA B3182]; Comana Forest, 31.05.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3535].

Făgăraș Mountains, Arpaș Valley, common spruce forest, on bark, sub *Madotheca* (Heufler 1853:50-51, Pl.IV, Fig.1; Schur 1866:873; Fuss 1878:653); Plaiul Țării, on beech tree bark, 7.08.1870, *leg.* & *det.* Fuss M., sub *Madotheca laevigata*, rev. Gündisch F., sub *Madotheca platyphylla* [SIB HF 1571] (Fuss 1878:653; Drăgulescu 1983:59).

Cozia Mountain, Fruntea Oii Ridge, 1975-1976 (Dihoru G. 1990:53).

Sibiu County, Sibiu, Șura Mare, Bardu, sub *Madotheca* (Fuss 1878:653); north to Netuș Commune, 500-550 m *alt.*, ass. *Quercetum roboris-petraeae*, sub *Madotheca*, *det.* Páll Ș. (Csürös & Kovács 1962:218); Sibiu, sub *Madotheca* [SIB SCHUR 4597](Gündisch 1977:52); Piatra Caprei, 650 m *alt.*, 15.07.1971, sub *Madotheca*, ass. *Woodsio-Aspenietum septentrionalis* Tx. 1937 (Schneider-Binder 1975:131, Tab.1); Sadu Valley, Dealu-Caprei, 650 m *alt.*, 3.08.1978, ass. *Woodsio-Asplenietum septentrionalis* subass. *dianthetosum henteri* Drăgulescu 1988 (Schneider-Binder 1975:131; Drăgulescu 1988:79, Tab.7; Drăgulescu 1995:203, Tab.12); Bradu, on fruit trees, 10.04.1865, *leg.* & *det.* Fuss M., sub *Madotheca laevigata*, rev. Gündisch F., sub *Madotheca platyphylla* [SIB HF 1572], on beech tree bark, 27.01.1873, *leg.* & *det.* Fuss M., sub *Madotheca laevigata*, rev. Gündisch F., sub *Madotheca platyphylla* [SIB HF 1569](Drăgulescu 1983:59); Biertan, 13.10.1867, *leg.* & *det.* Barth J., sub *Madotheca* [SIB HF 1566](Drăgulescu 1983:59).

Cindrel Mountains, Crinț, 900-1000 m *alt.*, Dealul Ursului, 1200 m *alt.*, sub *Madotheca* (Gündisch 1977:52).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub *Madotheca platyphylloidea*, *M. platyphylla* (Ștefureac, Popescu & Lungu 1955:527,538,539).

Parâng Mountains, Latorița Valley, Repedea Valley, 08-09.1954, sub *Madotheca* (Ștefureac, Popescu & Lungu 1959:9,20,29, Tab.5).

Hunedoara County, Bulzeștii de Sus (Smets 2003:61).

Retzat Mountains, Radeșul Mare Valley, Zlătuia Brook Valley, towards Radeșului Peak, sub *Madotheca* (Páll 1964a:108); Zlătuia Valley, in beech forest, 900-1200 m *alt.*, *det.* Páll Ș., sub *Madotheca*, ass. *Fagetum silvaticae oxalidosum* (Csürös, Kovács & Moldovan 1964:169); Zlătuia

Valley, in beech forest, 900-1000 m alt., det. Páll Ş., sub *Madotheca*, ass. *Fagetum silvaticae brachypodiosum* (Csűrös, Kovács & Moldovan 1964:169); Retezat National Park, sub *Madotheca*, ass. *Neckero complanatae-Leucodontetum* (Lippmaa 1935) Plămadă 1982, ass. *Leucodonto-Madothecietum platyphyllae* Plămadă 1982, ass. *Anomodontetum attenuati* (Barkm. 1939) Peciar 1965, ass. *Pterygynandro-Isothecietum myuri* Plămadă (1976) 1978, ass. *Neckeretum crispae* Ştefur. 1941 (Plămadă 1976a; Plămadă 1976b:20, Tab.2); Zlătuia Valley, ass. *Homalothecio-Leucodontetum sciuroides* (Størmer 1938) Ježet et Vondr. 1962, 790-1200 m alt., 6-7.09.1969, ass. *Neckero complanatae-Leucodontetum*, between Zlătuia Valley and Turcului Valley, 900-1250 m alt., 7.09.1969, ass. *Leucodonto-Madothecetum platyphyllae*, Zlătuia Valley, 790-850 m alt., 6-7.09.1969, Şesele Valley, 950 m alt., 9.09.1969, ass. *Anomodontetum attenuati*, Zlătuia Valley, 1000-1200 m alt., 7.09.1969, between Zlătuia Valley and Turcului Valley, 900 m alt., 7.09.1969, Turcului Valley, 850 m alt., 9.09.1969, Şesele Valley, 950 m alt., 9.09.1969, Şesele, 1000 m alt., 14.07.1970, ass. *Pterygynandro-Isothecietum myuri*, Zlătuia Valley, 1100 m alt., 7.09.1969, ass. *Anomodonto attenuati-Neckeretum crispae* Plămadă 1982, sub *Madotheca* (Plămadă 1982a:303-307,309, Tabs.1-5; Plămadă 1993:51,52, Tab.1).

Țarcu Mountains, Muntele Mic, 1000-1800 m alt., Muntele Mic – Şeroni Glade, 900-1500 m alt., 03-08.1943, leg. Boşcaiu N., sub *Madotheca* (Ştefureac 1948a:220).

Mehedinţi County, Orşova, sub *Madotheca* (Simonkai 1872:67); from Iloviţa to Predeal, 25.06.1899, sub *Madotheca*, the forests from Suliţa to Gornenţi, sub *Madotheca platyphylla* fo. *platyphylloidea* (Radian 1901b:41); Orşova, Cazane, sub *Madotheca* (Schiffner 1914:308); Cazane, 200 m alt., 11-14.06.1938, sub *Madotheca*, ass. *Seslerietum filifoliae* (Zólyomi 1939:141, Tab.7); †, s - Ada-Kaleh Isle, on *Populus alba*, sub *Madotheca* (Ştefureac & Mihai 1968a:298,304,305, Tab.1); Cazanele Mari, sub *Madotheca* (Boros, Vajda & Debreczy 1969:8); Mraconia Valley, right slope, on rocks, 7.10.1967, ass. *Asplenio-Cystoperidetum* Oberd. (1936) 1949, det. Plămadă E., sub *Madotheca* (Schneider-Binder 1969:149, Tab.2; Schneider-Binder 1980a:141, Tab.2); Ogaşul lui Nichici Valley, on *Carpinus orientalis*, sub *Madotheca* (Plămadă 1970b:206); Orşova City Park, Cerna Valley, in forest, on bark, 1966-1968, sub *Madotheca* (Plămadă 1970c:393); Mraconia Valley, 13.05.1969, sub *Madotheca* (Coldea & al. 1970:473, Tab.2); Cazanele Mari of Danube, on rocks, between Berzasca and Sviniţa, on *Quercus pubescens*, 1966, sub *Madotheca* (Ştefureac & Mihai 1970:500,506); Cazanele Mari, 65 m alt., 14.05.1969, ass. *Asplenio-Ceterachetum* Vives 1964 *banaticum* Schneider-Binder & al. 1970, sub *Madotheca* (Schneider-Binder & al. 1970:314, Tab.2); Sohodoalele Mari, near Baia de Aramă, leg. Decu V., det. Ştefureac T., sub *Madotheca* (Ştefureac 1970h:480).

Domogled Mountain, Domogled, sub *Madotheca* (Degen 1901:14; Matouschek 1903a:95); Domogled, leg. & det. Papp C., sub *Madotheca* (Papp 1939b:11); Crucea Albă, 44°53'10"N / 22°25'48"E, 500 m alt., 9.08.2004, leg. & det. Ştefănuţ S. [BUCA B2989]; Jelărău Valley, 500 m alt., 19.07.2005, leg. Cogălniceanu D., det. Ştefănuţ S. [BUCA B3188].

Caraş Severin County, Baziaş, Mehadia, sub *Madotheca* (Simonkai 1872:67); between Mehadia and Herculane Spa, leg. Schierl (Matouschek 1903a:95); Poiana Ruscăi, Ruschiţa, Cracul Polomului, 700 m alt., Cracul Vulturului, 880-1100 m alt., on beech tree bark, sub *Madotheca* (Papp 1942a:51); Herculane Spa, on bark, 150 m alt., leg. Pteancu P., det. Papp C., sub *Madotheca* (Papp 1944a:99); „Fântâna Moşului”, near the way from Herculane Spa to Gorneşti, Isverna, sub *Madotheca* (Ştefureac 1947a:139); Caransebeş-Teiuş, 250-300 m alt., 03.-08.1943, leg. Boşcaiu N., sub *Madotheca* (Ştefureac 1948a:220); Gura Teşnei, right slope, 9.10.1967, ass. *Asplenio-Cystoperidetum*, det. Plămadă E., sub *Madotheca* (Schneider-Binder 1969:149, Tab.2; Schneider-Binder 1980a:141, Tab.2); Valea Mare Reserve, on *Acer campestre*, 25.07.1962 (Ştefureac & Mihai 1967:16); Cerna Valley, Ciorici Peak, sub *Madotheca* (Boros, Vajda & Debreczy 1969:6,7); Herculane Spa, sub *Madotheca* [PHHM 5841/3004, 5989/3345](Mohan 1971a:9); Găurii Brook Valley, Cornetul Dracului, Valea Mare Reserve - Moldova Nouă (Plămadă 1990:75); Herculane Spa, Ruşetu's Waterfall, 2.05.1999, leg. Pop O., det. Ştefănuţ S. [BUCA B2435]; Grota cu Aburi, 44°54'03"N / 22°25'05"E, 400 m alt., 6.08.2004, leg. & det. Ştefănuţ S. [BUCA B2969]; Herculane Spa, Roman Hotel, 44°54'03"N / 22°25'02"E, 170 m alt., 8.08.2004, leg. & det. Ştefănuţ S. [BUCA B3034].

Poiana Ruscă Mountains, Rusca Montană, sub *Madotheca* (Pančić 1861:94).

Zarand Mountains, Milova Valley, Debela Gora, on bark, sub *Madotheca* (Csűrös M. 1978:77; Ardelean 2006:106).

Codru-Moma Mountains, Monesei Valley, Valea Lungă, Boroaia Chalet, Crişul Văratecului Valley, on oak bark (Mohan 1996:50; Ardelean 2006:106).

Arad County, Săvârșin, sub *Madotheca* (Simonkai 1872:67; Simonkai 1893:361); Ciala Forest, Pecica, sub *Madotheca* (Simonkai 1893:361; Fuss 1878:653); Ciala Forest, on *Juglans nigra*, 3.09.2003, *leg. & det.* Ștefănuț S. [BUCA B2335].

Alba County, Piatra Ceții, Trascău Mountains, 3.07.1868, sub *Madotheca* (Barth 1868:140,141); Scărișoara, Ordencușa Valley, sub *Madotheca* (Schiffner 1914:308; Goia 2001:83); Feneș Gorges, sub *Madotheca* (Papp 1944b:236; Papp 1945a:165); Colții Trascăului, sub *Madotheca* (Páll 1960b:90); Întregalde Forest, in beech forests, on bark, 06.1960, sub *Madotheca* (Páll 1964b:25); Runcului Gorges, at base of tree's trunks, 900-1000 m *alt.*, *det.* Páll Ș., *ass.* *Fagetum silvaticae transsilvanicum* (Pop I. & al. 1964:221); Coltești, Piatra Urdaș, 850 m *alt.*, 07.1960, *leg.* Nyárády A., sub *Madotheca* (Nyárády E.I. & Nyárády A. 1964a: Tab.4; Nyárády E.I. & Nyárády A. 1964b:134, Tab.4); Valea Lungă, *leg. & det.* Barth J., sub *Madotheca* [SIB HF 1567](Drăgulescu 1983:59); the region between Geoagiu-Mureș-Ampoi-Feneș vales and Detunata Peak from Trascău Mountain, frequent, sub *Madotheca* (Plămadă 1986a:58); Drăghița Valley, on fallen beech tree, 750 m *alt.*, 20.08.94, *ass.* *Anomodonto-Leucodontetum* Wisn. 1930, Pojar Hill, on hornbeam, 580 m *alt.*, 25.08.1994, *ass.* *Madotheco-Leskeetum nervosae* (Gams 1927) Barkman 1958 (Goia 1998:257,258, Tabs.7,8); Drăghița Valley, 750 m *alt.*, 28.08.1994, *ass.* *Anomodonto-Leucodontetum* Wisn. 1930 (Goia 2000:120, Tab.8); Arieșul Mic Basin (Goia & Schumacker 2000:92); Popeștilor Brook, below Lucia Cave, on willow, Pojar Hill, on hornbeam, Poiana Vadului, on ash tree, Drăghița Valley, Divaia Valley, Vidrișoara Valley, Pătroșeilor Valley, Morii Valley, Arieșul Mic towards the springs, Măgura Valley – Neagra, Gârda – Scărișoara interfluve, Ordencușa Valley, Gogii Brook – Cobleș, on beech tree, Băii Valley – Drăghița Valley, Morii Valley, on rotten wood (Goia 2001:83); Popeștilor Valley, 15.08.1994, *ass.* *Pylaisietum polyanthae* Felf. 1941, Pojar Hill, 25.08.1994, Vidrișoara Valley, 20.08.1992, Arieșul Mic Valley, 16,20.08.1994, *ass.* *Pterigynandretum filiformis* Hilitzer 1925, Vidrișoara Valley, 20.08.1992, Drăghița Valley, 20.08.1994, Morii Valley, 7.08.1994, *ass.* *Homalothecium sericei-Porelletum platyphyllae* Størmer 1938, Pătroieștilor Valley, 22.08.1992, Morii Valley, 13.08.1994, Divaia Valley, 21.08.1994, *ass.* *Anomodontetum attenuati* Cain et Sharp 1938, Drăghița Valley, 20.08.1994, *ass.* *Isothecietum myuri* Hilitzer 1925, Divaia Valley, 21.08.1994, *ass.* *Anomodonto viticulosi-Leucodontetum sciuroidis* (Goia & Schumacker 2003:59-63, Tabs.1-4); between Măgura and Obârșia Valley, 980 m *alt.*, 27.09.1996, between Gârda Valley and Scărișoara cave, 1000 m *alt.*, 11.08.1996, *ass.* *Pterigynandretum filiformis*, Scărișoara cave, 1080 m *alt.*, 11.08.1996, *ass.* *Homalothecio sericei-Porelletum platyphyllae* Størmer 1938, Pârâul Gogii Valley, 1300 m *alt.*, 9.08.1996, *ass.* *Isothecietum myuri*, Ordâncușa Valley, 1060 m *alt.*, 11.08.1996, between Măgura Valley and Ordâncușa Valley, 700 m *alt.*, 27.09.1996, *ass.* *Anomodonto viticulosi-Leucodontetum sciuroides* (Goia & Schumacker 2004:108-110, Tabs.2,3); Detunata Mountains, Detunata Goală, 1200 m *alt.*, *det.* Sass-Gyarmati A. (Sass-Gyarmati, Pócs & Orbán 2005:127); Feneș Gorges, 26.07.1944, *leg.* Papp C., *det.* Ștefănuț S. [BUCA B5483].

Mureș County, Sighișoara, sub *Madotheca* (Höhr 1914:87).

Cluj County, Turda's Gorges, on rocks and bark, 400-450 m *alt.*, sub *Madotheca* (Papp 1946a:13,17; Papp 1946e:263; Páll 1960b:90); Turda, Băile Sărâte, sub *Madotheca*, incl. *Madotheca platyphylloidea* (Todor 1947:41); Mănăștur, sub *Madotheca* (Soó 1951:40; Boros 1958:8); Făget, Greben Valley, Pleșca Valley, Lomb Forest, Cluj-Napoca (Boros 1958:8); Cluj-Napoca Botanical Garden, sub *Madotheca* (Boros 1958:5,8; Plămadă 1963:180; Ștefureac 1982c:197,200, Tab.2); on bark, rocks and soil, 1961-1966 (Plămadă 1967:470); Mera Forest, on *Quercus petraea* bark, 1963-1965, sub *Madotheca* (Plămadă 1968:25); Huza Forest on Filii Mountain, Muntele Mare, near the Hut, on bark, 700-750 m *alt.*, *car.* *Leucodonto-Madothecietum platyphyllae*, in *Fagetalia* (Plămadă & Coldea 1989b:121); Turda's Gorges, on rocks and bark (Plămadă & Goia 1994:87); Sălicea, Cluj-Napoca, Central Park (Goia 2002:115, Tab.1).

Gilău Mountains, beech forests (Plămadă 1985b:41).

Sălaj County, Someșan Plateau, Bălțișeni Forest from Ungur Valley, near Popteleac (Gârbău Commune), on bark, 430-500 m *alt.*, *car.* *Leucodonto-Madothecietum platyphyllae*, in *Fagetalia* (Plămadă & Coldea 1989b:121).

Bihor Mountains, *without locality* (Péterfi M. 1908:278; Goia 2001:83); Someșul Cald Gorges, on tree trunks, rocks and soil (Goia & Mătase 2001:18).

Bihor County, Felix Spa, sub *Madotheca* (Simonkai 1876; Borbas 1879:262); Crișul Repede Defile, on rocks and bark, *ass.* *Carpino-Fagetum* and *Stellario-Carpinetum* (Boșcaiu & Gergely 1966:104); Stâna de Vale, *ass.* *Piceetum montanum* Br.-Bl. 1939, Baia Popii Hill, below Poieni, 1470-

1500 m *alt.*, 22.07.1965, at the back of the forest hut, 1135 m *alt.*, 8.07.1964, below Baia Popii Hill, above Brâul de Fag, 1380-1400 m *alt.*, 2.08.1963, sub *Madotheca* (Rațiu O. 1967:330, Tab.1); Stâna de Vale, in the back of forest chalet, ass. *Piceeto-Fagetum carpaticum* Svoboda 1939, towards Custurilor Peak, 1150-1250 m *alt.*, 19.07.1964, at the back of the huts, 1220 m *alt.*, 4.08.1964, sub *Madotheca* (Rațiu O. 1967:335, Tab.2).

Satu Mare County, Noroieni, on bark, in *Fagetalia*, ass. *Leucodonto-Madothecetum platyphyllae* (Plămadă 1987a:64).

Porella x baueri (Schiffn.) C.E.O. Jensen

Syn.:

– *Bellincinia platyphylla* (L.) Kuntze

– *Madotheca baueri*

– *Madotheca navicularis* Lehm. & Lindenb., sensu Heufler

– *Madotheca navicularis* Nees

First citation for Romania: Heufler 1853.

Romania, Boros & Vajda 1967:226; Ștefureac 1986f:192.

Muntenia, sub *P. platyphylla* (Mohan 1988b:110).

Ecology: epilithic-humicolous, saprolognicolous, indifferent, mesophytic, sciophytic; Eurasia; mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: No, Se, Fr, Nl, Be, De, Po, Ch, At, Cz, Hu, Es, Si, Hr, Sb, Me, Ro, Bg, Al, Gr, Ua, Ca.

Distribution in Romania:

Rarău Mountain, Codrul Secular Slătioara (Ștefureac 1941:1154).

Căliman Mountains, Budac Valley, 1980-1981 (Mohan 1984a:257-263, Figs.2-5).

Bistrița-Năsăud County, Piatra Corbului, 1300 m *alt.*, 1980-1981 (Mohan & Hodoroga 1983:54, Fig.4).

Bodoc Mountains, Micfalău-Burde, 15.08.1975, ass. *Symphyto cordato-Fagetum* Vida (1959) 1963, *det.* Ștefureac T., sub *Madotheca baueri* (Kovács 1977:244); Malnaș, in beech forest, on shady and wet andesite and gritstone rocks, sub *Madotheca baueri* (Ștefureac & Kovács 1981:115-117).

Brașov County, Predeal, sub *Madotheca navicularis* Nees (Schur 1866:873; Fuss 1878:653; Hazslinszky 1885:40; Radian 1901a:132); Pietrele lui Solomon, *leg.* & *det.* Vajda L., sub *Madotheca baueri* (Boros & Vajda 1967:226).

Bucegi Massif, Mălăiești Valley, *leg.* & *det.* Vajda L., sub *Madotheca baueri* (Boros & Vajda 1967:226; Plămadă 1973a:382).

Făgăraș Mountains, Arpaș Valley, in beech forest, on bark, sub *Madotheca navicularis* Lehm. & Lindenb. (Heufler 1853:50-51, Pl.IV, Fig.3; Schur 1866:873; Fuss 1878:653; Hazslinszky 1885:40).

Retezat Mountains, Zlătuia Valley, Turcului Valley, Gemenea Valley, on rotten woods, on beech tree bark and wet rocks, 1964-1971 (Plămadă 1973a:382, Fig.11a-f); Șesele Valley, 950 m *alt.*, 9.09.1969, ass. *Anomodontetum attenuati* (Barkm. 1939) Peciar 1965, Șesele- Pârgului Valley, 950 m *alt.*, 9.09.1969, ass. *Anomodonto attenuati-Neckeretum crispae* Plămadă 1982, Zlătuia Valley, 800 m *alt.*, 6.09.1969, ass. *Brachythecio rutabuli-Mnietum cuspidati* (Felföldy 1941) Plămadă 1982, sub *Madotheca* (Plămadă 1982a:306,309,315, Tabs.3,5,8; Plămadă 1993:51,52 Tabs.1,2).

Mehedinți County, †, s - Ada-Kaleh Isle, on *Populus alba*, *P. nigra* trees bark and on the brick walls of fortress, sub *Madotheca*, ass. *Madothecetum baueri* (Ștefureac & Mihai 1968a:298,303-305, Tab.1; Ștefureac 1970f:196,198; Plămadă 1973a:382).

Domogled Mountain, Crucea Albă, CS, 44°53'10"N / 22°25'48"E, 500 m *alt.*, 9.08.2004, *leg.* & *det.* Ștefănuț S., sub *P. cordaeana*, rev. Ștefănuț S. [BUCA B2984].

Sălaj County, Someșan Plateau, Bălțișeni Forest from Ungur Valley, near Popteleac, Gârbău Commune, on bark, 430-500 m *alt.*, car. *Hypno-Polypodietum*, in *Fagion* (Plămadă & Coldea 1989b:121).

Porella sp.

Hunedoara County, Sălciua de Jos, 25.03.1916, *leg.* & *det.* Györfy I. & Péterfi M., Cigmău Cave, 21.11.1914, *leg.* & *det.* Györfy I. (Györfy 1924b:40); Săcărimb Sat, Certeju de Sus, below Haitău Hill-Săcărimb, sub *Madotheca* (Ștefureac 1956a:242).

Alba County, Arieș Hill, *leg.* & *det.* Györfy I. (Györfy 1924b:40).

Cluj County, near Feleac Commune, sub *Madotheca* (Csűrös -Káptalan 1962:256).

Preissia quadrata (Scop.) Nees

Syn.:

- *Chomiocarpon commutatus* (Lindenb.) Lindb.
- *Chomiocarpon quadratus* (Scop.) Lindb.
- *Conocephalum hemisphaericum* Dumort.
- *Conocephalum quadratum* (Scop.) Huebener
- *Cyathophora commutata* (Lindenb.) Trevis.
- *Cyathophora hemisphaerica* (Dumort.) Kuntze
- *Cyathophora quadrata* (Scop.) Trevis.
- *Marchantia commutata* Lindenb.
- *Marchantia quadrata* Scop.
- *Preissia commutata* (Lindenb.) Nees
- *Preissia quadrata* var. *commutata* (Lindenb.) Lindb.

First citation for Romania: Schur 1866.

Romania (Györfly 1947b:1).

Moldova, incl. sub *P. commutata* (Papp 1943:651; Ștefureac & al. 1973:140).

Muntenia (Mohan 1988b:116).

Transylvania, sub *Chomiocarpon* (Pax 1908:128).

Ecology: epilithic-humicolous, saprolignicolous, indifferent, mesophytic, sciophytic; Eurasia; boreal-mountain-alpine; Hth.

Herbaria and Exsiccate: BUCA, SIB

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Ee, Lv, Lt, Ua, Cm, Nz, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Maramureș County, Bistrița Aurie Valley, between Prislop and Poiana Rotundă (Warnstorff 1895b:143).

Rodna Mountains, Corongiș (Matouschek 1905:79); *without locality*, sub *Chomiocarpon* (Pax 1908:128; Györfly 1948:1).

Țibleș Mountains, Bran Peak, Arsuri Peak, 1984-1985 (Mohan 1988a:15).

Suceava County, Oușorul Mountain, 1971 (Mihai 1974b:318,320); Izvorul Alb, 14.05.1910, Fundul Moldovei, 3.06.1910, Argestrul, 16.05.1910, Breaza, 3.06.1910, sub *P. commutata* (Lilienfeldówna 1911:731).

Rarău Mountain, Rarău, 14.04.1910, Pietrele Doamnei, 15.05.1910, sub *P. commutata* (Lilienfeldówna 1911:731); Rarău, sub *P. commutata* (Papp 1925c:155); Codrul Secular Slătioara, 850-1470 m *alt.*, sub *P. commutata* (Ștefureac 1941:1154,1245,1279,1290, Tabs.5,7; Ștefureac 1986f:193); Between Dealul Colbului and Pietrele Doamnei, 1520 m *alt.*, 27-28.08.1949, 27.08.1950 (Ștefureac 1951a:59,65,66); Codrul Secular Slătioara, Rarău Peak, sub *P. commutata* (Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:196).

Căliman Mountains, alpine zone, on wet soil (Mihai 1968a:204).

Stânișoara Mountains, Puzdrele and Stânișoara Culm, 1974 (Pascal & Toma M. 1977:42).

Ceahlău Mountain, Ceahlău, 20.07.1897, 7.08.1898, *leg.* Panțu Z. & Procopianu A., sub *P. commutata* (Radian 1915:194); Ceahlău, 1700 m *alt.*, 20.07.1905, sub *P. commutata* (Grințescu G.P. 1908:6; Grințescu G.P. 1922a:142; Zanoschi 1970:279; Ștefureac & al. 1973:140; Manoliu & al. 1998:338); Ceahlău, ass. *Poeto (minoris)-Doronicetum carpatici* Pușcaru & al. 1956 (Borhidi 1958: Tab.3; Zanoschi 1970:279).

Neamț County, Măgura Mountain, on wet rocks, sub *P. commutata* (Grințescu G.P. 1907:47); Măgura Pietricica, on wet soil, sub *P. commutata* (Papp 1925c:155; Papp 1937d:235,239,240); Șugău Valley (Gușuleac 1933b:336; Ștefureac & al. 1973:140).

Giurgeu Mountains, Bicz Gorges, Șugău Brook Valley, 760 m *alt.*, 5.10.1941, 720 m *alt.*, 4.10.1941, 1942 (Györfly 1943b:120; Györfly 1943c:162,167); Bicz Gorges, Fratele Peak (Bálint & Orbán 2006:474).

Hășmaș Mountains, Hășmașul Mare Mountain near Bălan, sub *Preissiae commutatae* (Matouschek 1903b:160); Hășmașul Mare, sub *Chomiocarpon* (Degen 1930:975).

Harghita County, Harghita (Boros 1941a:365); Ciuc and Gheorghieni (Györfly 1948:1); Vârghiș (Bálint & Orbán 2006:470); Bălan Spa, sub *P. commutata* (Bálint & Orbán 2006:474).

Nemira Mountains, Plaiul Ciunget, near the lakes, on soil, 1970-1977 (Mihai & Barabaș V. 1978:114).

Bacău County, Slănic Brook, on wet soil, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:78).

Vrancea County, Tișiței Gorges, on soil, 1977 (Mihai & Pascal 1986:46).

Penteleu Mountain, ♀ - Izvorul Stânei, 24.07.1935, *leg.* Șerbănescu I., *det.* Ștefănuț S. [BUCA B0962].

Piatra Mare Mountain, Tamina Waterfall, 45°32'58"N / 25°38'33"E, 6.09.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2055, B2131].

Brașov County, Brașov, sub *P. commutata* (Schur 1866:874; Fuss 1878:651); Predeal, 800-900 m *alt.*, 6.09.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2537].

Prahova County, near Bușteni, 20-21.08.1959 (Racoviță A. 1963:188); ♀ - Brebului Gorges, 45°12'31"N / 25°44'23"E, 26.04.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3437]; Valea Largă, 14.05.2008, *leg.* & *det.* Ștefănuț S. [BUCA B4000, B4008].

Gârbova Massif, Tufa Valley, Rea Valley, on soil, 1967-1970 (Lungu & Ștefureac 1970:6,8).

Bucegi Massif, Furnica, Ialomița Valley, near Babele sheephold (Loitlesberger 1898:196; Radian 1915:194); Mălăiești Valley, sub *P. commutata* (Matouschek 1905:81); Bucșoiu, Jepi Valley, sub *Chomiocarpon* (Degen 1914:216); Cerbului Valley, 7.06.1896, *leg.* Moisescu N., 11.08.1903, 30.07.1904, 6.08.1905, 29.08.1911, 5.07.1914, *leg.* Radian S.Ș., sub *P. commutata* (Radian 1915:194); Cerbului Valley towards Diham, 16.06.1914, *leg.* Săvulescu T., sub *P. commutata* (Radian 1915:194); Urlătoarea Waterfall, 3.07.1899, Jepi Valley and towards Caraiman, 9,10.08.1903, 4.07.1914, Ialomița Valley around, below and above Hermitage, 21.06.1897, 11.08.1903, 29.07.1904, 5.08.1905, 28.06.1911, Ialomița Valley on Obârșie towards Omu, 11.08.1903, 30.07.1904, from Sfânta Ana towards Vârful cu Dor, 27.06.1911, sub *P. commutata* (Radian 1915:194; Radian 1923:10); Jepi Valley, 16.06.1914, *leg.* Săvulescu T., sub *P. commutata* (Radian 1915:194); Ialomița Valley, 1700 m *alt.*, 11.07.1945 (Ștefureac 1948b:698; Ștefureac 1967d:245; Ștefureac 1977d:141); Bucegi (Pușcaru D. & al. 1956:142,220); Albă Valley, 20.08.1959, *leg.* Racoviță A., *det.* Ștefureac T. (Racoviță A. 1960:1112); confluence of Sugărilor Valley with Doamnele Valley, in peatbog, 1750 m *alt.* (Ștefureac 1963b:97,103; Ștefureac 1967b:310; Ștefureac 1972c:101,102,104; Ștefureac 1986f:191); Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 8.07.1999, 2300 m *alt.*, *leg.* & *det.* Ștefănuț S. (Ștefănuț 2004a:63; Ștefănuț 2004g:158); Mălăiești Glacial Ring, BV, 45°27'04"N / 25°26'51"E, 2100 m *alt.*, 9.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2525]; ♀♂ - Mălăiești Glacial Ring, BV, 45°27'13"N / 25°26'45"E, 2010 m *alt.*, 9.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2123, B2124]; Gaura Glacial Ring, BV, 45°26'27"N / 25°26'19"E, 2120 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3359]; the glacial ring from Cerbului Valley, PH, 45°26'31"N / 25°27'41"E, 2250 m *alt.*, 11.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2288]; The glacial rings of Ialomița Valley, DB, 45°25'55"N / 25°26'37"E, 2260 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2325]; ♀ - [BUCA B2328], s - 45°26'00"N / 25°26'42"E, 2200 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2470, B2476], 45°26'06"N / 25°26'48"E, 2190 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2274], 45°26'05"N / 25°26'50"E, 2190 m *alt.*, 10.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B3309]; ♀ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3264]; ♀♂ - below Colții lui Barbeș, PH, 45°21'24"N / 25°28'43"E, 1780 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3219]; ♀♂ - towards Cota 2000, PH, 45°21'29"N / 25°29'25"E, 1950 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3241]; ♀♂ - Lăptici Valley, DB, 45°22'34"N / 25°27'32"E, 1700 m *alt.*, 28.07.2005, *leg.* & *det.* Ștefănuț S. [BUCA B3238]; ♀ - Lăptici Peatbog, DB, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3501]; ♀ - Babele Mountain, PH, 45°24'44"N / 25°28'42"E, 2190 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3625]; ♀ - Babele Mountain, PH, 45°24'48"N / 25°28'43"E, 2200 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3563]; ♀ - Babele Mountain, PH, 45°24'49"N / 25°28'43"E, 2220 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3559]; ♂ - Babele Mountain, PH, 45°24'48"N / 25°28'43"E, 2200 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3564]; ♂ - Babele Mountain, PH, 45°24'49"N / 25°28'43"E, 2220 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3560]; s - Babele Mountain, PH, 45°24'44"N / 25°28'42"E, 2190 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3624]; ♀ - Ialomița Valley, DB, 45°22'33"N / 25°26'10"E, 1465 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3619]; Caraiman Mountain, PH, 45°24'42"N / 25°28'37"E, 2129 m *alt.*, 20.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3919], ♀ - [BUCA B3920]; ♂♀ - Baba Mare Valley, PH, 45°24'42"N / 25°28'37"E, 2129 m *alt.*, 20.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3922], ♂ - 45°24'43"N / 25°28'44"E, 2150 m *alt.*, 14.07.2008, *leg.* & *det.* Ștefănuț S. [BUCA B3908]; Caraiman Mountain, PH, 45°24'56"N / 25°29'02"E, 2330 m *alt.*, 20.07.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3914], ♀ - [BUCA B3915], ♂ - [BUCA B3916].

Piatra Craiului Mountains, Curmătura, Ceardacul Stanciului, Popii Valley, Vlădușca (Ștefureac 1951b:254,247,258; Ștefureac 1975a:143; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:81);

Diana, BV, 1100 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2853], the way towards Vlădușca Pasture, BV, 1100 m *alt.*, 30.10.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2829], Crăpătura, 4-8.06.2001, *leg.* Pop O., *det.* Ștefănuț S., Prăpăstiile Zărneștiului, 21.08.2001, *leg.* Pop O., *det.* Ștefănuț S., Șpirlea Valley, 3.08.2001, *leg.* Pop O., *det.* Ștefănuț S., Gura Bârsei, 28.09.2001, *leg.* Pop O., *det.* Ștefănuț S. (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:81); towards Padina lui Călineț, BV, 45°33'48"N / 25°12'31"E, 850 m *alt.*, 7.08.1997, *leg.* & *det.* Ștefănuț S. [BUCA B2686, B2688, B2689] (Ștefănuț & Pop O.G. 2006:81); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg.* & *det.* Ștefănuț S. [BUCA B2566, B2606, B2612, B2847], ♀ - 45°30'36"N / 25°11'38"E, 1550 m *alt.*, 8.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2623] (Ștefănuț & Pop O.G. 2006:81); Diana, towards Brâna Caprelor, BV, 2000 m *alt.*, 23.05.2002, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2855, B2872] (Ștefănuț & Pop O.G. 2006:81); ♀ - Crăpătura Pietrei Craiului, BV, 45°33'12"N / 25°15'24"E, 1550 m *alt.*, 8.06.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2865, B2869], ♂ - [BUCA B2870] (Ștefănuț & Pop O.G. 2006:81); ♀ - towards Padinile Frumoase, common spruce forest, BV, 1600 m *alt.*, 6.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3004-B3006] (Ștefănuț & Pop O.G. 2006:81); ♀ - Ascuțit Peak towards Padinile Frumoase, BV, 2100 m *alt.*, 8.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2999] (Ștefănuț & Pop O.G. 2006:81); Pârâul Rece, AG, 45°30'38"N / 25°11'34"E, 1500 m *alt.*, 8.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2624] (Ștefănuț & Pop O.G. 2006:81); ♀ - Piatra Mică, BV, 1750 m *alt.*, 10.07.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3036], ♀ ♂ - [BUCA B3037] (Ștefănuț & Pop O.G. 2006:81); Brusturet's Gorges, AG, 950 m *alt.*, 26.07.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2960], ♂ - [BUCA B2961] (Ștefănuț & Pop O.G. 2006:81); ♂ - Hornul Găinii, mobile scree, BV, 1650 m *alt.*, 7.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3030, B3031], ♀ - [BUCA B3033] (Ștefănuț & Pop O.G. 2006:81); Padinile Frumoase, BV, 1600 m *alt.*, 20.06.1997, *leg.* Mihailescu Simona, *det.* Ștefănuț S. [BUCA B3160] (Ștefănuț & Pop O.G. 2006:81); Poiana Zănoaga, BV, 1370 m *alt.*, 20.06.1997, *leg.* Mihailescu Simona, *det.* Ștefănuț S. [BUCA B3159] (Ștefănuț & Pop O.G. 2006:81).

Argeș County, Dâmbovicioara (Loitlesberger 1898:196; Radian 1915:194); Boteni, *leg.* Vlădescu M., 03.1893, sub *P. commutata* (Radian 1915:194); Great Gorges of Dâmbovița River, 45°23'15"N / 25°11'40"E, 800 m *alt.*, 10.07.2003, *leg.* & *det.* Ștefănuț S. [BUCA B2796] (Ștefănuț & Pop O.G. 2006:81); ♂ - Great Gorges of Dâmbovița River, 750 m *alt.*, 8.06.2005, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3165], s - [BUCA B3171] (Ștefănuț & Pop O.G. 2006:81).

Leota Mountain, Între Văi, 750 m *alt.*, Crovului Gorges, 1200 m *alt.* (Papp & Diaconescu 1968:386,387).

Făgăraș Mountains, Arpaș Mountain, *leg.* & *det.* Heufler L.R., sub *P. commutata* (Schur 1866:874; Fuss 1878:651; Hazslinszky 1885:29; Ștefureac 1949a:287,288; Drăgulescu 2003:7,8); Bâlea Lake, *leg.* Zsák Z., sub *Chomiocarpon* (Schiffner 1914:303; Ștefureac 1949a:288; Drăgulescu 2003:7); below Ciortea Peak, 2300 m *alt.*, 15.07.1946, below Ciortea Peak, 2350 m *alt.*, below Jgheabul Văros, 2050 m *alt.*, 16.07.1946, below Jgheabul Văros, on dolomite, 2000 m *alt.*, 16.07.1946, Brânele de pe Jgheabul Văros, 2000-2100 m *alt.*, 15,16.07.1946, on dolomite, near Bâlea Waterfall, wet rocks, 1600 m *alt.* (Ștefureac 1949a:292; Ștefureac 1977d:138; Drăgulescu 2003:7); Avrig Valley, 1550 m *alt.*, 8.08.1973 (Schneider-Binder 1980a:139-141, Tabs.2,3; Drăgulescu 2003:8); ♀ - Bâlea Lake, SB, 45°36'08"N / 24°37'01"E, 2050 m *alt.*, 16.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2081], ♂ - [BUCA B2510]; Capra Lake, AG, 45°36'00"N / 24°37'45"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2159], ♀ - 45°36'01"N / 24°37'41"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2393], s - 45°36'01"N / 24°37'47"E, 2250 m *alt.*, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2380, B2381], ♂ - 45°36'00"N / 24°37'46"E, 17.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2183]; The glacial ring from Doamnei Valley, SB, 45°36'05"N / 24°36'27"E, 2150 m *alt.*, 16.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2389], ♀ - 45°36'06"N / 24°36'27"E, 2140 m *alt.*, 16.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2351] (Ștefănuț 2001:129).

Cozia Mountain, the east side of Bulzu Peak, 1560 m *alt.*, 1975-1976 (Dihoru G. 1990:53); Cozia Mountain, 22.05.1931, *leg.* Săvulescu T. (Dihoru G. 1990:53).

Sibiu County, Sibiu, sub *P. commutata* [SIB SCHUR 4606] (Schur 1866:874; Fuss 1878:651; Hazslinszky 1885:29; Gündisch 1977:45; Drăgulescu 2003:8); Turnu Roșu (Fuss 1878:651; Hazslinszky 1885:29; Drăgulescu 2003:8); Turnu Roșu, on wet calcareous rocks, 24.06.1845, *leg.* Fuss M. & *det.* Juratzka J., sub *P. commutata* [SIB HF 1479] (Drăgulescu 1983:56; Drăgulescu 2003:8); Tâlmăciu, conglomerate, 18.10.1968, *leg.* & *det.* Plămadă E., ass. *Asplenio-Cystoperidetum* Oberd. (1936) 1949 em. (Schneider-Binder 1969:149, Tab.2; Schneider-Binder 1970a:166; Drăgulescu 2003:8).

Vâlcea County, Greblești, “la Olt”, 800 m *alt.*, 14.08.1897, *leg. & det.* Loitlesberger K. (Loitlesberger 1898:196; Schiffner 1908b:275; Radian 1915:194).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Parâng Mountains, Coasta lui Rusu, 2080-2165 m *alt.* (Pócs & Simon 1957:57, Tab.1); lower side of Lotrioara Valley, 5.05.1967, *ass. Asplenio (trichomanes-bivalens)-Poetum nemoralis* Boșcaiu 1970 *subass. veronicetosum bachofeni* (Borza 1959) Boșcaiu 1970 (Schneider-Binder 1972:Tab.B).

Retezat Mountains, Gura Zlata, Cârligului Valley (Páll 1964a:108); Albele Mountain, 1800 m *alt.*, 24.06.1971 (Schneider-Binder 1980a:139,140, Tab.2).

Țarcu Mountains, Muntele Mic, 1937 (Györffy 1943b:120).

Mehedinți County, Cazane, † - Ada Kaleh, 1937 (Györffy 1943b:120).

Domogled Mountain, s - Crucea Albă, 500 m *alt.*, 9.08.2004, *leg. & det.* Ștefănuț S. [BUCA B2976, B2980], ♂ - [BUCA B2977].

Caras-Severin County, Herculane Spa, 1937 (Györffy 1943b:120); Herculane Spa, Cerna Valley, on soil, *alt.* 150 m, *leg.* Bujorean G., *det.* Papp C., *sub P. commutata* (Papp 1944a:98); Herculane Spa (Györffy 1948:1); Cerna Valley (Boros, Vajda & Debreczy 1969:6).

Codru-Moma Mountains, Monesei Valley, Ursului Hill, on soil (Mohan 1996:50; Ardelean 2006:109).

Alba County, Vidra at base of Găina Mountain, 800 m *alt.* (Péterfi M. 1908:267); Runcului Gorges, 500-850 m *alt.*, *det.* Páll Ș., *ass. Seslerietum rigidae* (Pop I. & al. 1964:216, Tab.3).

Cluj County, Becaș Valley (Györffy 1948:1); Dâmbu Negru Peatbog - La Pod, Călățele region, *det.* Ștefureac T. (Pop E. 1947:73); the peatbogs and fens from upper side of Someșul Cald Valley and from Bălăcești-Călățele region, *sub P. commutata* (Pop E. 1960:385); Morii Valley, on soil, 1961-1966 (Plămadă 1967:470); Someșul Cald Valley (Boros & Vajda 1974:8).

Gilău Mountains, common spruce forests (Plămadă 1985b:40).

Bihor County, Feneș Valley near Beiuș, 300 m *alt.* (Péterfi M. 1908:267); Crișul Repede Defile at Vadu Crișului, 350 m *alt.* (Péterfi M. 1908:267; Boros 1942a:31; Boșcaiu & Gergely 1966:103; Ștefureac 1975b:312); Vadu Crișului Cave, 24.05.1915, *leg.* Györffy I. & Péterfi M., *sub Chomiocarpon commutatus* (Györffy 1924b:37); Șuncuiuș (Boros 1942e:153); Vadu Crișului, 1941 (Györffy 1943b:120); Vadu Crișului (Györffy 1948:1).

Bihor Mountains, Izbucul Ponorului, Padiș Mountain (Vajda 1973:291); Izbucul Ponorului, Poiana Ponor (Boros & Vajda 1974:6,7); Someșul Cald Gorges, on soil, moist and dry rocks (Goia & Mătase 2001:16); Cetățile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:92; Jakab 2000b:67); ♀ - Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3845, B3868].

Ptilidium ciliare (L.) Hampe

Syn.:

- *Blepharozia ciliaris* (L.) Dumort.
- *Jungermannia ciliaris* L.
- *Jungermannia ciliaris* var. *heteromalla* Dumort.
- *Jungermannia hoffmannii* Wallr.
- *Jungermannia leersii* Roth
- *Ptilidium ciliare* fo. *rupicola* Müll. Frib.
- *Ptilidium ciliare* var. *ericetorum* (Nees) Gottsche et al.
- *Ptilidium ciliare* var. *heteromallum* (Dumort.) Gottsche et al.
- *Ptilidium ciliare* var. *inundatum* Schiffn.

First citation for Romania: Baumgarten 1846.

Moldova (Ștefureac & al. 1973:143).

Muntenia, incl. fo. *rupicola* (Mohan 1988b:110).

Transylvania (Pax 1908:130).

Ecology: epilithic, epigeaic, humicolous, saprolignicolous, acidophytic, xerophytic, photophytic; circumpolar; boreal-mountain; Hch. Characteristic species to common spruce forests.

Herbaria and Exsiccate: BUCA, CL, SIB

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Es, Co, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Rc, Re.

Distribution in Romania:

Maramureș Mountains (Hazslinszky 1885:42).

Rodna Mountains (Pax 1908:130); Pietrosul Borșei, north-west slope, 2260 m *alt.*, 8-9.08.1948, sub fo. *inundata* (Ștefureac 1952a:390,391, Tab.1); Pietrosul Borșei, Piciorul Moșului, on rocks, 1650 m *alt.* (Ștefureac 1958a:105-106).

Țibleș Mountains, Arcer Peak, Țibleș Peak, Izvorul Țibleșului, Păltiniș Valley, 1984-1985 (Mohan 1988a:16).

Suceava County, Coșna, Panasuri Mountain, 1300 m *alt.* (Breidler 1890a:149); Țapu Mountain, on rocks, *conf.* Mihai G. (Pascal 1970a:199); Cârlibaba, Cârlibaba Nouă, the Mountains Iedu, Dadu and Suhard (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:478); Vatra Dornei, *det.* Papp C. (Lungu D. 1971:116).

Giupalău Mountain, Giupalău, subalpine zone, *det.* Ștefureac T. (Cristorean 2000:174); Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 12.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3641].

Rarău Mountain, Codrul Secular Slătioara, 800-1600 m *alt.* (Ștefureac 1941:1154,1275,1276, 1284, Tabs.5,9; Ștefureac 1969a: Tab.16; Papp 1969b:188; Ștefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:196).

Căliman Mountains, Pietrosul Peak, on rocks (Mihai 1968a:205).

Ceahlău Mountain, Ceahlău, *det.* Mihai G. (Zanoschi 1970:280; Manoliu & al. 1998:338); northern slope of Toaca Peak and around Panaghia Peak, 1810 m *alt.*, 31.08.1969, *det.* Mihai G., *ass.* *Dryadetum octopetalae* Csűrös et all. 1956 *salicetosum retusae* Zanoschi 1972 (Zanoschi 1972:225, Tab.1; Manoliu & al. 1998:338).

Harghita Mountains, 30.08.1901 (Barth 1905:13).

Harghita County, Căpâlnița, *leg. & det.* Barth J. (Fuss 1878:651); Sfânta Ana Lake, on rotten trees trunk, 4.08.1869, *leg. & det.* Barth J. [SIB HF 1545](Fuss 1878:654; Drăgulescu 1983:57), Tușnad, Vlăhița (Bálint & Orbán 2006:470).

Nemira Mountain, *alt.* 1550 m, on gritstone (Barabaș V. 1974:23).

Ciucaș Mountains, Tigăile Mari Culm, Căzăturii Culm, Berii Brook Valley, Caprei Brook Valley, Roșu Brook Valley (Mohan 1990b:44).

Brașov County, Timișul de Jos, sub *Jungermannia* (Baumgarten 1846:228; Schur 1866:874; Fuss 1878:654; Hazslinszky 1885:42); Brașov (Barth 1880:121).

Bucegi Massif, Bucegi, 2200 m *alt.*, sub *Blepharozia ciliaris* (Loitlesberger 1898:196); subalpine zone, 1600-2100 m *alt.* (Pușcaru E. & al. 1950:14); The Saddle between Gaura and Mălăiești, 2390 m *alt.*, 30.09.1950 (Ștefureac 1955:606,697, Tab.3; Ștefureac 1972c:104); Doamnele Valley, 1830 m *alt.*, *ass.* *Nardetum strictae rubrae*, Lăptici, 1800 m *alt.*, *ass.* *Nardetum strictae typicum*, Jepii Mici, 2070 m *alt.*, *ass.* *Nardetum strictae supinae* (Pușcaru D. & al. 1956: Tab.66); Horoaba Valley, DB, 45°23'28"N / 25°26'02"E, 1520 m *alt.*, 23.10.2006, *leg. & det.* Ștefănuț S. [BUCA B3604].

Leaota Mountain, Brătei Valley, 1200-1300 m *alt.*, sub fo. *rupicola* (Papp & Diaconescu 1968:386,387).

Cindrel Mountains, Cristești, 2200 m *alt.* (Gündisch 1977:46; Drăgulescu 2003:9).

Mureș County, Sighișoara, sub *Jungermannia* (Baumgarten 1846:228; Schur 1866:874; Fuss 1878:654; Hazslinszky 1885:42; Höhr 1914:87); Lunca Bradului, *leg. & det.* Demeter K. [CL](Igmándy 1943:56).

Parâng Mountains, Parâng Mountain, 22-26.08.1882 (Barth 1883:5); Mohor Ridge, 2300 m *alt.*, small peatbog (Ștefureac 1969a:117,118, Tab.15).

Retezat Mountains, Retezat (Simonkai 1872:67; Fuss 1878:654; Hazslinszky 1885:42); towards Tăul Judele (Páll 1964a:108); Tăul Iezilor, 19.06.2005, *leg.* Cogălniceanu D., *det.* Ștefănuț S. [BUCA B3193].

Alba County, Sebeș (Barth 1880:121); Arieșul Mic, Arieșul Mare, Galbena Valley (Péterfi M. 1908:276; Goia & Schumacker 2000:92; Goia 2001:82); Arieșul Mare upstream to Arieșeni, on rotten wood (Goia 2001:82); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); Detunata Mountains, Detunata Goală, 1000-1050 m *alt.*, *det.* Pócs T. (Sass-Gyarmati, Pócs & Orbán 2005:127,128).

Cluj County, Ciucea (Barth 1880:121); Ciucea, 350 m *alt.* (Péterfi M. 1908:276).

Bihor County, Băița, 650 m *alt.*, Bulz, Drăgan Valley (Péterfi M. 1908:276; Boros 1942a:35).

Ptilidium pulcherrimum (Weber) Vanio

Syn.:

- *Blepharozia ciliaris* var. *pulcherrimum* Warnst.
- *Blepharozia ciliaris* var. *wallrothianum* Nees
- *Blepharozia pulcherrima* (Weber) Lindb.
- *Blepharozia pulcherrima* fo. *corticola* Müll. Frib.
- *Jungermannia pulcherrima* Weber
- *Ptilidium ciliare* var. *pulcherrimum* (Weber) Hoffm. ex Pfeiff.
- *Ptilidium ciliare* var. *wallrothianum* (Nees) Gottsche et al.
- *Ptilidium pulcherrimum* fo. *rupicola* Schiffn.
- *Ptilidium pulcherrimum* var. *subpinnatum* Jørg.
- *Ptilidium pulcherrimum* var. *wallrothianum* Husn.

First citation for Romania: Loitlesberger 1898.

Moldova, incl. sub *Blepharozia pulcherrima* fo. *corticola* (Papp 1943:664; Ștefureac & al. 1973:143).

Muntenia (Mohan 1988b:110).

Transylvanian Alps (Müller 1954:572).

Ecology: corticolous, humicolous, saprolognicolous, acidophytic, xero-mesophytic, sciophytic; circumpolar; boreal; Hch.

Characteristic species to *Vaccinio-Piceetea*.

Herbaria and Exsiccate: BUCA, HIPBC, PHHM

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Ee, Lv, Lt, By, Md, Ua, Cm, Rn, Rw, Rc, Re, Rs, Ca.

Distribution in Romania:

Maramureș County, Șerban Mountain, *leg. & det.* Boros Á. (Boros & Vajda 1969:412); between Tocila Valley and Băiuț, common spruce forest, 600 m *alt.*, 21-23.08.1998 (Jakab 1999:55).

Rodna Mountains, Lala Valley, 1200 m *alt.*, 17.08.1937, sub fo. *rupicola* (Ștefureac 1938:241, 244, 249-251, 258, Fig.5a-c).

Țibleș Mountains, Piciorul Țiglei, Țibleș Valley, Dosul Obcinei, Mesteacănul Valley, 1984-1985 (Mohan 1988a:16).

Suceava County, Breaza, 3.06.1910, sub *P. ciliaris* var. *pulcherimum* (Lilienfeldówna 1911:735); Bistrița Aurie Valley, between Iacobeni and Ciocănești, the edge of Suhârzulul and Suhârzulul Mare Brooks (Pascal 1969:107; Pascal & Mititelu 1971; Pascal 1973; Ștefureac & Pascal 1981:478; Ștefureac 1986f:194); Piatra Țibău, 1967 (Ștefureac & Pascal 1970a:246); Tinovu Mare de la Poiana Stampei (Ștefureac 1977a:49,52,53); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest (Lungu 1973b:72; Lungu 1981c:90).

Giumalău Mountain, Giumalău, subalpine zone, *det.* Ștefureac T. (Cristurean 2000:172); ♀ - Giumalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3667], s - [BUCA B3701]; Giumalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3956].

Rarău Mountain, Pietrele Doamnei, 15.05.1910, sub *P. ciliaris* var. *pulcherimum* (Lilienfeldówna 1911:735); Rarău, sub *P. ciliaris* var. *pulcherrimum* fo. *corticola* (Papp 1927b:149); Rarău-Todirescu, sub *Blepharozia ciliaris* var. *pulcherimum* fo. *rupicola* (Papp 1931a:219); Codrul Secular Slătioara, 820-1100 m *alt.* (Ștefureac 1941:1154,1283, Tabs.3,8; Ștefureac 1969a: Tab.16; Ștefureac 1986f:193); Codrul Secular Slătioara, Rarău Peak, incl. sub *Blepharozia pulcherrima* fo. *corticola* and *rupicola* (Papp 1969b:188); ♀ - Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3770].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphidietum pellucidae* (Barkman 1958) Maurer 1961, ass. *Lophocolea heterophylla-Ptilidium pulcherrimum* Maurer 1961, ass. *Orthodicraneto-Plagiotheciellum* Barkman 1958 (Ștefureac, Mihai & Pascal 1976:35,36,39, Tabs.1,2); Cârțibavu Mare Valley, Secu Brook, Leșului Valley, Măgura Calului, 1983-1984 (Mohan & Hodoroga 1986:211).

Căliman Mountains, on fallen rotten common spruce trees, *Pinus mugo* bark and rocks, 1981-1984 (Mihai 1985:97; Ștefureac 1986f:194).

Neamț County, Neamț Monastery, on rotten wood, 07-08.1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5).

Ceahlău Mountain, Patapi, incl. sub *Blepharozia pulcherimum* var. *corticola* (Papp 1924b:392; Papp 1934b:68,78; Zanoschi 1970:280; Mihai 1979b; Manoliu & al. 1998:338).

Hășmaș Mountains, Hășmaș (Schiffner 1914:308).

Harghita Mountains, Stâncilor Peak (Schiffner 1914:308); Stâncilor Peak, sub *Blepharozia* (Degen 1930:976); Greu Mountain, 1100 m *alt.*, 11.07.2000, Asău Valley, 1000-1100 m *alt.*, 22.10.2000,

Descut, 15.08.2001, Podul de Piatră Mountain, 1551 m *alt.*, 15.08.2001, Rotund Mountain, 1100 m *alt.*, 28.08.2001, Pietros Valley, 900 m *alt.*, 28.08.2001, Boitor Forest, 1000-1100 m *alt.*, 28.08.2001, Ulieşul Mic, 1150 m *alt.*, 17.04.2001, Luci Meleche Forest, 1050 m *alt.*, 13.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14).

Harghita County, Mohoş (Boros 1943c:114; Bálint & Orbán 2006:470); Mohoş (Pop E. 1960:322; Bálint & Orbán 2006:470); Bălan Spa (Bálint & Orbán 2006:474).

Nemira Mountains, Nemira Mountain, on soil and common spruce trees trunks, 1350-1550 m *alt.* (Barabaş V. 1974:26,28); Şandru, Nemira, on trees trunks, 1970-1977 (Mihai & Barabaş V. 1978:114,115); Şandru Peak, 1550 m *alt.* (Barabaş V. 1982b:56, Tab.3); Ţiganca Mountain, 1400 m *alt.*, ass. *Dicrano scoparii-Hypnetum cupressiformis* Will. 1962, Nemira Mountain, 1350-1600 m *alt.*, Şandru Peak, 1400 m *alt.* (Barabaş V. 1982b:57,62,63,65,66, Tabs.5,10-12,14,15).

Bacău County, Slănic Brook, on rotten wood, 2.05-8.11.1971 (Ştefureac & Barabaş V. 1972:76,77,82); Trotuş Valley at Straja-Asău and Şuliţa-Agăş, ass. *Myrtillo-Pinetum* Kobendza 1930 em. Passarge 1956 (Mititelu & Barabaş N. 1974:76).

Ciucăş Mountains, Zăgan Mountain, Piscul Caprei, Şuviţelor Culm, Roşu Mountain (Mohan 1990b:44).

Prahova County, Doftana Valley [PHHM 7774/3873](Mohan 1971a:8; Mohan 1971b:47).

Postăvaru Mountain, *without locality* (Schiffner 1914:308).

Gârbova Massif, Azuga Valley, Tufa Valley, Rea Valley, on *Picea abies* bark, 1967-1970 (Lungu & Ştefureac 1970:5).

Bucegi Massif, subalpine zone, 1600-2100 m *alt.* (Puşcaru E. & al. 1950:15).

Piatra Craiului Mountains, towards Pășunea Vlăduşca, 30.10.2001, *leg.* Pop O., *det.* Ştefănuţ S. (Dihoru G. & al. 2003:70; Ştefănuţ & Pop O.G. 2006:81); Crăpătura Pietrei Craiului, BV, 45°33'49"N / 25°15'54"E, 1050 m *alt.*, *leg.* & *det.* Ştefănuţ S., 21.08.2003 [BUCA B2781] (Ştefănuţ & Pop O.G. 2006:81); ♀ - Crăpătura Pietrei Craiului, BV, on common spruce bark, 45°33'44"N / 25°15'51"E, 1100 m *alt.*, 21.08.2003, *leg.* & *det.* Ştefănuţ S. [BUCA B2787] (Ştefănuţ & Pop O.G. 2006:81); Crăpătura Pietrei Craiului, BV, on rotten wood, 45°33'37"N / 25°15'48"E, 1200 m *alt.*, 22.08.2003, *leg.* & *det.* Ştefănuţ S. [BUCA B2786] (Ştefănuţ & Pop O.G. 2006:81); Marele Grohotiş, AG, 45°30'36"N / 25°11'38"E, 1550 m *alt.*, 8.07.2003, *leg.* & *det.* Ştefănuţ S. [BUCA B2638] (Ştefănuţ & Pop O.G. 2006:81,82).

Făgăraş Mountains, Mozgavului sheephold and Negoiu on Izvorului Valley, 1200-1400 m *alt.*, sub *Blepharozia ciliaris* var. *pulcherrima* (Loitlesberger 1898:196; Drăgulescu 2003:9).

Argeş County, Oeşti, 500 m *alt.* (Herzog 1919:295).

Cindrel Mountains, Păltiniş, 1200-1400 m *alt.*, Încărcătura Orlatului, 1400 m *alt.*, Onceşti, 1700 m *alt.* (Gündisch 1977:46; Drăgulescu 2003:9); Beşineu, 1600 m *alt.*, *det.* Ştefureac T. (Gündisch 1977:46; Drăgulescu 2003:9); Păltiniş [HIPBC](Drăgulescu 2003:9).

Sebeşului Mountains, Sebeş Valley, between Oaşa and Cibán, in common spruce forest, 800-1200 m *alt.*, Şurianu Mountain (Borza 1959:69,283, Tab.38; Drăgulescu 2003:9).

Parâng Mountains, Cărării Valley, 08-09.1954 (Ştefureac, Popescu & Lungu 1959:8,40,41, Tab.8).

Retezat Mountains, Galeşu Lake Bank (Páll 1964a:108); Zlătuia Valley, 1300-1400 m *alt.*, 6-8.09.1969, ass. *Nowellio-Ptilidietum pulcherrimi* Plămadă 1982, 8,09.1969, ass. *Isopterygio seligeri-Dicranetum scoparii* Ježek et Vondr. 1962 (Plămadă 1982a:312,313, Tabs.6,7; Plămadă 1993:52, Tab.2); Bucura Lake, 18.08.2004, *leg.* Onete Marilena, *det.* Ştefănuţ S. [BUCA B3062].

Ţarcu Mountains, Muntele Mic, 1000-1800 m *alt.*, 03.-08.1943, *leg.* Boşcaiu N. (Ştefureac 1948a:220).

Alba County, Vidra-Scărişoara, 800 m *alt.* (Péterfi M. 1908:276); Izbucul Ponorului (Boros & Vajda 1974:6); Morii Valley, on rotten wood, 600 m *alt.*, 7.08.1994, 22.10.1995, ass. *Riccardio-Nowellietum curvifoliae* Koppe 1956, ass. *Dicrano scoparii-Hypnetum cupressiformis* Barkman 1958 (Goia 1998:260,262, Tabs.9,12); Morii Valley, 600 m *alt.*, 22.10.1995, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Gârda Valley, 1200 m *alt.*, 7.08.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ştefur. 1941, Găina, 980 m *alt.*, 21.08.1992, Cobleş Valley, 1100 m *alt.*, 10.08.1996, ass. *Brachythecio salebroşi-Drepanocladetum uncinati* Marstaller 1989, Morii Valley, 700 m *alt.*, 22.10.1995, ass. *Dicrano scoparii-Hypnetum filiformis* Barkman 1958 (Goia 2000:112,116, 117,119, Tabs.2,5-7); Arieşul Mic Basin (Goia & Schumacker 2000:92); Morii Valley, on common spruce bark and rotten wood, Băii Brook, on beech bark, Gârda Seacă upstream Casa de Piatră, Ursoaia Saddle, Mătişesti, on rotten wood (Goia 2001:82); Arieşul Mare Basin, on rotten wood (Goia & Schumacker

2002:87); Băii Valley, 20.08.1994, ass. *Isothecium myuri* Hiltzer 1925 (Goia & Schumacker 2003:62, Tab.3); Detunata Mountains, 1055-1100 m *alt.*, *det.* Sass-Gyarmati A. (Sass-Gyarmati, Pócs & Orbán 2005:127).

Cluj County, Feleac Hill base (Boros 1958:8).

Bihor County, Stâna de Vale, 1100 m *alt.* (Péterfi M. 1908:276; Goia 2001:82); Someșul Cald Gorges (Goia & Mătase 2001:17).

Vlădeasa Mountain, 1500-1800 m *alt.*, 10.09.1902, *leg.* Györffy I. (Schiffner 1909a:28,33).

Radula complanata (L.) Dumort.

Syn.:

- *Jungermannia complanata* L.
- *Martinellius complanatus* Gray
- *Radula alpestris* Lindenb. ex Berggr.
- *Radula complanata* fo. *propagulifera* Hook.
- *Radula complanata* var. *alpestris* (Berggr.) Lindb.
- *Radula complanata* var. *notarisii* (Steph.) Schiffn.
- *Radula hyalina* Steph.
- *Radula krausei* Steph.
- *Radula notarisii* Steph.
- *Stephaniana alpestris* O. Kuntze
- *Stephaniana complanata* O. Kuntze

First citation for Romania: Baumgarten 1846.

Romania, from the Tatra Mountains to Orșova (Hazslinszky 1885:41).

Moldova, incl. sub fo. *propagulifera* Hook. (Papp 1943:666; Ștefureac & al. 1973:149).

Dobrogea (Ștefureac, Mihai & Pascal 1970:120,123); Black Sea littoral, in forests, on bark (Mititelu D., Vițalariu G. & al. 1968:152); Danube Delta, in forest (Mititelu D., Vițalariu G. & al. 1968:156).

Muntenia (Mohan 1988b:109,110).

Transylvania (Pax 1908:130).

Ecology: corticolous, epilithic, saprolignicolous, mesoacidophytic-subneutrophytic, xero-mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: BUCA, CSH, I, PHHM, SIB, FRE

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ct, Tu, Ee, Lv, Lt, By, Md, Ua, Cm, Rn, Rw, Rc, Re, Rs, Ca.

Distribution in Romania:

Rodna Mountains, (Pax 1908:130); **fer** - Lala Valley, 1200 m *alt.*, on stones and soil, 17.08.1937 (Ștefureac 1938:241,250,251,258).

Țibleș Mountains, Țibleș Valley, Mesteacănu Valley, 1984-1985 (Mohan 1988a:22).

Botoșani County, Cordăreni, Suhărău, on bark (Papp 1946b:150); Suhărău Forest, Șendriceni Forest (Papp 1956a:259; Ștefureac & al. 1973:149); Comănești Forest, Lișna Forest, on *Acer campestre*, *A. platanoides*, *Carpinus betulus*, *Fagus sylvatica*, *Populus alba*, *P. tremula* and *Ulmus minor*, incl. sub fo. *propagulifera* (Mihai 1966:147,152,154, Tab.2); Ciritei Forest, Pădureni Forest, incl. sub fo. *propagulifera* (Mihai 1968b:137, Tab.4; Mihai 1968c:396); Borolea Forest, on *Carpinus betulus*, sub fo. *propagulifera*, Sadoveni Forest, on *Quercus robur*, Avrămeni Forest, on *Acer tataricum*, *conf.* Ștefureac T. (Mihai 1969c:91); Lișna Forest, 240 m *alt.*, ass. *Fagetum carpaticum* (Borza 1930) Moor 1938, Paucă 1941 subass. *collinum* Matuszkiewicz 1958 (Mihai 1971d:719, Tab.6); Liveni Forest, Mitoc Forest, incl. sub fo. *propagulifera* (Mihai 1972d:113); Dobârceni Forest, on *Carpinus betulus* (Mihai 1977b:23).

Suceava County, Izvorul Alb, 14.05.1910, Argeștrul, 16.05.1910, Breaza, 3.06.1910, „Berdo nad Czerniawka”, 26.05.1910 (Lilienfeldówna 1911:735,736); Benea-Breaza, on serpentine, 1050-1250 m *alt.* (Ștefureac, Cristurean & Sihota 1964:225, Tab.1); the peatbogs from Criștorul along Neagra-Broștenilor Valley, 06.1964 (Lungu 1967c:329); Bistrița Aurie Valley, between Iacobeni and Ciocănești, north-western slope of Brezuța Peak, sub fo. *propagulifera* (Pascal 1969:107; Pascal 1973; Ștefureac & Pascal 1981:486); Pietra Țibău, 1967 (Ștefureac & Pascal 1970a:245,247,249); Cârlibaba, Țibău, Șesuri, Mestecăniș, Ciocănești (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:486); Adam and Eva Mountains, Pojorâta Commune, in common spruce forest, on stones (Mihai & Pascal 1973b:157,161); Criștor-Neagra Broștenilor, Borcut Meadow, on bark (Lungu 1973b:72; Lungu 1981c:94).

Rarău Mountain, Pietrele Doamnei, 15.05.1910 (Lilienfeldówna 1911:735); Codrul Secular Slătioara, 780-1240 m *alt.* (Ștefureac 1941:1154,1263,1282,1288, Tabs.3,8,9; Mickiewicz 1968:30-31; Papp 1969b:188).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Neckerieto-Isothecietum myosuroides* Barkman 1958, subass. *isothecietosum myuri* Barkman 1958 (Ștefureac, Mihai & Pascal 1976:36, Tab.3).

Stânișoara Mountains, Suha Mare Brook Valley, above the forest hut, on beech bark, Târnița Peak, on rocks, 1974 (Pascal & Toma M. 1977:42).

Bistrița-Năsăud County, Măgheruș Valley, Lupiște, Hederiș Hill (Ștefureac & Cristurean 1973:315); Codrișor Forest, La Pârloage, Râpa Mare, Monari, Simionești, 1980-1981 (Mohan & Hodoroga 1983:53); Satului Valley, near Rebra, in forest, on bark, 470-570 m *alt.*, in *Leucodonteia* (Plămadă & Coldea 1989b:121).

Iași County, Repedea, Bordea and Breazu Forest (Papp 1924a:102; Papp 1929:555,558-560; Mihai & Pascal 1973a:267, Tabs.3,4); Bârnova Forest, sub fo. *propagulifera* (Papp 1925c:156; Papp 1929:555); Nicolina Brook Valley, east to Lunca Bârnovei (Papp 1935b:326,331); Repedea and Bârnova forests (Papp 1939a:355); Poieni, sub fo. *propagulifera* (Papp 1942b:525,526); Strunga Forest, sub fo. *propagulifera* [I](Papp 1942b:525,526); Pârlitura Valley, Carului Valley, in forest, on bark, incl. sub fo. *propagulifera* (Papp 1950:400,403); Repedea Forest and Bordea Forest, on bark, frequent (Papp & Eftimie 1963:110,111); Uricani Forest, incl. sub fo. *propagulifera* (Eftimie 1967:290,292); Bursucăriei Hill, 160-170 m *alt.*, on oak tree bark, incl. sub fo. *propagulifera* (Dobrescu & al. 1969:170,175,176, Tab.2); “Surda” Forest, Hurloaea Hill, west to Piscul Rusului-Dagăța, *det.* Papp C. (Dobrescu 1969a:388); Miroslova Hill (Dobrescu & al. 1971:147); Breazu Forest, 160-180 m *alt.*, ass. *Madotheceto-Leskeetum nervosae* (Gams 1927) Barkaman 1958 (Mihai & Pascal 1973a:267, Tabs.3,4); Uricani Forest, ass. *Atricheto-Lophocoletum minoris* Mihai 1973, ass. *Frullanieto-Raduletum complanatae* (Lippmaa 1935) Mihai 1973 (Mihai 1973b:413-418, Tabs.1,3,5,6); Repedea-Bârnova Forest Massif, ass. *Madotheceto-Leskeetum nervosae* (Gams 1927) Barkaman 1958, ass. *Leskelletto-Raduletum complanatae* Mihai 1974, ass. *Frullanieto-Raduletum complanatae*, ass. *Leucodontetum sciuroides* Hilitzer 1925, ass. *Metzgerietum furcatae* Störmer 1938 (Mihai 1974a:128-130, Tabs.2-6), ass. *Lophocoletum heterophyllae* Peciar 1965, ass. *Anomodontetum attenuati* Peciar 1965 (Mihai 1975:105,106, Tabs.1,2), bryocoenosis with *Brachythecium salebrosum* (Mihai 1976b:283,284, Tab.3); Mârzești Forest, ass. *Madotheceto-Leskeetum nervosae*, ass. *Frullanieto-Raduletum complanatae*, ass. *Leskeetum polycarpae* Horvat 1932, incl. subass. *anomodontetosum viticulosi* Mihai 1976 and *amblystegietosum serpentis* Mihai 1976, ass. *Hypnetum cupressiformis* Hilitzer 1925 (Mihai 1976c:662-665,667, Tabs.2,3,5-7,9); Domnița Forest – Voinești, Voinești and Țibana Communes, on *Fagus sylvatica*, *Carpinus betulus*, *Fraxinus excelsior*, *Acer platanoides*, *Populus tremula* bark and rotten tree stump (Mititelu & Chifu 1978:378,394); Iași Botanical Garden (Mihai 1979a; Ștefureac 1982c:200); Humosu Natural Reserve, ass. *Madotheco-Leskeetum nervosae* (Mihai 1980:8; Mihai 1983c:354,355, Tabs.5,6).

Vaslui County, Hârboanca Forest, at 0,7 km south-west to Brăhășoia, 1955-1968, *det.* Papp C. (Dobrescu 1969b:26,27, Tab.1); Crasna Valley, on bark, frequent, 1966-1969 (Plămadă & Vițalariu 1971:166).

Harghita Mountains, 30.08.1901 (Barth 1905:13); Minei Valley, 1100-1200 m *alt.*, 11.07.2000, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Cifrabuc, 1200 m *alt.*, 16.08.2001, Rotund Mountain, 1100 m *alt.*, 28.08.2001, Pietros Valley, 900 m *alt.*, 28.08.2001, Boitor Forest, 1000-1100 m *alt.*, 28.08.2001, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, Luci Meleche Forest, 1050 m *alt.*, 13.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:470).

Harghita County, Odorhei, Tăureni, in beech forests, on bark, 1958-1962 (Páll 1963b:17).

Ceahlău Mountain, Durău, Ceahlău (Papp 1924b:392; Papp 1934b:69,72; Manoliu & al. 1998:339); Ceahlău, 1200-1700 m *alt.* (Mihai 1979b); Ceahlău, ass. *Neckero-Anomodotetum viticulosi* (Wisn. 1929) Philippi 1965 subass. *homalothecietosum philippeani* Ștefur. 1941, ass. *Neckeretum complanatae* (Hilitzer 1925) Peciar 1965 (Mihai 1987b: Tabs.3,4,5).

Neamț County, Tâmpesți and Poieni Forests (Papp 1924a:102); Neamț Monastery, on deciduous tree bark and rotten beech trees, 07-08.1919,1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Recea Forest, Poarta Poenilor Forest, incl. var. *propagulifera* (Papp 1947a:158; Papp 1947b:182,183,190); Corni Forest Massif, „Lacul cu Clin” Forest, sub fo. *propagulifera* (Papp 1959b:564; Ștefureac & al. 1973:149); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242); s - Botoșanu Hill, on *Picea abies* (Mihai 1971e:407); Pângărăcior Brook Valley, at base of beech tree, sub fo. *propagulifera* (Mihai 1973d:29,32); Dobreanu Culm, on the trunk tree (Mihai 1974c:23; Ștefureac & al. 1973:149).

Nemira Mountains, Nemira Mountain, on soil, in common spruce forest, on *Fagus sylvatica* and *Acer pseudoplatanus*, 900-1400 m *alt.* (Barabaş V. 1974:26,29,30); Farcu Mare Peak, on *Fagus sylvatica* and *Alnus incana* trunks and wet rocks, 1970-1977 (Mihai & Barabaş V. 1978:117); Nemira Mountain, 800-1600 m *alt.*, Slănic and Uz Brooks Vales, 500 m *alt.*, Bălătau Lake, 900 m *alt.* (Barabaş V. 1982b:58,59,63,67,74,75, Tabs.7,11,17,25,26).

Bacău County, Pufu Hill, in forest, 800-900 m *alt.*, Porcului Hill, in forest, Ciungetul Brook Valley, sub fo. *propagulifera* (Papp 1957:285; Papp 1958b:396); Berzunţ Culm, 990 m *alt.*, Sava Hermitage, in forest, sub var. *propagulifera* (Papp & Bircă 1960:316,324); Tajbuga Culm, on bark, incl. sub fo. *propagulifera* (Papp 1966:219-221); Seaca Forest, Tocila (Mititelu, Barabaş N. & al. 1968:147,168; Ştefureac & al. 1973:149; Costică 1995:252); Uz Valley, near the dam, on rotten stumps, 1966-1967 (Mihai & Barabaş V. 1969:71,75); Podu Turcului, on *Quercus robur* (Mihai & Barabaş V. 1970:67,70,71); s - Măgura Hill, north-west to Târgu Ocna, on *Quercus petraea* rotten stumps and rocks, 680 m *alt.*, rare, incl. sub fo. *propagulifera*, on stones (Mihai & Barabaş V. 1971:676,686); s, *fer* - Sohodol Forest, Măgura Commune, at base of *Carpinus betulus* tree, Traian Forest, on *Quercus robur*, Petricica Hill, Măgura Commune, on rotten beech trees, 1970-1971 (Mihai & Barabaş V. 1972:87,92; Costică 1995:252); Cheşcheş Culm, on hornbeam bark, 2.05-8.11.1971 (Ştefureac & Barabaş V. 1972:78,82); Ghioina Forest, incl. sub var. *propagulifera*, Lada Forest, Slabului Hill, the forest way from Întărcătoare towards Zboina Verde, on *Populus tremula*, *Carpinus betulus*, *Fagus sylvatica* and *Acer campestre* (Eftimie 1972:151); Codrul Secular Runc-Racova, on bark (Barabaş V. 1982a:49); Măgura Hill – Târgu Ocna, 400 m *alt.* (Barabaş V. 1982b:77,78, Tab.30).

Bodoc Mountains, on wood (Ştefureac & Kovács 1981:117).

Vrancea County, Ploscuţeni Forest, 303 m *alt.*, at base of beech trees (Mihai & Barabaş V. 1970:67,71-73); Tişitei Gorges, on bark, 1977 (Mihai & Pascal 1986:46).

Brăila County, Brăila, on willow and poplar barks, 29.05.1969, *leg.* Moşneagă M. & *det.* Mohan G. [PHHM 6207727](Mohan 1971a:9).

Tulcea County, Dealul Mare, Niculiţel Commune, on bark (Papp 1938:289,293,295; Mihai, Pascal & Viţalari 1962:285; Ştefureac, Mihai & Pascal 1970:123); Letea Forest, north to C.A. Rosetti Commune, on bark (Mihai & Pascal 1963:264; Ştefureac, Mihai & Pascal 1970:123); Codru Forest, Babadag (Mihai, Pascal & Viţalari 1962:285); Babadag Forest, 220 m *alt.*, Ciucurova Topolog Forest, 350 m *alt.*, Niculiţel Forest, on bark, 20-23.07.1968 (Ştefureac & Mohan 1969:140,144; Ştefureac, Mihai & Pascal 1970:123); ♀♂ - Canaraua Fetii, on *Ulmus* bark, 6.06.2007, *leg.* & *det.* Ştefănuţ S. [BUCA B3993], s - [BUCA B3994]; Topolog, 44°51'55"N / 28°22'45"E, 13.06.2008, *leg.* & *det.* Ştefănuţ S. [BUCA B3886].

Constanţa County, ? – near Valul lui Traian Commune, in forest. *Obs.* Quated according Mihai, Pascal & Viţalari 1962, but missing in this paper (Ştefureac, Mihai & Pascal 1970:123); Făurei Forest, south-east to Băneasa Commune, on *Acer tataricum* and *Quercus cerris* (Mihai & Pascal 1963:264; Ştefureac, Mihai & Pascal 1970:123); Danube Bank between Galiţa and Ostrov, Canaraua Fetii Forest, 1963 (Mihai 1965:160); Cărpiniş Forest, Băneasa Commune (Mihai 1965; Ştefureac, Mihai & Pascal 1970:123); Negureni Forest, on *Quercus cerris* (Mihai 1981b:10); Canaraua Fetii and Esehioi Forest Reserves (Mititelu, Parincu & Gheorghişă 1993:33); Neptun railway station, 2.07.2005, *leg.* & *det.* Ştefănuţ S. [BUCA B3194]; ♀♂ - Comarova Forest near Neptun railway station, 2.07.2006, *leg.* & *det.* Ştefănuţ S. [BUCA B3537].

Penteleu Massif, Tisa Reserve, on bark, 1000 m *alt.* (Dihoru G. 1964:399, Tab.3; Dihoru G. 1987b:94); Şapte Izvoare Valley, above forest hut, common spruce forest, on rotten common spruce wood, 11.10.1983 (Dihoru G. 1987b:94).

Buzău County, ♀♂ - Sărata-Monteoru, 07.2005, *leg.* Ivănescu Cristina, *det.* Ştefănuţ S. [BUCA B3187]; ♂♀ - Spătaru Forest, on *Fraxinus pallisiae* bark, 45°05'22"N / 26°47'03"E, 11.11.2008, *leg.* & *det.* Ştefănuţ S. [BUCA B3982].

Ciucuş Mountains, Berii Brook Valley, Tigăile Mici Culm, Roşu Mountain, Zăgan Mountain, Bratocea Culm, Stâncoasă Culm (Mohan 1990b:44).

Braşov County, Braşov (Schur 1866:874; Fuss 1878:653); Predeal (Loitlesberger 1898:196); Cheia Brook Valley, Râşnov Gorges, on fir bark, 850 m *alt.*, 22.09.1940, *leg.* Cretzoiu P., *det.* Papp C. [FRE 2388; PHHM 6207961, 6207806, 6207807, 6207405] (Borza 1943:23); Lempeş Hill, on *Quercus robur*, 05.1961 (Mihai 1962:278); ♀♂ - Tâmpa, 18.06.2006, *leg.* & *det.* Ştefănuţ S. [BUCA B3508,

B3521, B3522] (Ștefănuț 2006b:34; Ștefănuț 2008b:29); ♀♂ - Făgăraș, Galați Hill, 24.11.2002, *leg. & det.* Ștefănuț S. [BUCA B2059]; ♀♂ - Predeal, 6.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3396].

Prahova County, Românești Forest, 16.04.1969, *leg.* Moșneagă M., *det.* Mohan G. [PHHM 5936/3345](Mohan 1971a:9); Păulești-Ploiești Forest, 22.09.1969, *leg.* Moșneagă M., *det.* Mohan G. [PHHM 6207655](Mohan 1971a:9); Doftana Valley, Secăria Valley, Păltinoasa Valley, on beech bark (Mohan 1971a:9; Mohan 1971b:48); Crângul lui Bot Forest, *fer* - Predești, Stejaru, *fer* - Tinosu (Dihoru A. 1994:4); ♀♂ - Prahova Valley, 45°09'16"N / 25°42'56"E, 459 m *alt.*, 27.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3404]; ♀♂ - Doftana Valley, in *Quercus petraea* forest, 45°10'11,8"N / 25°45'04,6"E, 26.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3411, B3420] (Vasiliu-Oromulu 2008:87); ♀♂ - Doftana Valley, in mixed *Quercus petraea* with *Fagus sylvatica* forest, 45°10'01,6"N / 25°45'09,2"E, 27.04.2006, *leg. & det.* Ștefănuț S. [BUCA B3428, B3423] (Vasiliu-Oromulu 2008:87).

Gârbova Massif, Piscul Căinelui (Loitlesberger 1898:196); Rea Valley, 1000-1300 m *alt.*, Cumpătul Peak, 1651 m *alt.* (Mickiewicz 1968:30-34); Azuga Valley, Tufa Valley, Rea Valley, Valea lui Bogdan, on *Fagus sylvatica*, 1967-1970 (Lungu & Ștefureac 1970:5); Cumpătu Mountain, on beech bark, 830 m *alt.*, 6.10.1985, *leg. & det.* Lungu L. [CSH].

Bucegi Massif, fer - Bucșoiu, Mălăiești Valley, 08-09.1911 (Degen 1914:217); Vârful cu Dor, 1891 m *alt.*, Urlătoarea Valley, 900-1000 m *alt.* (Mickiewicz 1968:30-34); Urlătoarea Valley, 25.05.2000, *leg. & det.* Constantinescu A. [PHHM].

Piatra Craiului National Park, Gura Râului, 28.09.2001, *leg.* Pop O., *det.* Ștefănuț S. (Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:82); ♀♂ - Great Gorges of Dâmbovița River, AG, on *Pinus sylvestris*, 45°23'18"N / 25°11'44"E, 800 m *alt.*, 10.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2591, B2598, B2599], ♀♂ - [BUCA B2594] (Ștefănuț & Pop O.G. 2006:82); Gura Râului, BV, 45°33'07"N / 25°17'50"E, 900 m *alt.*, 7.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2731] (Ștefănuț & Pop O.G. 2006:82); Garofița Pietrei Craiului Hut, BV, 45°30'47"N / 25°10'26"E, 1080 m *alt.*, 9.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2792] (Ștefănuț & Pop O.G. 2006:82); Crăpătura Pietrei Craiului, BV, 45°33'44"N / 25°15'51"E, 1100 m *alt.*, 21.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2764] (Ștefănuț & Pop O.G. 2006:82).

Ialomița County, „Bărăganu” Experimental Forest Station (Dihoru G. & Mărgăritescu 1994:95, Tab.1).

Ifov County, Cocioc, Piscu-Hereasca and Țigănești Forest, 22,23.04.1899, Cernica-Pusnicu, 18.06.1900, sub var. *propagulifera, fer* - Cocioc, Vlăsia and Snagov Forest, 22,24.04.1899, Căldărușani, 5.06.1900 (Radian 1901b:41); Brănești-Pusnicul Forest, on bark, 22.12.1935, *leg.* Cretzoiu P., Clement O. & Beldie A. (Papp 1937a:160,163); Mogoșoaia Forest, 29.12.1959, *leg.* Racoviță A., *det.* Ștefureac T. (Racoviță A. 1960:1112,1113); Mogoșoaia Forest, 15.11.1959 (Racoviță A. 1963:188).

Bucharest, Băneasa Forest (Racoviță A. 1941:154, Pl.I, Figs.4-8).

Giurgiu County, s - Comana, frequent, on *Quercus cerris* and *Q. frainetto*, 1968-1969, sub fo. *propagulifera* (Ștefureac & Mohan 1970a:353); Tătarului Forest, on *Quercus cerris*, 28.10.1968, sub var. *propagulifera* (Ștefureac & Mohan 1970b:151,153,155, Tab.1); ♀♂ - Călugăreni Forest, 3.05.2004, *leg. & det.* Ștefănuț S. [BUCA B2930]; Căscioarele Forest, 10.05.2005, *leg.* Ivănescu Cristina, *det.* Ștefănuț S. [BUCA B3181]; Comana Forest, 31.05.2006, *leg. & det.* Ștefănuț S. [BUCA B3534].

Teleorman County, ♀♂ - Bujoreni, 21.04.2004, *leg. & det.* Ștefănuț S. [BUCA B2936].

Făgăraș Mountains, Arpaș Mountain (Schur 1866:874; Fuss 1878:653); Arpașul Mare Valley, SB, on *Quercus robur*, 590 m *alt.*, 8.10.2003, *leg. & det.* Ștefănuț S. [BUCA B2925].

Sibiu County, Sibiu (Schur 1866:874; Fuss 1878:653); Măgura Cisnădiei, Ursului Brook, *leg. & det.* Lerchenfeld J., sub *Jungermannia* [SIB HL 33712](Fuss 1878:653; Drăgulescu 1983:59; Gündisch 1977:52); Muma, Prejba [SIB SCHUR 4608](Schur 1866:874; Fuss 1878:653; Gündisch 1977:52); Tălmăciu [SIB HF 1915](Fuss 1878:653; Gündisch 1977:52); Bradu-Halberweg, on bark, 3.04.1872, *leg. & det.* Fuss M. [SIB HF 1563](Fuss 1878:653; Drăgulescu 1983:59); Cașolț, Șura Mare, Gușterița (Fuss 1878:653); Gușterița-Formenthal, on srubs, 04.1865, *leg.* Fuss M. & *det.* Juratzka J. [SIB HF 1558](Fuss 1865:28; Drăgulescu 1983:59); Bradu, 10.04.1865, 3.05.1875, *leg.* Fuss M., *det. & rev.* Drăgulescu C. [SIB HF 1559-1562,1564,1568] (Drăgulescu 1983:59).

Cindrel Mountains, Crinț, 900 m *alt.*, Păltiniș, 1400 m *alt.*, Ursului Hill, 1200 m *alt.* (Gündisch 1977:52).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Curmătura Vidruței, 1350 m alt., 26.07.1955, sub *Haplozia* (Ștefureac, Popescu & Lungu 1957a:68,69); Latorița Valley, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,20, Tab.5); south to the peatbog from the edge of Câlcescu Lake (Ștefureac 1969a:104).

Retezat Mountains, Râu de Mori (Schiffner 1914:308); Râu Mare Valley between Gura Zlata and Gura Apei (Páll 1964a:108); Retezat National Park, *Leucodonto-Madothecietum platyphyllae*, *Anomodontetum attenuati* (Barkm. 1939) Peciar 1965, *Pterygynandro-Isothecietum myuri* Plămadă (1976) 1978, *Neckeretum crispae* Ștefur. 1941 (Plămadă 1976a; Plămadă 1976b:20, Tab.2); between Zlătuia Valley and Turcului Valley, 1100-1200 m alt., 7.09.1969, ass. *Leucodonto-Madothecetum platyphyllae* Plămadă 1982, Zlătuia Valley, 790-800 m alt., 6-7.09.1969, Șesele Valley, 900-950 m alt., 9.09.1969, ass. *Anomodontetum attenuati*, Zlătuia Valley, 1000 m alt., 7.09.1969, Turcului Valley, 850 m alt., 9.09.1969, Șesele Valley, 950 m alt., 14.07.1970, ass. *Pterigynandro-Isothecietum myuri*, Șesele - Pârgului Valley, 950 m alt., 9.09.1969, 1000 m alt., 14.07.1970, ass. *Anomodonto attenuati-Neckeretum crispae* Plămadă 1982 (Plămadă 1982a:305-307,309, Tabs.2-5; Plămadă 1993:51, Tab.1); Gemenele Valley, 08.2005, leg. Onete Marilena, det. Ștefănuț S. [BUCA B3204].

Mehedinți County, Orșova (Hazslinszky 1885:41); Orșova, Cazane (Schiffner 1914:308); The Culm towards Poiana Salcuței, Slătinic Valley, Gura Văii, 28.06.1945 (Ștefureac 1947a:138); †, s - Ada-Kaleh Isle, on *Populus alba* (Ștefureac & Mihai 1968a:298,305, Tab.1); Eșelnița Valley, frequent, on *Quercus* and *Acer* (Plămadă 1970b:206); Danube Defile, between Orșova and Cerna Valley, in forest, on bark, frequent, 1966-1968 (Plămadă 1970c:393); Tricule, the first valley towards Canton, on stones, between Berzasca and Svinița, 1966, sub fo. *propagulifera* (Ștefureac & Mihai 1970:500).

Domogled Mountain, Domogled (Degen 1901:14); ♀♂ - Crucea Albă, 500 m alt., 9.08.2004, leg. & det. Ștefănuț S. [BUCA B2982].

Caraș Severin County, Cerna Valley, Ciorici Peak (Boros, Vajda & Debreczy 1969:6,7).

Poiana Ruscă Mountains, Lunca (Simonkai 1872:67; Fuss 1878:653); Poiana Ruscă, Rusca Montană, Pleșu, on hornbeam bark, 630 m alt. (Papp 1942a:51); Sinersig „Dumbrava” Forest, 29.07.1962 (Ștefureac & Mihai 1967:14).

Zarand Mountains, Highiș Peak, beech forest, Patru Gomile Valley, Slatina de Mureș, on bark (Csűrös M. 1978:77; Ardelean 2006:105).

Codru-Moma Mountains, Monesei Valley, Osoiu Mare, Valea Lungă, Ursului Hill, Brihenilor Valley, on beech and oak bark (Mohan 1996:49; Ardelean 2006:105).

Arad County, Ciala Forest, Pecica, from Adea towards Sebiș along “Tözmellék” (Simonkai 1893:361; Fuss 1878:653); Ciala Forest, on oak, 3.09.2003, leg. & det. Ștefănuț S. [BUCA B2332, B2340]; ♂♀ - Runcu-Groși Reserve, 46°10'14"N / 22°07'34"E, 428 m alt., 20.08.2008, leg. & det. Ștefănuț S. [BUCA B3926].

Mureș County, Sighișoara, sub *Jungermannia* (Baumgarten 1846:229; Schur 1866:874; Fuss 1878:653; Györffy 1917a:167); Lechința, oak forest, on bark, leg. Borza A., det. Papp C., incl. sub var. *propagulifera* (Papp 1944a:99); Ilva Valley, 9.08.1995 (Oroian 1997:113, Tab.1).

Alba County, Piatra Ceții, Trascău Mountains, 3.07.1868 (Barth 1868:140,141); Galda de Sus, leg. & det. Barth J. (Fuss 1878:653); Valea Lungă, on bark, 1866, leg. & det. Barth J. [SIB HF 1556, 1557] (Fuss 1878:653; Borza & Lupșa 1964:151; Drăgulescu 1983:59); *fer* - Vidra, „Piatra Struțu” and Scărișoara, Piatra Runcului (Schiffner 1914:308; Goia 2001:82); Feneș Gorges, sub fo. *propagulifera* (Papp 1944b:236; Papp 1945a:162); the region between Geoagiu-Mureș-Ampoi-Feneș and Detunata Peak from Trascău Mountain, frequent (Plămadă 1986a:58); Pojar Hill, on hornbeam, 580 m alt., 25.08.1994, ass. *Isothecietum myuri* Hilitzer 1925, ass. *Madotheco-Leskeetum nervosae*, Drăghia Valley, on fallen beech tree, 750 m alt., 20.08.94, ass. *Anomodonto-Leucodontetum* Wisn. 1930 (Goia 1998:256-258, Tabs.6-8); Măgura Valley, 1300 m alt., ass. *Pterygynandretum filiformis* Hilitzer 1925, Drăghia Valley, 750 m alt., 28.08.1994, ass. *Anomodonto-Leucodontetum* (Goia 2000:120, Tab.8); Arieșul Mic Basin (Goia & Schumacker 2000:92); Popeștilor Brook, on willow, below Lucia Cave, on willow, Pojar Hill, on hornbeam, Morii Valley, on common spruce, beech and rotten wood, Ursoaia Saddle, common spruce, Cobleș Valley, Poiana Vadului, on ash tree, Divaia Valley, Popeștilor Valley, Vidrișoara Valley, Arieșul Mic towards springs, Măgura Valley, Gârda – Scărișoara interfluvium, Ordâncușa Valley, Scărișoara Cave – aven, on beech tree, Galbena Valley, Drăghia Valley, Pătroieștilor Valley, on beech forest and on rotten wood, Vârciorog Valley and Țoha Mică Valley, on rotten wood (Goia 2001:83); Popeștilor Valley, 15.08.1994, Drăghia Valley, 20.08.1994, ass. *Pylaisietum polyanthae* Felf. 1941, Pojar Hill, 25.08.1994, Vidrișoara Valley, 20.08.1992, Cheia Valley, 31.07.1994, Morii Valley, 13.08.1994, Arieșul Mic Valley,

16.20.08.1994, ass. *Pterigynandretum filiformis* Hilitzer 1925, Drăghița Valley, 20.08.1994, Morii Valley, 7.08.1994, ass. *Homalothecium sericei-Porelletum platyphyllae* Størmer 1938, Pătroiștilor Valley, 22.08.1992, Morii Valley, 13.08.1994, Divaia Valley, 21.08.1994, ass. *Anomodontetum attenuati* Cain et Sharp 1938, Arieșul Mic Valley, 20.08.1994, Drăghița Valley, 20.08.1994, Pojar Hill, 25.08.1994, ass. *Isothecietum myuri* Hilitzer 1925, Pojar Valley, 25.08.1994, Drăghița Valley, 20.08.1996, ass. *Anomodonto viticulosi-Leucodontetum sciuroidis* Wisn. 1930, Pojar Hill, 25.08.1994, Pătroiștilor Valley, 22.08.1992, ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia & Schumacker 2003:59,60,62-64, Tabs.1-5); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); Vramița Valley, towards Avram Iancu, 27.05.1998 (Smets 2003:60); Colbeș Valley, 860 m alt., 10.08.1996, ass. *Pylaisietum polyantae* Felf. 1941 *orthotrichetosum obtusifoliae* Marst. 1985, Gârda Seacă Valley, 1000 m alt., 8.08.1996, Scărișoara cave, 1070 m alt., 11.08.1996, Ordâncușa Valley, 1180 m alt., 11.08.1996, Galbena Valley, 980 m alt., 12.09.1996, between Măgura and Obârșia Valley, 980 m alt., 27.09.1996, between Gârda Valley and Scărișoara cave, 1000 m alt., 11.08.1996, ass. *Pterigynandretum filiformis*, Scărișoara cave, 1080 m alt., 11.08.1996, ass. *Homalothecio sericei-Porelletum platyphyllae*, Ordâncușa Valley, 1060 m alt., 11.08.1996, between Gârda Valley and Scărișoara Cave, 1000 m alt., 11.08.1996, ass. *Isothecietum myuri*, between Măgura Valley and Obârșia Valley, 700 m alt., 27.09.1996, ass. *Anomodonto viticulosi-Leucodontetum sciuroides*, between Mățișești and Șaua Ursoaia, 730 m alt., ass. *Orthodicrano montani-Hypnetum filiformis* (Goia & Schumacker 2004: 107,109-111, Tabs.1-4).

Cluj County, Southern Ciucea on Surduc Valley (Boros 1942a:34); Turda, Băile Sărute (Todora 1947:41); Făget, Greben Valley, Mănăstur (Soó 1951:40; Boros 1958:8); Cluj-Napoca Botanical Garden, sub fo. *propagulifera* (Boros 1958:5,8; Plămadă 1963:179); Hoia, Pleșca Valley, Cluj-Napoca, Lomb Forest (Boros 1958:8); Hoia Forest, north-west to Cluj, on bark, 1961-1963 (Plămadă 1966:60); Cluj-Napoca Botanical Garden, on bark, 1961-1966, incl. sub fo. *propagulifera* (Plămadă 1967:470; Ștefureac 1982c:197,200, Tab.2); Mera Forest Basin, on bark, 1963-1965, sub fo. *propagulifera* (Plămadă 1968:25); Cluj-Napoca Botanical Garden, cemetery, Sporting Park, on bark (Plămadă 1969:170); Huza Forest on Filii Mountain, Muntele Mare, near the Hut, on bark, 700-750 m alt., in *Leucodonte* (Plămadă & Coldea 1989b:121); Turda's Gorges, on *Crataegus* (Plămadă & Goia 1994:87); Sălicea, Făget-St. Ion, Valea Popii, Cluj-Napoca, Central Park (Goia 2002:115, Tab.1).

Bihor County, Felix Spa (Simonkai 1876; Borbas 1879:262); Drăgan Valley (Boros 1942a:35); Rădvani Forest, on oak bark, *det.* Ștefureac T. (Pop I. 1968:70).

Bihor Mountains, *without locality* (Péterfi M. 1908:278; Goia 2001:83); Someșul Cald Gorges (Goia & Mătase 2001:17,18); ♀♂ - Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m alt., 3.09.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3840].

***Radula lindenbergiana* Gottsche et C. Hartm.**

Syn.:

- *Radula complanata* subsp. *lindenbergiana* (Gottsche ex C. Hartm.) R.M. Schust.
- *Radula bornmuelleri* Schiffn.
- *Radula commutata* Gottsche ex Husn.
- *Radula complanata* var. *propagulifera* (Nees) Gottsche et al.
- *Radula constricta* Steph.
- *Radula germana* J.B. Jack
- *Radula lindenbergiana* Gottsche ex J.B. Jack
- *Radula lindenbergiana* var. *germana* (J.B. Jack) C. Massal.
- *Radula ovata* J.B. Jack ex Steph.

First citation for Romania: Loitlesberger 1898.

Romania (Schuster 1980:609).

Moldova (Papp 1943:666; Ștefureac & al. 1973:149).

Muntenia (Mohan 1988b:110).

Transylvania, sub *R. lindenbergii* (Pax 1908:130).

Ecology: epilithic, acidophytic, xero-mesophytic, sciophytic; Eurasia; mountain-alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fo, No, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Me, Ba, Ro, Bg, Al, Gr, Ct, Tu, Lv, Lt, Ua, Rn, Ca, Az, Ma, Cn.

Distribution in Romania:

Maramureș County, Covatar Waterfall from Săpânța, 900 m alt., 15-21.06.1997, *leg.* & *det.* Jakab G. (Jakab 1999:53,55).

Țibleș Mountains, Arsuri Peak, Arcer Peak, 1984-1985 (Mohan 1988a:22).

Suceava County, the peatbogs from Cristișorul along Neagra-Broștenilor Valley, 06.1964 (Lungu 1967c:329); Piatra Țibău (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:486); Cârlibaba, Codreava, Stâni Valley, below Tolovan Mountain, between Iacobeni and Argestru (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:486); Cristișor-Neagra Broștenilor, Borcut Meadow, on *Alnus incana* and *Fagus sylvatica* (Lungu 1973b:72; Lungu 1981c:94).

Rarău Mountain, Codrul Secular Slătioara, 800-1400 m *alt.* (Ștefureac 1941:1155,1245,1279, 1283,1290, Tabs.3,7,8,9; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:198).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Neckerieto-Isothecietum myosuroides* Barkman 1958 *isothecietosum myuri* Barkman 1958 (Ștefureac, Mihai & Pascal 1976:36, Tab.3).

Bistrița-Năsăud County, Măgheruș Valley, Hederiș Hill, Lupiște (Ștefureac & Cristurean 1973:314,315); Râpa Mare, Piatra Corbului, Simionești, Budacul de Jos, 1980-1981 (Mohan & Hodoroga 1983:53).

Harghita Mountains, Vermet Valley, 1050-1250 m *alt.*, on rocks, 2.07.2000, *leg.* Bálint L. & Csizi K. (Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Neamț County, Neamț Monastery, on deciduous tree bark, on calyey soil, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Recea, Muncelașul and Poarta Poienilor Forests (Papp 1947a:159); Muncelașu Hill, in forest (Papp 1947b:182-184,190,195); Corni Forest Massif (Papp 1959b:567; Ștefureac & al. 1973:149); Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242).

Bacău County, Slănic Brook, on elm tree, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:78).

Ciucaș Mountains, Gropșoarele Peak, Chirușca Mountain, Ciucaș Peak (Mohan 1990b:44).

Gârbova Massif, Azuga Valley, on rocks, 1967-1970 (Lungu & Ștefureac 1970:5,9).

Piatra Mare Mountain, „Șapte Scări” Waterfall (Boros & Vajda 1967:226); ♂ - Chiva Valley, 17.05.2006, *leg.* Avramescu C., *det.* Ștefănuț S. [BUCA B3432].

Cristianul Mare Mountain, 1700-1800 m *alt.* (Boros & Vajda 1967:226).

Bucegi Massif, Sinaia, on trees, 08.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:5); Bucșoiu Mountain, 1100-1700 m *alt.* (Boros & Vajda 1967:226); Furnica Mountain, PH, 1010 m *alt.*, 27.10.2005, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3305].

Piatra Craiului Mountains, Prăpăstiile Zărneștiului, 1000 m *alt.*, *leg.* & *det.* Boros Á., Crăpătura and Curmătura, 1500-1700 m *alt.* (Boros & Vajda 1967:226; Ștefănuț & Pop O.G. 2006:82); Diana, BV, 1100 m *alt.*, 22.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2816, B2818] (Ștefănuț & Pop O.G. 2006:82).

Făgăraș Mountains, above Bâlea Lake, below Paltina Peak, on sandy soil, 2250 m *alt.*, 13.07.1946, above Avrig Lake, 2150 m *alt.*, 9-19.07.1946 (Ștefureac 1949a:289,290); Cârțișoara Valley, 1200 m *alt.*, Arpaș Valley, towards Podragu Lake, 1800 m *alt.*, *leg.* & *det.* Vajda L. (Boros & Vajda 1967:226).

Vâlcea County, Greblești, 800 m *alt.*, sub „*Radula lindbergii*” (Loitlesberger 1898:196).

Parâng Mountains, Dâlma Badei, 2000 m *alt.* (Péterfi M. 1910:321); Latorița Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,16).

Hunedoara County, the Hills from Șoimuș, Făerag Valley and Pârâul Piscului (Certejul de Sus), Hunedoara on Sânpetru Hill, ass. *Carpino-Fagetum* Paucă 1941 (Sanda, Popescu & Peicea 1972:315, Tab.7); *fer* - Certeju de Sus, on rocks (Peicea 1973:441,443, Tabs.2,3).

Retezat Mountains, Valereasca, alpine region (Schiffner 1914:308); towards Bucura Peak (Páll 1964a:108).

Cluj County, Someșul Cald Valley (Boros & Vajda 1974:9).

Bihor County, Someșul Cald Gorges (Goia & Mătase 2001:18).

Reboulia hemisphaerica (L.) Raddi

Syn.:

- *Asterella hemisphaerica* (L.) P. Beauv.
- *Asterella hemisphaerica* var. *fasciata* (Myrin ex Hartm.) Lindb.
- *Grimaldia hemisphaerica* (L.) Lindenb.
- *Grimaldia ventricosa* Wallr.

- *Marchantia crinita* Michx.
- *Marchantia fasciata* Myrin ex Hartm.
- *Marchantia hemisphaerica* L.
- *Ottona crinita* (Michx.) Corda
- *Reboulia fasciata* (Myrin ex Hartm.) Ångstr.
- *Reboulia hemisphaerica* (L.) Raddi var. *microspora* Ștefureac.
- *Rhakiocarpon conspersum* Corda
- *Strozzius hemisphaericus* (L.) Gray

First citation for Romania: Baumgarten 1846.

Romania, *without locality* (Baumgarten 1846:234; Schur 1866:874; Fuss 1878:651); Arpaș Mountain, sub *Marchantia* (Schur 1852; Heufler 1853:64,65).

Transylvania (Pax 1908:128).

Dobrogea (Ștefureac, Mihai & Pascal 1970:121).

Muntenia (Mohan 1988b:115).

Ecology: epilithic-humicolous, indifferent, mesophytic, sciophytic; circumpolar; mountain-subatlantic; Hth.

Herbaria and Exsiccate: BUCA, PHHM, SIB

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ct, Ee, Lv, Lt, Ua, Cm, Rn, Rw, Rc, Re, Ca, Az, Ma, Cn.

Distribution in Romania:

Rarău Mountain, Rarău, 14.05.1910, Pietrele Doamnei 15.05.1910 (Lilienfeldówna 1911:731); near Liliecilor Cave, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3749].

Măcin Mountains, Pricopan Culm, *det.* Lungu L. (Andrei & Popescu A. 1967:261); Țuțuiatu Peak, on calcareous soil (Mihai & Pascal 1968:112; Ștefureac, Mihai & Pascal 1970:121).

Tulcea County, fer - Iacobdeal, Piatra Roșie, Consul, Greci, 05.1937 (Vlădescu A. 1939:59; Ștefureac, Mihai & Pascal 1970:121); Consul Hill, 6.05.1937, *leg. & det.* Popescu A. [PHHM 6207633](Mohan 1971a:7); Somova, 2000, *leg.* Andrei M., *det.* Wallfisch R. & Ștefănuț S. [BUCA B3125].

Constanța County, Cheia Gorges, 44°30'50"N / 28°26'01"E, 12.06.2008, *leg. & det.* Ștefănuț S. [BUCA B3893].

Ciucaș Mountains, fer - Teleajen Valley, at Bratocea, subalpine zone, 2.10.1900 (Radian 1915:191); Bratocea Peak, Gropșoarele Peak (Mohan 1990b:45).

Brașov County, Brașov (Schur 1866:874; Fuss 1878:651; Barth 1880:121).

Bucegi Massif, fer - subalpine and alpine zone, Jepi Valley towards Caraiman and around Peștera Ialomiței Hermitage, 10.08.1903, Ialomița Valley above Peștera Ialomiței Hermitage, 29.07.1904, 5.08.1905, 30.08.1908, 6.07.1914, on Obârșia Ialomiței towards Omul, 11.08.1903, 5.08.1905, 6.06.1914, Cerbului Valley, 11.08.1903, 30.07.1904, 30.08.1908, 29.08.1911, 5,6.07.1914 (Radian 1915:191; Radian 1923:10); Sinaia, 08.1920, *leg.* Brândză M., *det.* Ștefureac T. (Ștefureac 1942a:3); Caraiman (Ștefureac 1972c:104); Gaura Glacial Ring (Mihăilescu & Ștefănuț 2000a:14); ♀♂ - the glacial ring from Cerbului Valley, PH, 45°26'23"N / 25°27'42"E, 2160 m *alt.*, 11.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2282]; ♀ - the glacial ring from Cerbului Valley, PH, 45°26'31"N / 25°27'41"E, 2250 m *alt.*, 11.07.1999, *leg. & det.* Ștefănuț S., sub *M. triandra*, *rev.* Ștefănuț S. [BUCA B2284](Ștefănuț 2004i); The glacial rings of Ialomița Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m *alt.*, 10.07.1999, *leg. & det.* Ștefănuț S. [BUCA B2317, B2327]; Babele Mountain, PH, 45°24'44"N / 25°28'37"E, 2200 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3259], 45°24'42"N / 25°28'37"E, 2170 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3499]; Ialomița Valley, DB, 45°22'33"N / 25°26'10"E, 1465 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3616]; ♂♀ - Babele Valley, PH, 45°24'41"N / 25°28'37"E, 2110 m *alt.*, 14.07.2008, *leg. & det.* Ștefănuț S. [BUCA B3905].

Piatra Craiului Mountains, s, fer - Râie's Valley, 1350 m *alt.*, Curmătura, 2000 m *alt.* (Ștefureac 1951b:254,255; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:82); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2562-B2564] (Ștefănuț & Pop O.G. 2006:82); Brâna Caprelor, BV, 45°33'18"N / 25°14'29"E, 2000 m *alt.*, 23.05.2002, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2813] (Ștefănuț & Pop O.G. 2006:82); ♀♂ - towards Crăpătura Pietrei Craiului, BV, 21.08.2001, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3366] (Ștefănuț & Pop O.G. 2006:82); ♀♂ - Crăpătura Pietrei Craiului, BV, on soil, 45°33'44"N / 25°15'51"E, 1100 m *alt.*, 21.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2750] (Ștefănuț & Pop O.G. 2006:82); ♀♂ - Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2811, B2812] (Ștefănuț & Pop O.G. 2006:82); ♀♂ - Crăpătura Pietrei Craiului, BV, 45°33'35"N / 25°15'46"E, 1250 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2772] (Ștefănuț & Pop O.G. 2006:82); ♂ - Hornul Găinii, mobile screes, BV, 1650 m *alt.*, 7.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3028] (Ștefănuț

& Pop O.G. 2006:82); the way towards Crăpătura, above Prăpăstiile Zărneștiului, 21.08.2001, *leg.* Pop O., *det.* Ștefănuț S. sub *Asterella lindenbergiana*, *rev.* Ștefănuț S. (Dihoru G. & al. 2003:69; Ștefănuț 2004i:326; Ștefănuț & Pop O.G. 2006:82).

Argeș County, *fer* – Dâmbovicioara (Loitlesberger 1898:196; Radian 1915:191).

Făgăraș Mountains, Arpaș Mountain, 1849-1850, *leg.* & *det.* Schur F. (Schur 1852:92; Heufler 1853:64,65; Schur 1866:874; Fuss 1878:651; Hazslinszky 1885:27; Ștefureac 1949a:287,288; Drăgulescu 2003:8); above Bâlea Lake, below Paltina Peak, on sandy soil, 2150-2250 m *alt.*, 13.07.1946, below Paltina Peak, screes, 2200 m *alt.*, 10.07.1946, below Ciortea Peak, on dolomite, 2350 m *alt.*, 15.07.1946 (Ștefureac 1949a:289,291; Drăgulescu 2003:8).

Sibiu County, Turnu Roșu, sub “*Rebonillia*” (Fuss 1865:28; Drăgulescu 2003:8); Cisnădioara [SIB SCHUR 4615](Schur 1866:874; Fuss 1878:651; Gündisch 1977:45; Drăgulescu 2003:8).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, *leg.* Barth J. (Barth 1883:8); Dâlma Badei, *alt.* 2000 m (Péterfi M. 1910:321).

Mehedinți County, Balotești, on right bank of Topolnița Valley, 04.1945 (Ștefureac 1947a:138,148,149); below Geanți, below Cornetul Isvernei, 6.06.1945, *leg.* Țopa E., sub var. *microspora* Ștefur. (Ștefureac 1947a:138,141,142,148, Figs.1-4; Ștefureac 1978d:161; Ștefureac 1982b:56; Cristurean 1999:255); on left side of Eșelnița Valley, upstream the Village, in oak forest, on sandy-clayey soil (Plămadă 1970b:205); Danube Defile, between Orșova and Cerna Valley, in forest, wet vales, on sandy-calyley soil, 1966-1968 (Plămadă 1970c:393); Cazanele Mari of Danube, on rocks, 1966 (Ștefureac & Mihai 1970:500).

Domogled Mountain, (Degen 1901:14; Papp 1939b:6).

Caras-Severin County, Găurii Brook Valley, Valea Mare Reserve - Moldova Nouă (Plămadă 1990:75).

Arad County, Șoimoș Fortress near Radna, 1872, *leg.* & *det.* Simonkai L. incl. sub *Asterella* (Simonkai 1872:66; Simonkai 1872:66; Simonkai 1893:359; Fuss 1878:651; Hazslinszky 1885:27).

Alba County, Piatra Ceții, Trascău Mountains, 3.07.1868 (Barth 1868:141); Galda de Sus, *leg.* & *det.* Barth J. (Fuss 1878:651; Hazslinszky 1885:27); Piatra Struțu, Vidra, 900 m *alt.* (Péterfi M. 1908:267).

Cluj County, Turda’s Gorges, on calcareous rocks, 14.08.1868, *leg.* & *det.* Barth J. [SIB HF 1486, HNFT 27920] (Fuss 1878:651; Barth 1880:121; Hazslinszky 1885:27; Drăgulescu 1983:57); Saca Valley near Pietros, 600 m *alt.* (Péterfi M. 1908:267); Tur Gorges (Páll 1960b:90).

Bihor County, Vadu Crișului (Péterfi M. 1908:267; Boros 1942a:31); Vadu Crișului, on rocks, ass. *Phyllitidi-Aceretum* (Boșcaiu & Gergely 1966:103); Iadului Valley between Remetea and Bulz, 300 m *alt.* (Péterfi M. 1908:267; Boros 1942a:33).

***Riccardia chamaedryfolia* (With.) Grolle**

Syn.:

- *Aneura pinnatifida* Nees
- *Aneura sinuata* (Hook.) Dumort.
- *Jungermannia chamaedryfolia* With.
- *Jungermannia multifida* var. *sinuata* Hook.
- *Riccardia latifrons* var. *sinuata* (Hook.) Lindb.
- *Riccardia sinuata* (Hook.) Trevis.
- *Riccardia sinuata* var. *stenoclada* Schiffn.
- *Riccardia sinuata* var. *submersa* (C.E.O. Jensen ex Müll. Frib.) Arnell

First citation for Romania: Péterfi M. 1908.

Moldova, sub *Aneura sinuata* (Papp 1943:652); sub *R. sinuata* (Ștefureac & al. 1973:142).

Muntenia (Mohan 1988b:113).

Ecology: epilithic, corticolous, acidophytic, hygrophytic, scio-photophytic; circumpolar; suboceanic-mountain; Hth.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, ?Me, Ba, Ro, Bg, Ct, Ee, Lv, Lt, Ua, Rn, Rc, Az, Ma, Cn.

Distribution in Romania:

Maramureș County, Văratec Mountain, 16-18.10.1998 (Jakab 1999:53,55).

Rarău Mountain, Codrul Secular Slătioara, 840 m *alt.*, sub *Aneura sinuata* (Ștefureac 1941:1153, Tab.7; Papp 1969b:188).

Giupalău Mountain, Giupalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3965].

Iași County, south-east to Curăturile-Ciurea, in pools, sub *R. sinuata* (Dobrescu, Bîrcă & Lazăr 1964:353).

Neamț County, Neamț Monastery, on clayey soil, 07-08.1921-1923, *leg.* Brândză M., *det.* Ștefureac T., sub *Aneura sinuata* (Ștefureac 1942a:3,10).

Cristianul Mare Mountain, 1600 m *alt.*, *leg. & det.* Vajda L., sub *Aneura sinuata* (Boros & Vajda 1967:218).

Bucegi Massif, Sinaia, 08.1920, *leg.* Brândză M., *det.* Ștefureac T., sub *Aneura sinuata* (Ștefureac 1942a:3); Lăptici Peatbog, 1500 m *alt.*, 1946, sub *Aneura sinuata* (Ștefureac 1949c:691; Pop E. 1960:349; Godeanu S. 1970:45); Mălăiești Valley, 1400 m *alt.*, *leg. & det.* Vajda L., sub *Aneura sinuata* (Boros & Vajda 1967:218);

Piatra Craiului Mountains, Crăpătura Pietrei Craiului, BV, 45°33'49"N / 25°15'54"E, 1050 m *alt.*, 21.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2740] (Ștefănuț & Pop O.G. 2006:82).

Făgăraș Depression, Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 10.2001, *leg. & det.* Ștefănuț S. [BUCA B3081] (Ștefănuț 2004f:74).

Făgăraș Mountains, Arpășel Valley, 1000 m *alt.*, sub *R. sinuata* (Pócs 1958:108); Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2656, B2670] (Ștefănuț 2002:190).

Alba County, the peatbog "Ponor" near Lăpuș, 900 m *alt.*, sub *Aneura sinuata* (Péterfi M. 1908:268; Pop E. 1960:400; Goia 2001:52).

Cluj County, Peana, 6.11.1916, *leg.* Györfy I. & Péterfi M., sub *Aneura sinuata* (Györfy 1924b:37; Boros 1958:7); Făget, Pleșca Valley, Sălicea, sub *R. sinuata* (Boros 1958:3,7).

***Riccardia incurvata* Lindb.**

Syn.:

– *Aneura incurvata* (Lindb.) Steph.

First citation for Romania: Ștefureac 1941.

Moldova, sub *Aneura* (Papp 1943:652).

Muntenia (Mohan 1988b:113).

Ecology: epigeaic, acidophytic, hygrophytic, photo-sciophytic; European; Hth.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Sb, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw.

Distribution in Romania:

Rarău Mountain, Codrul Secular Slătioara, sub *Aneura* (Ștefureac 1941:1153; Papp 1969b:188).

? - **Ciucaș Mountains**, Fugarului Brook Valley, Zăgan Mountain, Cucului Brook Valley (Mohan 1990b:45).

Bucegi Massif, Ialomița Valley, 1700 m *alt.*, 11.07.1945, sub *Aneura* (Ștefureac 1948b:698); on edge of peatbog from confluence of Sugărele Valley with Doamnele Valley, 1750 m *alt.*, sub *Aneura* (Ștefureac 1963b:97); from Lăptici towards the peatbog from confluence of Sugărele Valley with Doamnele Valley (Ștefureac 1972c:101); Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3248, B3256].

***Riccardia latifrons* (Lindb.) Lindb.**

Syn.:

– *Aneura latifrons* Lindb.

– *Aneura palmata* var. *major* Nees

– *Riccardia latifrons* var. *uliginosa* C.E.O. Jensen

First citation for Romania: Breidler 1890a.

Moldova, sub *Aneura* (Papp 1943:652; Ștefureac & al. 1973:141).

Muntenia (Mohan 1988b:113).

Ecology: humicolous, epilithic, saprolignicolous, acidophytic, hygro-hydrophytic, scio-photophytic; circumpolar; subboreal-mountain; Hth.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, Az, Ma.

Distribution in Romania:

Țibleș Mountains, Arcer Peak, Păltiniș Peak, Izvorul Țibleșului, 1984-1985 (Mohan 1988a:16).

Suceava County, Coșna, Panasuri Mountain, 1300 m *alt.*, sub *Aneura* (Breidler 1890a:149; Pax 1908:128); Breaza, 3.06.1910, sub *Aneura* (Lilienfeldówna 1911:731); Cârlibaba Brook Valley, 07.1966, *leg.* Pascal P. (Ștefureac 1969a:137; Pascal 1970b:112); Cârlibaba Brook Valley, 1967 (Ștefureac & Pascal 1970a:246); Bistrița Aurie Basin (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:476); Barnar Gorges, on fallen rotten common spruce tree trunks (Pascal & Seghedin 1977:141); Cristișor-Neagra Broștenilor, Borcut Meadow, in fen (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:90).

Giupalău Mountain, Poiana Ițcani Reserve, 920 m *alt.*, 1946-1957, sub *Aneura* (Ștefureac 1969a: Tab.16); Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3659]; ♀ - Giupalău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3961], ♂♀ - [BUCA B3979].

Rarău Mountain, Codrul Secular Slătioara (Tarnavschi 1936:284,285,289; Ștefureac & Pascal 1981:476); Codrul Secular Slătioara, 800-1000 m *alt.*, sub *Aneura* (Ștefureac 1941:1153,1284, Tab.9; Ștefureac 1969a: Tab.16; Papp 1969b:188; Ștefureac 1986f:193); Rarău, 1350 m *alt.*, sub *Aneura* (Ștefureac 1969a: Tab.16).

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphideturum pellucidae* (Barkman 1958) Maurer 1961 (Ștefureac, Mihai & Pascal 1976:36, Tab.1); Tureac Brook, Strâmba Peak, Heniu Mare, Leșului Valley, Muncel Peak, 1983-1984 (Mohan & Hodoroga 1986:211).

Stânișoara Mountains, below Puzdrele, on rotten woods, Suha Mică Brook Valley and Tarnița Brook Valley, 1974 (Pascal & Toma M. 1977:42).

Neamț County, Neamț Monastery, on soil, rotten fir woods, 07-08.1919,1921,1923, *leg.* Brândză M., *det.* Ștefureac T., sub *Aneura* (Ștefureac 1942a:3); Maghernița Brook Valley, on rotten wood, sub *Aneura* (Papp 1959a:112).

Hășmaș Mountains, Hășmaș (Schiffner 1914:303); Hășmașul Mare (Degen 1930:975); Sasului Valley („Szarazpatak”), below Hășmașul Mare, 1300 m *alt.*, *leg.* E.I. Nyárady, *det.* Papp C., sub *Aneura* (Papp 1940b:117; Bálint & Orbán 2006:474).

Nemira Mountains, Nemira, on rotten woods (Barabaș V. 1974:31); Șandru, in common spruce forest, on rotten trees trunks, 1970-1977 (Mihai & Barabaș V. 1978:114,115); Nemira Mountain, 1350 m *alt.*, sub *Aneura* (Barabaș V. 1982b:65).

Bacău County, Slânic Brook, on rotten woods, 2.05-8.11.1971 (Ștefureac & Barabaș V. 1972:77).

Bârnova Mountains, Tufa Valley, PH, on rotten woods, 5.07.1998, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2307].

Bucegi Massif, ♂, ♀ - Jepi Valley towards Caraiman, 9-10.08.1903, sub *Aneura* (Radian 1915:195); Sinaia, on rotten fir tree, 08.1920, *leg.* Brândză M., *det.* Ștefureac T., sub *Aneura* (Ștefureac 1942a:3); Lăptici Peatbog, 1500 m *alt.*, 1946, sub *Aneura* (Ștefureac 1949c:691; Pop E. 1960:349; Godeanu S. 1970:45); Mălăiești Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:218).

Piatra Craiului Mountains, lower region of Bulimani Brook Valley, on rotten wood, 1000 m *alt.*, on rotten fir woods, in glade, 1100 m *alt.* (Ștefureac 1951b:260,261; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:82); Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2692] (Ștefănuț & Pop O.G. 2006:82).

Făgăraș Mountains, Cârțișoara Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:218); Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg. & det.* Ștefănuț S. (Ștefănuț 2002:190).

Alba County, Vidra, 800 m *alt.*, sub *Aneura* (Péterfi M. 1908:269; Péterfi M. 1909:97; Goia 2001:52); Morii Valley, 600 m *alt.*, 22.10.1995, Scărișoara Cave, 1340 m *alt.*, 11.08.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Scărișoara Cave, 1200 m *alt.*, 12.08.1996, ass. *Cephalozio bicuspidatae-Nowellietum curvifoliae* Philippi 1965, Lupșa, 1160 m *alt.*, 15.05.1996, ass. *Anastrepto orcadensis-Dicranodontietum denudati* Ștefur. 1941 (Goia 2000:112,115,116, Tabs.2,4,5); Arieșul Mic Basin (Goia & Schumacker 2000:91); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86); Vârciorog Valley, Iarba Rea Valley, Cepelor Valley, Arieșul Mare – upstream Arieșeni, Ocoale, Morii Valley, on rotten woods (Goia 2001:52).

Cluj County, Făget (Boros 1958:3,7); Scoborișul Mountain, Dobrin, *leg. & det.* Györfy I. & Péterfi M. (Boros & Vajda 1967:218; Ștefureac 1975b:313).

***Riccardia multifida* (L.) Gray**

Syn.:

- *Aneura multifida* (L.) Dumort.
- *Aneura multifida* var. *ambrosioides* Nees
- *Jungermannia multifida* L.
- *Riccardia multifida* var. *ambrosioides* (Nees) Carrington & Pearson

First citation for Romania: *without locality*, sub *Jungermannia*, Baumgarten 1846.

Romania (Müller 1954:500; Schuster 1992a:621).

Moldova, sub *Aneura* (Papp 1943:652; Ștefureac & al. 1973:141).

Muntenia (Mohan 1988b:113).

Transylvania (Pax 1908:128).

Ecology: epigeaic, truficolous, acidophytic, hygro-hydrophytic, sciophytic; circumpolar; Hth.

Herbaria and Exsiccate: BUCA, PHHM, SIB, FRE

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Ba, Ro, Bg, Al, Ct, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Ca, Az, Ma, Cn.

Distribution in Romania:

Suceava County, the bog from Neagra Broștenilor Meadow, ass. *Cratoneuretum filicino-commutati* (Kuhn 1937) Oberd. 1977 (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981b:417, Tab.2; Lungu 1981c:90).

Bârgău Mountains, Muncel Peak, Măgura Calului, Piatra Fântânele, 1983-1984 (Mohan & Hodoroga 1986:210).

Neamț County, Agapia, sub *Aneura* (Radian 1915:195); Neamț Monastery, on sandy-clayey soil, 07-08.1921-1923, *leg.* Brândză M., *det.* Ștefureac T., sub *Aneura* (Ștefureac 1942a:3).

Bacău County, Coasei Mountain, on Zboina, 25.07.1914, *leg.* Săvulescu T., sub *Aneura* (Radian 1915:195).

Ciucăș Mountains, Caprei Brook Valley, Tigăile Mici Culm, Roșu Mountain (Mohan 1990b:45).

Brașov County, Predeal, 18.08.1902, *leg.* Radian C.Ș., sub *Aneura* (Radian 1915:195); Prejmer (Ștefureac 1979d:118); Hărman Peatbog, sub *Aneura* (Ularu & Heltmann 1994:153, Tab.6).

Gârbova Massif, Azuga Valley, on soil, 1967-1970 (Lungu & Ștefureac 1970:5).

Prahova County, Doftana Valley [PHHM 7776/3873](Mohan 1971a:7; Mohan 1971b:45; Mohan 1990a:24).

Bucegi Massif, Piatra Arsă, *leg.* & *det.* Baumgarten J.C.G., sub *Jungermannia* [SIB HF 1500] (Fuss 1878:652; Drăgulescu 1983:57); Jepi Valley at Bușteni and towards Caraiman, 9,10.08.1903, sub *Aneura* (Radian 1915:195).

Iezer-Păpușa Mountains, Dâmbovița Valley (Mohan 1990a:24).

Argeș County, Boteni, 06.1891, *leg.* Vlădescu M., sub *Aneura* (Radian 1915:195).

Făgăraș Depression, Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 10.2001, *leg.* & *det.* Ștefănuț S. [BUCA B3079], 8.10.2003, *leg.* & *det.* Ștefănuț S. [BUCA B3087] (Ștefănuț 2004f:74); Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 20.11.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3592].

Cindrel Mountains, Păltiniș, 1300-1400 m *alt.* (Gündisch 1977:46; Drăgulescu 2003:8).

Retezat Mountains, at bottom of Retezat, sub *Aneura* (Simonkai 1872:66; Fuss 1878:652; Hazslinszky 1885:34); Zlătuia Brook Valley (Páll 1964a:108).

Poiana Ruscă Mountains, Luncani, Tăul Ursului, sub *Aneura* (Simonkai 1872:66; Fuss 1878:652).

Arad County, Săvârșin Brook below Calvaria Mountain, Troiaș Valley, the springs below Piatra Albă, sub *Aneura* (Simonkai 1872:66; Simonkai 1893:360; Fuss 1878:652; Hazslinszky 1885:34).

Mureș County, Sighișoara, sub *Aneura* (Schur 1866:869; Fuss 1878:652; Hazslinszky 1885:34; Höhr 1914:88).

Alba County, Valea Lungă, 24.10.1867, *leg.* & *det.* Barth J., sub *Aneura* [SIB HF 1501] (Fuss 1878:652; Hazslinszky 1885:34; Drăgulescu 1983:57); Găina Mountain at Vidra, 1000 m *alt.*, sub *Aneura* (Péterfi M. 1908:269); Morii Valley, Țoha Mică, Arieșul Mare upstream to Arieșeni, Gârda Seacă, Ocoale, Vârciorog Valley, Galbena Valley, Scărișoara Cave, Cepelor Valley, Iarba Rea Valley, Sterpă Valley, on rotten woods (Goia 2001:52); Cetățile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3835, B3870].

Cluj County, Făget Forest, 500 m *alt.*, 27.09.1920, *leg.* Borza A. & Péterfi M., sub *Aneura* [FRE 15](Borza 1921a:6; Borza & Nyárady E.I. 1940:9); Valea Lungă near Valea Drăganului Village, on wet soil, sub *Aneura* (Papp 1942a:51); Făget (Boros 1958:3,7).

Bihar County, Neagra and Băița, 800 m *alt.*, sub *Aneura* (Péterfi M. 1908:269).

***Riccardia palmata* (Hedw.) Carruth.**

Syn.:

- *Aneura palmata* (Hedw.) Dumort.
- *Jungermannia multifida* var. *palmata* (Hedw.) Gray
- *Jungermannia palmata* Hedw.

First citation for Romania: Simonkai 1872.

Moldova, sub *Aneura* (Papp 1943:652; Ștefureac & al. 1973:141).

Muntenia (Mohan 1988b:113).

Transylvania (Pax 1908:128).

Ecology: humicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hth.

Herbaria and Exsiccate: BUCA, H.A.T.R.

Distribution in Europe: No, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca, Az, Ma.

Distribution in Romania:

Maramureș County, Borșa, Secului Valley, 1100-1400 m *alt.*, Sighet, Poiana Sarampoiului Forest, 1000 m *alt.*, Mara, Runc Valley, 700-800 m *alt.*, Puzdra Mountain, 1500-1600 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:217,218); between Tocila Valley and Băiuț, common spruce forest, 600 m *alt.*, 21-23.08.1998 (Jakab 1999:55).

Rodna Mountains, Vinului Valley, 700 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:217); Pietrosul Rodnei (Ștefureac 1983g:177,178; Nădișan & Chercheș 2002:58).

Țibleș Mountains, Arsuri Peak, Țibleș Peak, Izvorul Țibleșului, 1984-1985 (Mohan 1988a:16).

Suceava County, Coșna, Panasuri Mountain, 1300 m *alt.*, sub *Aneura* (Breidler 1890a:149; Pax 1908:128); Bistrița Aurie Valley, between Iacobeni and Ciocănești, Tolovan Mountain, north-western slope of Brezuța Peak (Pascal 1969:106); Barnar Gorges (Pascal & Seghedin 1977:141); Criștișor-Neagra Broștenilor, Borcut Meadow (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:90).

Giuralău Mountain, Poiana Ițcani Reserve, 900-920 m *alt.*, 1946-1957, sub *Aneura* (Ștefureac 1969a: Tab.16); Giuralău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3941, B3962, B3972].

Rarău Mountain, Rarău, 14.05.1910, sub *Aneura* (Lilienfeldówna 1911:731); Rarău, sub *Aneura* (Papp 1925c:155); Codrul Secular Slătioara (Tarnavski 1936:285; Ștefureac & Pascal 1981:476); Codrul Secular Slătioara, sub *Aneura* (Ștefureac 1941:1153; Ștefureac 1969a: Tab.16); Rarău Peak, sub *Aneura* (Papp 1969b:188); Rarău, 1350 m *alt.*, sub *Aneura* (Ștefureac 1969a: Tab.16); Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3761].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphidum pellucidum* (Barkman 1958) Maurer 1961, ass. *Lophocolea heterophylla-Ptilidium pulcherrimum* Maurer 1961 (Ștefureac, Mihai & Pascal 1976:36, Tab.1); Muncel Peak, Măgura Calului, Piatra Fântânele, Străja Valley, Tomnatec Peak, 1983-1984 (Mohan & Hodoroga 1986:211).

Neamț County, Agapia, 31.08.1914, *leg.* Săvulescu T., sub *Aneura* (Radian 1915:195); Neamț Monastery, on rotten fir tree, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T., sub *Aneura* (Ștefureac 1942a:4).

Hășmaș Mountains, Hășmaș (Schiffner 1914:303); Hășmașul Mare (Degen 1930:975); Piatra Ascuțită, Surduc Mountain above Lacu Roșu, *leg. & det.* Felföldy L., Piatra Ascuțită (Boros & Vajda 1967:217; Bálint & Orbán 2006:474).

Harghita Mountains, Harghita Spa, 1300 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:217; Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Rotund Mountain, 1100 m *alt.*, 28.08.2001, Luci, 1050 m *alt.*, 13.08.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:470).

Harghita County, Lueta, Tolvajos Brook Valley, 800 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:217).

Nemira Mountains, Șandru, in common spruce forest, on rotten trees trunks, 1970-1977 (Mihai & Barabaș V. 1978:114,125); Nemira Mountain, 1350 m *alt.*, ass. *Dicrano scopari-Hypnetum cupressiformis* Will. 1962 (Barabaș V. 1982b:62, Tab.10).

Bacău County, Tălâmba Brook, on rotten fir tree, 1050 m *alt.* (Eftimie 1972:150).

Penteleu Massif, the left side of Cernat Valley, above the forest hut, in peatbog, on rotten wood, 11.10.1983 (Dihoru G. 1987b:94).

Buzău County, Bisoca, „Lacul Negru” (Dihoru, Wallfisch & Pîrvu 1984:5).

Ciucaș Mountains, Bratocea Mountain, 1300 m *alt.* (Boros & Vajda 1967:217); Zăgan Mountain, Bratocea Peak, Gropșoarele Peak (Mohan 1990b:38,45).

Brașov County, Predeal, sub *Aneura* (Loitlesberger 1898:196; Radian 1915:195).

Gârbova Massif, Rea Valley near Sinaia, 1000 m *alt.*, 8.07.1897, *leg. & det.* Loitlesberger K., sub *Aneura* [H.A.T.R. 33](Loitlesberger 1898:196; Radian 1915:195); Tufa Valley, PH, 5.07.1998, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2006, B2026], on woods [BUCA B2308].

Prahova County, Tătaru Mountain, on left side of Bâlbăitoarea Brook, Bâlbăitoarea Peatbog, on *Alnus glutinosa* stump, 9.07, 20.10.1981 (Dihoru G. 1984c:82).

Piatra Mare Mountain, Tamina Valley, *leg. & det.* Vajda L., Șapte Scări Waterfall, 800-1500 m *alt.* (Boros & Vajda 1967:217).

Cristianul Mare Mountain, 1000-1200 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:217).

Bucegi Massif, fer - Mălăiești Valley, sub *Aneura* (Matouschek 1905:81); Jepi Valley (Degen 1914:216); Cerbului Valley, 7.06.1896, *leg.* Moisescu N., sub *Aneura* (Radian 1915:195); Azuga in Grecului Valley, 18.08.1897, Jepi Valley at Bușteni and towards Caraiman, 9,10.08.1903, sub *Aneura* (Radian 1915:195); Bucșoiu, 1100-1400 m *alt.* (Boros & Vajda 1967:217).

Piatra Craiului Mountains, Crăpătura, 1000-1600 m *alt.*, Prăpăstiile Zărneștiului, 1000 m *alt.*, *leg. & det.* Boros Á., Plaiul Foi, 1000 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:217; Dihoru G. & al. 2003:70; Ștefănuț & Pop O.G. 2006:82); Crăpătura Pietrei Craiului, BV, on rotten wood, 45°33'49"N / 25°15'54"E, 1050 m *alt.*, 21.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2784], 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2706], 45°33'35"N / 25°15'46"E, 1250 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2737, B2758] (Ștefănuț & Pop O.G. 2006:82).

Făgăraș Depression, Lacul Tătarilor Peatbog, SB, 45°42'56"N / 24°29'07"E, 540 m *alt.*, 10.2001, *leg. & det.* Ștefănuț S. [BUCA B3080] (Ștefănuț 2004f:74).

Făgăraș Mountains, Arpășel Valley, 1000 m *alt.* (Pócs 1958:108); Cârțișoara Valley, 700-900 m *alt.* (Boros & Vajda 1967:217).

Cozia Mountain, Păușa Valley, on rotten woods, 1975-1976 (Dihoru G. 1990:53).

Cindrel Mountains, Păltiniș, 1300 m *alt.* (Gündisch 1977:46; Drăgulescu 2003:8).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526).

Retezat Mountains, towards Custura Peak (Páll 1964a:108); Zlătuia Valley, 6.09.1969, 800 m *alt.*, ass. *Brachythecio-rutabuli-Mnietum cuspidati* (Felföldy 1941) Plămadă 1982 (Plămadă 1982a:315, Tab.8; Plămadă 1993:52, Tab.2).

Domogled Mountain, Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8).

Poiana Ruscă Mountains, Luncani, Tăul Ursului, *leg. & det.* Simonkai L., sub *Aneura* (Simonkai 1872:66; Fuss 1878:652; Hazslinszky 1885:34).

Arad County, Highiș Brook, sub *Aneura* (Simonkai 1893:360).

Zarand Mountains, Highiș Valley, wet place (Csűrös M. 1978:76; Ardelean 2006:107).

Alba County, Morii Valley, on rotten wood, 600 m *alt.*, 22.10.1995, ass. *Riccardio-Nowellietum curvifoliae* Koppe 1956, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965 (Goia 1998:260,261, Tabs.9,10); Scărișoara Cave, 1340 m *alt.*, 11.08.1996, ass. *Calypogeietum trichomanis* Neumayr 1971, *Riccardio-Scapanietum umbrosae* Philippi 1965, Morii Valley, 600 m *alt.*, 22.10.1995, Vârciorog Valley, 780 m, 1340 m and 1385 m *alt.*, 3.06.1995, 13.09.1996, Cepelor Valley, 875 m *alt.*, 16.05.1996, Galbena Valley, 875 m *alt.*, 12.09.1996, Iarba Rea Valley, 950 m *alt.*, 25.08.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Galbena Valley, 780 m *alt.*, 12.09.1996, ass. *Lophocoleo-Dolichothecetum seligeri*, Scărișoara Cave, 1200 m *alt.*, 12.08.1996, ass. *Cephalozio bicuspidatae-Nowellietum curvifoliae* Philippi 1965 (Goia 2000:111-113,115,116, Tabs.1-5); Arieșul Mic Basin (Goia & Schumacker 2000:91); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89); Izvorul Ampoiului, 6.11.1997, *leg.* Șerpoi Nicoleta, *det.* Ștefănuț S. [BUCA B2561].

Vlădeasa Massif, Vlădeasa, Micău, *det.* Ștefureac T., sub *Aneura* (Resmeriță, Nemeș & Csűrös Ș. 1963:135; Resmeriță 1970a:44).

Cluj County, Southern Ciucea on Surduc Valley, sub *Aneura* (Boros 1942a:34); Southern Ciucea on Surduc Valley, 500-700 m *alt.* (Boros & Vajda 1967:217); Scoborișul Mountain, Dobrin, *leg. & det.*

Györfly I. & Péterfi M (Boros & Vajda 1967:217); Someșul Rece Valley, 700-750 m *alt.* (Boros & Vajda 1967:217).

Bihar Mountains, Padiș, in *Piceetum*, on rotten woods, 2-9.07.1961 (Páll 1963a:8); Someșul Cald Gorges (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3824].

***Riccardia* sp.**

Bucegi Massif, Lăptici Peatbog, 1470 m *alt.* (Ștefureac 1972c:100).

***Riccia bifurca* Hoffm.**

Syn.:

- *Riccia arvensis* Aust.
- *Riccia minutissima* Steph., p.p.
- *Riccia pusilla* Warnst.
- *Riccia subcrispula* Warnst.

First citation for Romania: Schur 1866.

Romania (Morariu 1956:82).

Moldova (Ștefureac & al. 1973:141).

Ecology: epigeaic, subneutrophytic, hygro-xerophytic, photophytic; cosmopolitan; Hth.

Herbaria and Exsiccate: BUCA, SIB

Distribution in Europe: No, Se, Fi, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Sa, Sc, It, Si, Hr, ?Mk, Ro, Al, Gr, Ct, Ee, Lv, Lt, Ua, Rn, Ca, Az, Ma, Cn.

Distribution in Romania:

Botoșani County, Mitoc, Prut Valley, on sandy-calvee alluvial deposits, 90 m *alt.*, 27.10.1961 (Papp, Mihai & Vițalariu 1962:150).

Tulcea County, Consul Hill, 12.06.2008, *leg. & det.* Ștefănuț S. [BUCA B3889].

Sibiu County, Sibiu [SIB *SCHUR 4609*](Schur 1866:874; Fuss 1878:650; Hazslinszky 1885:22; Gündisch 1977:45; Papp, Mihai & Vițalariu 1962:150; Drăgulescu 2003:8).

Căpățânei Mountains, Lotru Valley, Malaia Riverside Coppice, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:526,530, Pl.I, Figs.1-3; Papp, Mihai & Vițalariu 1962:150).

***Riccia canaliculata* Hoffm.**

Syn.:

- *Riccia eudichotoma* Bisch.
- *Riccia fluitans* var. *canaliculata* (Hoffm.) Roth
- *Riccia gamsiana* Lorb.
- *Riccia perennis* Steph.
- *Ricciella fluitans* var. *canaliculata* (Hoffm.) Lindenb.
- *Ricciella heyeri* Huebener ex Genth
- *Riccinia perennis* Trab.

First citation for Romania: Simonkai 1893.

Ecology: acidophytic, hydrophytic, photophytic; circumpolar; Hh. On muddy and peaty soil in the geolitoral of lakes and ponds (Dierßen 2001:248).

Distribution in Europe: No, Dk, Se, Fi, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, It, Ro, Ct, Lt, By, Ua, Rn, Rc.

Distribution in Romania:

Arad County, between Arad Fortress ditches and along Töz Brook near Cermei, sub *Ricciella fluitans* var. *canaliculata* (Simonkai 1893:359).

***Riccia cavernosa* Hoffm.**

Syn.:

- *Riccia crystallina* auct., non L. emend. Raddi
- *Riccia huebeneriana* Lindenb. var. *cavernosa* (Hoffm.) Ast
- *Riccia montagnei* Steph.
- *Riccia tenellii* Gola
- *Riccia terracianoii* Gola
- *Ricciella crystallina* (L.) Warnst.
- *Ricciella rautanenii* Steph.

First citation for Romania: *without locality*, sub *R. crystallina* L., Baumgarten 1846.

Romania (Müller 1954:424; Schuster 1992b:489).

Muntenia, sub „*Riccia cavernosa* Steph.” (Mohan 1988b:116).

Ecology: epigeaic, acidophytic, hygrophytic, photophytic; subcosmopolitan; Hth.

Herbaria and Exsiccate: SIB

Distribution in Europe: Is, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Sc, It, Hr, Ro, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Rs, Ma, Cn, Re.

Distribution in Romania:

? - **Buzău County**, Pâclele Mari, Vulcanii Noroioși, sub „*Riccia cavernosa* Steph.” (Mohan 1974; Mohan 1988b:116; Mohan 1990a:25).

† - **Bucharest**, in Dâmbovița's pools from Grozăvești, 13.10.1900, leg. E.C. Teodorescu, det. Radian S.Ș., sub *R. crystallina* L. (Radian 1901b:40; Radian 1915:189).

Sibiu County, Sibiu, sub *R. crystallina* L. [SIB SCHUR 4610](Schur 1866:874; Fuss 1878:650; Hazslinszky 1885:23; Gündisch 1977:45; Drăgulescu 2003:8).

Arad County, near Arad, in the reed plot from Gelin, sub *R. crystallina* L. (Simonkai 1893:359).

Riccia ciliata Hoffm.

Syn.:

- *Riccia affinis* Milde
- *Riccia bischoffii* var. *subtumida* Milde
- *Riccia ciliata* var. *epilosa* Warnst.
- *Riccia ciliata* var. *intumescens* Bisch.
- *Riccia dalslandica* S.W. Arnell
- *Riccia glauca* var. *ciliata* Weber
- *Riccia intumescens* (Bischl.) Underw.
- *Riccia subtumida* Milde

First citation for Romania: Simonkai 1890a.

Moldova (Ștefureac & al. 1973:141).

Dobrogea (Ștefureac, Mihai & Pascal 1970:122).

Muntenia (Mohan 1988b:116).

Ecology: epigeaic, calcicolous, xerophytic, photophytic; cosmopolitan; Hth.

Distribution in Europe: No, Se, Fi, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Me, Mk, Ro, Bg, Al, Gr, Ct, Ee, Lv, Lt, By, Ua, Rc, Ma, Cn.

Distribution in Romania:

Iași County, the salty land from Movileni, 46 m alt., on clayey-sandy soils, 21.06.1942 (Ștefureac 1947b:615,616; Ștefureac 1969a:22,24,26,56, Tabs.10,11,12).

Tulcea County, Iacobdeal, Piatra Roșie, Greci, 05.1937, incl. sub *R. intumescens* (Vlădescu A. 1939:59; Ștefureac 1947b:615; Ștefureac, Mihai & Pascal 1970:122); Cocoș Monastery, leg. Șerbănescu I., det. Ștefureac T. (Ștefureac, Mihai & Pascal 1970:122).

? - **Ciucăș Mountains**, Stâncoasă Culm, Stâni Valley Culm, Piscul Turiștilor (Mohan 1990b:46).

? - **Prahova County**, Doftana Valley between Trăistieni and Tesila, 850 m alt (Mohan 1981:99).

Giurgiu County, Căscioarele Forest, sub „*R. ciliaris*” (Șerbănescu I. 1959b:513).

Carăș-Severin County, Cerna Valley, 500-600 m alt., leg. & det. Zovik, sub *R. intumescens* (Ștefureac 1947b:615).

Alba County, Colții Trascăului (Páll 1960b:90).

Cluj County, Ciucea and Tăul Negru, sub var. *epilosa* (Péterfi M. 1908:266; Ștefureac 1947b:615; Ștefureac 1975b:313).

Bihar County, Chișirid Forest, between Băile Episcopoești and Cheriș (Simonkai 1890a:129; Hazslinszky 1885:22; Györffy 1908d:261; Ștefureac 1947b:615).

Riccia ciliifera Link ex Lindenb.

Syn.:

- *Riccia bischoffii* Huebener
- *Riccia bischoffii* var. *ciliifera*
- *Riccia ciliifera* Link. ex Lindenb. var. *pedemontana* Steph.
- *Riccia latzelii* Schiffn.
- *Riccia pedemontana* Steph.

First citation for Romania: Radian 1920.

Moldova (Ștefureac & al. 1973:141).

Dobrogea (Ștefureac, Mihai & Pascal 1970:120,122).

Ecology: epigeaic, acidophyt-basiphytic, xerophytic, photophytic; Eurasia-North Africa, subatlantic-submediterranean; Hth.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Se, Fr, Be, Lu, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Hr, Me, Ba, Mk, Ro, Bg, Al, Gr, Ua, Ma, Cn.

Distribution in Romania:

Maramureş County, Covatar Waterfall near Săpânţa, 900 m *alt.*, 15-21.06.1997 (Jakab 1999:55).

Iaşi County, the salty lands from Movileni, 46 m *alt.*, on sandy soil, 21.06.1942 (Ştefureac 1947b:613-614,616, Figs.7-10; Ştefureac 1969a:22,24,26,27,56,66, Tabs.10,12).

Măcin Mountains, at bottom of Țuțuiatu, Greci-Măcin, granitic region, 8.05.1916, *leg.* Săvulescu T., sub *R. bischoffii* (Radian 1920:73; Papp 1938:300; Vlădescu A. 1939:58; Ştefureac 1947b:613; Ştefureac, Mihai & Pascal 1970:122); Greci, 05.1937, sub *R. bischoffii*, incl. var. *ciliifera* (Vlădescu A. 1939:58; Ştefureac, Mihai & Pascal 1970:122); Pricopan Culm, *det.* Ştefureac T., sub var. *pedemontanum* (Andrei & Popescu A. 1967:261); Țuțuiatu Peak (Mihai & Pascal 1968:112; Ştefureac, Mihai & Pascal 1970:122); Măcin, Cheia Hill, *leg. & det.* Ştefureac T., sub var. *pedemontanum* (Ştefureac, Mihai & Pascal 1970:122).

Tulcea County, Iacobdeal, 27.03.1937, 5.05.1937, Piatra Roşie, 4.05.1937, Consul, 6.05.1937, sub *R. bischoffii*, incl. var. *ciliifera* (Vlădescu A. 1939:58; Ştefureac 1947b:614; Ştefureac, Mihai & Pascal 1970:122); Consul Hill, 12.06.2008, *leg. & det.* Ştefănuţ S. [BUCA B3887, B3891].

Constanţa County, Târguşor-Medgidia, *leg.* Zahariadi C., *det.* Ştefureac T. (Ştefureac, Mihai & Pascal 1970:122).

Cozia Mountain, on soil, 1975-1976 (Dihoru G. 1990:53).

Caraş-Severin County, Cerna Valley, 500-600 m *alt.*, *leg. & det.* Zovik, sub *R. bischoffii*, incl. var. *ciliifera* (Ştefureac 1947b:613-614).

Codru-Moma Mountains, Teuz Valley, Pâncoaia, Măgura Diecilor, on soil (Mohan 1996:50; Ardelean 2006:109).

Riccia crystallina L. emend. Raddi

Syn.:

- *Riccia pellucida* Hoffm.
- *Riccia negrii* Gola
- *Riccia plana* Taylor
- *Ricciella crystallina* Warnst.

First citation for Romania: Ştefureac & Mihai 1967.

Romania (Frey & al. 2006:31).

Ecology: epigeic, acidophytic-subneutrophytic, hygrophytic, photophytic; cosmopolitan, submediterranean; Hth.

Distribution in Europe: Br, Fr, At, Hu, Pt, Es, Bl, Sc, It, Hr, Sb, Ro, Bg, Al, Gr, Ct, Lv, Lt, Rc, Re, Az, Ma, Cn.

Distribution in Romania:

Caraş Severin County, Ostrovul Modova Veche, on sandy soil, 24.07.1962 (Ştefureac & Mihai 1967:14).

Riccia fluitans L.

Syn.:

- *Riccia canaliculata* var. *fluitans* (L.) Lindb.
- *Riccia centrifuda* Arnell
- *Riccia fluitans* fo. *major*
- *Riccia fluitans* fo. *robusta* Papp
- *Riccia fluitans* var. *terrestris* T. Jensen
- *Ricciella fluitans* (L.) A. Braun

First citation for Romania: Baumgarten 1846.

Moldova, sub *Ricciella* (Papp 1943:649,650).

Dobrogea (Ştefureac, Mihai & Pascal 1970:122).

Muntenia (Mohan 1988b:117).

Ecology: floating at the surface of water or on mud flats and peat, acidophytic-subneutrophytic, hydrophytic, photophytic; cosmopolitan; Hh. Characteristic to *Ricciatum fluitantis* Slavnić 1956.

Herbaria and Exsiccate: PHHM, SIB, BRHE, FRE

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Rs.

Distribution in Romania:

Botoşani County, Alba Forest, on edges of pools, on soil, Oroftiana Forest, in water and some small pools (Mihai 1968c:391,397; Mihai 1969d:18); Botoşani, ass. *Ricciatum fluitantis* (Navrotescu & Mititelu 2003:29).

Iaşi County, Repedea-Bârnova Forest Massif, in fen, sub *Ricciella fluitans*, in water, incl. sub fo. *robusta*, on silt (Papp 1924a:100; Papp 1926a:11,40,41, Figs.1,2; Papp 1926b:374; Papp 1929:555,557,

558,560; Papp 1939a:358; Papp & Eftimie 1963:108,111,112); Repedea-Bârnova Forest Massif, in forest, in pools, 1975-1976, ass. *Ricciatum fluitantis* (Mihai 1977a:139, Tab.3); Bârnova Forest, sub *Ricciella fluitans* fo. *robusta* (Papp 1935a:431; Papp 1955; Ștefureac & al. 1973:141); Totoești, incl. sub fo. *major* (Papp 1959b:566); Stânca-Comarna, Victoria and Bosia, along Prut Meadow, ass. *Ricciatum fluitantis* (Mititelu & Barabaș N. 1972a:191; Mititelu & Barabaș N. 1975c:227; Mititelu & Barabaș N. 1975c:227,258, Tab.7; Mititelu & al. 1995:123; Navrotescu & Mititelu 2003:29); Domnița-Voinești Forest, Voinești and Țibana Commune, on marshy soil, edge of pool (Mititelu & Chifu 1978:378,394); Poienița Lake, south-east to Dobrovăț, 330 m alt., 22.05.1970, ass. *Ricciatum fluitantis*, ass. *Caricetum elatae* W. Koch 1926, ass. *Calamagrosti-Salicetum cineræe* Soó & Zólyomi 1955 (Dobrescu 1978:12,Tab.1; Dobrescu 1981:384,387,390, Tab.11; Mititelu & al. 1995:123); Humosu Natural Reserve, ass. *Ricciatum fluitantis* (Mihai 1980:8; Mihai 1983c:357, Tab.9).

Neamț County, Peste Recea Forest, sub fo. *robusta* (Papp 1955; Ștefureac & al. 1973:141); Peste-Recea, incl. sub fo. *major* (Papp 1959b:566); Peste Recea Forest, west to Tîmpești and Leka Villages, Războieni Commune, at confluence of Șipot with Recea, in fens, beech-hornbeam mixed forest, 360 m alt., 15.07.1948 [FRE 3045b; PHHM 6207708] (Papp 1960a:120; Borza, Gergely & Rațiu O. 1968:522); Hrișcani, south to Vad Village, Dragomirești Commune, in fens, beech-hornbeam mixed forest, sub *Ricciella* (Papp 1960a:120).

Vaslui County, ? - Bârzești, ass. *Ricciatum fluitantis* (Dobrescu 1970:336); Tăbălăești, in pools, 1966-1969 (Plămadă & Vițalariu 1971:165); Cârja, ass. *Salvinio-Spirodeletum* Slavnič 1956, Balta Focșei, ass. *Lemno-Utricularietum* Soó 1938, Prundu-Berezeni, Tufa-Berezeni, Balta Mare-Fălciu, Cârja, Mața-Cârja, Maicăș-Vlădești, Târzii, Vetrișoia (Mititelu 1971:822; Ștefureac & al. 1973:141; Mititelu 1975:130; Mititelu & Barabaș N. 1975c:227,258, Tab.7; Navrotescu & Mititelu 2003:29).

Bacău County, Seaca Forest, ass. *Ricciatum fluitantis*, det. Mihai G. (Mititelu, Barabaș N. & al. 1968:135,148,169; Ștefureac & al. 1973:140; Costică 1995:252); Borșani-Coțofenești, the lake from Chetriș Forest, ass. *Ricciatum fluitantis* (Mititelu & Barabaș N. 1971a:792; Mititelu & Barabaș N. 1971b; Dobrescu & Kovács 1972:370; Ștefureac & al. 1973:140; Mititelu & Barabaș N. 1975b:216); Slobozia-Onești, 200 m alt., ass. *Lemnetum minoris* Oberd. 1957 (Barabaș N. 1974:99); Mărgineni, in the lake from Seaca Forest, ass. *Ricciatum fluitantis* (Mititelu & Barabaș N. 1975a:5,10, Tab.1); Vișoara – Tg. Trotuș (Mititelu & Barabaș N. 1975b:216); *without locality*, ass. *Potametum natantis* Soó 1927 (Mititelu & Barabaș N. 1978:271).

Vrancea County, Adjud (Mititelu & Barabaș N. 1975b:216).

Galați County, Vlădești in Balta Maicăș, 1972-1973, ass. *Ricciatum fluitantis* Slavnič 1956 (Mititelu & Barabaș N. 1973:352; Navrotescu & Mititelu 2003:29).

Tulcea County, Danube Delta, frequent, *leg.* & *det.* Ștefureac T. (Ștefureac, Mihai & Pascal 1970:122); Danube Delta (Godeanu M. & Manikovschi 1972:396,397).

Constanța County, Cochirleni Lake, ass. *Riccio-Azolletum carolinianae* Nedelcu & al. 1986, ass. *Ricciatum fluitantis* Slavnič 1956, ass. *Lemno-Azolletum carolinianae* Nedelcu 1964, ass. *Lemno-Salvinietum natantis* Miyawaki & Tx. 1960, ass. *Lemnetum minoris* (Oberd. 1957) Müller & Görs 1960, ass. *Lemno-Utricularietum* Soó 1928, ass. *Najadetum marinae* (Oberd. 1957) Fukarek 1961, ass. *Nymphaetum albo-lutae* nowinski 1920 *nymphaetosum* V. Kárpáti 1963, ass. *Trapo-Nymphoidetum* Oberd. 1957, ass. *Nymphoidetum peltatae* (All. 1922) Oberd. & Müller 1960 (Nedelcu & al. 1986:85-87,89, Tabs.1-3; Sanda, Coldea & Popescu A. 1994:9, Tab.1; Sanda, Popescu A. & Nedelcu 1997:62).

Prahova County, Doftana Valley - Paltinu Lake [PHHM 7778/3873](Mohan 1971a:7; Mohan 1971b:45).

Brașov County, Rupea, *leg.* & *det.* Baumgarten J.C.G. [SIB HF 1475] (Baumgarten 1846:236; Schur 1866:874; Fuss 1878:650; Drăgulescu 1983:57); Brașov-Bartolomeu, *leg.* & *det.* Bielz J. [SIB HF 1476, HS 43325] (Schur 1866:874; Fuss 1878:650; Drăgulescu 1983:57); Fortyogó (Gesprengberg) Bog, *leg.* & *det.* Moesz G. (Prodan 1939:335).

Ifov County, Căldărușani Lake near Hermitage, 20.04.1901, *leg.* Teodorescu E.C., *det.* Radian S.Ș., the pool between Ciolpani and Țigănești Monastery, 4.05.1901, *leg.* Teodorescu E.C., *det.* Radian S.Ș. (Radian 1901b:40; Radian 1915:189); Periș, in forest, in pools, 29.05.1903 (Radian 1915:189); Periș, pools near railway, 17.05.1915 (Radian 1920:74); Chitila, 09.1912, *leg.* Brândză M. (Radian 1920:74); Căldărușani Lake, 1956 (Salmen & Ruemmele 1960:140); Căldărușani Lake, 1959 (Antonescu & Udrescu 1961:152); Mogoșoaia Lake, frequent, ass. *Ricciatum fluitantis* (Nedelcu 1969:235,236, Tab.1; Nedelcu 1971:195); Căldărușani Lake, ass. *Ricciatum fluitantis* (Nedelcu 1972:537,544, 549,555,

Tabs.1,8); Mogoșoaia and Căldărușani, ass. *Ricciatum fluitantis* (Popescu A. & al. 1984:174,182,369,371, 372,383, Tabs.2,5,8,9,28; Sanda, Coldea & Popescu A. 1994:9, Tab.1); Snagov Lake, Cernica Lake (Mohan 1990a:25); ! - Chitila, 2007, *leg.* Paucă-Comănescu Mihaela, *det.* Ștefănuț S.

Bucharest, † - in the pools of Dâmbovița River from Ciurel and Grozăvești, 13.10.1900, *leg.* Teodorescu E.C. (Radian 1901b:40; Radian 1915:189); in the pools along Sabar Valley between Odăi and Măgurele, 28.10.1900, *leg.* Teodorescu E.C., *det.* Radian S.Ș. (Radian 1901b:40; Radian 1915:189).

Giurgiu County, Căscioareanca Forest near Malu-Spart, 21.05.1903, *leg.* Teodorescu E.C., *det.* Radian S.Ș. (Radian 1915:189); s - Comana, marshy place, 1968-1969 (Ștefureac & Mohan 1970a:352; Mohan 1990a:25); Flosecului Valley, between Comana and Vlad Țepeș, ass. *Lemnetum minoris*, *Wolffietum arrhizae* Miy. & Tx. 1960, ass. *Mentheto-Sietum angustifoliae* Nedelcu 1973 (Nedelcu 1973:134,139,142, Tabs.1,2,5); Comana Lake (Mohan 1990a:25).

Sibiu County, Sibiu [SIB *SCHUR 4611*](Schur 1866:874; Fuss 1878:650; Gündisch 1977:45; Drăgulescu 2003:8); Bradu, Racovița (Fuss 1878:650; Drăgulescu 2003:8); Sibiu, 420 m *alt.* (Gündisch 1977:45; Drăgulescu 2003:8).

Gorj County, Steic, in pools with *Thypha angustifolia*, in ass. *Ricciatum fluitantis* (Costache 2002:55).

Timiș County, Lugoj, Oloșagului Street, the Lake from Căramidăria Bartoș, 13.08.1965, sub *Ricciella*, ass. *Lemno-Utricularietum* Soó 1928 (Boșcaiu 1966:71).

Alba County, Valea Lungă, *leg.* & *det.* Barth J. [SIB *HF 1477*](Fuss 1878:650; Barth 1880:121; Borza & Lupșa 1964:150; Drăgulescu 1983:57).

Cluj County, Sălicea, Tăul Mare, 600 m *alt.*, 8.11.1914, *leg.* Györfy I. & Péterfi M. [BRHE 1](Györfy & Péterfi M. 1916:18; Boros 1958:7; Pop E.1960:60); Turda, Băile Sărate (Todor 1947:41); Făget (Boros 1958:3,7); Chintău, Deuș Lake, 480 m *alt.*, 6.07.1939, *leg.* & *det.* Nyárady E.I. & Péterfi Ș., *rev.* Ștefureac T. [FRE 3045a; PHHM 6207636, 6207637](Nyárady E.I. 1941:5; Boros 1958:7; Borza, Gergely & Rațiu O. 1968:522).

Bihor County, Tărian (Simonkai 1890a:129); Salonta, Corhana Channel, Șerpilor Lake, Lacul cu Stuf, Rădvani Fishery, the canals around Marțihaz Village, Cefa, ass. *Lemneto-Utricularietum*, ass. *Salvinieto-Spirodeletum*, ass. *Ceratophylleto-Hydrocharetum*, ass. *Potameto-Ceratophylletum*, ass. *Nymphaeetum albo-luteae*, ass. *Elatini-Lindernietum pyxidariae* (Pop I. 1962:196,197,199-202,205, Tabs.1-5,7; Pop I. 1968:69,123, Tabs.16,18-24).

Satu Mare County, Livada Commune, ass. *Hydrochari-Stratiotetum* (Langendock 1935) Westhoff 1942 *ricciatosum fluitantis* Gergely, Rațiu O. & Moldovan 1977 (Gergely, Rațiu O. & Moldovan I. 1977:23, Tab.3; Karácsonyi 1995:141); Livada Commune, in canal (Gergely, Rațiu O. & Moldovan I. 1977:23, Tab.4).

Riccia frostii Austin

Syn.:

- *Riccia beckeriana* Steph.
- *Riccia frostii* Austin fo. *major* Papp, Mihai & Vițalaru
- *Riccia microspora* Steph.
- *Riccia palaestina* S.W. Arnell
- *Riccia watsoni* Austin

First citation for Romania: Papp, Mihai & Vițalaru 1962.

Moldova (Ștefureac & al. 1973:141).

Romania, chorology (Ștefănuț 2003b:238, Fig.6);

Ecology: epigeaic, acidophytic, hygrophytic, photophytic; circumpolar; Hth.

Distribution in Europe: At, Hu, Es, It, Hr, Sb, Ro, Ua, Re, Rs.

Distribution in Romania:

Botoșani County, Mitoc, Prut Valley, on sandy-calvee alluvial deposits, 90 m *alt.*, 27.10.1961 (Papp, Mihai & Vițalaru 1962:147,148, Fig.1; Ștefănuț 2003b:235, Fig.6); Mitoc, Prut Valley, on sandy-calvee alluvial deposits, 90 m *alt.*, 27.10.1961, sub fo. *major* (Papp, Mihai & Vițalaru 1962:148, Fig.2; Ștefureac 1978d:161; Ștefănuț 2003b:235, Fig.6).

Caraș Severin County, Ostrovul Modova Veche, on sandy soil, 24.07.1962 (Ștefureac & Mihai 1967:14; Ștefănuț 2003b:235, Fig.6).

Riccia glauca* L. var. *glauca

Syn.:

- *Riccia glauca* L. fo. *major* Lindb.
- *Riccia maior* Roth
- *Riccia ruppiensis* Warnst.
- *Riccia venosa* Roth

First citation for Romania: Baumgarten 1846.

Romania (Müller 1954:471).

Moldova (Ştefureac & al. 1973:141).

Dobrogea (Ştefureac, Mihai & Pascal 1970:122).

Muntenia (Mohan 1988b:117).

Transylvania (Hazslinszky 1885:21).

Banat (Hazslinszky 1885:21).

Ecology: epigeaic, acidophytic, hygrophytic, photophytic; circumpolar; Hth.

Herbaria and Exsiccate: PHHM, SIB

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Ba, Ro, Bg, Al, Gr, Ct, Ee, Lv, Lt, By, Md, Ua, Rn, Rw, Rc, Re, ?Rs, Az, Ma, Cn.

Distribution in Romania:

Suceava County, Suceava and in vicinity (Knauer 1863; Ştefureac & Pascal 1981:476).

Iaşi County, the salty lands from Movileni, 46 m *alt.*, on sandy soil, 21.06.1942 (Ştefureac 1947b:615-617; Ştefureac 1969a:22,24,27,56, Tabs.6,10).

Neamţ County, Tâmpeshti, Războieni Commune, in forest, on clayey soil, in stubble field, incl. fo. *major* (Papp 1959b:563; Papp 1960a:120; Ştefureac & al. 1973:141).

Tulcea County, Iacobdeal, Piatra Roşie, Consul, Greci, 05.1937 (Vlădescu A. 1939:59; Ştefureac, Mihai & Pascal 1970:122).

Constanţa County, Târguşor-Medgidia, *leg.* Zahariadi C., *det.* Ştefureac T. (Ştefureac, Mihai & Pascal 1970:122).

Ciucaş Mountains, Capra Brook Valley, Chiruşca Mountain, Piscul Gropşoarele (Mohan 1990b:46).

Prahova County, Doftana Valley [PHHM 7779/3873](Mohan 1971a:7; Mohan 1971b:45; Mohan 1990a:26); Teleajen Valley, Negraş Valley (Mohan 1990a:26).

Braşov County, Rupea (Baumgarten 1846:235,236; Schur 1866:874; Fuss 1878:650).

Giurgiu County, *fer* - Satu Nou, 30.04.1900, *leg.* Teodorescu E.C., *det.* Radian S.Ş. (Radian 1901b:40; Radian 1915:189; Vlădescu A. 1939:59).

Iezer-Păpuşa Mountains, Dâmboviţa Valley (Mohan 1990a:26).

Sibiu County, Agnita (Baumgarten 1846:235,236; Schur 1866:874; Fuss 1878:650; Drăgulescu 2003:8); Sibiu [SIB *SCHUR* 4612](Schur 1866:874; Fuss 1878:650; Gündisch 1977:45; Drăgulescu 2003:8); Gura Râului, 500 m *alt.* (Gündisch 1977:45; Drăgulescu 2003:8).

Căpăţanei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ştefureac, Popescu & Lungu 1955:526).

Retezat Mountains, Retezat (Simonkai 1872:65; Schur 1866:874; Fuss 1878:650).

Hunedoara County, Baia de Criş, 320 m *alt.* (Péterfi M. 1908:266).

Caraş-Severin County, Voislova (Simonkai 1872:65; Schur 1866:874; Fuss 1878:650).

Poiana Ruscă Mountains, Rusca Montană (Pančić 1861:94).

Arad County, Radna (Simonkai 1872:65); Şoimoş Valley and Şoimoş Fortress Hill, in Mureş's willows between Mândruloc and Glogovăţ, near Arad (Simonkai 1893:359; Schur 1866:874; Fuss 1878:650; Vlădescu A. 1939:59).

Codru-Moma Mountains, Valea Lungă, Măgura Diecilor, on soil (Mohan 1996:50; Ardelean 2006:109).

Alba County, Galda de Sus, *leg.* & *det.* Barth J. (Schur 1866:874; Fuss 1878:650); Valea Lungă, 16.03.1868, *leg.* & *det.* Barth J. [SIB *HF* 1468](Schur 1866:874; Fuss 1878:650; Borza & Luşca 1964:150; Drăgulescu 1983:57); Piatra Ceţii, Trascău Mountains, 3.07.1868 (Barth 1868:141).

Cluj County, Feleac Hill (Györffy 1924b:40; Boros 1958:7); Southern Ciucea on Surduc Valley, 330 m *alt.* (Péterfi M. 1908:266; Boros 1942a:34); at bottom of Feleac Hill, Craiului Hill (Boros 1958:7; Plămadă 1969:170).

Bihar County, Felix Spa (Simonkai 1876; Borbas 1879:262).

var. *ciliaris* Warnst.

Syn.:

– *Riccia glauca* var. *subinermis* (Lindb.) Warnst.

– *Riccia subinermis* Lindb.

First citation for Romania: Radian 1915.

Distribution in Europe: No, Se, Fi, Br, Fr, De, Po, Ch, At, Es, Co, Sa, Ro, Gr, Ua.

Distribution in Romania:

Giurgiu County, *fer* – Căscioarele Forest near Malu-Spart, 21.05.1903, *leg.* Teodorescu E.C., *det.* Radian S.Ș., sub var. *subinermis* (Radian 1915:189; Müller 1954:471).

Căpățânei Mountains, Lotru Valley, Malaia Riverside Coppice, 9-15.09.1952, sub var. *subinermis* (Ștefureac, Popescu & Lungu 1955:526,530).

***Riccia gougetiana* Durieu et Mont.**

Syn.:

– *Riccia bischoffii* Huebener var. *maxima* Levier & Jack

– *Riccia donellii* Austin

– *Riccia gougetiana* Durieu et Mont. var. *erinacea* Schifffn.

– *Riccia levieri* Jack

– *Riccia zachariae* Levier ex. Müll. Frib.

First citation for Romania: Ștefureac 1947b.

Moldova (Ștefureac & al. 1973:141).

Ecology: epigaeic, indifferent, xerophytic, photophytic; circumpolar; submediterranean; Hth.

Distribution in Europe: Fr, De, Ch, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Hr, Ba, Mk, Ro, Bg, Gr, Ct, Ua, Ma, Cn.

Distribution in Romania:

Iași County, the salty lands from Movileni, 46 m *alt.*, on wet soils, 21.06.1942 (Ștefureac 1947b:614-617, Figs.1-6; Ștefureac 1969a:22,24,26,27,56, Fig.3, Tab.10).

Caras-Severin County, Cerna Valley, *leg. & det.* Zovik, sub var. *erinacea* (Ștefureac 1947b:613-614).

***Riccia papillosa* Moris**

Syn.:

– *Riccia papillosa* var. *pseudopapillosa* (Levier) Gams

– *Riccia pseudopapillosa* Levier

– *Riccia setosa* F.A. Müll.

First citation for Romania: Degen 1894.

Moldova (Ștefureac & al. 1973:141).

Ecology: epigaeic, calcicolous, xerophytic, photophytic; submediterranean; Hth.

Distribution in Europe: Fr, At, Cz, Sk, Hu, Pt, Es, Sa, Sc, It, Hr, Me, Ba, Ro, Bg, Al, Gr, Ct, Ua, Cn.

Distribution in Romania:

Botoșani County, Mitoc, Prut Valley, on sandy-calvee alluvial deposits, 90 m *alt.*, 27.10.1961, sub var. *pseudopapillosa* (Papp, Mihai & Vițalariu 1962:149, Figs.3,4; Mihai 1962:278; Ștefureac & al. 1973:141).

Brașov County, Cetății (Lempeș) Hill - La Coastă, on sandy soil, 05.1961 (Mihai 1962:278).

Arad County, Ineu, *leg.* Simonkai L. (Degen 1894:172; Boros 1940a:241; Boros 1942h:40); Corhani, Chișineu Criș, *leg.* Simonkai L. (Müller 1906-1911:164).

Riccia sorocarpa* Bisch. var. *sorocarpa

Syn.:

– *Riccia epicarpa* Wallr. ex Gottsche et al.

– *Riccia lindenbergiana* Saut., p.p.

– *Riccia minima* L.

– *Riccia sorocarpa* var. *nana* Kern.

First citation for Romania: Schur 1866.

Moldova (Ștefureac & al. 1973:141).

Dobrogea (Ștefureac, Mihai & Pascal 1970:122).

Muntenia, incl. var. *nana* (Mohan 1988b:117).

Ecology: epigaeic, indifferent, meso-xerophytic, photophytic; circumpolar; Hth.

Herbaria and Exsiccate: BUCA, PHHM

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Gr, Ct, Ee, Lv, Lt, By, Ua, Cm, Rn, Rw, Rc, Re, ?Rs, Az, Ma, Cn.

Distribution in Romania:

Botoșani County, Mitoc, Prut Valley, on sandy-calvee alluvial deposits, 90 m *alt.*, 27.10.1961, sub var. *nana* (Papp, Mihai & Vițalaru 1962:150).

Iași County, the salty lands from Movileni, 46 m *alt.*, on clayey-sandy soil, 21.06.1942 (Ștefureac 1947b:615-617; Ștefureac 1969a:22,24,26,56, Tabs.10,12); Movileni, Românești (Papp, Mihai & Vițalaru 1962:150).

Tulcea County, Iacobdeal, Piatra Roșie, Consul, Greci, 05.1937 (Vlădescu A. 1939:59; Ștefureac, Mihai & Pascal 1970:122).

Prahova County, Doftana Valley [PHHM 7780/3873](Mohan 1971a:7; Mohan 1971b:45).

Bucegi Massif, fer - Cerbului Valley towards Omu, 2300 m *alt.*, 27.08.1937, *leg. & det.* Vlădescu A. (Vlădescu A. 1939:59; Ștefureac 1951b:254; Ștefureac 1963b:86,102, Fig.1); Brâna de Mijloc a Craimanului, sub var. *nana* (Ștefureac 1951b:254; Ștefureac 1963b:86,87,102; Ștefureac 1972c:104; Ștefureac 1986f:190); Caraiman Valley and Brâna Caraimanului, Cerbului Valley, Dorului Valley, La Lacuri, Colții lui Barbeș, 1943-1950 (Ștefureac 1951b:254; Ștefureac 1963b:86,102, Fig.1); Bucegi, 18.07.1947, *leg.* Ștefureac T., *det.* Ștefănuț S. [BUCA B2944].

Piatra Craiului Mountains, Curmătura, fixet scree, 1640 m *alt.*, 17.07.1948, at bottom of Gruitul Lung Hill (Plaiul Foi) from Bârsa Groșetului Valley, on soil, on micaschist and gritstone, 830 m *alt.*, 13.07.1948 (Ștefureac 1951b:253-254; Ștefureac 1963b:87,102; Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:82).

Făgăraș Mountains, Arpaș Mountain, sub *R. minima* (Schur 1866:874; Fuss 1878:650; Hazslinszky 1885:22; Degen 1894:174; Drăgulescu 2003:8).

Giurgiu County, s - Comana, on wet soil, 1968-1969 (Ștefureac & Mohan 1970a:352,361).

Retezat Mountains, Râul Mare Valley (Páll 1964a:108).

Mehedinți County, Eșelnița Valley, on wet sandy soil, 1966 (Ștefureac & Mihai 1970:500).

Codru-Moma Mountains, Ursului Hill, Pleșuț (Mohan 1996:50; Ardelean 2006:110).

Bihor County, Crișul Repede Defile, on soil (Boșcaiu & Gergely 1966:103).

var. *heegii* Schiffn.

Syn.:

– *Riccia heegii* Schiffn.

First citation for Romania: Schiffner 1913a.

Transylvania, sub var. *heegii* (Müller 1954:459).

Distribution in Europe: Fr, At, Pt, Es, Sa, Sc, Ro, Ma, Cn.

Distribution in Romania:

Hășmaș Mountains, Piatra Ascuțită, 1300 m *alt.*, 26.07.1911, *leg.* Degen A., *det.* Schiffner V. (Schiffner 1913a:37; Schiffner 1913b:135-136; Degen 1930:975; Müller 1954:459).

Riccia warnstorffii Limpr. ex Warnst.

Syn.:

– *Riccia bavarica* Warnst.

– *Riccia commutata* Jack

– *Riccia glauca* var. *minima* Lindenb.

– *Riccia warnstorffii* var. *subinermis* Warnst.

First citation for Romania: Radian 1901b.

Muntenia, sub var. *subinermis* (Mohan 1988b:117).

Ecology: epigeaic, indifferent, meso-hygrophytic, photophytic; circumpolar; submediterranean; Hth.

Distribution in Europe: Se, Fr, Nl, Be, Lu, De, Po, Ch, At, Cz, Hu, Pt, Es, Sc, It, Hr, Me, Ro, Ee, Az, Ma.

Distribution in Romania:

Călărași County, Cacaletți Forest, 4.06.1900, sub var. *subinermis* (Radian 1901b:40; Radian 1915:189).

Obs. This species was wrong quoted from Stâna de Vale, Bihor County (Mohan 1998:89).

***Riccia* sp.**

Maramureș, (Ștefureac 1971f:13).

Ricciocarpos natans (L.) Corda

Syn.:

– *Riccia capillata* Schmidel

– *Riccia natans* L.

– *Riccia velutina* Wilson

– *Ricciocarpos vetulinus* (Wilson) Steph.

First citation for Romania: Baumgarten 1846.

Romania, *without locality*, sub *Riccia* (Baumgarten 1846:236; Schur 1866:874; Fuss 1878:650; Müller 1954:415).

Moldova (Papp 1943:650; Ștefureac & al. 1973:140).

Dobrogea (Ștefureac, Mihai & Pascal 1970:122).

Muntenia (Mohan 1988b:117).

Banat, *leg. & det.* Pokorny A. (Hazslinszky 1885:23).

Ecology: aquatic, epigeaic, acidophytic, hydrophytic, photo-sciophytic; cosmopolitan; Hh.

Herbaria and Exsiccate: SIB, FRE

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Sb, Me, Ba, Mk, Ro, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Rs, Ka.

Distribution in Romania:

Botoșani County, Bucecea, *leg. & det.* Țopa E. (Prodan 1939:335); Cișmănești, on water, 150-160 m *alt.* (Mihai 1968c:391,397; Mihai 1969d:18; Mihai 1972a: Tabs.1,3).

Suceava County, Suceava and in vicinity (Knauer 1863; Ștefureac & Pascal 1981:476).

Bistrița-Năsăud County, „Tăul de la Alac” Peatbog at 2 km south to Zagra Commune, *det.* Plămadă E. (Lupșa 1972a:364).

Iași County, Ungheni, in pools, sub *Riccia natans* (Prodan 1914a:250,254; Radian 1915:190; Papp 1931a:217) – *Obs.* In Ștefureac’s paper, this area is quoted as URSS’s locality, at present in Moldova Republic (Ștefureac 1971b:16); Cristești (Papp 1931a:218); Jijia Valley (Papp 1939a:349); Cristești, 40 m *alt.*, 12.07.1937, *leg.* Burduja C., *det.* Papp C. [FRE 1123b](Borza 1940:70; Borza & Nyárady E.I. 1940:12); ? - Prut Meadow at Stâncă-Comarna, Victoria and Bosia (Mititelu & Barabaș N. 1975c:227,258, Tab.7).

Vaslui County, Târzii and Oltenești, in pools, 1966-1969 (Plămadă & Vițalariu 1971:165; Mititelu 1975:130); ? – Prundu-Berezeni, Tufa-Berezeni, Cârja, Mața-Cârja, Maicăș-Vlădești, Balta Mare-Fălciu, ass. *Riccietum fluitantis* Slavnič 1956 (Mititelu & Barabaș N. 1975c:227,258, Tab.7).

Bacău County, Seacă Valley, ass. *Riccietum fluitantis*, *det.* Mihai G. (Mititelu, Barabaș N. & al. 1968:135,148,169; Ștefureac & al. 1973:140; Costică 1995:252); Mărgineni, in the Lake from Seaca Forest, ass. *Riccietum fluitantis*, Lespezi-Gârleni in Lilioci Lake, Bacău at Șoț, Schineni-Săucești, ass. *Mryiophyllo-Potametum* Soó 1934 (Mititelu & Barabaș N. 1975a:10, Tab.1); in the Lake from Chetriș Forest at Borșani-Coțofenești, ass. *Riccietum fluitantis*, Viișoara – Târgu Trotuș (Mititelu & Barabaș N. 1975b:216); *without locality*, ass. *Potametum natantis* Soó 1927 (Mititelu & Barabaș N. 1978:271).

Vrancea County, Adjud (Mititelu & Barabaș N. 1975b:216).

Constanța County, Hagieni Reserve, towards Cascaia, 9.10.1965 (Cristurean & Ionescu-Țeculescu 1970:247,275,276, Tab.8; Ștefureac, Mihai & Pascal 1970:122; Fuhn & Cristurean 1977:106); Cochirleni Lake, ass. *Riccio-Azolletum carolinianae* Nedelcu & al. 1986, ass. *Riccietum fluitantis*, ass. *Lemno-Salvinietum natantis* Miyawaki & Tx. 1960 (Nedelcu & al. 1986:85-87, Tabs.1,2; Sanda, Coldea & Popescu A. 1994:9, Tab.1; Sanda, Popescu A. & Nedelcu 1997:62).

Ifov County, near Pasărea Monastery, in pool, 18.06.1900 (Radian 1901b:40; Radian 1915:190), *fer* - Chitila, in Colentina’s pool, 31.05.1900, 13.05.1912 (Radian 1915:190; Radian 1920:74); Cernica Lake, Snagov Lake (Mohan 1990a:26).

Giurgiu County, Comana Lake (Mohan 1990a:26).

Sibiu County, Bradu, sub *Riccia* (Fuss 1878:650; Hazslinszky 1885:23; Drăgulescu 2003:8).

Poiana Ruscă Mountains, Rusca Montană, sub *Riccia* (Pančić 1861:94).

Arad County, Nyék Fen between Șimand and Sântana (Simonkai 1893:359); Moneasa (Ardelean 2006:110).

Timiș County, Timișoara, Bega, 90 m *alt.*, 4.09.1942, *leg.* Bujorean G. & Bănărescu N., *det.* Tarnavski I. [FRE 1123b] (Borza 1943:63).

Alba County, Valea Lungă, in running water, 19.09.1867, *leg. & det.* Barth J., sub *Riccia* [SIB HF 1470](Fuss 1878:650; Barth 1880:121; Borza & Lupșa 1964:150; Drăgulescu 1983:57); Teiuș (Barth 1880:121).

Bihor County, Tărian, sub *Riccia* (Simonkai 1890a:129); Boianu Mare, *leg. & det.* Pokorny A., sub *Riccia* (Pokorny 1860:286); Salonta, the edge of canals, Lacul cu Stuf edge, Șerpilor Lake, ass. *Scirpo-Phragmitetum* W. Koch (Pop I. 1962:203,204, Tab.6; Pop I. 1968:69,123, Tab.25).

Satu Mare County, † - Ecedea Fen, 1859, *leg. & det.* Pokorny A., sub *Riccia* (Pokorny 1860:286; Pop E. 1957b:174; Pop E. 1960:144).

Sauteria alpina (Nees) Nees

Syn.:

- *Lumularia alpina* Nees

First citation for Romania: Matouschek 1905.

Romania (Zodda 1934:68; Müller 1954:381, Fig.81).

Transylvania (Pax 1908:128).

Muntenia (Mohan 1988b:115,116).

Ecology: epilithic, calcicolous, xerophytic, photophytic; circumpolar; Hch.

Herbaria and Exsiccate: BUCA, PHHM,

Distribution in Europe: Sj, Is, No, Se, Fi, Fr, De, Po, Ch, At, Sk, It, Si, Me, Ro, Ua, Nz, Rn.

Distribution in Romania:

? - **Ciucaș Mountains**, Ciucaș Peak, Bratocea Peak (Mohan 1990b:46).

? - **Prahova County**, Doftana Valley [PHHM 7782/3873](Mohan 1971a:7).

Cristianul Mare Mountain, 1700-1800 m *alt.* (Boros & Vajda 1967:217).

Bucegi Massif, *fer* - Mălăiești Valley, Bucșoiu Mountain (Degen 1914:216; Boros & Vajda 1967:217); *fer* - Cerbului Valley, alpine and subalpine region, 7.06.1896, *leg.* Moiescu N., 11.08.1903, 30.07.1904, 6.08.1905, 30.08.1908, 5,6.07.1914, *leg.* Radian S.Ș., Ialomița Valley above Peștera Ialomiței Hermitage, 22.06.1898, 5.08.1905, *leg.* Radian S.Ș., Obârșia Ialomiței towards Omul, 11.08.1903, *leg.* Radian S.Ș., at bottom of Caraiman Mountain, 30.08.1908, *leg.* Radian S.Ș. (Radian 1915:191; Radian 1923:10); Obârșia Ialomiței-Mecetul Turcesc, 2000 m *alt.*, 29.06.1943 (Ștefureac 1946:339,341; Ștefureac 1972c:101,104); Hornurile Țigănești, 2330 m and 2420 m *alt.*, 23.07.1950 (Ștefureac 1955:595, Tab.1; Ștefureac 1972c:103,104); Bucșoiu, 1500-1900 m *alt.* (Boros & Vajda 1967:217); Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. (Ștefănuț 2004a:63; Ștefănuț 2004g:158); ♀♂ - Babele Mountain, PH, 45°24'44"N / 25°28'37"E, *alt.* 2200 m, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3267, B3268], 45°24'46"N / 25°28'43"E, 2195 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3498]; ♀♂ - Babele Mountain, PH, 45°24'46"N / 25°28'43"E, 2195 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3617, B3621]; ♂♀ - Babele Valley, PH, 45°24'43"N / 25°28'44"E, 2150 m *alt.*, 14.07.2008, *leg. & det.* Ștefănuț S. [BUCA B3899], s - [BUCA B3911].

Piatra Craiului Mountains, above Zărnești (Matouschek 1905:82; Györffy 1908d:262; Ștefureac 1951b:250; Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:82); between Curmătura and Ciorânga, Hornul Vlădușca, 1650 m *alt.*, Podul lui Călineț, 1590-1650 m *alt.*, Brăul Răchita, 1600 m *alt.* (Ștefureac 1951b:254,255; Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:82); Piatra Craiului (Boros & Vajda 1967:217; Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:82); ♀♂ - Hornul Găinii, on mobile scree, BV, 1650 m *alt.*, 7.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3029, B3032] (Ștefănuț & Pop O.G. 2006:82).

Făgăraș Mountains, ? – below Râiosu Peak, on limestone, 2100 m *alt.*, 17.07.1946 (Ștefureac 1949a:291; Ștefureac 1977d:138); the edge of Bâlea Lake, 2050 m *alt.*, 11.07.1946, The ridge between Avrig Lake and Ciortea Peak, 2200 m *alt.*, 15.07.1946, below Ciortea Peak, 2350 m *alt.*, Brânele de pe Jgheabul Văros, 2000-2100 m *alt.*, 15,16.07.1946, on dolomite (Ștefureac 1949a:292; Ștefureac 1977d:138; Drăgulescu 2003:8); *Obs.* Ștefureac T. quoted this species from Făgăraș, according Matouschek (1905), but the locality is Piatra Craiului (Ștefureac 1949a:288).

Alba County, *fer* - Scărișoara, Ordencușa Valley, *leg.* Degen A. (Schiffner 1914:303; Györffy & Péterfi M. 1916:23).

Bihor County, Iad's springs, 1800 m *alt.*, *leg.* Péterfi M. (Péterfi M. 1908:266; Péterfi M. 1909:97; Györffy & Péterfi M. 1916:23).

Scapania aequiloba (Schwägr.) Dumort.

Syn.:

- *Jungermannia aequiloba* Schwägr.
- *Jungermannia rupestris* Schleich.
- *Jungermannia tyrolensis* Nees
- *Martinellia aequiloba* (Schwägr.) Lindb.
- *Martinellia rupestris* (Dumort.) Trevis.
- *Martinellia tyrolensis* (Nees) Trevis.
- *Radula rupestris* Dumort.
- *Scapania minuta* Warnst.
- *Scapania aequiloba* fo. *gracilis* Bernet
- *Scapania aequiloba* fo. *inermis* Gottsche
- *Scapania aequiloba* fo. *squarrosa* Bernet
- *Scapania rupestris* (Dumort.) Dumort.
- *Scapania tyrolensis* (Nees) Gottsche et al.

First citation for Romania: Breidler 1890a.

Moldova (Papp 1943:665).

Muntenia (Mohan 1988b:106).

Transylvania (Pax 1908:130; Schuster 1974:611).

Ecology: epilithic, saprolignicolous, calcicolous, mesophytic, photo-sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA, PHHM, Krypt. Exs.

Distribution in Europe: No, Se, Fi, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Ua, Rn.

Distribution in Romania:

Maramureş County, Poiana Runcului, 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, Pietrosul Rodnei, 1500 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:223; Ştefureac 1983g:177,178); Vinului Valley, 1700 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:223); Anieşul Mare Glacial Ring, 1520-1600 m *alt.*, 17.07.1975, ass. *Doronico carpati-Saxifragetum aizoides* Coldea 1990 (Coldea 1990:54, Tab.17); Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2047].

Rarău Mountain, Pietrele Doamnei, 1600 m *alt.* (Breidler 1890a:150; Pax 1908:130; Lilienfeldówna 1911:733); Rarău, 14.05.1910 (Lilienfeldówna 1911:733); Codrul Secular Slătioara, 800-1500 m *alt.*, incl. sub fo. *inermis*, fo. *squarrosa* (Ştefureac 1941:1155,1245,1263,1267,1273,1276,1280,1284,1288,1290, Tabs.1,3,5,7, 9; Papp 1969b:188; Ştefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve (Ştefureac & Raclaru 1978:197).

Giurgeu Mountains, Bicz Gorges (Vajda 1947:38).

Hăşmaş Mountains, Hăşmaş (Schiffner 1914:308); Hăşmaşul Mare, sub *Martinellia* (Degen 1930:976; Vajda 1947:38; Bálint & Orbán 2006:474); Piatra Ascuţită, Piatra Singuratică („Egyeskő”), Hăşmaşul Mare, 1500-1700 m *alt.*, *leg.* Vajda L., Boros Á., Felföldy L. (Boros & Vajda 1967:223); Surduc and Suhard („Kisohárd”) Mountains near Roşu Lake, 1000-1300 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:223); Suhardul Mic, in forest, on soil, 11.08.1953 (Bîrcă & Mihai 1963:127).

Harghita County, Harghita, 26.07.1901 (Barth 1905:13; Bálint & Orbán 2006:470).

Ciucaş Mountains, Bratocea and Ciucaş, near Muntele Roşu Hut, *leg. & det.* Vajda L. (Boros & Vajda 1967:223); Bratocea Mountain, Gropşoarele Peak, Caprei Brook Valley, Albele Culm, Cucului Brook Valley (Mohan 1990b:42).

Cristianul Mare Mountain, Cristianul Mare, Doamnei Mountain, *leg. & det.* Vajda L. (Boros & Vajda 1967:223).

Piatra Mare Mountain, Tamina Waterfall and Şapte Scări Waterfall, *leg. & det.* Vajda L. (Boros & Vajda 1967:223); Tamina Waterfall, BV, 45°32'58"N / 25°38'33"E, 6.09.1997, *leg. & det.* Ştefănuţ S. [BUCA B2053, B2452, B2532], ♀ - 6.09.1997, *leg. & det.* Ştefănuţ S. [BUCA B2539].

Postăvaru Mountain, (Schiffner 1914:308).

Gârbova Massif, Rea Valley, 900 m *alt.*, *leg. & det.* Loitlesberger K. [Krypt. Exs. 472] (Loitlesberger 1898:193; Zahlbruckner 1900:188).

Bucegi Massif, Piatra Arsă (Loitlesberger 1898:193); Bătrâna Peak, Omu Peak, 2000 m *alt.*, sub *S. rupestris* (Loitlesberger 1898:193; Pax 1908:130); Mălăieşti Valley, Bucşoiu, ♂ - Jepi Valley, 08-09.1911 (Degen 1914:217); Sinaia, on rotten fir and rocks, 08.1920, *leg.* Brândză M., *det.* Ştefureac T., incl. fo. *gracilis* (Ştefureac 1942a:5); Bucegi (Ştefureac 1946:335; Vajda 1947:38; Puşcaru D. & al. 1956:220); Cerbului Valley, 21.08, 21.10.1959, Albă Valley, 21-22.08.1959, *det.* Ştefureac T. (Racoviţă A. 1960:1112-1114); Cerbului Valley, 21.08.1959, *det.* Ştefureac T., sub fo. *squarrosa* (Racoviţă A.

1960:1113); upper side of Mălăiești Valley and Urlătoarea Waterfall, 1400 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:223); subalpine zone, in upper side of some vales (Ștefureac 1972c:102); Gura Diham Hut, 14.05.2006, *leg. & det.* Marinescu R. [PHHM]; Lăptici Peatbog, DB, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3502].

Piatra Craiului Mountains, with *Bucegia romanica* (Ștefureac 1951b:257; Ștefureac 1975a:143; Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:82); Râie's Valley, 1280 m *alt.*, *leg.* Beldie A., *det.* Ștefureac T. (Beldie 1952:1008; Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:83); Crăpătura and Prăpăstiile Zărneștiului (Boros & Vajda 1967:223; Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:83); Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2842] (Ștefănuț & Pop O.G. 2006:83); Ascuțit Peak, BV, 2100 m *alt.*, 8.08.2004, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2992] (Ștefănuț & Pop O.G. 2006:83); Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2571, B2602, B2618, B2832, B2845, B3386, B3387, B3460-B3462, B3476], 45°30'49"N / 25°11'49"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2572], 45°30'34"N / 25°11'46"E, 1650 m *alt.*, 8.07.2003, *leg. & det.* Ștefănuț S. [BUCA B2625] (Ștefănuț & Pop O.G. 2006:83); Marele Grohotiș, AG, 24.08.2007, *leg.* Pop O.G., *det.* Ștefănuț S. [BUCA B3986].

Argeș County, Dâmbovicioara (Loitlesberger 1898:193; Ștefănuț & Pop O.G. 2006:82); ♂ - Great Gorges of Dâmbovița River, 750 m *alt.*, 8.06.2005, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3170] (Ștefănuț & Pop O.G. 2006:83).

Făgăraș Mountains, Cârțișoara Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:223); Bâlea Lake, SB, 45°36'08"N / 24°37'00"E, 2060 m *alt.*, 18.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2096], 45°36'11"N / 24°37'00"E, 2040 m *alt.*, 16.07.2000, *leg. & det.* Ștefănuț S. [BUCA B3372]; Capra Lake, AG, 45°36'00"N / 24°37'49"E, 2250 m *alt.*, 17.07.2000, *leg. & det.* Ștefănuț S. [BUCA B2883]; Sebeș Valley, BV, 19.07.1998, *leg. & det.* Ștefănuț S. [BUCA B3382].

Sebeșului Mountains, Sebeș Valley, between Oașa and Cibán, in common spruce forest, 800-1200 m *alt.* (Borza 1959:69,283, Tab.38; Drăgulescu 2003:15).

Lotrului Mountains, Latorița Valley, on calcareous rocks, 900 m *alt.*, 31.08.1954 (Ștefureac, Popescu & Lungu 1956a:513, Tab.1).

Hunedoara County, Ponor Cave, 10.06.1918, *leg. & det.* Györffy I. & Péterfi M., sub *Martinellia* (Györffy 1924b:38).

Domogled Mountain, Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8).

Mehedinți County, below Geanți, below Cornetul Isvernei, 6.06.1945, *leg.* Țopa E. (Ștefureac 1947a:138,141,148).

Alba County, in the Scărișoara Cave aven (Boros & Vajda 1974:4; Goia 2001:69); Vidra, „Piatra Struțu” (Schiffner 1914:308; Goia 2001:69); Arieșul Mic Basin (Goia & Schumacker 2000:92); Gârda Seacă upstream Casa de Piatră, Izbucl Chiobului, Morii Valley, on rotten wood (Goia 2001:69); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); Morii Valley, 13.08.1994, *ass.* *Pterigynandretum filiformis* Hiltner 1925 (Goia & Schumacker 2003:59,60, Tabs.1,2).

Cluj County, Drăgan Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:223); Someșul Cald Valley (Boros & Vajda 1974:8).

Bihar Mountains, *without locality*, 300-1000 m *alt.* (Péterfi M. 1908:277; Goia 2001:69); *without locality* (Vajda 1947:38); Izbucl Ponorului, Poiana Ponorului (Boros & Vajda 1974:6,7); Izbucl Ponorului, Padiș Mountain (Vajda 1973:291); Someșul Cald Gorges, on rocks and soil (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3864].

Scapania apiculata Spruce

Syn.:

– *Martinellia apiculata* (Spruce) Lindb.

First citation for Romania: Herzog 1919.

Moldova (Papp 1943:665; Ștefureac & al. 1973:147).

Ecology: humicolous, saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; subarctic-subalpine; Hch.

Distribution in Europe: No, Se, Fi, Fr, Ad, De, Po, Ch, At, Sk, Hu, Es, It, Si, Hr, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Suceava County, Cristișor-Neagra Broștenilor, Borcut Meadow, on rotten common spruce woods (Lungu 1973b:72; Lungu 1981c:93,95).

Rarău Mountain, Codrul Secular Slătioara (Tarnavschi 1936:285; Ștefureac & Pascal 1981:483).

Neamț County, Tarcău-Grinduș Mountain (Papp 1942b:525).

Făgăraș Mountains, Arpășel Valley, 1000 m *alt.*, *det.* Vajda L. (Pócs 1958:108,109).

Vâlcea County, Poiana Lungă, 1000 m *alt.* (Herzog 1919:295).

Cindrel Mountains, Șanta, 1200 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:15).

Alba County, Galbena Valley, 780 m *alt.*, 12.09.1996, ass. *Lophocoleo-Dolichothecetum seligeri* Philippi 1965, Iarba Rea Valley, 790 m *alt.*, 25.08.1996, ass. *Leucobryo-Tetraphydetum pellucidae* Barkman 1958, Iarba Rea Valley, 800 m *alt.*, 25.08.1996, ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia 2000:113,116,117,119, Tabs.3,5,7); Vârciorog Valley, Iarba Rea Valley, Gârda de Sus Valley – Izbucul Chiobului, on rotten common spruce woods (Goia 2001:69,70, Fig.17); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

Cluj County, Someșul Rece Valley, *leg.* & *det.* Vajda L. (Boros & Vajda 1967:222).

***Scapania aspera* Bernet et M. Bernet**

Syn.:

– *Martinellia aspera* (M. Bernet & Bernet) Broth.

– *Scapania aequiloba* var. *aspera* (M. Bernet & Bernet) Boulay

– *Scapania aequiloba* var. *major* Gottsche ex Warnst.

First citation for Romania: Györfy 1924b.

Ecology: epilithic, calcicolous, mesophytic, scio-photophytic; Eurasia; suboceanic-mountain; Hch.

Herbaria and Exsiccate: BUCA, Krypt. Exs.

Distribution in Europe: No, Dk, Se, Ie, Br, Fr, Ad, Be, De, Ch, At, Cz, Sk, Hu, Es, Bl, Co, Sc, It, Si, Hr, Sb, Me, Ba, Ro, Bg, Al, Gr, Cm.

Distribution in Romania:

Țibleș Mountains, Păltiniș Peak, 1984-1985 (Mohan 1988a:21).

Suceava County, Tătarca Brook Valley, near the forest way, on soil, *conf.* Mihai G. (Pascal 1970a:199; Pascal 1973; Pascal & Mititelu 1971; Ștefureac & Pascal 1981:483); Țibău Brook Valley (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:483).

Giurgeu Mountains, Bicz Gorges, 1978, 1979, ass. *Tortello-Ctenidietum mollusci* (Mihai 1981a:18, Tab.5).

Piatra Craiului Mountains, Prăpăstii, 860 m *alt.*, 29.08.1936, ass. *Saxifraga cuneifolia-Campanula carpatica* (Zólyomi 1939:82,137, Tab.6; Vajda 1947:37; Boros 1951:377; Ștefănuț & Pop O.G. 2006:83).

Retezat Mountains, towards Tăul Negru (Páll 1964a:108); Râușor, 1050 m *alt.*, 5.06.2003, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3093], ♀ - [BUCA B3096].

Hunedoara County, Hunedoara, *leg.* Péterfi M., sub *Martinellia* (Györfy 1924b:38; Vajda 1947:37; Boros 1951:378).

Domogled Mountain, on rocks, 27.07.1962 (Ștefureac & Mihai 1967:14); Crucea Albă, Șerban (Boros, Vajda & Debreczy 1969:8); Crucea Albă, 500 m *alt.*, 9.08.2004, *leg.* & *det.* Ștefănuț S. [BUCA B2991].

Mehedinți County, Cazanele Mari, on rocks, 1966 (Ștefureac & Mihai 1970:500); Romnuța Mare, Cerna Valley, near Obârșia, 400 m *alt.*, 08.08.1968, *leg.* & *det.* Pócs T. [Krypt. Exs. 4762](Passauer 1976).

Alba County, Morii Valley, on calcareous rocks, 700 m *alt.*, 01.06.1995, ass. *Tortello-Ctenidietum mollusci* (Goia 1998:252, Tab.3; Goia 2001:70).

Bihar County, Crișul Repede Defile, on rocks, ass. *Tilio-Fraxinetum* (Boros 1942a:31,32; Boros 1944b:149; Boșcaiu & Gergely 1966:104); Vadu Crișului, *leg.* Soó R., Iad Valley (Boros 1944a:160; Boros 1944b:149; Boros 1951:377); Apuseni Mountains (Ștefureac 1975b:313).

Bihar Mountains, Cetățile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:92; Jakab 2000b:67); Galbena Valley, 750 m *alt.*, Ponor, 1100 m *alt.*, Padiș, 1150 m *alt.*, 08.1999 (Jakab 2000b:66,69).

Scapania brevicaulis Taylor

Syn.:

- *Scapania degenii* Schiffn. ex Müll. Frib.

First citation for Romania: Ștefureac 1958a.

Romania: Smith A.J.E. 1990:186; Ștefănuț 2003b:238, Fig.5; Frey & al. 2006:106.

Ecology: epilithic, subneutrophytic-basiphytic, meso-hygrophytic, scio-photophytic; circumpolar; arctic-alpine; Hch.

Distribution in Europe: Is, No, Se, Br, Po, Ch, At, Sk, Ro, Rn.

Distribution in Romania:

Rodna Mountains, Pietrosul Borșei, western slope, on rocks, 2150 m *alt.*, sub *S. degenii* (Ștefureac 1958a:109; Paton 1999:368; Ștefănuț 2003b:235, Fig.5).

Scapania calcicola (Arnell et J. Perss.) Ingham

Syn.:

- *Martinellia calcicola* Arnell & J. Perss.

First citation for Romania: Györfy 1924b.

Romania (Frey & al. 2006:100).

Moldova (Papp 1943:665; Ștefureac & al. 1973:147).

Muntenia (Mohan 1988b:106).

Ecology: epilithic, calcicolous, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, No, Dk, Se, Fi, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, It, Si, Hr, Sb, Ba, Ro, Bg, Al, Gr, Ee, Lv, Cm, Fl, Rn.

Distribution in Romania:

Maramureș County, Poiana Botizii (Boros 1943e:148; Boros 1951:377).

Suceava County, Țibău Mountain, *conf.* Mihai G. (Pascal 1970a:199).

Rarău Mountain, Codrul Secular Slătioara, 1280-1470 m *alt.* (Ștefureac 1941:1155,1245,1273, Tabs.5,7; Papp 1969b:188; Ștefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:197).

Bacău County, Cernica Brook Valley (Papp 1957:285; Papp 1958b:412,417).

Brașov County, Brașov, 790 m *alt.*, 28.08.1936, ass. *Seslerietum rigidae burcicum* (Zólyomi 1939:68,112, Tab.1; Vajda 1947:37; Boros 1951:377; Ștefănuț 2006b:34; Ștefănuț 2008b:29); Tâmpa, 18.06.2006, *leg. & det.* Ștefănuț S. [BUCA B3507, B3513] (Ștefănuț 2006b:34; Ștefănuț 2008b:29).

Bucegi Massif, Obârșia Ialomiței - Mecetul Turcesc, 2000 m *alt.*, 29.06.1943 (Ștefureac 1946:338; Ștefureac 1972c:101); ♂ - Dorului Valley, PH, 45°21'51"N / 25°28'37"E, 1830 m *alt.*, 28.07.2005, *leg. & det.* Ștefănuț S. [BUCA B3216]; Babele Mountain, PH, 45°24'38"N / 25°28'36"E, 2140 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3553].

Piatra Craiului Mountains, Marele Grohotiș, AG, 45°30'49"N / 25°11'49"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. (Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:83); Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg. & det.* Ștefănuț S. [BUCA B2713] (Ștefănuț & Pop O.G. 2006:83); Piatra Mică, BV, 1750 m *alt.*, 10.07.2004, *leg. Pop O., det.* Ștefănuț S. [BUCA B3040] (Ștefănuț & Pop O.G. 2006:83).

Mehedinți County, Vărănic Hill, the way from Breznița to Gura Văii, 400 m *alt.*, 03.1945 (Ștefureac 1947a:138,148).

Codru-Moma Mountains, Liliacilor Cave, Ponoarele, on calcareous rocks (Mohan 1996:49; Ardelean 2006:104).

Alba County, Rimetea, *leg.* Péterfi M., sub *Martinellia* (Györfy 1924b:38); Piatra Secuiului Mountain, near Rimetea, *leg.* Vajda L. & Gergely I. (Vajda 1960:156); Ionel's Cave, Gârda de Sus, 800 m *alt.*, 16.05.1999 (Smets 2003:60).

Cluj County, Turului Gorges, *leg. & det.* Györfy I. & Péterfi M. 8.06.1915, sub *Martinellia* (Györfy 1924b:38; Vajda 1947:37).

Bihar Mountains, Ordâncușii Gorges, 900-920 m *alt.*, ass. *Poëtum nemoralis calcicolum* Pop I. & Hodișan I. 1967, 850 m *alt.*, ass. *Calamagrostetum variaie carpaticum* Sillinger subass. *biharicum* (Pop I. & Hodișan I. 1967:18,19, Tabs.3,4).

Scapania compacta (Roth) Dumort.

Syn.:

- *Jungermannia compacta* Roth
- *Jungermannia resupinata* Hook.
- *Martinellia resupinata* (Hook.) Lindb.
- *Scapania undulata* var. *resupinata* Hook.

First citation for Romania: Heufler 1853.

The presence of this species in Romania was contested (Plămadă & Dumitru 1998b:68; Dihoru G. 2004:169).

Ecology: epilithic, acidophytic-subneutrophytic, meso-hygrophytic, scio-photophytic; mountain-suboceanic; Eurasia-North Africa; Hch.

Herbaria and Exsiccate: PHHM (I checked the Herbarium and the species it missing)

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, de, Po, Ch, Cz, Sk, Pt, Es, Co, Sa, Sc, It, Si, Hr, Yu, Ba, Ro, Bg, Al, Gr, Ct, Tu, Rw, Az, Ma, Cn.

Distribution in Romania:

? - **Ciucaș Mountains**, Zăganul Mountain, Roșu Mountain and the valley of the Ursului Brook (Mohan 1990b:42).

? - **Prahova County**, Doftana Valley and Păltinoasa Valley, Prahova County [PHHM 7783/3873] (Mohan 1971a:9; Mohan 1988b:107).

Făgăraș Mountains, Arpaș Valley, sub *S. undulata* L. var. *resupinatae* Hook., in beech forest (Heufler 1853:48-49).

Scapania crassiretis Bryhn

Syn.:

- *Martinellia crassiretis* Arnell
- *Scapania gracillima* Warnst.

First citation for Romania: Loitlesberger 1898.

Transylvanian Alps (Pax 1908:130).

Ecology: epilithic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Distribution in Europe: No, Se, Fi, Po, Ch, At, Sk, It, Si, Ba, Ro, Rn.

Distribution in Romania:

Făgăraș Mountains, Negoiu, 2000 m *alt.* (Loitlesberger 1898:193; Pax 1908:130; Drăgulescu 2003:15).

? – **Leota Mountain**, Brătei Valley, 1200-1300 m *alt.*, sub fo. *laevis* Papp (Papp & Diaconescu 1968:387; Mohan 1988b:107).

? – **Cluj County**, Vlădeasa Massif, Drăgan Valley (Mohan 1998:48; Plămadă & Dumitru 1998b:68).

Scapania curta (Mart.) Dumort.

Syn.:

- *Jungermannia affinis* Huebener
- *Jungermannia curta* Mart.
- *Jungermannia montana* Nees
- *Jungermannia rosacea* Corda
- *Martinellia curta* (Mart.) Lindb.
- *Martinellia curta* var. *rosacea* (Corda) Arnell
- *Martinellia rosacea* (Corda) Lindb.
- *Scapania curta* var. *geniculata* (C. Massal.) Müll. Frib.
- *Scapania curta* var. *rosacea* (Corda) Carrington
- *Scapania rosacea* (Corda) Nees

First citation for Romania: Schur 1866.

Moldova (Papp 1943:665).

Muntenia, incl. sub var. *rosacea* (Mohan 1988b:107).

Transylvanian Alps, incl. sub *S. rosacea* (Pax 1908:130).

Ecology: epigaeic, epilithic, acidophytic, mesophytic, sciophytic; circumpolar; subboreal-mountain; Hch.

Herbaria and Exsiccate: BUCA, PHHM, SIB

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sc, It, Si, Hr, Sb, Ba, Ro, Bg, Gr, Ct, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Rc, Re, Ka, Az, Ma, Cn.

Distribution in Romania:

Maramureș Mountains, Tâjla Valley, near Borșa Băi, 08.1948 (Ștefureac 1958a:111).

Rodna Mountains, Galați Mountain, 2000 m *alt.* (Matouschek 1905:80); Rodna Mountains (Pax 1908:130); Pietrosul Borșei, north-western slope, 2280 m *alt.*, 8-9.08.1948 (Ștefureac 1952a:391, Tab.1).

Suceava County, Criștișor-Neagra Broștenilor, Borcut Meadow (Lungu 1973b:72; Lungu 1981c:93); Oușorul Mountain, on soil, 1971 (Mihai 1974b:317-319).

Rarău Mountain, Codrul Secular Slătioara, incl. sub var. *geniculata* (Ștefureac 1941:1155; Papp 1969b:188; Ștefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:197).

Giurnalău Mountain, Giurnalău, east-north-eastern slope, 1800 m *alt.*, 22.08.1936 (Ștefureac 1936:294; Ștefureac 1938:258).

Căliman Mountains, Pietrosul Peak, alpine zone, on wet soil and rocks (Mihai 1968a:205).

Bistrița-Năsăud County, Măgherușului Valley, Gropii Hill, Al. *Pino-Quercetalia* (Ștefureac & Cristorean 1973:313-315); Jelna Forest, Simionești, Budacul de Sus, 1980-1981 (Mohan & Hodoroga 1983:52).

Ceahlău Mountain, Durău Valley, common spruce forest, subalpine zone, on humus and soil (Mihai 1984a:89).

Giurgeu Mountains, Bicaz Gorges, on rocks, 1957-1960, sub var. *rosacea* (Papp 1927b:150; Papp & al. 1962:144,147,148; Bálint & Orbán 2006:474).

Harghita Mountains, Harghita (Bálint & Orbán 2006:470);

Nemira Mountains, Farcu Mare Peak, on soil and rocks, 1970-1977 (Mihai & Barabaș V. 1978:114,116).

Bacău County, Scorboraia, on soil (Eftimie 1972:151).

Brașov County, Predeal, 1000-1200 m *alt.* (Loitlesberger 1898:193); Codlea, 800 m *alt.*, *leg.* & *det.* Vajda L. (Boros & Vajda 1967:222).

Prahova County, Doftana Valley, Gâlma Secăriei [PHHM 7784/3873](Mohan 1971a:9; Mohan 1971b:48).

Ciucaș Mountains, Sterp Brook Valley, Zăgan Mountain, Piscul Turiștilor (Mohan 1990b:42).

Bucegi Massif, Omu Peak, sub *S. rosacea* (Loitlesberger 1898:193); Bucegiu Peak, 08-09.1911, sub var. *geniculata* (Degen 1914:217); Bucegi (Ștefureac 1955:560); Piciorul Obârșiei, 1860 m *alt.* (Pușcaru D. & al. 1956:71, Tab.66), between Blana and Nucet Valley, 1850 m *alt.* (Pușcaru D. & al. 1956:396, Tab.174; Ștefureac 1972c:101); Obârșia - Mecetul Turcesc, 2000 m *alt.* (Ștefureac 1972c:101); Gaura Glacial Ring, BV, 45°26'22"N / 25°26'24"E, 2250 m *alt.*, 8.07.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2889] (Mihăilescu & Ștefănuț 2000a:14); ♀ - Peștera Hermitage, DB, 1540 m *alt.*, 7.09.2006, *leg.* & *det.* Ștefănuț S. [BUCA B3581], s - [BUCA B3568, B3575, B3577].

Leota Mountain, Vaca Valley, 900 m *alt.*, sub var. *rosacea* (Papp & Diaconescu 1968:386,387).

Făgăraș Mountains, Arpaș Mountain (Schur 1866:875; Fuss 1878:657; Hazslinszky 1885:69; Drăgulescu 2003:15).

Cindrel Mountains, Păltiniș, *leg.* & *det.* Schur F. (Schur 1866:875; Fuss 1878:657; Hazslinszky 1885:69; Drăgulescu 2003:15); Păltiniș, 1100-1300 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:15).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ștefureac, Popescu & Lungu 1955:527,529,531, Pl.II, Figs.1-6).

Parâng Mountains, *fer* - the water shed between Lotru Valley and Jiu Valley, way from Obârșia towards Lonea, before Poiana Muierii, 1600 m *alt.*, 16.08.1955, incl. var. *rosacea*, *leg.* Ștefureac T. (Ștefureac, Popescu & Lungu 1957a:64,68,69,71, Tab.1); Latorița Valley, Repedea Valley, 08-09.1954 (Ștefureac, Popescu & Lungu 1959:9,19,24); below Mohor Ridge, 2300 m *alt.*, small peatbog, on wet clayey ± peaty soil, sub var. *rosacea* (Ștefureac 1969a:118, Tab.15).

Rețezat Mountains, in alpine region, 2000 m *alt.* (Schiffner 1914:308); towards Tăul Negru (Páll 1964a:108).

Caraș-Severin County, left bank of Cociu Valley, near Herculane Spa, 2.06.1945 (Ștefureac 1947a:138,150; Bujorean & Popescu P.C. 1966:21).

Alba County, Valea Lungă, on clayey soil, 24.10.1867, *leg.* & *det.* Barth J. [SIB HF 1555](Fuss 1878:657; Hazslinszky 1885:69; Drăgulescu 1983:58);

Cluj County, Sălicea, *leg.* & *det.* Péterfi M. (Boros 1958:4,8).

Bihar County, ♂ - Vlădeasa Mountain, 1500-1600 m *alt.*, 11.06.1901, *leg.* Györffy I., sub var. *rosacea* (Schiffner 1909a:28,33).

Scapania cuspiduligera (Nees) Müll. Frib.

Syn.:

– *Jungermannia bartlingii* Hampe & Nees

- *Jungermannia cuspiduligera* Nees
- *Martinellia bartlingii* Trevis.
- *Martinellia carestiae* (De Not.) Trevis.
- *Martinellia cuspiduligera* (Nees) Arnell
- *Scapania carestiae* De Not.

First citation for Romania: Müller 1957.

Romania: Müller 1957:934; Schuster 1974:355; Smith A.J.E. 1990:179; Frey & al. 2006:100.

Ecology: epilithic, calcicolous, mesophytic, sciophytic; circumpolar; arctic-alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, No, Se, Fi, Ie, Br, Fr, Ad, De, Lu, Po, Ch, At, Cz, Sk, Es, It, Si, Ro, Ua, Nz, Rn, Re.

Distribution in Romania:

? - **Transylvanian Alps**, *without locality* (Müller 1957:934; Schuster 1974:355).

Bucegi Massif, Gaura Glacial Ring, BV, 45°26'27"N / 25°26'19"E, 2120 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3355], 45°26'26"N / 25°26'26"E, 2175 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3531] (Ștefănuț 2007a:103); Mălăiești Glacial Ring, BV, 45°27'06"N / 25°27'04"E, 2260 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3470], 45°27'05"N / 25°26'53"E, 2110 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3469] (Ștefănuț 2007a:103).

Scapania gracilis Lindb.

Syn.:

- *Martinellia gracilis* Lindb.
- *Martinellia gracilis* var. *laxifolia* (Dumort.) H. Möller
- *Radula dentata* var. *laxifolia* Dumort.
- *Scapania gracilis* var. *laxifolia* (Dumort.) Dumort.
- *Scapania gracilis* var. *minor* (Pearson) Macvicar
- *Scapania patulifolia* Warnst.
- *Scapania recurva* Steph.
- *Scapania resupinata* var. *minor* Pearson

First citation for Romania: Ștefureac 1941.

Romania: Smith A.J.E. 1990:198; Paton 1999:383; Frey & al. 2006:104.

Ecology: epilithic, acidophytic, mesophytic, scio-photophytic; circumpolar; suboceanic; Hch.

Distribution in Europe: Fo, No, Dk, Se, Ie, Br, Fr, Nl, Pt, Es, Co, It, Ro, Gr, Az, Ma, Cn.

Distribution in Romania:

Rarău Mountain, Codrul Secular Slătioara, sub „*Scapania gracilis* Kaal.” (Ștefureac 1941:1155, 1272; Ștefureac 1969a: Tab.16; Papp 1969b:188); Codrul Secular Slătioara, Ion’s Brook (Ștefureac 1942b:91).

Scapania gymnostomophila Kaal.

Syn.:

- *Diplophyllum gymnostomophilum* (Kaal.) Kaal.
- *Diplophyllum incurvum* Bryhn & Kaal.
- *Martinellia gymnostomophila* (Kaal.) Arnell & C.E.O. Jensen
- *Sphenolobus gymnostomophilus* (Kaal.) Schiffn.

First citation for Romania: Ștefănuț 2008a.

Ecology: epilithic, subneutrophytic-basiphytic, mesophytic, scio-photophytic; circumpolar, arctic-alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, No, Se, Fi, Ie, Br, Fr, Ad, Pt, De, Po, Ch, At, Cz, Sk, Es, It, Ro, Ee, Rn, Rw, Re.

Distribution in Romania:

Bucegi Massif, ♂ - Caraiman Mountain, PH, 45°24'56"N / 25°29'02"E, 2330 m *alt.*, 20.07.2007, *leg. & det.* Ștefănuț S., *conf.* Văňa J. [BUCA B3722, B3723] (Ștefănuț 2008a:234).

Scapania helvetica Gottsche

Syn.:

- *Martinellia helvetica* Arnell
- *Scapania geniculata* C. Massal.

First citation for Romania: Boros & Vajda 1967.

Romania (Boros & Vajda 1967:222; Ștefureac 1986f:192; Frey & al. 2006:106).

Muntenia (Mohan 1988b:107).

Ecology: epilithic-epigaeic, slightly acidophytic, hygrophytic, photophytic; Eurasia; mountain-alpine; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Fr, De, Po, Ch, At, Cz, Sk, It, Si, Ro, Bg, Ua.

Distribution in Romania:

? - **Ciucaș Mountains**, Roșu Mountain, Chirușca Mountain, Ciucaș Peak (Mohan 1990b:42).

Piatra Mare Mountain, 1700 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222; Plămadă 1973a:380).

Bucegi Massif, Vârful cu Dor, 1200 m *alt.*, Piatra Arsă, 1900 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222; Plămadă 1973a:380).

Piatra Craiului Mountains, Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B2649] (Ștefănuț & Pop O.G. 2006:83).

Retezat Mountains, near Tăul Negru, downstream Tăul Porții, near the snow places, on wet soil, 1964-1971 (Plămadă 1973a:380, Fig.9a-d; Plămadă 1976a; Plămadă 1976b:8; Plămadă 1993:49).

Alba County, Iarba Rea Valley, 800 m *alt.*, 25.08.1996, ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia 2000:119, Tab.7); Galbena Valley, Iarba Rea Valley, on rotten wood (Goia 2001:70,71); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

? - **Codru-Moma Mountains**, Pâncoia, Ponoarele, on calcareous rocks (Mohan 1996:49; Ardelean 2006:104).

Scapania irrigua (Nees) Nees

Syn.:

- *Jungermannia fallax* Huebener
- *Jungermannia irrigua* Nees
- *Jungermannia uliginosa* Sw. ex Huebener
- *Martinellia irrigua* (Nees) Lindb.
- *Scapania compacta* var. *irrigua* (Nees) Aust.
- *Scapania curta* var. *viridissima* Müll. Frib.
- *Scapania integriloba* Warnst.
- *Scapania irrigua* var. *obtusata* H. Buch
- *Scapania irrigua* var. *rubescens* H. Buch

First citation for Romania: Hazslinszky 1885:68.

Moldova (Papp 1943:666).

Muntenia (Mohan 1988b:107).

Ecology: epigeic-humicolous, mesoacidophytic, meso-hygrophytic, sciophytic; circumpolar; boreal-mountain; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Si, Sb, Me, Ba, Mk, Ro, Bg, Tu, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Rc, Re, Ca.

Distribution in Romania:

Maramureș County, Bistrița Aurie Valley, between Prislop and Poiana Rotundă (Warnstorff 1895b:142; Pax 1908:130).

Rodna Mountains, Lala Lake (Ștefureac 1963c:168).

Rarău Mountain, Codrul Secular Slătioara, 1300 m *alt.* (Ștefureac 1941:1155,1281, Tab.7; Papp 1969b:188; Ștefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:193,197).

Harghita County, Sfânta Ana Lake, *leg. & det.* Vajda L. (Boros & Vajda 1967:222).

Harghita Mountains, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bălint L. & Csízi K. (Bălint & Orbán 2003:14).

Nemira Mountains, in upper side of mountain, near the lakes, on peaty soil, 1970-1977 (Mihai & Barabaș V. 1978:114,116,125).

Siriu Mountain, Sec Lake and Sec Mic Lake, 1460 m *alt.*, in *Nanocyperion* and *Scheuchzerio-Caricetalia* (Dihoru 1963: Tab.; Dihoru G. 1975:24; Ștefureac 1986f:194).

Ciucaș Mountains, above Muntele Roșu Hut, 1400 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222); Berii Brook Valley, Tigăile Mari Culm, Alb Brook Valley (Mohan 1990b:38,42); Roșu Mountain, PH, 45°29'35"N / 25°56'45"E, 1400 m *alt.*, 4.07.2004, *leg. & det.* Ștefănuț S. [BUCA B3049].

Brașov County, Timiș Valley, 500 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222).

Bucegi Massif, Piatra Arsă, 2000 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222); Gaura Glacial Ring, BV, 45°26'52"N / 25°26'32"E, 2290 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3379]; Babele Mountain, PH, 45°24'40"N / 25°28'32"E, 2150 m *alt.*, 8.09.2005, *leg. & det.* Ștefănuț S. [BUCA B3270]; Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3463]; towards Coștila, PH, 45°24'56"N / 25°28'37"E, 2270 m *alt.*, 20.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3894].

Leaota Mountain, Leaota, AG, 09.2006, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B3611].

Făgăraș Mountains, Cârțișoara's Mountains, Arpaș Mountain, *leg. & det.* Schur F. (Hazslinszky 1885:68; Vajda 1947:38); Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2078] (Ștefănuț 2002:190).

? - **Iezer-Păpușa Mountains**, Iezer Valley, Bătrâna Valley, Dâmbovița Valley, Râușor Valley (Mohan 1990a:24).

Cindrel Mountains, Râul Mare Valley and Bătrâna Mountain, *leg. & det.* Vajda L. (Boros & Vajda 1967:222); Jujbea, 1800 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:15).

Parâng Mountains, the edge of Câlcescu Lake, in peatbog (Ștefureac 1969a:90,95,102, Tab.14).

Retezat Mountains, Judele Glacial Valley, in peatbogs, on peat, 2050 m *alt.* (Plămadă 1973b:102).

Bihor Mountains, Scorțăriței Valley - Scărișoara, 700 m *alt.*, Piatra Grăitoare, 1450 m *alt.* (Péterfi M. 1908:277; Vajda 1947:38; Goia 2001:71; Goia & Schumacker 2002:87).

Scapania mucronata H. Buch

Syn.:

- *Martinellia curta* auct.
- *Martinellia mucronata* (H. Buch) Arnell & C.E.O. Jensen
- *Martinellia rigida* Lindb.
- *Scapania curta* auct.

First citation for Romania: Pócs 1958.

Romania (Frey & al. 2006:106).

Muntenia (Mohan 1988b:107).

Ecology: humicolous-epilithic, acidophytic, mesophytic, sciophytic; circumpolar; Hch.

Herbaria and Exsiccate: BUCA

Distribution in Europe: No, Dk, Se, Fi, Fr, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Yu, Ro, Bg, Ee, Ua, Nz, Rn, Rw, Re.

Distribution in Romania:

Rodna Mountains, Iezerul Pietrosului, MM, 47°35'53"N / 24°38'53"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2007].

Giumalău Mountain, Giumalău, subalpine zone, *det.* Ștefureac T. (Cristurean 2000:173,175).

Harghita Mountains, Ulieșul Mic, 1150 m *alt.*, on rocks, 17.04.2001, Cucu Mountain, 1550 m *alt.*, on soil, 15.08.2001, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Piatra Mare Mountain, Tamina Waterfall, in common spruce forest, *leg. & det.* Vajda L. (Boros & Vajda 1967:222; Plămadă 1973a:380).

Bucegi Massif, Vârful cu Dor, 1000 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222; Plămadă 1973a:380); Babele Mountain, PH, 45°24'49"N / 25°28'43"E, 2220 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3558].

Piatra Craiului Mountains, 1300 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222; Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:83).

Făgăraș Mountains, Arpășel Valley, 1000 m *alt.*, *det.* Vajda L. (Pócs 1958:108,109; Plămadă 1973a:380); Urlea Lake, BV, 45°35'44"N / 24°50'31"E, 2200 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2051].

Cindrel Mountains, Găușoara Mountain (Boros & Vajda 1967:222; Plămadă 1973a:380; Gündisch 1977:50; Drăgulescu 2003:16); Păltiniș, 1400 m *alt.*, Jujbea, 1950 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:16).

Retezat Mountains, Zlătuia Valley, in beech zone, Râul Mare Valley at Gura Zlata, on rotten woods and stones, 1964-1971 (Plămadă 1973a:380, Fig.10a-d).

Mehedinți County, Danube Defile, between Orșova and Cerna Valley, in forest, on soil, 1966-1968 (Plămadă 1970c:393; Plămadă 1973a:380).

Gilău Mountains, Someșul Rece Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:222); in beech forests (Plămadă 1985b:41); *Obs.* The species was wrong quoted from Someșul Rece Valley by Plămadă E. (1973:380).

Scapania nemorea (L.) Grolle

Syn.:

- *Jungermannia nemorea* L.
- *Jungermannia nemorosa* L.
- *Martinellia joergensenii* (Schiffn. ex Müll. Frib.) H. Möller
- *Martinellia nemorosa* Lindb.
- *Scapania aconiensis* De Not.

- *Scapania amurensis* Warnst.
- *Scapania austinii* Warnst.
- *Scapania jackii* Warnst.
- *Scapania joergensenii* Schiffn. ex Müll. Frib.
- *Scapania nemorosa* Dumort.
- *Scapania nemorosa* var. *alata* Kaal. ex Müll. Frib.
- *Scapania nemorosa* var. *joergensenii* (Schiffn. ex Müll. Frib.) Müll. Frib.
- *Scapania nemorosa* var. *marchica* Warnst.
- *Scapania nemorosa* var. *uliginosa* (C.E.O. Jensen ex Macvicar) Ingham
- *Scapania recurvifolia* Warnst.

First citation for Romania: Baumgarten 1846.

Moldova, sub *S. nemorosa* (Papp 1943:665; Ștefureac & al. 1973:147,148).

Muntenia (Mohan 1988b:107).

Transylvania, sub *S. nemorosa* (Pax 1908:130).

Ecology: epigeaic, epilithic, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, SIB

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sc, It, Si, Hr, Sb, Ba, Mk, Ro, Bg, Al, Gr, Lv, Lt, By, Ua, Rn, Rw, Re, Ca, Az, Ma, Cn.

Distribution in Romania:

Maramureș County, between Vișeu and Făina, sub *S. nemorosa* (Warnstorf 1895b:142); Surduc Gorges, Cavnice (Boros 1943e:144,146); Firiza Valley, 800 m *alt.*, Săpânța, 800 m *alt.*, Selnița, 300-400 m *alt.*, Copalnic, 200 m *alt.*, *leg. & det.* Boros Á., sub *S. nemorosa* (Boros & Vajda 1967:223); Covatar Waterfall from Săpânța, *leg. & det.* Boros Á. (Jakab 1999:51); Șipot Waterfall, 15-21.06.1997, near Băiuț, 21-23.08.1998 (Jakab 1999:55).

Maramureș Mountains, Vaser Valley, sub *S. nemorosa* (Hazslinszky 1885:67); Tâjla Valley, towards Borșa Spa, 08.1948, sub *S. nemorosa* (Ștefureac 1958a:111).

Rodna Mountains, Corongiș, Galați Mountain, 2000 m *alt.*, sub *S. nemorosa* (Matouschek 1905:79,80); Rodna Mountains, sub *S. nemorosa* (Pax 1908:130); Vinului Valley, *leg. & det.* Boros Á. & Felföldy L., sub *S. nemorosa* (Boros & Vajda 1967:223).

Țibleș Mountains, Bran Peak, Piciorul Arsuri, Țibleș Valley, 1984-1985 (Mohan 1988a:21).

Guțâi Mountains, Tătarului Gorges, 670 m *alt.*, 28.06.1970, 690 m *alt.*, 8.07.1971, sub *S. nemorosa* (Rațiu O. & Moldovan 1972b:4-6, Tab.1).

Suceava County, Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, sub *S. nemorosa*, ass. *Pogonatum alloides* v. *Krusenstjerna* 1948 (Lungu 1973b:72; Lungu 1976:238, Tab.2; Lungu 1981c:94); Barnar Gorges, sub *S. nemorosa* (Pascal & Seghedin 1977:142); Poiana Stampei Peatbog, SV, 47°20'33"N / 25°11'14"E, 920 m *alt.*, 28.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3791, B3794, B3796].

Stânișoara Mountains, Ostra Brook Valley below Puzdrele, on wet soil, 1974, sub *S. nemorosa* (Pascal & Toma M. 1977:42).

Harghita Mountains, Sândominic, 1000 m *alt.*, *leg. & det.* Pócs T., sub *S. nemorosa* (Boros & Vajda 1967:223); Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Ulieșul Mic, 1150 m *alt.*, 17.04.2001, *leg.* Bálint L. & Csizi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:470).

Neamț County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.*, sub *S. nemorosa* var. *joergensenii* (Lungu 1963a:242,243).

Nemira Mountains, Șandru, along brooks, on wet stones, 1970-1977, sub *S. nemorosa* (Mihai & Barabaș V. 1978:116).

Bacău County, Slănic, sub *S. nemorosa* (Papp 1942b:525); Titirezul Hill, 500 m *alt.*, Ninesei Hill, 600 m *alt.*, Cerbu Brook Valley, Cernica Brook Valley, Feșca de Sus Brook Valley, Șurei Brook Valley, sub *S. nemorosa* (Papp 1957:285; Papp 1969a:181); Porcului Hill towards Hârja, the forest on Porcului Hill, Doftana Brook Valley, sub *S. nemorosa* var. *marchica* (Papp 1957:285); Porcului Hill, 600 m *alt.*, Cernica Brook Valley, Feșca de Sus Brook Valley, incl. sub *S. nemorosa* var. *marchica* (Papp 1958b:394,395,412); Șoi Peak, on soil, 1966-1967, sub *S. nemorosa* (Mihai & Barabaș V. 1969:70); s - Măgura Hill, north-west to Târgu Ocna, in cutting forest, on soil and wet rocks, bank of brooks, 680 m *alt.*, rare, sub *S. nemorosa* (Mihai & Barabaș V. 1971:676,682-685); Slănic Brook, on wet stone 2.05-8.11.1971, sub *S. nemorosa* (Ștefureac & Barabaș V. 1972:78); near Târgu Ocna, beech forest, 450 m *alt.* (Barabaș V. 1982b:68, Tab.18).

Siriu Mountain, Poiana din Fundul Muntelui, common spruce forest, Buzău Gorges, *Vaccinio-Piceetalia*, sub *S. nemorosa* (Dihoru G. 1975:24).

Braşov County, Homorod Spa, 20.07.1901, sub *S. nemorosa* (Barth 1905:13); Codlea, 800 m alt., leg. & det. Vajda L. (Boros & Vajda 1967:223).

Ciucaş Mountains, Cucului Brook Valley, Zăgan Mountain, Ciucaş Peak (Mohan 1990b:42).

Bucegi Massif, Padina, DB, 6.07.1948, leg. Şerbănescu I., det. Ştefănuţ S. [BUCA B3014, B3017].

Iezer-Păpuşa Mountains, Bratia Valley, 1000 m alt., sub *S. nemorosa* (Loitlesberger 1898:193); Voina Chalet, 20.08.2006, leg. Banciu C., det. Ştefănuţ S. [BUCA B3545].

Făgăraş Mountains, Arpaş Valley, in beech forest towards subalpine zone, sub *S. nemorosa* (Heufler 1853:48-49; Fuss 1854:29; Fuss 1878:657; Hazslinszky 1885:67; Drăgulescu 2003:16); Arpăşel Valley, 1000 m alt., sub *S. nemorosa* (Pócs 1958:108); Cârţişoara Valley, Arpaş Valley, 1000 m alt., leg. & det. Vajda L., sub *S. nemorosa*, Arpăşel Valley, Turnu Roşu, 800 m alt., leg. & det. Pócs T., sub *S. nemorosa* (Boros & Vajda 1967:223); ♀ - Pojorta Valley, BV, 800-1000 m alt., 18.09.2001, leg. & det. Ştefănuţ S. [BUCA B2541, B2548] (Ştefănuţ 2002:190); Sebeş Valley, BV, 19.07.1998, leg. & det. Ştefănuţ S. [BUCA B3383-B3385]; Urlea Lake, BV, 45°35'44"N / 24°50'31"E, 2200 m alt., 17.09.2001, leg. & det. Ştefănuţ S. [BUCA B2359]; Pojorta Valley, BV, 800 m alt., 21.09.2003, leg. & det. Ştefănuţ S. [BUCA B2917].

Cozia Mountain, Turnu towards Stânişoara, 08.2005, leg. Onete Marilena, det. Ştefănuţ S. [BUCA B3486].

Sibiu County, Sibiu, sub *S. nemorosa* (Schur 1866:875; Fuss 1878:657; Hazslinszky 1885:67; Drăgulescu 2003:16); Cârţişoara, sub *S. nemorosa* (Fuss 1878:657; Drăgulescu 2003:16); Cârţişoara - Glăjărie, on wet rocks, 9.08.1856, leg. Fuss M., det. Juratzka J. [SIB HF 1553](Fuss 1865:28; Drăgulescu 1983:58; Drăgulescu 2003:16).

Cindrel Mountains, Păltiniş, sub *S. nemorosa* (Boros & Vajda 1967:223; Gündisch 1977:50); Crinţ, 700 m alt., Păltiniş, 1300-1400 m alt., Cânaia, 1500 m alt., sub *S. nemorosa* (Gündisch 1977:50; Drăgulescu 2003:15).

Vâlcea County, Boia, sub *S. nemorosa* (Loitlesberger 1898:193).

Căpâţanei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub *S. nemorosa* (Ştefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Parâng Mountain, 22-26.08.1882, sub „*Slapani nemorosa*” (Barth 1883:5); **fer** - Curmătura Vidruţei, 1350 m alt., 26.07.1955, sub *S. nemorosa* (Ştefureac, Popescu & Lungu 1957a:65,68,69, Tab.1); Latoriţa Valley, 08-09.1954, sub *S. nemorosa* (Ştefureac, Popescu & Lungu 1959:9,15,19,22,25,28,31,34,35, Tab.6).

Sebeşului Mountains, Sebeş Valley, at Loman, the edge of oak forest (Borza 1959:69).

Şureanu Mountain, Râul Mare Valley, sub *S. nemorosa* (Greguss 1930:7).

Hunedoara County, Porcurea Valley, Almaşul Mic de Munte, 11.06.1961, leg. Şerbănescu I., det. Ştefănuţ S. [BUCA B3023].

Retezat Mountains, Retezat, sub *S. nemorosa* (Simonkai 1872:67; Fuss 1878:657; Hazslinszky 1885:67).

Domogled Mountain, Crucea Albă, Şerban, sub *S. nemorosa* (Boros, Vajda & Debreczy 1969:8);

Mehedinţi County, Lutiţa Brook, Vârciorova, 10.06.1945, sub *S. nemorosa* (Ştefureac 1947a:138,147).

Poiana Ruscă Mountains, Rusca Montană, sub *S. nemorosa* (Pančić 1861:94).

Arad County, the springs from Runcu Hill between Dulcele and Răşirata, Hălmagiu zone below Geina, sub *S. nemorosa* (Simonkai 1893:361).

Alba County, Piatra Ceţii, Trascău Mountains, 3.07.1868, sub *S. nemorosa* (Barth 1868:141); Galda de Sus, leg. & det. Barth J., sub *S. nemorosa* (Fuss 1878:657; Hazslinszky 1885:67); Bihor Mountains (Péterfi M. 1908:277; Goia & Schumacker 2000:92; Goia 2001:71); Valea Lungă, leg. & det. Barth J. [SIB HF 1552](Drăgulescu 1983:58); the right slope of Ampoiului Valley downstream Pătrângenii, at 4,7 km to Zlatna, oak forest, sub *S.c.f. nemorea* (Plămadă 1986a:61, Tab.2); Vârciorog Valley, 1385 m alt., 13.09.1996, Galbena Valley, 875 m alt., 12.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965 (Goia 2000:112, Tab.2); Vârciorog Valley, Iarba Rea Valley, Cepelor Valley, Galbena Valley, on rotten wood, Ursoaia Saddle, on common spruce tree (Goia 2001:71); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:87); between Mătişeşti and Şaua Ursoaia, 730 m alt., ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia & Schumacker 2004:111, Tab.4); Detunata Mountains, Detunata Goală, 1100-1180 m alt., det. Sass-Gyarmati A. (Sass-Gyarmati, Pócs & Orbán 2005:127).

Mureş County, Sighişoara – Fuchslösch, *leg. & det.* Baumgarten J.C.G., sub *Jungermannia nemorosa* [SIB HF 1551](Baumgarten 1846:225; Fuss 1865:28; Schur 1866:875; Fuss 1878:657; Hazslinszky 1885:67; Györffy 1917a:167; Drăgulescu 1983:58).

Cluj County, Southern Ciucea on Surduc Valley, 500-600 m *alt.*, sub *S. nemorosa* (Boros 1942a:34; Boros & Vajda 1967:223); Drăgan Valley, sub *S. nemorosa* (Boros 1942a:35); Făget, Sălicea, *leg. & det.* Péterfi M., sub *S. nemorosa* (Boros 1958:4,8; Boros & Vajda 1967:223); Turda's Gorges, sub *S. nemorosa* (Páll 1960b:90); Someşul Rece Valley, *leg. & det.* Vajda L., Drăgan Valley at Tranişu, sub *S. nemorosa* (Boros & Vajda 1967:223); Bologa, *leg. & det.* Harghitai Z. & Soó R., sub *S. nemorosa* (Boros & Vajda 1967:223).

Bihor County, Remetea, 26.05.1915, *leg. & det.* Györffy I. & Péterfi M., sub *S. nemorosa* (Györffy 1924b:38); Iadului Valley between Remetea and Bulz, sub *S. nemorosa* (Boros 1942a:33; Boros & Vajda 1967:223).

Bihor Mountains, *without locality*, 300-900 m *alt.*, sub *S. nemorosa* (Péterfi M. 1908:277; Ştefureac 1975b:313); Cetăţile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ştefănuţ S. [BUCA B3839].

Scapania paludicola Loeske et Müll. Frib.

Syn.:

- *Martinellia irrigua* var. *picea* C.E.O. Jensen
- *Martinellia irrigua* var. *subconvexa* C.E.O. Jensen
- *Martinellia paludicola* (Loeske ex Müll. Frib.) C.E.O. Jensen
- *Scapania irrigua* var. *sudetica* Velen.
- *Scapania kaalaasii* (Müll. Frib.) Schiffn.
- *Scapania paludicola* var. *kaalaasii* Müll. Frib.
- *Scapania rotundata* Warnst.

First citation for Romania: Ştefureac 1949c.

Romania: Smith A.J.E. 1990:188; Frey & al. 2006:102.

Ecology: epilithic, turficulous, acidophytic, hydrophytic, sciophytic; circumpolar; mountain; Hch.

Threatened species in Romania: Mihăilescu S. & Ştefănuţ 2004a:88.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, No, Dk, Se, Fi, Br, Fr, Be, De, Po, Ch, At, Cz, Sk, Es, It, Ro, Bg, Ee, Lv, Lt, By, Ua, Nz, Rn, Rw, Rc, Re, Ka.

Distribution in Romania:

Suceava County, Criştişor-Neagra Broştenilor, Borcut Meadow, in peatbogs, on peat (Lungu 1973b:72; Lungu 1981c:93; Ştefureac 1986f:193).

Harghita Mountains, below Mădăraş Peak, 1700-1750 m *alt.*, *det.* Vajda L. (Pócs 1958:109; Bálint & Orbán 2006:470).

Bucegi Massif, Lăptici Peatbog, 1500 m *alt.*, 1946 (Ştefureac 1949c:691; Pop E. 1960:349; Godeanu S. 1970:45); Lăptici Peatbog, 1500 m *alt.*, 22.07.1950 (Ştefureac 1958a:100); Ialomiţa Valley, 1500 m *alt.*, ass. *Sphagnetum acutifolii* (Puşcaru D. & al. 1956:200,246, Tab.85; Buia 1963:126); Lăptici, south to Scândurarilor Valley (Beldie 1967:555,556; Godeanu S. 1970:45); Lăptici Peatbog, 1470 m *alt.* (Ştefureac 1972c:100); Lăptici Peatbog, 45°22'26"N / 25°26'23"E, 1470 m *alt.*, 28.07.2005, *leg. & det.* Ştefănuţ S. [BUCA B3257].

Scapania paludosa (Müll. Frib.) Müll. Frib.

Syn.:

- *Martinellia paludosa* (Müll. Frib.) Arnell
- *Scapania cordifolia* Müll. Frib.
- *Scapania paludosa* var. *flaccida* Jørg.
- *Scapania paludosa* var. *isoloba* Warnst.
- *Scapania paludosa* var. *papillosa* Müll. Frib. ex L. Clark
- *Scapania paludosa* var. *rubiginosa* Müll. Frib.
- *Scapania paludosa* var. *submersa* (Jørg.) Müll. Frib.
- *Scapania paludosa* var. *vogesiaca* Müll. Frib.
- *Scapania reniformis* Warnst.
- *Scapania undulata* var. *paludosa* Müll. Frib.

First citation for Romania: Dihoru G. 1975.

Muntenia: Mohan 1988b:107; Smith A.J.E. 1990:193.

Ecology: epigeic, acidophytic, hygro-mesophytic, sciophytic; circumpolar; mountain; Hch.

Distribution in Europe: Is, Fo, No, Se, Fi, Br, Fr, De, Po, Ch, At, Cz, Sk, Es, Co, It, Sb, Ro, Rn, Re, Ca.

Distribution in Romania:

Siriu Mountain, western slope of Mălăia, Ord. *Scheuchzerio-Caricetalia* (Dihoru G. 1975:24; Ștefureac 1986f:194; Mohan 1988b:107).

Ciucaș Mountains, Balaban Mountain, Gropșoarele Peak, Chirușca Mountain (Mohan 1990b:43);

Cindrel Mountains, Crinț, 900 m *alt.*, Jujbea, 1800 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:16).

***Scapania scandica* (Arnell et H. Buch) Macvicar**

Syn.:

- *Martinellia scandica* Arnell & H. Buch
- *Scapania renifolia* Warnst. ex H. Buch
- *Scapania scandica* var. *argutedentata* H. Buch

First citation for Romania: Boros & Vajda 1967.

Muntenia: Mohan 1988b:107; Smith A.J.E. 1990:181.

Ecology: epilithic-humicolous, saprolognicolous, acidophytic, hygro-mesophytic, sciophytic; circumpolar; subarctic-mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Pt, Es, Hu, It, Sb, Ro, Bg, Ua, Rn, Rw, Rc, Re, Ca, Az.

Distribution in Romania:

Rodna Mountains, Iezerul Pietrosului, MM, 47°35'50"N / 24°38'50"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B3455].

Piatra Mare Mountain, Tamina Waterfall, *leg. & det.* Vajda L. (Boros & Vajda 1967:222; Goia 2001:71).

Bucegi Massif, Mălăiești Valley, in common spruce forest, *leg. & det.* Vajda L. (Boros & Vajda 1967:222; Goia 2001:73).

Piatra Craiului Mountains, Marele Grohotiș, AG, 45°30'36"N / 25°11'45"E, 1650 m *alt.*, 8.07.1998, *leg. & det.* Ștefănuț S. [BUCA B3465].

Făgăraș Mountains, Cârțișoara Valley towards Bâlea Lake, Arpaș Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:222; Goia 2001:71).

Alba County, Arieșul Mic Basin (Goia & Schumacker 2000:92); Morii Valley, Vârciorog Valley, on rotten wood (Goia 2001:71-73, Figs.18-20); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

***Scapania subalpina* (Nees ex Lindenb.) Lindb.**

Syn.:

- *Jungermannia subalpina* Nees ex Lindenb.
- *Martinellia subalpina* (Nees ex Lindenb.) Trevis.
- *Martinellia subalpina* var. *subrotunda* Lindb. & Arnell
- *Martinellia subalpina* var. *undulifolia* (Nees) Lindb.
- *Scapania subaequiloba* Warnst.
- *Scapania subaequiloba* var. *subintegra* Warnst.
- *Scapania subalpina* var. *haynesiae* Frye & L. Clark
- *Scapania subalpina* var. *purpurascens* Bryhn ex Müll. Frib.
- *Scapania subalpina* var. *subintegra* Bryhn ex Schiffn.
- *Scapania subalpina* var. *submersa* Jørg.
- *Scapania subalpina* var. *subrotunda* (Lindb. & Arnell) Müll. Frib.
- *Scapania subalpina* var. *undulifolia* (Nees) Gottsche et al.
- *Scapania subrotundifolia* Warnst.

First citation for Romania: Loitlesberger 1898.

Romania, Hausbrandt 1949: 35; Schuster 1974:564.

Moldova (Papp 1943:665).

Transylvania (Pax 1908:130).

Ecology: epilithic-humicolous, indifferent, hygrophytic, sciophytic; circumpolar; subalpine-alpine; Hch.

Herbaria and Exsiccatae: BUCA, H.A.T.R.

Distribution in Europe: Sj, Is, Fo, No, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, Pt, Es, Co, Sc, It, Si, Sb, Ro, Bg, Gr, Ua, Nz, Rn, Rw, Re, Ca, Ma.

Distribution in Romania:

Rodna Mountains, Lala Lake (Ștefureac 1963c:166,168,170; Vajda & Orbán 1975:116).

Rarău Mountain, Codrul Secular Slătioara, 1600 m *alt.* (Ștefureac 1941:1155,1276,1290, Tab.5; Papp 1969b:188); Plaiul Todirescu-Slătioara Reserve (Ștefureac & Raclaru 1978:197).

Căliman Mountains, the peatbogs from Răchitișul de Sus, 1700 m *alt.*, 24.07.1972, *det.* Plămadă E. (Coldea 1973b:54,55, Tab.1).

Bucegi Massif, Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3138]; Mălăiești Glacial Ring, BV, 45°27'13"N / 25°26'45"E, 2010 m *alt.*, 9.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3116]; ♀ - Peștera Hermitage, DB, 1540 m *alt.*, 7.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3572], s - [BUCA B3585].

Făgăraș Mountains, Negoiu, 2000 m *alt.* [H.A.T.R. 184](Loitlesberger 1898:194; Pax 1908:130; Schiffner 1911:291; Radian 1920:77; Vajda & Orbán 1975:116; Drăgulescu 2003:16).

Iezer-Păpușa Mountains, Iezer Mountain, 2200 m *alt.* [H.A.T.R. 115](Loitlesberger 1898:194; Pax 1908:130; Vajda & Orbán 1975:116).

Vâlcea County, Robu Mountain, 1800 m *alt.* (Herzog 1919:296).

Cindrel Mountains, Păltiniș, 1300-1350 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:16).

Retezat Mountains, Retezat, ex Hazslinszky (Radian 1920:77).

Semenic Mountains, near Carașova (Vajda & Orbán 1975:115,118).

Scapania uliginosa (Sw. ex Lindenb.) Dumort.

Syn.:

- *Jungermannia renifolia* Lehm.
- *Jungermannia uliginosa* (Sw. ex Lindenb.) Nees
- *Jungermannia undulata* var. *uliginosa* Sw. ex Lindenb.
- *Martinellia obliqua* Arnell
- *Martinellia uliginosa* (Sw. ex Lindenb.) Trevis.
- *Scapania limprichtii* Warnst.
- *Scapania obliqua* (Arnell) Schiffn.
- *Scapania uliginosa* var. *obliqua* (Arnell) Jørg.
- *Scapania vahliana* Lehm.

First citation for Romania: Schur 1866.

Romania: Smith A.J.E. 1990:190.

Transylvania (Pax 1908:130).

Ecology: epilithic, acidophytic-subneutrophytic, hydro-hygrophytic, sciophytic; circumpolar; arctic-alpine; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, Fo, No, Se, Fi, Ie, Br, Fr, De, Po, Ch, At, Cz, Sk, It, Ro, Ua, Rn, Rc, Re.

Distribution in Romania:

Harghita Mountains, Minei Valley, 1100-1200 m *alt.*, on rotten woods, 11.07.2000, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Făgăraș Mountains, Bâlea Waterfall, Arpaș Mountain (Schur 1866:875; Fuss 1878:657; Hazslinszky 1885:68; Drăgulescu 2003:15); Urlea Lake, BV, 45°35'43"N / 24°50'29"E, 2195 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2080], 45°35'42"N / 24°50'25"E, 2194 m *alt.*, 17.09.2001, *leg. & det.* Ștefănuț S. [BUCA B2343].

Cindrel Mountains, Jujbea, 1900 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:15).

Retezat Mountains, Bucura Glacial Ring, 2050-2200 m *alt.*, ass. *Eriophoretum vaginati dacicum*, sub *Scapania obliqua* (Borza 1934:52,64, Tab.14); on bank of Galeșu Lake (Páll 1964a:108).

Scapania umbrosa (Schrad.) Dumort.

Syn.:

- *Jungermannia convexa* Scop.
- *Jungermannia umbrosa* Schrad.
- *Martinellia convexa* (Scop.) Lindb.
- *Martinellia umbrosa* (Schrad.) Lindb.
- *Scapania convexa* (Scop.) Pearson

First citation for Romania: Baumgarten 1846.

Transylvania (Pax 1908:130).

Muntenia (Mohan 1988b:108).

Ecology: saprolignicolous, acidophytic, mesophytic, sciophytic; circumpolar; suboceanic-mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Si, Hr, Sb, Me, Ba, Mk, Ro, Bg, Al, Ee, Ua, Rn, Rw, ?Rc, Ma.

Distribution in Romania:

Rodna Mountains, Corongiș, sub *S. convexa* (Matouschek 1905:79).

Giupalău Mountain, Giupalău Secular Forest, SV, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3661], 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3971].

Harghita Mountains, Pietros Mountain, 1295 m *alt.*, on soil, 15.08.2001, *leg.* Bálint L. & Csízi K. (Orbán & Bálint 2002:61; Bálint & Orbán 2003:14).

Ciucaș Mountains, Ciucaș Peak, Bratocea Peak, Caprei Brook Valley, Cucului Brook Valley (Mohan 1990b:43).

Piatra Mare Mountain, Piatra Mare, sub *Jungermannia* (Baumgarten 1846:225; Fuss 1878:657; Hazslinszky 1885:69).

Postăvaru Mountain, Postăvaru, sub *Jungermannia* (Baumgarten 1846:225; Fuss 1878:657; Hazslinszky 1885:69).

Bucegi Massif, Mălăiești Valley, 08-09.1911, sub *S. convexa* (Degen 1914:217); above Mălăiești Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:223).

Piatra Craiului Mountains, Plaiul Foi, Prăpăștiile Zărneștiului, 1000 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222,223; Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:83); Șpirlea Valley, *leg.* Pop O., *det.* Wallfisch R. (Dihoru G. & al. 2003:71; Ștefănuț & Pop O.G. 2006:83); ! - below Marele Grohotiș, 8.07.2003, *leg. & det.* Ștefănuț S. (Ștefănuț & Pop O.G. 2006:83); ! - Crăpătura Pietrei Craiului, 22.08.2003, *leg. & det.* Ștefănuț S.

Făgăraș Mountains, Arpășel Valley, 1000 m *alt.*, *det.* Vajda L. (Pócs 1958:108,109); Cârțișoara Valley, 1000-1900 m *alt.*, Arpaș Valley, 1600 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:222).

Cindrel Mountains, Bătrâna, Găușoara and Beșineu, 1600-1900 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:223); Păltiniș, 1500 m *alt.*, Jujbea, 2000 m *alt.* (Gündisch 1977:50; Drăgulescu 2003:16).

Retezat Mountains, Râușor, 1050 m *alt.*, 5.06.2003, *leg.* Paucă Mihaela, *det.* Ștefănuț S. [BUCA B3094].

Alba County, Scărișoara Cave, 1340 m *alt.*, 11.08.1996, Cepelor Valley, 875 m *alt.*, 16.05.1996, Galbena Valley, 875 m *alt.*, 12.09.1996, ass. *Riccardio-Scapanietum umbrosae* Philippi 1965, Iarba Rea Valley, 800 m *alt.*, 25.08.1996, ass. *Orthodicrano montani-Hypnetum filiformis* Wisn. 1930 (Goia 2000:112,119, Tabs.2,7); Vârciorog Valley, Cepelor Valley, Gârda Seacă upstream Casa de Piatră, Galbena Valley, Arieșul Mare upstream to Arieșeni, Mătișești, Horea, on rotten wood (Goia 2001:74); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87,89).

Bihor Mountains, Izbucul Ponorului (Boros & Vajda 1974:6); Ponor, 1100 m *alt.*, Padiș, 1200 m *alt.*, 08.1999 (Jakab 2000b:66,70); Someșul Cald Gorges, on rotten wood (Goia & Mătase 2001:17); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3822].

Scapania undulata (L.) Dumort.

Syn.:

- *Jungermannia nemorosa* var. *purpurascens* Hook.
- *Jungermannia undulata* L.
- *Jungermannia undulata* var. *aequata* Nees
- *Jungermannia undulata* var. *purpurascens* Huebener
- *Jungermannia undulata* var. *rivularis* Huebener
- *Martinellia dentata* (Dumort.) Arnell
- *Martinellia purpurascens* (Hook.) Arnell ex C.E.O. Jensen
- *Martinellia purpurascens* var. *ambigua* (De Not.) C.E.O. Jensen
- *Martinellia undulata* (L.) Lindb.
- *Martinellia undulata* var. *aequatiformis* (De Not.) C.E.O. Jensen
- *Martinellia undulata* var. *dentata* (Dumort.) Lindb.
- *Martinellia undulata* var. *integrifolia* Lindb.
- *Martinellia undulata* var. *purpurascens* Arnell
- *Martinellia undulata* var. *purpurea* Lindb.
- *Martinellia undulata* var. *rivularis* (Huebener) H. Möller
- *Radula dentata* Dumort.
- *Scapania atrata* Warnst.
- *Scapania dentata* (Dumort.) Dumort.
- *Scapania dentata* var. *ambigua* (De Not.) C. Massal.
- *Scapania dentata* var. *heterophylla* Müll. Frib.
- *Scapania dentata* var. *speciosa* (Nees) Cogn.
- *Scapania dentata* var. *taeniiformis* Müll. Frib.
- *Scapania douinii* Schiffn.

- *Scapania heterophylla* M. Howe
- *Scapania intermedia* (Husn.) Pearson
- *Scapania nemorosa* var. *intermedia* Husn.
- *Scapania nemorosa* var. *purpurascens* (Hook.) Gottsche et al.
- *Scapania oseensis* Warnst.
- *Scapania paludosa* var. *aquatica* Schiffn.
- *Scapania paludosa* var. *natans* Schiffn.
- *Scapania purpurascens* (Hook.) Taylor ex Pearson
- *Scapania speciosa* (Nees) Lett
- *Scapania splendens* Steph.
- *Scapania squarrosula* Lindenb.
- *Scapania suecica* Warnst.
- *Scapania undulata* subsp. *dentata* Dumort.
- *Scapania undulata* var. *aequata* (Nees) Gottsche et al.
- *Scapania undulata* var. *aequatiformis* (De Not.) C. Massal. & Carestia
- *Scapania undulata* var. *alata* Schiffn.
- *Scapania undulata* var. *ambigua* (De Not.) C. Massal. & Carestia
- *Scapania undulata* var. *densa* Müll.Frib.
- *Scapania undulata* var. *dentata* (Dumort.) McArdle
- *Scapania undulata* var. *denticulata* Warnst.
- *Scapania undulata* var. *flagellaris* Loeske
- *Scapania undulata* var. *heterophylla* (M. Howe) Warnst.
- *Scapania undulata* var. *lepida* Warnst.
- *Scapania undulata* var. *purpurascens* (Huebener) Cogn.
- *Scapania undulata* var. *purpurea* (Nees) Gottsche et al.
- *Scapania undulata* var. *rivularis* (Huebener) Rabenh.
- *Scapania undulata* var. *subglacialis* Schiffn.

First citation for Romania: Baumgarten 1846.

Romania, without *locality*, sub *Jungermannia* (Baumgarten 1846:224).

Moldova (Ștefureac & al. 1973:148).

Muntenia (Mohan 1988b:108).

Transylvania (Pax 1908:130).

Ecology: epilithic, acidophytic, hydro-hygrophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, CL, SIB, BRHE, Krypt. Exs.

Distribution in Europe: Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, NI, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, Sa, Sc, It, Si, Hr, Sb, Me, Mk, Ro, Bg, Gr, Ee, Lv, Lt, Ua, Rn, Rw, Rc, Re, Ca, Az, Ma, Cn.

Distribution in Romania:

Maramureș Mountains, Pop Ivan Mountain (Hazslinszky 1885:67).

Maramureș County, the peatbogs from Oaș-Maramureș Region (Pop E. 1960:312); Secu Mountain, in Colbu Valley, 900-1000 m *alt.*, *leg. & det.* Boros Á., Poiana lui Dumitru near Blidari, 900 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:224); Runc Waterfall, 15-21.06.1997, Tocila Valley near Băiuț, 600 m *alt.*, Ursului Fountain, below Pleșca Peak, 21-23.08.1998, the Fountain below Văratec Peak, 16-18.10.1998, sub fo. *dentata*, Budești, Nededa Peatbog, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, *leg. & det.* Demeter K. [CL](Igmándy 1943:56); Piatra Neagră, 1650 m *alt.*, 15.07.1977, ass. *Philonotido seriatae-Saxifragetum stellaris* Horv. 1949 (Coldea, Täuber & Pinzaru 1981:430); Livezi, 1600-1620 m *alt.*, 15.07.1977, Galați Peak – Căldare, 1690 m *alt.*, 6.08.1977, ass. *Chrysosplenio alpini-Saxifragetum stellaris* Pawl. & Walas 1949 (Coldea 1990:52, Tab.15); Iezerele Buhăescu, MM, 47°35'18"N / 24°38'40"E, 1880 m *alt.*, 29.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2370], 47°35'19"N / 24°38'37"E, 1910 m *alt.*, 29.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2368, B2369, B2877, B2878]; Iezerul Pietrosului, MM, 47°35'53"N / 24°38'48"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2009], 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2211], ♂ - [BUCA B2356], s - 47°35'53"N / 24°38'48"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2231], 47°35'53"N / 24°38'53"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2357, B3371]; Ineu Glacial Ring, BN, 47°31'34"N / 24°53'34"E, 1920 m *alt.*, 26.08.1999, *leg. & det.* Ștefănuț S. [BUCA B2198, B2222, B3457].

Țibleș Mountains, Izvorul Țibleșului, Mesteacănul Valley, sub *S. dentata*, Izvorul Țibleșului, 1984-1985 (Mohan 1988a:21).

Suceava County, Grădinița Peatbog, 1962-1963 (Ștefureac 1968:307); Țapu Mountain, *conf.* Mihai G. (Pascal 1970a:199); Cristișor-Neagra Broștenilor, Borcut Meadow, in fen, on peat, incl. sub *S. dentata* (Lungu 1973b:72; Lungu 1981c:94).

Căliman Mountains, upper Dorna Valley, near forest chalet, on rocks (Mihai 1968a:205).

Giumalău Mountains, Giumalău Secular Forest, 27.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3804].

Harghita Mountains, Harghita Spa, 1300 m *alt.*, *leg. & det.* Boros Á., incl. sub var. *dentata* (Boros 1951:376; Boros & Vajda 1967:223,224; Bálint & Orbán 2006:470); Luci Peatbog, 1000-1100 m

alt., *leg.* & *det.* Boros Á, Ciceu (“Csicsói”) Mountain, 1900 m *alt.*, *leg.* & *det.* Pócs T. (Boros & Vajda 1967:223,224; Bálint & Orbán 2006:470); Greu Mountain, 1100 m *alt.*, 11.07.2000, Minei Valley, 1100-1200 m *alt.*, 11.07.2000, Vermet Valley, 1050-1250 m *alt.*, 2.07.2000, Asău Valley, 1000-1100 m *alt.*, 22.10.2000, Mic Valley, 1050-1150 m *alt.*, 16.08.2001, Pietros Valley, 900 m *alt.*, 28.08.2001, Ulieşul Mic, 1150 m *alt.*, 17.04.2001, Luci Meleche Forest, 1050 m *alt.*, 13.08.2001, *leg.* Bálint L. & Csízi K. (Bálint & Orbán 2003:14; Bálint & Orbán 2006:470); Mohoş, sub *S. dentata* (Bálint & Orbán 2006:470).

Harghita County, Pietra Piscului, *leg.* & *det.* Demeter K. [CL](Igmándy 1943:56); Harghita, 26.07.1901 (Barth 1905:13); Chirui Spa from Lueta, 14.08.1869, *leg.* & *det.* Barth J. [SIB HF 1554](Fuss 1878:657; Drăgulescu 1983:58).

Neamţ County, Cernegura Mountain, Sterghinosu Brook Valley, 400-550 m *alt.* (Lungu 1963a:242).

Bacău County, Şurei Hill, in forest, near Slănic-Moldova Spa, on right side of Slănic Brook, 500 m *alt.*, sub „*S. penata*” (Papp 1969a:181); Slănic Brook, on rocks, 2.05-8.11.1971 (Ştefureac & Barabaş V. 1972:78); Ruginii Brook, incl. sub var. *dentata* (Eftimie 1972:151); *without locality*, 450 m *alt.* (Barabaş V. 1982b:70, Tab.20).

Ciucaş Mountains, Berii Brook Valley, Alb Brook Valley, Sterp Brook Valley (Mohan 1990b:43);

Gârbova Massif, Cazacului Valley, Azuga’s affluent, 950 m *alt.*, *det.* Ştefureac T. (Badea & Cretzoiu 1941:285).

Prahova County, Teleajen Valley, (Mohan 1990a:24).

Făgăraş Mountains, Arpaş Valley, incl. sub var. *rivularis*, common spruce forest (Heufler 1853:48-49; Fuss 1854:20; Schur 1866:875; Fuss 1878:657; Hazslinszky 1885:67; Drăgulescu 2003:16); Cârţişoara Mountains, *leg.* & *det.* Barth J. (Fuss 1878:657); Bâlea (Schur 1866:875; Fuss 1878:657; Hazslinszky 1885:67; Drăgulescu 2003:16); Negoiu, 2000 m *alt.*, *leg.* & *det.* Loitlesberger K., sub var. *purpurea* [Krypt. Exs. 473] (Loitlesberger 1898:193,194; Zahlbruckner 1900:188; Drăgulescu 2003:16); Topolog Valley, 1600 m *alt.* (Herzog 1919:296); Arpăşel Valley, 1000 m *alt.*, sub *S. dentata* var. *heterophylla* (Pócs 1958:108); Făgăraş Mountains, *det.* Vajda L., sub subsp. *dentata* (Pócs 1958:109); Arpaş Valley, *leg.* & *det.* Vajda L., Călţun Lake, 2350 m *alt.*, *leg.* & *det.* Pócs T. (Boros & Vajda 1967:223,224); Sărata Glacial Ring, right side of Sărata Valley, peatbog, 1750 m *alt.*, *det.* Ştefureac T. (Diaconeasa 1969:317; Drăgulescu 2003:16).

Iezer-Păpuşa Mountains, Păpău Sheepfold, 1600 m *alt.*, incl. sub *S. dentata* (Loitlesberger 1898:193,194); Iezer Valley, Bătrâna Valley, Râuşor Valley (Mohan 1990a:24); below Iezer Refuge, 7.08.1993, Iezer Valley, 19.08.95, near the springs and alpine brooks, ass. *Chrysosplenio-Saxifragetum stellaris* Pawl. & Walas 1949 (Alexiu 1995:40, Tab.2; Alexiu 1996:184).

Cozia Mountain, north-eastern side of Jgheabul Bulzului, on soil, 1975-1976 (Dihoru G. 1990:53); Slavei Brook, on soil, sub var. *dentata* (Dihoru G. 1990:53).

Cindrel Mountains, between Rozdeşti and Onceşti (Herzog 1919:296); Beşineu, incl. sub fo. *elongata*, Păltiniş, Râul Mare Valley, *leg.* & *det.* Vajda L., sub var. *dentata* (Boros & Vajda 1967:223,224; Gündisch 1977:51); Crinţ, 900 m *alt.*, Păltiniş, 1500 m *alt.*, Cănaia, 1700 m *alt.*, Săroi, 1200 m *alt.*, Şerbănei, 1800 m *alt.*, Bătrina, 1870 m *alt.*, Beşineu, 1900 m *alt.*, Jujbea, 2100 m *alt.* (Gündisch 1977:51; Drăgulescu 2003:16); Cindrel, 2200 m *alt.* (Gündisch 1977:51; Drăgulescu 1992:55; Drăgulescu 2003:16); Frumoasa - Platoul Diavolului [SIB HG](Drăgulescu 1992:55; Drăgulescu 2003:16).

Sebeşului Mountains, Sebeş Valley, between Oaşa and Cibán, in common spruce forest, 800-1200 m *alt.*, sub *S. dentata* (Borza 1959:69,283, Tab.38; Drăgulescu 2003:16).

Lotrului Mountains, the peatbog from Sărăcinul Mic, on left side of Lotru Valley, near Puru Forest Hut, Voineasa Commune, 1956 (Ştefureac, Popescu & Lungu 1957b:872).

Căpăţanei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub *S. dentata* (Ştefureac, Popescu & Lungu 1955:527).

Parâng Mountains, the springs of Mânileasa Brook, 1200 m *alt.*, 26.07.1955 (Ştefureac, Popescu & Lungu 1956b:1314); the edge of the peatbog near Călcescu Lake, 11.08.1955 (Ştefureac 1959:757); Mândra Mountain, Jieţ Valley, 1810 m *alt.*, *leg.* & *det.* Pócs T. (Boros & Vajda 1967:223); south to the peatbog from edge of Călcescu Lake, incl. sub var. *aequatiformis* (Ştefureac 1969a:103,104); east to the peatbog on Călcescu Lake border (Ştefureac 1969a:105).

Retezat Mountains, Zănoaga (Simonkai 1872:67; Fuss 1878:657; Hazslinszky 1885:67); Judele Peak, 2200 m *alt.*, 22.07.1914, *leg.* Péterfi M., sub *S. dentata* var. *speciosa* Nees [BRHE 9](Györffy & Péterfi M. 1916:37); Mlaştina de Sus on Zănoaga Valley, Zănoaga-Slăveiu marked path, 1870 m *alt.*, Mlaştina I between Slăvei and Muchia Ascuţită, 1990 m *alt.*, incl. sub *S. dentata*, Mlaştina II between

Slăvei and Muchia Ascuțită, 2000 m *alt.*, 1971, ass. *Philonotido-Saxifragetum stellaris* Horv. 1949, Mlaștina Mică at west to Zănoaga Lake below Zănoaga Peak, 2000 m *alt.*, Mlaștina III from Judele Glacial Valley, 2050 m *alt.*, 1971, ass. *Calthaetum laetae* Krajina 1933 (Boșcaiu, Plămadă & Péterfi Ș. 1972:177-179, Tabs.1,2; Sanda & Popescu A. 1992:172, Tab.1); Judele Brook, on wet stones, 2080 m *alt.* (Plămadă 1973b:101); Judele Glacial Valley, in water, on stones, the vales between Muchia Ascuțită and Slăvei Culm – Judele 2 Valley, 1990-2100 m *alt.*, Judele 2 Glacial Valley, in peatbogs, 1990-2090 m *alt.*, incl. sub *S. dentata* (Plămadă 1973b:102); Rovine Brook, 2000 m *alt.*, 5.09.1967, Cârligului Valley at “Casa alpinet”, 1900 m *alt.*, 9.07.1968, Știrbului Brook, 1950-2000 m *alt.*, 12.07.1971, Judele Brook, 2070-2090 m *alt.*, 9.07.1971, ass. *Philonotido-Hygrohypnetum dilatati* Plămadă 1974, Stânișoara Valley, 1700 m *alt.*, Judele Valley between Slăvei and Muchia Ascuțită, 1900 m *alt.*, ass. *Scapanietum undulatae* Schwick. 1944, Zlătuia Brook Valley, 1600 m *alt.*, ass. *Brachythecietum rivulare* Herzog 1943, Bârlei Brook, 1850 m *alt.*, 4.09.1967, Șesele Brook, 1050 m *alt.*, 21.06.1968, Judele Brook, 2070-2100 m *alt.*, 9.07.1971, ass. *Fontinaletum gracilis* Plămadă 1974, near Lia Lake, 1950-2000 m *alt.*, 6.06.1969, near Gemenea Lake, 2100 m *alt.*, 7.07.1969, upstream Tăul Cârligului, 2000 m *alt.*, 8.07.1969, Stânișoara Valley below Lolaia Peak, 1860 m *alt.*, 7.07.1970, incl. sub *S. dentata*, ass. *Philonotido-Saxifragetum stellaris* Horv. 1949 (Plămadă 1974b:98-103, Tabs.3,4,5; Plămadă 1976a; Plămadă 1976b:16,22; Plămadă 1993:55, Tabs.5,6); Retezat, 800-1200 m *alt.*, ass. *Chrysosplenio-Cardaminetum amarae* (Tx. 1937) Mass 1959, 1750-2050 m *alt.*, ass. *Philonotido-Saxifragetum stellaris* Horv. 1949, 1750-2050 m *alt.*, *Calthaetum laetae* Krajina 1933 (Coldea 1993:40, Tab.7).

Țarcu Mountains, Muntele Mic, 1000-1800 m *alt.*, 03-08.1943, *leg.* Boșcaiu N. (Ștefureac 1948a:220).

Caraș-Severin County, „Șapte Izvoare”, Herculane Spa, 200 m *alt.*, 22.06.1945, sub *S. dentata* (Ștefureac 1947a:138,150).

Poiana Ruscă Mountains, Luncani, Luncanilor Valley (Hazslinszky 1885:67).

Arad County, Dulcele on Mare Valley (Simonkai 1893:361).

Mureș County, Răchitiș Peak „Poiana”, 25.07.1995, ass. *Chrysosplenio-Cardaminetum amarae* Mass. 1959 (Oroian 1996:247, Tab.22).

Alba County, Galda de Sus, Rimetea (Barth 1880:121); Cărpiniș (Péterfi M. 1908:277); Găina Mountain, 1000 m *alt.*, Galbena Valley, 600 m *alt.*, sub *S. dentata* (Péterfi M. 1908:277; Goia & Schumacker 2000:92; Goia 2001:74); below Cucurbăta Mare, 1600-1700 m *alt.* (Coldea 1996:4, Tab.3; Goia 2001:74); Cucurbăta Mare Peak, 4.08.1994, 1700-1720 m *alt.*, ass. *Fontinalietum antipyreticae* Gretzer (Goia 1998:251, Tab.2); Cobleș Valley, on rotten wood (Goia 2001:74); Arieșul Mare Basin, on rotten wood (Goia & Schumacker 2002:87).

Cluj County, Turzii Gorges (Barth 1880:121); Dobrin Mountain (Péterfi M. 1918:61); Dobrin Mountain, 14.04.1916, *leg. & det.* Györffy I. & Péterfi M. (Györffy 1924b:38); Făget, *leg. & det.* Péterfi M. (Boros 1958:4,8); the peatbogs from spring and upper course of Someșul Rece, incl. Muntele Mare and Dobrin (Pop E. 1960:397); Someșul Rece Valley, *leg. & det.* Vajda L. (Boros & Vajda 1967:224); Gilău Mountains, common spruce forest (Plămadă 1985b:40).

Bihor County, Bulz, Pietros, 500 m *alt.*, Cristior, 400 m *alt.*, Stâna de Vale, Buteasa, 1300 m *alt.*, incl. sub *S. dentata* (Péterfi M. 1908:277); Iadului Valley between Remetea and Bulz, 26.05.1915, *leg. & det.* Györffy I. & Péterfi M., sub *S. dentata* (Györffy 1924b:38; Boros 1942a:33; Boros & Vajda 1967:225); Apuseni Mountains (Ștefureac 1975b:313).

Bihor Mountains, Padiș, 1250 m *alt.*, 08.1999, sub fo. *dentata* (Jakab 2000b:70).

Scapania verrucosa Heeg

Syn.:

- *Scapania parva* Steph.
- *Scapania verrucosa* fo. *isoloba* Müll. Frib.
- *Scapania verrucosa* var. *schiffneriana* Müll. Frib.
- *Scapania verruffera* C. Massal.

First citation for Romania: Loitlesberger 1898.

Transylvania (Pax 1908:130; Frey & al. 2006:101).

Romania (Stephani 1910:134; Szweykowski 1969:59,61, Figs.1,2; Ștefănuț 2003b:239, Fig.7).

Ecology: epilithic, acidophytic, hygrophytic, sciophytic; circumpolar; suboceanic-subalpine; Hch.

Herbaria and Exsiccatae: H.A.T.R.

Distribution in Europe: Fr, Ch, At, Es, It, Si, Hr, Ba, Ro, Bg, Ua, Ca.

Distribution in Romania:

Maramureş County, Vaser Valley at Vişeu de Sus (Boros 1951:377; Ştefureac, Popescu & Lungu 1955:531; Ştefănuţ 2003b:235, Fig.7).

Rodna Mountains, Vinului Valley (Boros 1951:377; Ştefureac, Popescu & Lungu 1955:531; Ştefănuţ 2003b:235, Fig.7).

Rarău Mountain, Codrul Secular Slătioara (Ştefureac 1941:1155,1272; Papp 1969b:188; Ştefureac & Pascal 1981:484; Ştefănuţ 2003b:235, Fig.7).

Bistriţa-Năsăud County, Râpa Mare, Piatra Corbului, Monari, Simioneşti, 1980-1981 (Mohan & Hodoroga 1983:52; Ştefănuţ 2003b:235, Fig.7).

Iezer-Păpuşa Mountains, ! – south to Voina Hut, *leg. & det.* Wallfisch R., *conf.* Ştefănuţ S. (Ştefănuţ 2003b:235, Fig.7).

Vâlcea County, Boia-Grebleşti, 800 m *alt.*, 1897, *leg. & det.* Loitlesberger K., sub var. *schiffneriana* [H.A.T.R. 151](Loitlesberger 1898:193; Radian 1901a:139; Müller 1912-1916:486; Boros 1942a:33; Ştefureac, Popescu & Lungu 1955:530; Ştefureac & Peicea 1973:44; Ştefănuţ 2003b:235, Fig.7).

Căpăţânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952 (Ştefureac, Popescu & Lungu 1955:527, Pl.I, Figs.4-9; Ştefănuţ 2003b:235, Fig.7).

Parâng Mountains, Latoriţa Valley, on calcareous rocks, 900 m *alt.*, 31.08.1954 (Ştefureac, Popescu & Lungu 1956a:514, Tab.1; Szweykowski 1969:59-61, Figs.1,2; Ştefănuţ 2003b:235, Fig.7); Latoriţa Valley, on calcareous rocks, 08-09.1954 (Ştefureac, Popescu & Lungu 1959:16,19,25,27; Ştefănuţ 2003b:235, Fig.7); Latoriţa Valley, 08-09.1954, sub var. *schiffneriana* (Ştefureac, Popescu & Lungu 1959:9,16,20,24,29).

Retezat Mountains, Zlătuia Brook Valley (Páll 1964a:108; Ştefănuţ 2003b:235, Fig.7).

Caraş-Severin County, Herculan Spa (Boros 1942a:33; Ştefureac, Popescu & Lungu 1955:531).

Domogled Mountain, Izvorul Jărălău, 607 m *alt.*, *leg. & det.* Papp C. (Papp 1939b:11,20; Ştefănuţ 2003b:235, Fig.7).

Alba County, Vidra Waterfall, 720 m *alt.* (Péterfi M. 1908:277,278; Péterfi M. 1909:97; Boros 1942a:33; Ştefureac, Popescu & Lungu 1955:530; Goia 2001:74).

Cluj County, Drăgan Valley, 27.05.1915, *leg. & det.* Györffy I. & Péterfi M. (Györffy 1924b:38; Boros 1942a:33,35; Ştefureac, Popescu & Lungu 1955:531); Drăgan Valley near Tranişu, 600 m *alt.*, *leg. & det.* Boros Á. (Boros & Vajda 1967:223; Ştefănuţ 2003b:235, Fig.7).

Bihar County, Iadului Valley between Remetea and Bulz, sub fo. *isoloba* (Boros 1942a:33; Boros 1951:377; Ştefureac, Popescu & Lungu 1955:531).

Scapania sp.

Căliman Mountains, upper side of Fundul Haiti Valley, below Pietrosu, 1750 m *alt.*, 21.07.1947 (Ştefureac 1948a:237; Ştefureac 1967b:310).

Giupalău Mountain, Poiana-Iţcani Reserve, Giupalău, 1750 m *alt.*, 20.07.1946 (Ştefureac 1958a:100).

Rarău Mountain, Codrul Secular Slătioara (Ştefureac 1941:1265).

Harghita County, Praid-Dealul Plateau, peatbogs (Pop E.1960:243).

Bucegi Massif, Obârşia Ialomiţei – Mecetul Turcesc, 2000 m *alt.*, 29.06.1943 (Ştefureac 1946:338); Lăptici Peatbogs, 1470 m *alt.* (Ştefureac 1972c:100).

Făgăraş Mountains, Bălea Glacial Ring, 1950 m *alt.*, 9-11.07.1946 (Ştefureac 1948a:237); the ridge above Bălea Lake, the bottom of Paltina Mountain, on sandy soil, 2100 m *alt.*, below Paltina Peak, on sandy soil, 2250 m *alt.*, 13.07.1946 (Ştefureac 1949a:289).

Retezat Mountains, the edge of Gemenele and Tăul Negru glacial lakes, *det.* Lungu L. (Prunescu-Arion & Toniuc 1967:221).

Hunedoara County, Ohaba-Ponor, *leg. & det.* Györffy I., sub *Martinellia* (Györffy 1924b:38).

Alba County, Arieş Valley, *leg.* Péterfi M., sub *Martinellia* (Györffy 1924b:38).

Gilău Mountains, Răcăţău, *leg.* Péterfi M., sub *Martinellia* (Györffy 1924b:38).

Targionia hypophylla L.

First citation for Romania: Pančić 1861.

Ecology: epigaeic, subneutrophytic-basiphytic, xerophytic, photophytic; circumpolar; mediterranean; Hth.

Distribution in Europe: Ie, Br, Fr, Nl, Be, De, Ch, At, Cz, Pt, Es, Bl, Co, Sa, Sc, It, Si, Hr, Me, Ba, Mk, Ro, Bg, Al, Gr, Ct, Cm, Az, Ma, Cn.

Distribution in Romania:

Caraș-Severin County, Rusca Montană („Ruckberg” or „Ruszkabánya”) (Pančić 1861:94; Györfly 1908d:262; Radian 1920:75).

***Trichocolea tomentella* (Ehrh.) Dumort.**

Syn.:

– *Jungermannia tomentella* Ehrh.

First citation for Romania: Baumgarten 1846.

Maramureș (Ștefureac 1979c:59).

Moldova (Papp 1943:664).

Muntenia (Mohan 1988b:99).

Transylvania (Pax 1908:130).

Ecology: epilithic-epigaeic, corticolous, indifferent, mesophytic, scio-photophytic; circumpolar; suboceanic; Hch.

Herbaria and Exsiccatae: BUCA, PHHM, SIB, FRE

Distribution in Europe: No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Bl, Co, It, Si, Hr, Sb, Mk, Ro, Bg, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Az.

Distribution in Romania:

Maramureș County, Bubila Brook at Berbești, 800-850 m *alt.*, *leg.* & *det.* Coman A. (Boros & Vajda 1967:218).

Suceava County, Coșna (Boros 1942d:149); the peatbogs from Dorna Basin (Pop E. 1960:287; Ștefureac 1967b:315,317; Ștefureac 1967d:246); Bistrița Aurie Valley, between Iacobeni and Ciocănești, the edge of Suhârzulul and Suhârzulul Mare Brooks (Pascal 1969:107); Grădinița Peatbog, Ilva Mică, 970 m *alt.*, 9.08.1973, Grădinița, between Făgețel Brook and Teșna Brook, frequent (Ștefureac 1967b:315-317; Ștefureac 1967d:246; Ștefureac 1968:307; Ștefureac 1970d:24,39; Ștefureac 1974:169); Tinovu Mare de la Poiana Stampei (Ștefureac 1970d:24,39; Ștefureac 1977a:49,52); Argestru, Cârlibaba, Deaca, Lițu and Țibău brooks vales (Pascal & Mititelu 1971; Ștefureac & Pascal 1981:478); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest (Lungu 1973b:72; Lungu 1974:74, Tabs.1,2; Lungu 1981c:91,95; Ștefureac 1986f:193).

Rarău Mountain, Codrul Secular Slătioara, on peaty soil, 800 m *alt.*, 14.07.1938, 12.08.1938 (Ștefureac 1941:1155,1163,1172,1215,1238,1249,1263,1265,1280,1288, Fig.27; Ștefureac 1965c:63; Ștefureac 1967b: 315,317; Ștefureac 1967d:246); Codrul Secular Slătioara, 900 m *alt.*, *leg.* Ștefureac T. & Ștefureac C., *det.* Ștefureac T., 10.08.1942 [FRE 2614; PHHM 6207711] (Borza 1945:248; Mohan 1971a:8); Codrul Secular Slătioara, Rarău Peak (Papp 1969b:188); Codrul Secular Slătioara (Ștefureac 1965f; Raclaru 1970; Ștefureac & Pascal 1981:478).

Bârgău Mountains, Strâmba Peak, Heniu Mare, Arșiței Peak, Muncel Peak, Iliuța Bozghi Brook, 1983-1984 (Mohan & Hodoroga 1986:211).

Harghita Mountains, Chirui Spa from Lueta, *leg.* & *det.* Barth J. (Schur 1866:875; Fuss 1878:654; Hazslinszky 1885:43; Bálint & Orbán 2006:471); Harghita, 30.08.1901 (Barth 1905:13; Bálint & Orbán 2006:471); Luci Peatbog, 1080 m *alt.* (Pócs 1958:110); Chirui Spa, on wet stones, 14.08.1869, *leg.* & *det.* Barth J. [SIB HF 1547, HF 1548](Drăgulescu 1983:57).

Harghita County, Vârșag, Târnavă Bank, 1958-1962 (Páll 1963b:17).

Piatra Mare Mountain, Piatra Mare, sub *Jungermannia* (Baumgarten 1846:228,229; Schur 1866:875; Fuss 1878:654; Hazslinszky 1885:43); Șapte Scări Waterfall, 940-1000 m *alt.* (Boros & Vajda 1967:218).

Postăvaru Mountain, sub *Jungermannia* (Baumgarten 1846:228,229; Schur 1866:875; Fuss 1878:654; Hazslinszky 1885:43).

Bucegi Massif, Bucegi (Schur 1866:875; Fuss 1878:654); ? - Peleş Valley, 4.08.1868, *leg.* & *det.* Grecescu D., sub “*Trichocolea tomentata*” (Grecescu 1869; Radian 1901a:135,136).

Făgăraș Mountains, Arpaș Mountain, *leg.* & *det.* Heufler L.R. (Schur 1866:875; Fuss 1878:655; Drăgulescu 2003:9).

Iezer-Păpușa Mountains, Iezer Valley, Bătrâna Valley (Mohan 1990a:23).

Argeș County, Argeșului Valley (Mohan 1990a:23).

Sibiu County, Prejba [SIB SCHUR 4622](Schur 1866:875; Fuss 1878:654; Gündisch 1977:47; Drăgulescu 2003:9).

Parâng Mountains, Parâng Mountain, 22-26.08.1882 (Barth 1883:5; Ștefureac, Popescu & Lungu 1955:525).

Retezat Mountains, Tăul Știrbului (Páll 1964a:108).

Arad County, Mare Valley near Dulcele (Simonkai 1893:363).

Bihar Mountains, Galbena Valley, 750 m *alt.*, 08.1999 (Jakab 2000b:66); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg. & det.* Ștefănuț S. [BUCA B3827].

***Tritomaria exsecta* (Schmidel) Schiffn. ex Loeske**

Syn.:

– *Diplophyllum exsectum* (Schmidel ex Schrad.) Thér. & Mong.

– *Jungermannia donniana* Hook. ex Huebener

– *Jungermannia exsecta* Schmidel ex Schrad.

– *Lophozia exsecta* (Schmidel ex Schrad.) Dumort.

– *Scapania exsecta* (Schmidel ex Schrad.) Aust.

– *Sphenolobus exsectus* (Schmidel ex Schrad.) Steph.

First citation for Romania: Schur 1866.

Moldova (Ștefureac & al. 1973:145).

Muntenia (Mohan 1988b:105).

Transylvania, sub *Lophozia* (Pax 1908:129; Müller 1954:742).

Ecology: epilithic-humicolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, CL

Distribution in Europe: No, Se, Ie, Br, Fr, Ad, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Si, Hr, Me, Ba, Ro, Bg, Lv, By, Ua, Rw, Rc, Re, Ca, Ma, Cn.

Distribution in Romania:

Maramureș County, Runc Waterfall, 15-21.06.1997 (Jakab 1999:55).

Rodna Mountains, Ineu, 2000-2200 m *alt.*, sub *Diplophyllum* (Matouschek 1905:80); Rodna Mountains, sub *Lophozia* (Pax 1908:129); Lala Valley, 1200 m *alt.*, on sandy soil with humus, 17.08.1937, sub *Sphenolobus* (Ștefureac 1938:241,250,258); the Bank of Tăul Mic Lake below Ineu, 21.08.1937, sub *Sphenolobus* (Ștefureac 1945:179).

Suceava County, Izvorul Alb, 14.05.1910, Argeștrul, 16.05.1910, sub *Sphenolobus* (Lilienfeldówna 1911:733); Cristișor-Neagra Broștenilor, Borcut Meadow, in shrubs, on soil (Lungu 1973b:72; Lungu 1981c:93).

Giuralău Mountain, Poiana Ițcani Reserve, 900-920 m *alt.*, 1946-1957, sub *Sphenolobus* (Ștefureac 1969a: Tab.16); ♀ - Giuralău Secular Forest, 47°26'12"N / 25°29'20"E, 1210 m *alt.*, 11.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3687, B3688], s - 1210 m *alt.*, 11.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3672, B3694], 13.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3666], 13.10.2006, *leg. & det.* Ștefănuț S. [BUCA B3632], 1210 m *alt.*, 1.09.2008, *leg. & det.* Ștefănuț S. [BUCA B3943, B3948, B3954, B3964, B3969, B3973].

Rarău Mountain, Pietrele Doamnei, 1600 m *alt.*, sub *Jungermannia* (Breidler 1890a:150; Lilienfeldówna 1911:732); Rarău, 14.05.1910, Pietrele Doamnei, 15.05.1910, sub *Sphenolobus* and *Jungermannia* (Lilienfeldówna 1911:731,732); Codrul Secular Slătioara, sub *Sphenolobus* (Tarnavski 1936:284,285,289; Ștefureac & Pascal 1981:476); Codrul Secular Slătioara, 800-930 m *alt.*, sub *Sphenolobus* (Ștefureac 1941:1155,1284, Tabs.3,9; Ștefureac 1969a: Tab.16; Papp 1969b:188); ♀ - Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3754], s - [BUCA B3756, B3757, B3768, B3776].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969, ass. *Tetraphidietum pellucidae* (Barkman 1958) Maurer 1961 (Ștefureac, Mihai & Pascal 1976:36, Tab.1); Muncel Peak, 1983-1984 (Mohan & Hodoroga 1986:213).

Căliman Mountains, on humus, 1981-1984 (Mihai 1985:96).

Neamț County, Neamț Monastery, on rotten wood, 07-08.1921,1923, *leg.* Brândză M., *det.* Ștefureac T., sub *Sphenolobus* (Ștefureac 1942a:4).

Giurgeu Mountains, Bicz Gorges, 1957-1960, sub *Sphenolobus* (Papp & al. 1962:144; Bálint & Orbán 2006:475).

Hășmaș Mountains, Hășmaș, sub *Sphenolobus* (Schiffner 1914:306); Hășmașul Mare, sub *Sphenolobus* (Degen 1930:975).

Harghita Mountains, Piatra Colibei, 19.06.1999 (Jakab 2000a:88); Tușnad (Bálint & Orbán 2006:471).

Nemira Mountains, Nemira, on humus, 1970-1977 (Mihai & Barabaş V. 1978:116); Bălătău Lake, 850 m *alt.* (Barabaş V. 1982b:70, Tab.20).

Bacău County, *s* - Măgura Hill, north-west to Târgu Ocna, on humus, 680 m *alt.*, rare (Mihai & Barabaş V. 1971:674-676,683,687); Tălâmba Brook, Fata Moartă Forest, on rotten fir (Eftimie 1972:151); upper Caşin Basin, between the springs of Fata Moartă Brook, Buciaş's affluent, on soil, 1000 m *alt.*, 06.1970 (Eftimie 1973:423).

Penteleu Mountain, Izvorul Bălescu, 07.1935, *leg.* Şerbănescu I., *det.* Ştefănuţ S. [BUCA B0957].

Ciucaş Mountains, Caprei Brook Valley, Albele Culm, Bratocea Mountain, Roşu Mountain (Mohan 1990b:42).

Braşov County, Predeal, sub *Jungermannia* (Loitlesberger 1898:195).

Gârbova Massif, Tufa Valley, 5.07.1998, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B2004, B2027, B2201].

Bucegi Massif, fer - Mălăieşti Valley, Bucşoiu, Jupi Valley, 08-09.1911, sub *Sphenolobus* (Degen 1914:217); Sinaia, on rotten wood and soil, 05.08.1914,1920, *leg.* Brândză M., *det.* Ştefureac T., sub *Sphenolobus* (Ştefureac 1942a:4); Albă Valley, 23.08.1959, *leg.* Racoviţă A., *det.* Ştefureac T., sub *Sphenolobus* (Racoviţă A. 1960:1113); Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m *alt.*, 8.07.1999, *leg.* & *det.* Ştefănuţ S. [BUCA B2091].

Prahova County, Sinaia, sub *Jungermannia* (Loitlesberger 1898:195).

Piatra Craiului Mountains, Crăpătura Pietrei Craiului, BV, 45°33'49"N / 25°15'54"E, 1050 m *alt.*, 21.08.2003, *leg.* & *det.* Ştefănuţ S. [BUCA B2779], on rotten wood [BUCA B2785] (Ştefănuţ & Pop O.G. 2006:83); Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m *alt.*, 22.08.2003, *leg.* & *det.* Ştefănuţ S. [BUCA B2719, B2777] (Ştefănuţ & Pop O.G. 2006:83); Marele Grohotiş, AG, 45°30'36"N / 25°11'38"E, 1550 m *alt.*, 8.07.2003, *leg.* & *det.* Ştefănuţ S. [BUCA B2630] (Ştefănuţ & Pop O.G. 2006:83); towards Şaua Funduri, common spruce forest, AG, 45°29'54"N / 25°12'39"E, 1480 m *alt.*, 7.08.2003, *leg.* Pop O., *det.* Ştefănuţ S. [BUCA B3340] (Ştefănuţ & Pop O.G. 2006:83).

Făgăraş Mountains, above Avrig Lake, 2150 m *alt.*, 9-19.07.1946, sub *Sphenolobus* (Ştefureac 1949a:290; Drăgulescu 2003:13); Podragu Valley, 1800-2000 m *alt.* (Vajda 1975:120); Pojorta Valley, BV, 800-1000 m *alt.*, 18.09.2001, *leg.* & *det.* Ştefănuţ S. [BUCA B2672]; Pojorta Valley, BV, 21.09.2003, 800 m *alt.*, *leg.* & *det.* Ştefănuţ S. [BUCA B2918].

Vâlcea County, Poiana Lungă, 1000 m *alt.*, sub *Sphenolobus* (Herzog 1919:295).

Cozia Mountain, Slavei Brook, Păuşa Valley, on rotten woods, 1975-1976 (Dihoru G. 1990:53); Turnu towards Stânişoara, 08.2005, *leg.* Onete Marilena, *det.* Ştefănuţ S. [BUCA B3488].

Cindrel Mountains, Păltiniş, 1350-1400 m *alt.*, Niculeşti, 1900 m *alt.* (Gündisch 1977:49; Drăgulescu 2003:13).

Sibiu County, Cisnădioara (Schur 1866:871; Fuss 1878:657; Hazslinszky 1885:62; Drăgulescu 2003:13).

Retzat Mountains, Turcului Valley, 9.09.1969, 800 m *alt.*, ass. *Isopterygio seligeri-Dicranetum scoparii* Ježek et Vondr. 1962 (Plămadă 1982a:313, Tab.7; Plămadă 1993:52, Tab.2); Zănoaga Lake, 28.07.1974, *leg.* Orbán S. & Debreczy Z., Zănoaga Glacial Ring, northern slope, 27.07.1974, *leg.* Orbán S. & Debreczy Z. (Orbán & Sass-Gyarmati 2003:139); Gemenele, 2006, *leg.* Cogălniceanu D., *det.* Ştefănuţ S. [BUCA B3716].

Poiana Ruscă Mountains, Luncani, Tăul Ursului (Simonkai 1872:67; Fuss 1878:657; Hazslinszky 1885:62).

Alba County, Galbena Valley, 900 m *alt.*, 12.09.1996, Ursoaia Saddle, 900 m *alt.*, ass. *Lophocolo-Dolichothecetum seligeri* Philippi 1965 (Goia 2000:114, Tab.3); Vârciorog Valley, Iarba Rea Valley, Cepelor Valley, Arieşul Mare – upstream Arieşeni, Gârda Seacă – upstream Casa de Piatră, Scărişoara Cave, Mătişesti – towards Ursoaia Saddle, on rotten wood (Goia 2001:64); Arieşul Mare Basin, on rotten wood (Goia & Schumacker 2002:86,89); Cetăţile Ponorului, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ştefănuţ S. [BUCA B3828, B3853].

Mureş County, Lunca Bradului, *leg.* & *det.* Demeter K., sub *Jungermannia* [CL](Demeter 1888:60; Igmándy 1943:55,56).

Codru-Moma Mountains, Monesei Valley, Lilieciilor Cave, on calcareous rocks (Mohan 1996:49; Ardelean 2006:104).

Cluj County, Southern Ciucea on Surduc Valley, sub *Sphenolobus* (Boros 1942a:34); Mărişel towards Beliş, 950 m *alt.*, ass. *Symphyto (cordato)-Fagetum* Vida 1959, 1963, northern and southern

slopes of the mountains upstream Tarnița Lake and downstream Mărișel, 600-850 m *alt.*, ass. *Deschampsio (flexuosae)-Fagetum* Soó 1962 (Pop I. & Hodișan I. 1981:46,53, Tabs.2,5).

Bihor County, Someșul Cald Gorges, on decaying woods (Goia & Mătase 2001:17).

Tritomaria exsectiformis (Breidl.) Loeske

Syn.:

- *Diplophylleia exsectiformis* (Breidl.) Culm.
- *Diplophyllum exsectiforme* (Breidl.) Warnst.
- *Jungermannia exsectiformis* Breidl.
- *Lophozia exsectiformis* (Breidl.) Jaap
- *Sphenolobus exsectiformis* (Breidl.) Steph.
- *Sphenolobus exsectiformis* var. *aequilobus*

First citation for Romania: Degen 1930.

Moldova (Ștefureac & al. 1973:145).

Muntenia (Mohan 1988b:105).

Ecology: epigeaic, truficolous, acidophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, No, Dk, Se, Fi, Ie, Br, Fr, Ad, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Es, Co, It, Ba, Ro, Bg, Gr, Ee, Lv, Lt, By, Ua, Rn, Rw, Rc, Re, Rs, Ca.

Distribution in Romania:

Rodna Mountains, sub *Sphenolobus* (Ștefureac 1963c:168).

Țibleș Mountains, Arsuri Peak, Țibleș Peak, 1984-1985, sub *Sphenolobus* (Mohan 1988a:20).

Suceava County, Piatra Țibău, Cârlibaba, 1967 (Ștefureac & Pascal 1970a:246,249); Criștor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, on soil and rotten woods (Lungu 1973b:72; Lungu 1981c:93); Poiana Stampei Peatbog, SV, 47°20'33"N / 25°11'14"E, 920 m *alt.*, 28.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3792, B3795].

Giurnalău Mountain, Giurnalău Secular Forest, 47°26'12"N / 25°29'20"E, 1200 m *alt.*, 13.09.2006, *leg. & det.* Ștefănuț S. [BUCA B3660, B3705].

Rarău Mountain, Codrul Secular Slătioara, 800-1400 m *alt.*, incl. sub *Sphenolobus exsectiformis* var. *aequilobus* (Ștefureac 1941:1155,1270,1281,1284, Tabs.3,7,9; Bîrcă & Mihai 1963:127; Papp 1969b:188; Ștefureac 1986f:193); Plaiul Todirescu-Slătioara Reserve, incl. var. *aequilobus* (Ștefureac & Raclaru 1978:196); ♀ - Rarău Mountain, 47°27'15"N / 25°33'45"E, 1450 m *alt.*, 25.07.2007, *leg. & det.* Ștefănuț S. [BUCA B3764].

Bârgău Mountains, Cucureasa Reserve, Coșna Forest Hut, 930-1230 m *alt.*, 1967, 1969 (Ștefureac, Mihai & Pascal 1976:36); Piatra Fântânele, Muncel Peak, Heniu Mare Peak, Arșiței Peak, Străja Valley, Tureac Brook, 1983-1984 (Mohan & Hodoroga 1986:212).

Stânișoara Mountains, Ostra Brook Valley below Puzdrele, on rotten woods, 1974 (Pascal & Toma M. 1977:42).

Hășmaș Mountains, Hășmașul Mare (Degen 1930:976); Oii Valley, on rotten woods, 12.08.1953 (Bîrcă & Mihai 1963:127,130).

Harghita Mountains, Asău Valley, 1000-1100 m *alt.*, on rocks, 22.10.2000, *leg.* Bálint L. & Csizi K. (Orbán & Bálint 2002:60; Bálint & Orbán 2003:14).

Bacău County, s - Măgura Hill, north-west to Târgu Ocna, in oak groves, on soil, 680 m *alt.*, very rare (Mihai & Barabaș V. 1971:675-676,687).

Ciucaș Mountains, Chirușca Mountain, Bratocea Peak, Gropșoarele Peak, Roșu Mountain (Mohan 1990b:42).

Gârbova Massif, Tufa Valley, on wood, 5.07.1998, *leg.* Pop O., *det.* Ștefănuț S. [BUCA B2306].

Bucegi Massif, Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m *alt.*, 8.07.1999, *leg. & det.* Ștefănuț S. [BUCA B3111].

Făgăraș Mountains, Cârțișoara Valley, 1400 m *alt.*, *leg. & det.* Vajda L. (Boros & Vajda 1967:220); Podragu Valley, 1800-2000 m *alt.* (Vajda 1975:120).

Tritomaria polita (Nees) Jörg.

Syn.:

- *Diplophyllum politum* (Nees) Dumort.
- *Jungermannia medelpadica* Arnell
- *Jungermannia polita* Nees
- *Lophozia polita* (Nees) Macoun
- *Saccobasis polita* (Nees) H. Buch

- *Sphenolobus medelpadicus* (Arnell) Steph.
- *Sphenolobus politus* (Nees) Steph.
- *Sphenolobus politus* var. *medelpadicus* (Arnell) Schiffn.
- *Sphenolobus politus* var. *riparium* Bryhn ex Schiffn.

First citation for Romania: Plămadă 1977b.

Ecology: epilithic, subneutrophytic-basiphytic, hygrophytic, scio-photophytic; circumpolar; subalpine-alpine; Hch.

Herbaria and Exsiccatae: BUCA

Distribution in Europe: Sj, Is, No, Se, Fi, Br, Fr, De, Po, Ch, At, Sk, It, Si, Ro, Rn.

Distribution in Romania:

Făgăraş Mountains, Doamnei Valley, on soil, 1900 m *alt.*, Bâlea-Lac Glacial Ring, Piciorul Caprei Ridge, on soil, 2000 m *alt.*, 24.07.1974, sub *Saccobasis* (Plămadă 1977b:115; Plămadă 1979a:45; Plămadă, Goia & Dumitru 2000:23; Drăgulescu 2003:13); ♀ - The glacial ring from Doamnei Valley, SB, 45°36'08"N / 24°36'26"E, 2120 m *alt.*, 16.07.2000, *leg. & det.* Ştefănuţ S. [BUCA B2001, B2093, B2094] (Ştefănuţ 2001:129).

Tritomaria quinquedentata (Huds.) H. Buch

Syn.:

- *Barbilophozia quinquedentata* (Huds.) Loeske
- *Jungermannia barbata* Schreb. var. *quinquedentata* (Huds.) Nees
- *Jungermannia lyonii* Taylor
- *Jungermannia quinquedentata* Huds.
- *Lophozia lyonii* (Taylor) Steph.
- *Lophozia quinquedentata* (Huds.) Cogn.
- *Tritomaria quinquedentata* var. *alpigena*

First citation for Romania: Baumgarten 1846.

Bucovina (Müller 1954:738; Schuster 1969:681).

Moldova, incl. sub *Lophozia* (Papp 1943:656; Ştefureac & al. 1973:145).

Muntenia (Mohan 1988b:105,106).

Transylvania, sub *Lophozia* (Pax 1908:129).

Ecology: epilithic, humicolous, corticolous, subneutrophytic, mesophytic, sciophytic; circumpolar; mountain; Hch.

Herbaria and Exsiccatae: BUCA, PHHM, SIB

Distribution in Europe: Sj, Is, Fo, No, Dk, Se, Fi, Ie, Br, Fr, Nl, Be, De, Po, Ch, At, Cz, Sk, Hu, Pt, Es, Co, It, Si, Hr, Sb, Ba, Mk, Ro, Bg, Ec, Lv, Lt, By, Ua, Nz, Fl, Rn, Rw, ?Rc, Re, Ca.

Distribution in Romania:

Maramureş Mountains, Şuligu (Hazslinszky 1885:54).

Maramureş County, Covatar Waterfall near Săpânţa, 900 m *alt.*, 15-21.06.1997, Piatra Sărită, near Băiuţ, 16-18.10.1998 (Jakab 1999:55).

Rodna Mountains, Pietrosul Rodnei, sub var. *alpigena* (Hazslinszky 1885:54); Galaţi Mountain, 2000 m *alt.*, sub *Jungermannia* (Matouschek 1905:80); sub *Lophozia* (Pax 1908:129); Ineu, Crestele Găgii, Tăul Mare, 2000 m *alt.*, sub *Lophozia* (Ştefureac 1942b:91); Pietrosul Borşei, north-western slope, 2260-2280 m *alt.*, 8-9.08.1948, western slope, 2150 m *alt.*, sub *Lophozia* (Ştefureac 1952a:389-391, Tab.1; Ştefureac 1958a:109; Ştefureac 1968:304; Ştefureac 1977c:167; Ştefureac 1983g:177; Nădişan & Chercheş 2002:58); Ineu, the glacial ring below Roşu Peak, 08.1937 (Ştefureac 1958a:110); Rodna Mountains, sub *Lophozia* (Ştefureac 1963c:170); Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2207], 47°35'53"N / 24°38'49"E, 1835 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2501], 47°35'50"N / 24°38'50"E, 1840 m *alt.*, 28.08.1999, *leg. & det.* Ştefănuţ S. [BUCA B2010, B2011, B2132, B2907].

Țibleş Mountains, Bran Peak, Arsuri Peak, Izvorul Țibleşului, Mesteacănul Valley, 1984-1985 (Mohan 1988a:21).

Suceava County, Argestrul, 16.05.1910, sub *Jungermannia* (Lilienfeldówna 1911:733); Tătarca Brook Valley, near Țibău, on the edge of forest way, common spruce forest and between Țibău and Cârlibaba, on rocks, *conf.* Mihai G. (Pascal 1970a:198); Codreava, Iedu Village towards Iedu Mountain and Țapu Mountain (Pascal & Mititelu 1971; Ştefureac & Pascal 1981:481); Adam and Eva Mountains, Pojorâta Commune, on stones (Mihai & Pascal 1973b:156,161); Bistrița Aurie Valley (Pascal 1973; Ştefureac 1986f:194); Cristișor-Neagra Broștenilor, Borcut Meadow, in common spruce forest, on soil (Lungu 1973b:72; Lungu 1981c:92).

Rarău Mountain, Pietrele Doamnei, 15.05.1910 (Lilienfeldówna 1911:734); Codrul Secular Slătioara, 800-820 m *alt.*, sub *Lophozia* (Ştefureac 1941:1154, 1270,1273,1288, Tab.3; Papp 1969b:188).

Bârgău Mountains, Piatra Fântânele, Străja Valley, Cârțibavu Mare Valley, Secu Brook, Măgura Calului, Tureac Brook, 1983-1984 (Mohan & Hodoroga 1986:212).

Bistrița-Năsăud County, Piatra Corbului, Monari, Simionești, Budacul de Jos, Râpa Mare, 1980-1981 (Mohan & Hodoroga 1983:52).

Căliman Mountains, Gruiu Peak, Pietrosul Peak, on rocks (Mihai 1968a:204); Răchitiș Peak, SV, 47°05'55"N / 25°14'54"E, 2020 m alt., 26.07.2007, leg. & det. Ștefănuț S. [BUCA B3726, B3732, B3739].

Ceahlău Mountain, Ceahlău, sub *Lophozia* (Papp 1934b:75,78; Zanoschi 1970:280; Manoliu & al. 1998:339).

Hășmaș Mountains, Hășmaș, sub *Lophozia* (Schiffner 1914:306).

Harghita Mountains, Stâncilor Peak, sub *Lophozia* (Degen 1930:976); above Ciceu (Bálint & Orbán 2006:471).

Nemira Mountains, Nemira, on stones, 1970-1977 (Mihai & Barabaș V. 1978:116); Nemira Mountain, 1045 m alt. (Barabaș V. 1982b:61, Tab.9).

Bacău County, Slănic Moldova, 07.1910, leg. Brândză M., det. Ștefureac T., sub *Lophozia* (Ștefureac 1942a:4; Papp 1957:284); Pufu Hill, in forest, 800-900 m alt., sub *Lophozia* (Papp 1957:284; Papp 1958b:396); without locality, 450 m alt. (Barabaș V. 1982b:70, Tab.20).

Ciucaș Mountains, Cucului Brook Valley, Ursului Brook Valley (Mohan 1990b:42).

Prahova County, Doftana Valley [PHHM 7791/3873](Mohan 1971a:8; Mohan 1971b:47).

Gârbova Massif, Azuga Valley, Rea Valley, on rocks, 1967-1970 (Lungu & Ștefureac 1970:5).

Bucegi Massif, Piatra Arsă, 2000 m alt., sub *Jungermannia* (Loitlesberger 1898:195); Gaura Glacial Ring, BV, 45°26'27"N / 25°26'19"E, 2120 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2040; B2890], 45°26'22"N / 25°26'24"E, 2250 m alt. [BUCA B2246, B2431] (Mihăilescu & Ștefănuț 2000a:14); Hornul Mare, BV, 45°26'55"N / 25°26'35"E, 2300 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2529](Ștefănuț 2004a:63; Ștefănuț 2004g:158); Hornul Mare, BV, 45°26'56"N / 25°26'31"E, 2310 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B2036, B3114, B3134, B3135, B3139], 45°26'55"N / 25°26'35"E, 2300 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3108]; Gaura Glacial Ring, BV, 45°26'27"N / 25°26'19"E, 2120 m alt., 8.07.1999, leg. & det. Ștefănuț S. [BUCA B3354]; The glacial rings of Ialomița Valley, DB, 45°26'00"N / 25°26'42"E, 2200 m alt., 10.07.1999, leg. & det. Ștefănuț S. [BUCA B2444, B2461, B2467, B2478], 45°26'07"N / 25°26'57"E, 2205 m alt., 10.07.1999, leg. & det. Ștefănuț S. [BUCA B2032]; Mălăiești Glacial Ring, BV, 45°27'05"N / 25°27'07"E, 2275 m alt., 9.07.1999, leg. & det. Ștefănuț S. [BUCA B2280]; Ialomița Valley, DB, 45°22'33"N / 25°26'10"E, 1465 m alt., 7.09.2006, leg. & det. Ștefănuț S. [BUCA B3601].

Piatra Craiului Mountains, Crăpătura Pietrei Craiului, BV, 45°33'30"N / 25°15'44"E, 1300 m alt., 22.08.2003, leg. & det. Ștefănuț S. [BUCA B2738], 45°33'35"N / 25°15'46"E, 1250 m alt., 22.08.2003, leg. & det. Ștefănuț S. [BUCA B2739], ♀ - 45°33'28"N / 25°15'42"E, 1350 m alt., 22.08.2003, leg. & det. Ștefănuț S. [BUCA B2736] (Ștefănuț & Pop O.G. 2006:83); Brusturet Gorges, AG, 950 m alt., 26.07.2004, leg. Pop O., det. Ștefănuț S. [BUCA B2957] (Ștefănuț & Pop O.G. 2006:83).

Argeș County, ♀ - Great Gorges of Dâmbovița River, 750 m alt., 8.06.2005, leg. Pop O., det. Ștefănuț S. [BUCA B3172] (Ștefănuț & Pop O.G. 2006:83).

Făgăraș Mountains, Arpaș Valley, in beech forest to subalpine zone, sub *Jungermannia barbata* var. *quinquedentata* (Heufler 1853:50-51, Pl. IV, Fig.2; Fuss 1854:20; Schur 1866:871,872; Fuss 1878:655,656; Drăgulescu 2003:12); Urlea Lake, BV, 45°35'44"N / 24°50'31"E, 2200 m alt., 17.09.2001, leg. & det. Ștefănuț S. [BUCA B2437](Ștefănuț 2002:190); Pojorta Valley, BV, 800 m alt., 21.09.2003, leg. & det. Ștefănuț S. [BUCA B2913].

Iezer-Păpușa Mountains, Bratia Valley, 1000 m alt., sub *Jungermannia* (Loitlesberger 1898:195);

Sibiu County, Prejba [SIB SCHUR 4584](Schur 1866:872; Fuss 1878:656; Gündisch 1977:49; Drăgulescu 2003:13); Cîsnădioara, Argintiu Brook Valley, at bottom of „Mälseifen” Hill, 16.10.1969, ass. *Asplenio (trichomanes-bivalens)-Poetum nemoralis* Boșcaiu 1970 (Schneider-Binder 1972: Tab.B; Drăgulescu 2003:13).

Cindrel Mountains, Păltiniș, 1300 m alt., Jujbea, 1800-2100 m alt. (Gündisch 1977:49; Drăgulescu 2003:13); Iezerul Cindrel, 2200 m alt. [SIB HG](Drăgulescu 1992:55; Drăgulescu 2003:13).

Căpățânei Mountains, Lotru Valley, Bucureasa, Malaia, 9-15.09.1952, sub *Lophozia* (Ștefureac, Popescu & Lungu 1955:527).

Parâng Mountains, Latorița Valley, on calcareous slope, 900 m *alt.*, 31.08.1954, sub *Lophozia* (Ștefureac, Popescu & Lungu 1956a:513-514, Tab.1); Latorița Valley, on calcareous rocks, Repedea Valley, sub *Lophozia* (Ștefureac, Popescu & Lungu 1959:8,16,22,25-27,29,34, Tabs.3-6); south and east to the peatbog from Câlcescu Lake border, sub *Lophozia* (Ștefureac 1969a:104,106).

Retezat Mountains, Retezat, sub *Jungermannia barbata* var. *quinquedentata* (Simonkai 1872:67; Fuss 1878:656; Hazslinszky 1885:54); Râu de Mori, sub *Lophozia* (Schiffner 1914:306); towards Lăncița (Páll 1964a:108); near Casa Laborator Gemenele, 1750 m *alt.*, *leg.* Plămadă E., 30.07.1966 (Ștefureac 1969a:136; Plămadă 1985a:52).

Alba County, Ordencușa Valley (Schiffner 1914:306); Întregalde Gorges, on *Fraxinus ornus* bark, 06.1960 (Páll 1964b:25); Runcului Gorges, at the base of trees trunks, 900-1000 m *alt.*, *det.* Páll Ș., *ass.* *Fagetum silvaticae transsilvanicum* (Pop I. & al. 1964:221); Morii Valley, on calcareous rocks, 700 m *alt.*, 01.06.1995, *ass.* *Tortello-Ctenidietum mollusci* (Gams 1927) Stodiek 1937 (Goia 1998:252, Tab.3); Galbena Valley, 875 m *alt.*, 12.09.1996, *ass.* *Riccardio-Scapanietum umbrosae* Philippi 1965 (Goia 2000:113, Tab.2).

Mureș County, Sighișoara, sub *Jungermannia* “*quinque-dentata*” (Baumgarten 1846:222; Schur 1866:872; Fuss 1878:656; Höhr 1914:87).

Bihor County, Drăgan Valley, sub *Lophozia* (Boros 1942a:35).

Bihor Mountains, 340-1400 m *alt.*, sub *Jungermannia* (Péterfi M. 1908:273); Cetățile Ponorului, 1150 m *alt.*, 17.08.1999 (Jakab 2000a:92; Jakab 2000b:67); Cetățile Ponorului, AB, 46°33'55"N / 22°42'15"E, 1050 m *alt.*, 3.09.2007, *leg.* & *det.* Ștefănuț S. [BUCA B3856, B3865].

Tritomaria scitula (Taylor) Jörg.

Syn.:

- *Diplophylleia exsectiformis* var. *aequiloba* Culm.
- *Jungermannia exsecta* var. *scitula* (Taylor) Pearson ex Macvicar
- *Jungermannia polita* var. *acuta* (Lindb. & Arnell) Meyl.
- *Jungermannia scitula* Taylor
- *Lophozia quinquedentata* var. *tenera* Arnell & C.E.O. Jensen
- *Sphenolobus politus* var. *acuta* (Kaal. ex Schiffn.) Müll. Frib.
- *Sphenolobus scitulus* (Taylor) Steph.
- *Tritomaria exsectiformis* var. *aequilobus* (Culm.) Müll. Frib.
- *Tritomaria quinquedentata* var. *tenera* (Arnell & C.E.O. Jensen) Weim.
- *Tritomaria scitula* (Taylor) Jörg. var. *spinosa* Herzog

First citation for Romania: Györfy 1943d.

Bucovina (Müller 1954:736; Schuster 1969:667).

Muntenia (Mohan 1988b:106).

Ecology: epilithic, humicolous, subneutrophytic, basiphytic, mesophytic, sciophytic, cryophytic; circumpolar; arctic-alpine; Hch.

Distribution in Europe: Sj, Is, No, Se, Fi, Fr, De, Po, Ch, At, Sk, It, Ro, Bg, Ua, Rn, Re.

Distribution in Romania:

Rodna Mountains, Pietrosul Rodnei, 23.08.1942, *leg.* & *det.* Boros Á., sub *Sphenolobus* (Györfy 1943d:321; Boros 1951:372; Ștefureac 1952a:392; Boros & Vajda 1967:220; Schuster 1969:667; Ștefureac 1983g:177); Laptelui Mountain, 1700-2000 m *alt.*, *leg.* & *det.* Boros Á., sub var. *spinosa* (Boros & Vajda 1967:220); Pietrosul Rodnei, 2280 m *alt.*, *leg.* & *det.* Ștefureac T., *ass.* *Bucegietum romanicae* Ștefur. 1984 subass. *jungermannietosum sphaerocarphae* Ștefur. 1986 (Ștefureac 1986h:105-107, Tab.2); ♀ - Iezerul Pietrosului, MM, 47°35'51"N / 24°38'48"E, 1840 m *alt.*, 28.08.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2209], s - 47°35'53"N / 24°38'49"E, 1835 m *alt.*, 28.08.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2304], 47°35'50"N / 24°38'50"E, 1840 m *alt.*, 28.08.1999, *leg.* & *det.* Ștefănuț S. [BUCA B2291].

Cozia Mountain, Muchea Turneanu, on soil, 1975-1976 (Dihoru G. 1990:53).

Bucegi Massif, Piatra Arsă, 2000 m *alt.*, *leg.* & *det.* Vajda L., sub var. *spinosa* (Boros & Vajda 1967:220).

Făgăraș Mountains, Podragu Valley, 1800-2000 m *alt.* (Vajda 1975:120); Bâlea Lake, SB, 45°36'10"N / 24°37'01"E, 2040 m *alt.*, 18.07.2000, *leg.* & *det.* Ștefănuț S. [BUCA B2135, B2139].

Parâng Mountains, Latorița Valley, 08-09.1954, sub *Lophozia quinquedentata* var. *tenera* (Ștefureac, Popescu & Lungu 1959:8,16,22,25-27,29,34, Tabs.3-6); below Mohor Ridge, 2300 m *alt.*, small peatbog, sub *Lophozia quinquedentata* var. *tenera* (Ștefureac 1969a:116, Tab.15).

DISTRIBUTION MAPS OF HORNWORTS AND LIVERWORTS IN ROMANIA

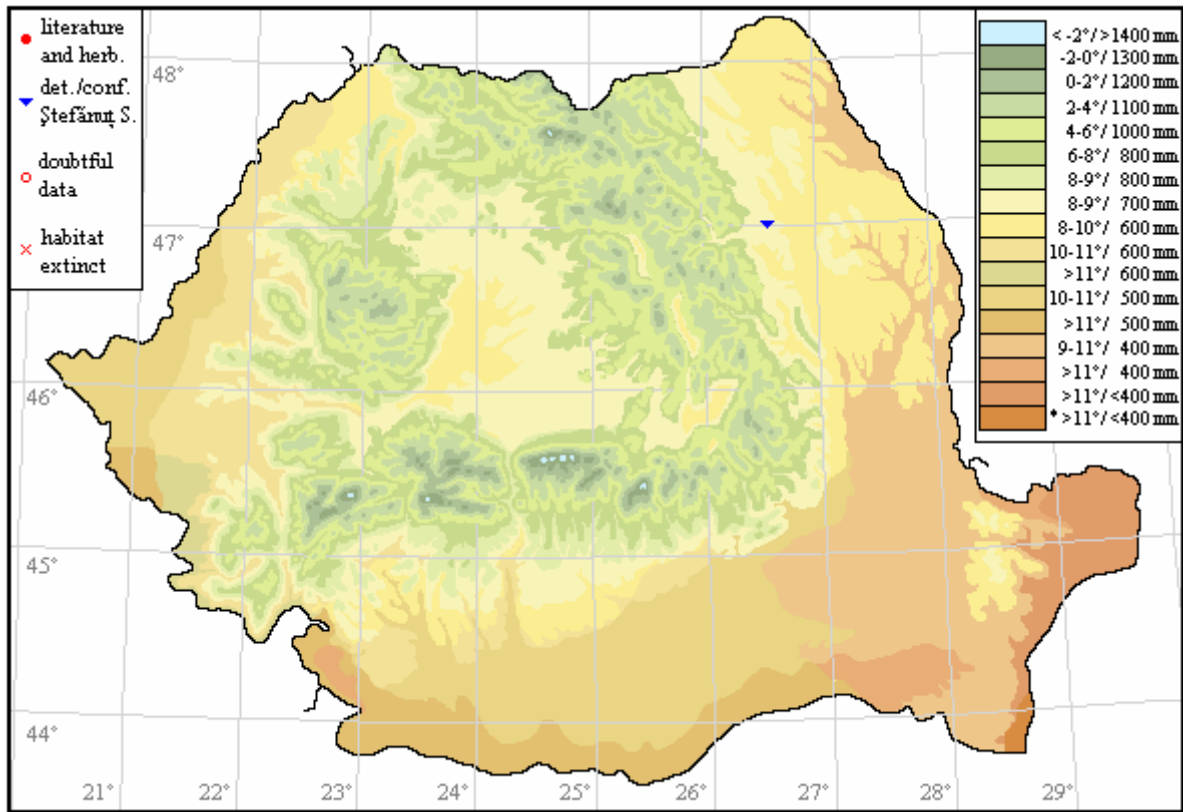


Fig. 7. Distribution of *Anthoceros agrestis* Paton in Romania.

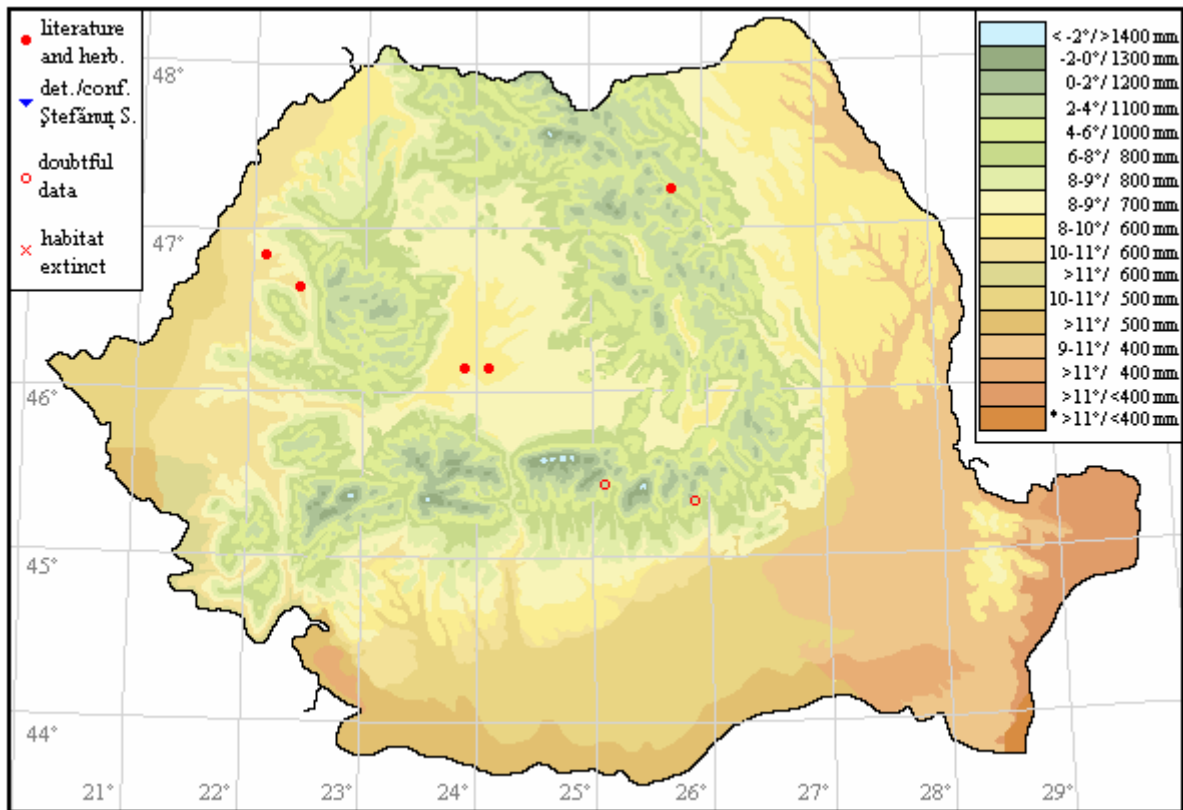


Fig. 8. Distribution of *Anthoceros punctatus* L. in Romania.

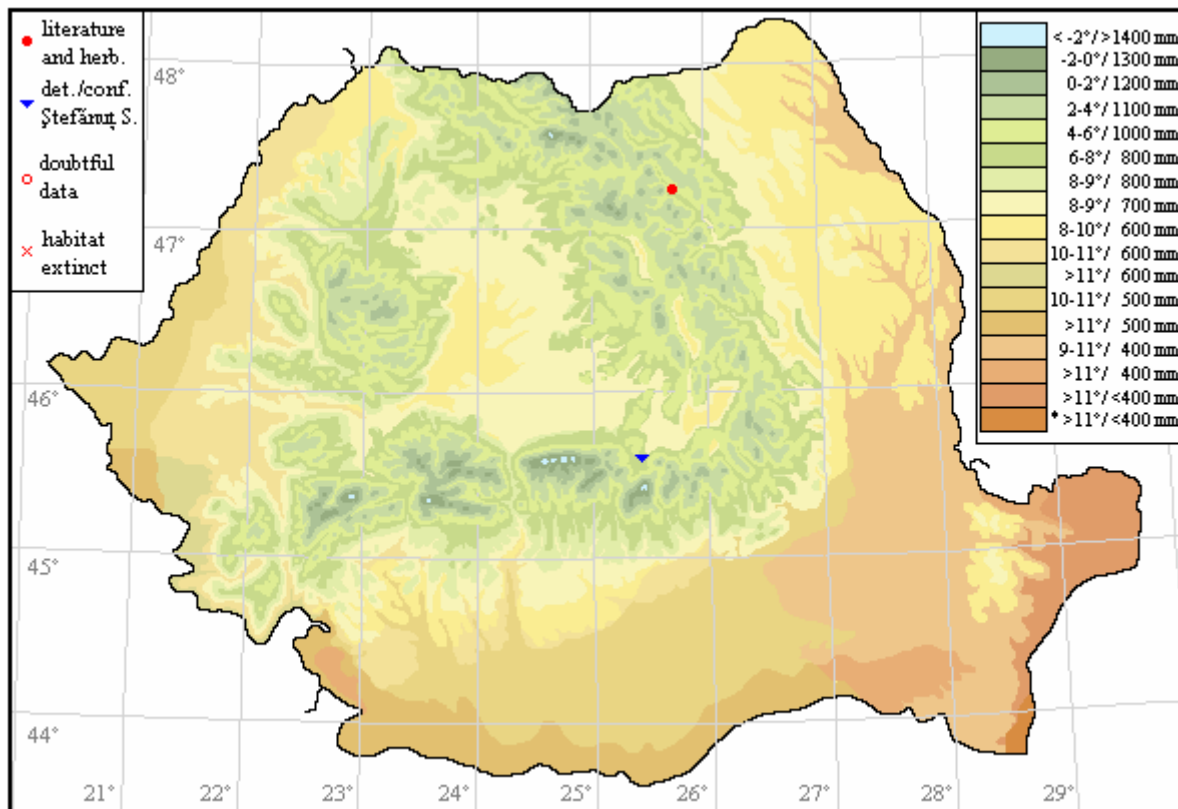


Fig. 9. Distribution of *Phaeoceros carolinianus* (Michx.) Prosk. in Romania.

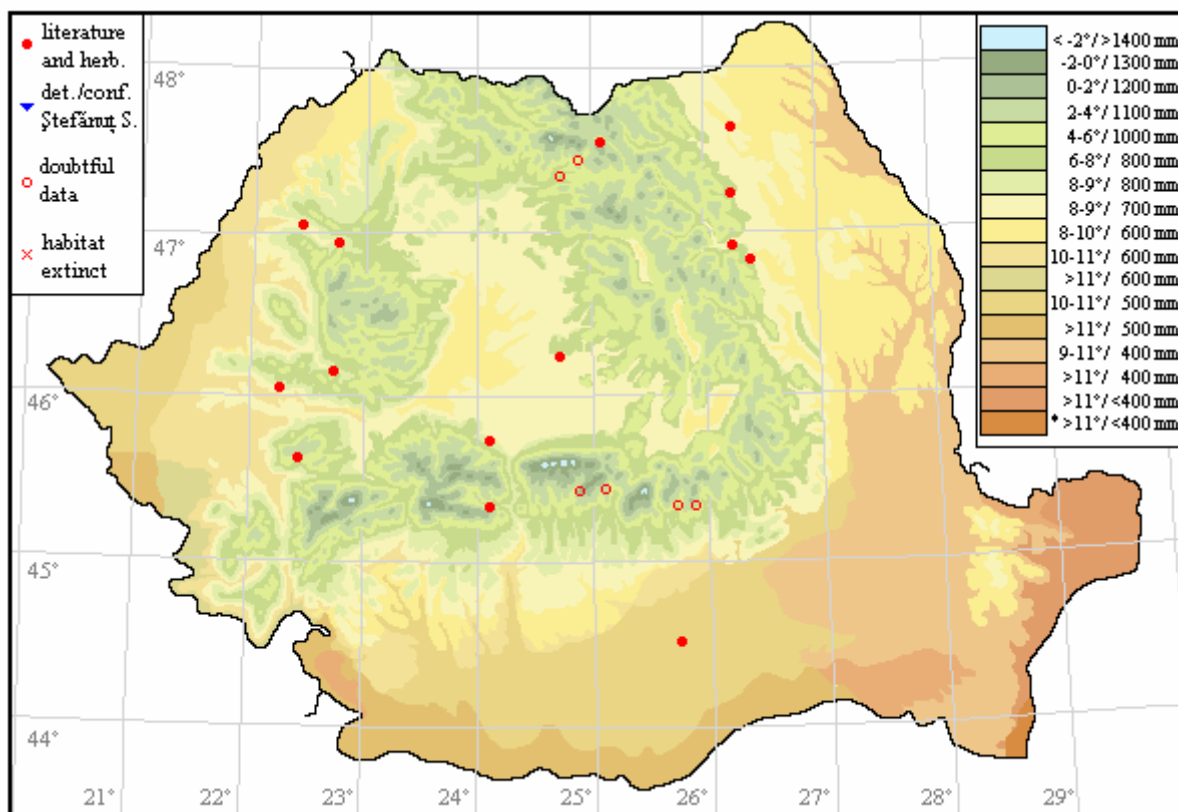


Fig. 10. Distribution of *Phaeoceros laevis* (L.) Prosk. in Romania.

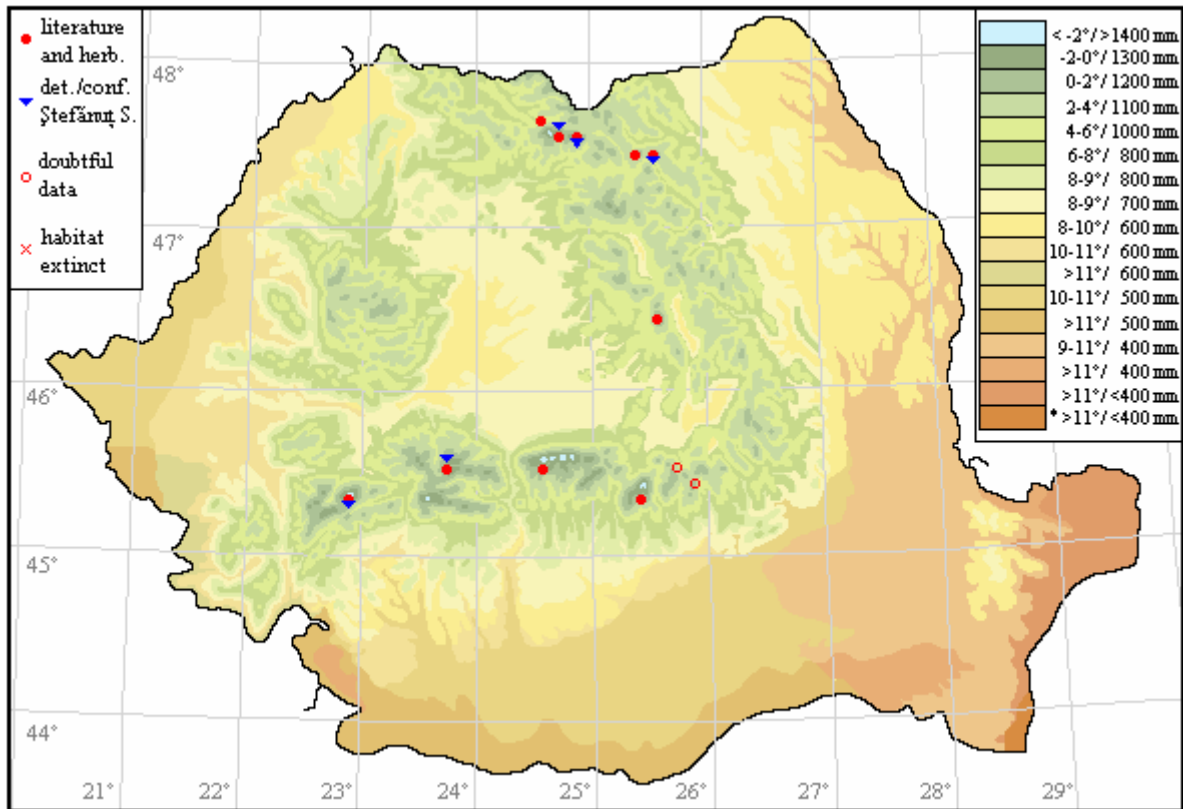


Fig. 11. Distribution of *Anastrepta orcadensis* (Hook.) Schiffn. in Romania.

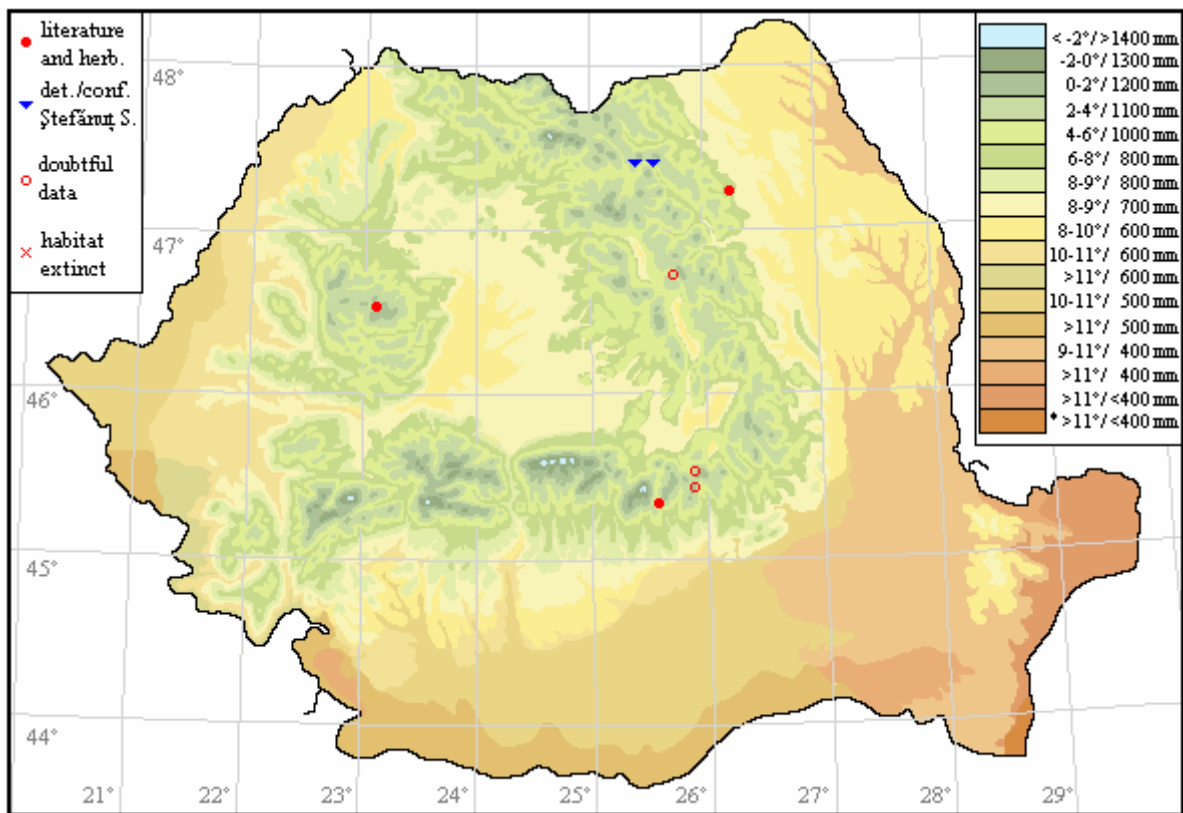


Fig. 12. Distribution of *Anastrophyllum hallerianum* (Nees ex Lindenb.) R.M. Schust. in Romania.

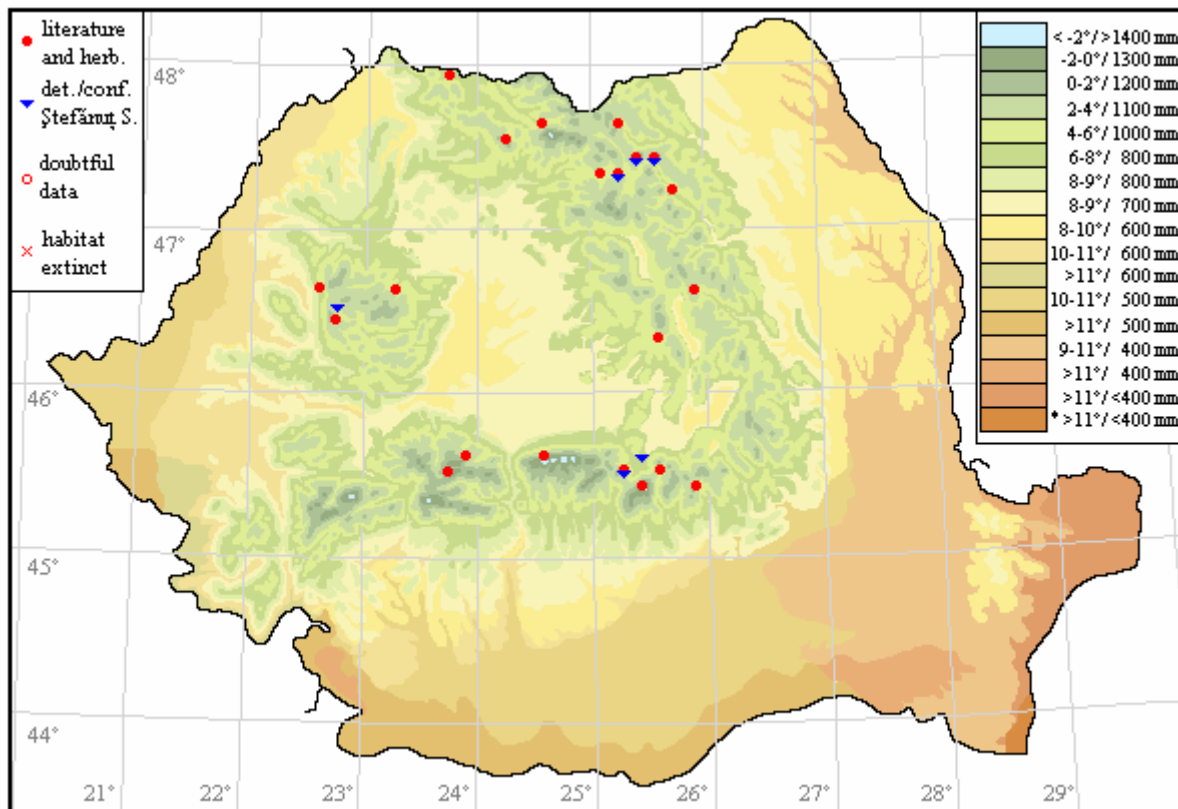


Fig. 13. Distribution of *Anastrophyllum michauxii* (F. Weber) H. Buch in Romania.

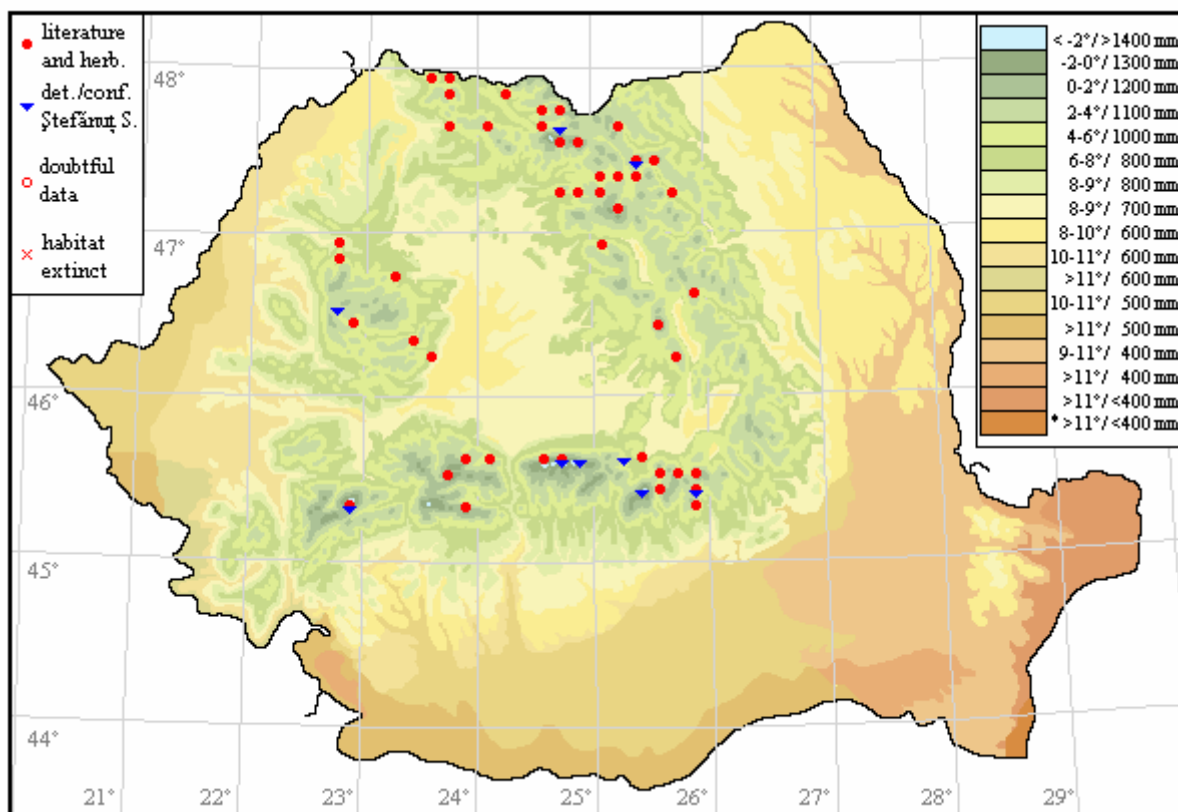


Fig. 14. Distribution of *Anastrophyllum minutum* (Schreb.) R.M. Schust. in Romania.

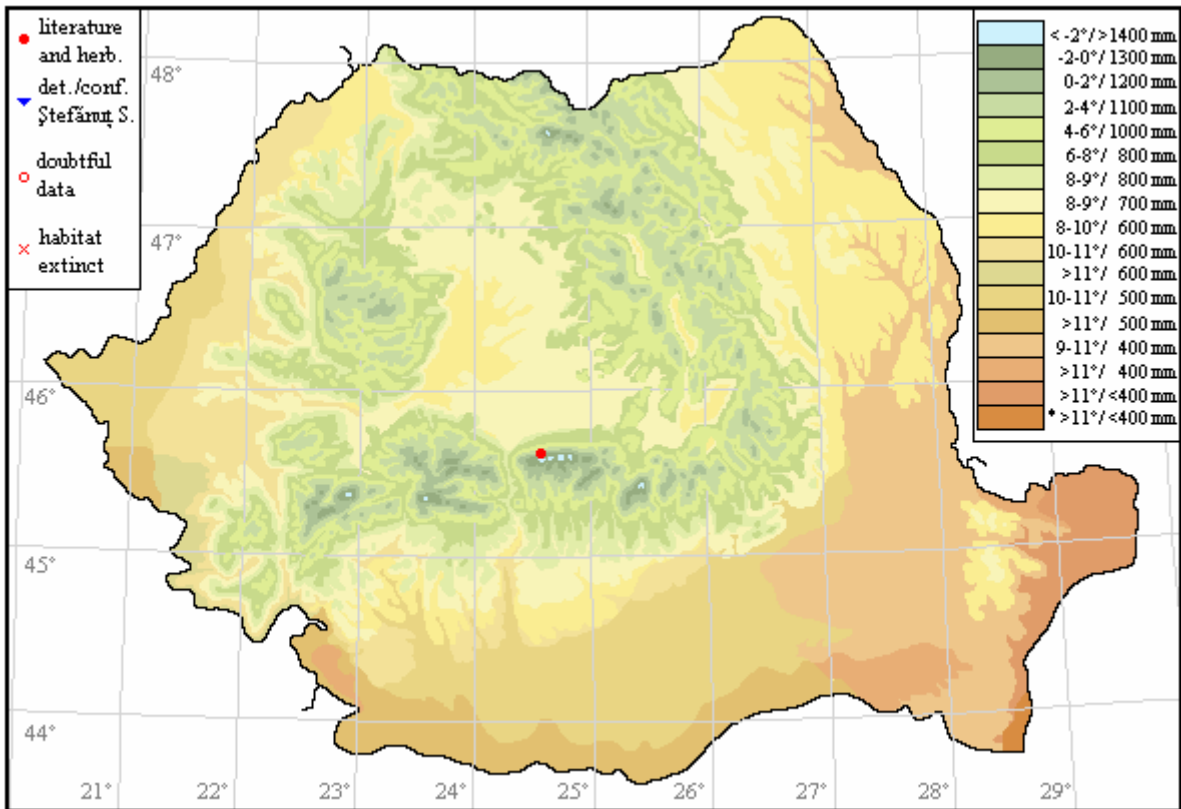


Fig. 15. Distribution of *Anastrophyllum saxicola* (Schrad.) R.M. Schust. in Romania.

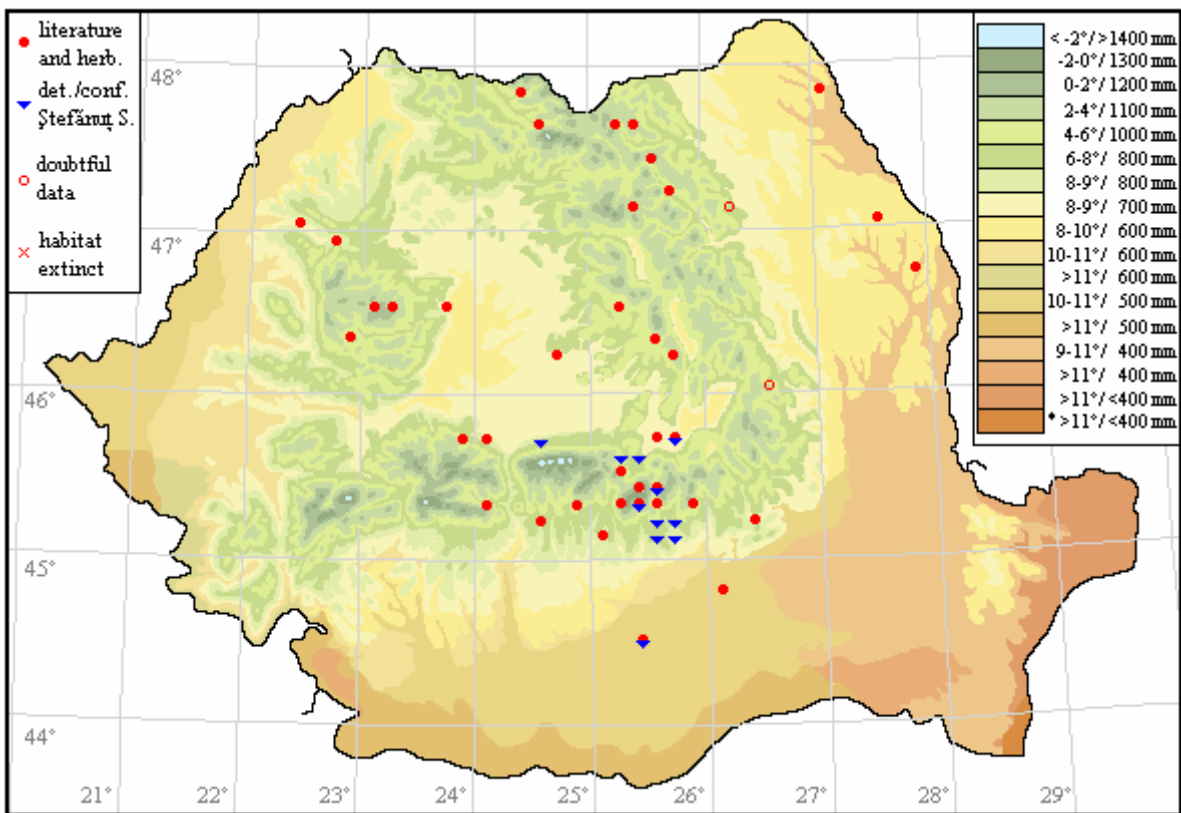


Fig. 16. Distribution of *Aneura pinguis* (L.) Dumort. in Romania.

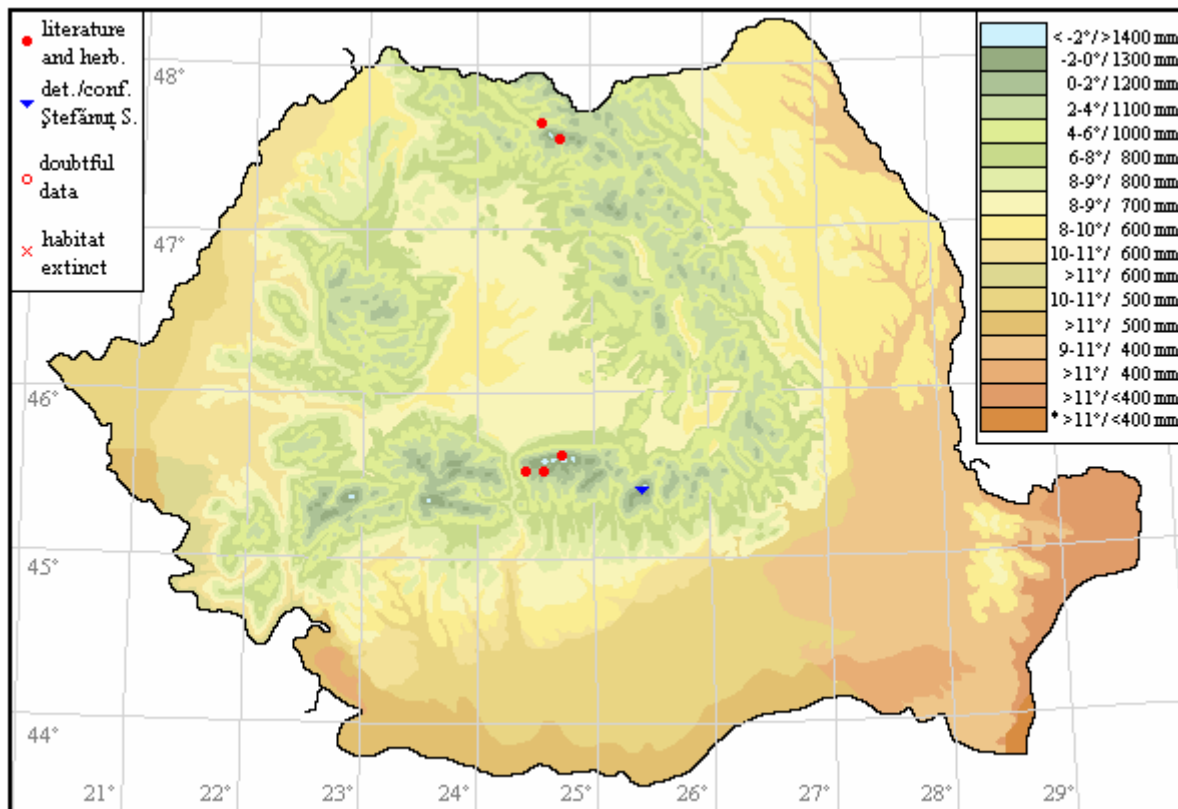


Fig. 17. Distribution of *Anthelia julacea* (L.) Dumort. in Romania.

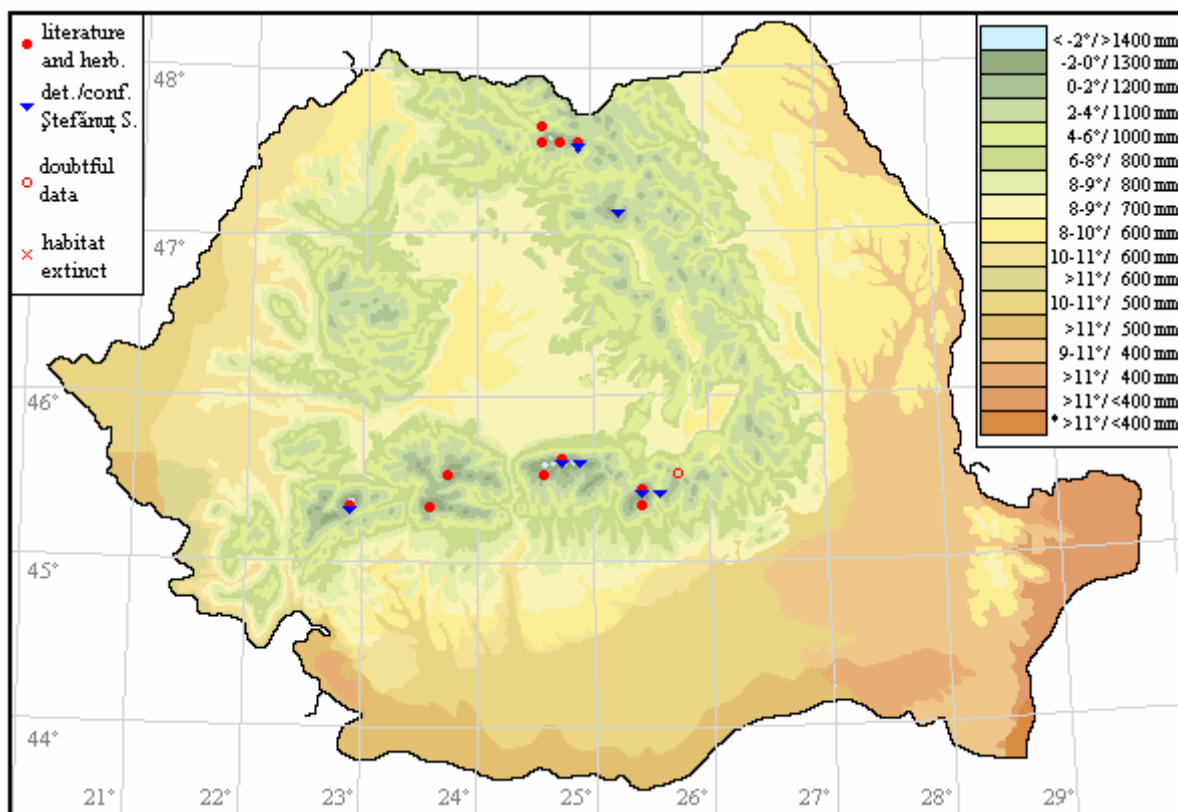


Fig. 18. Distribution of *Anthelia juratzkana* (Limpr.) Trevis. in Romania.

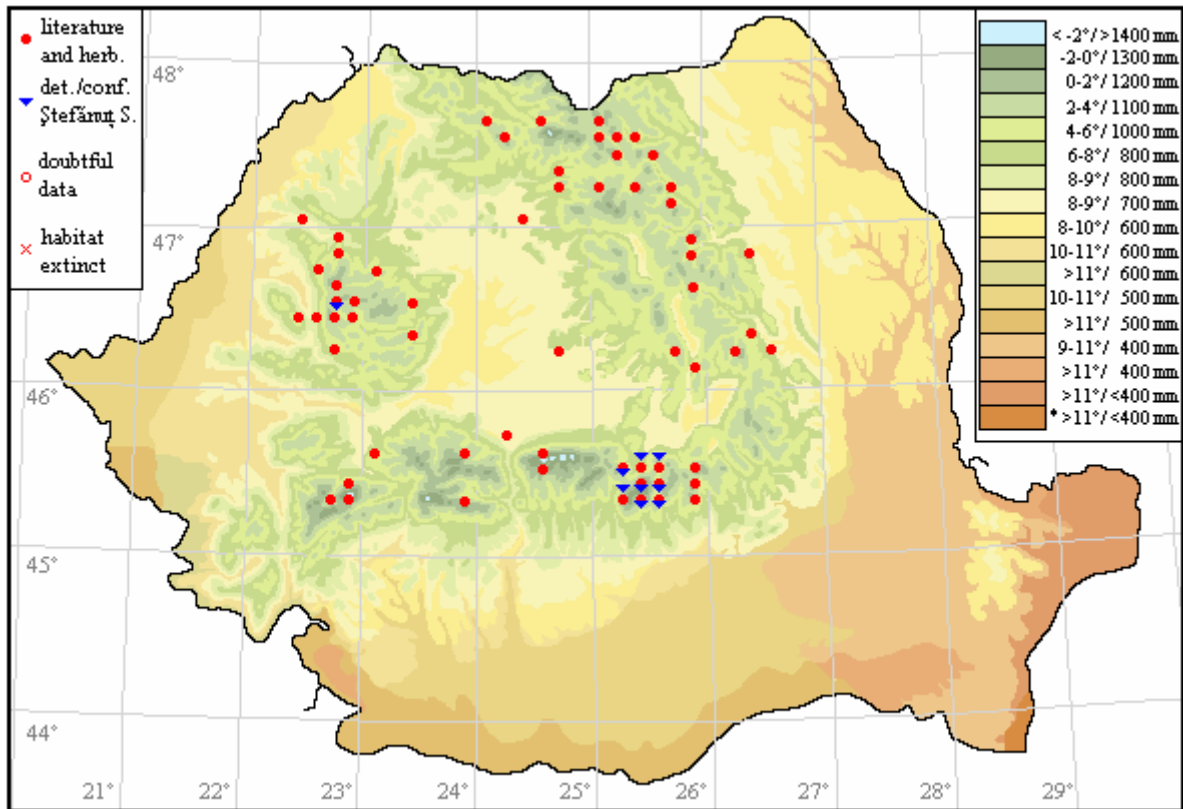


Fig. 19. Distribution of *Apometzgeria pubescens* (Schrank) Kuwah. in Romania.

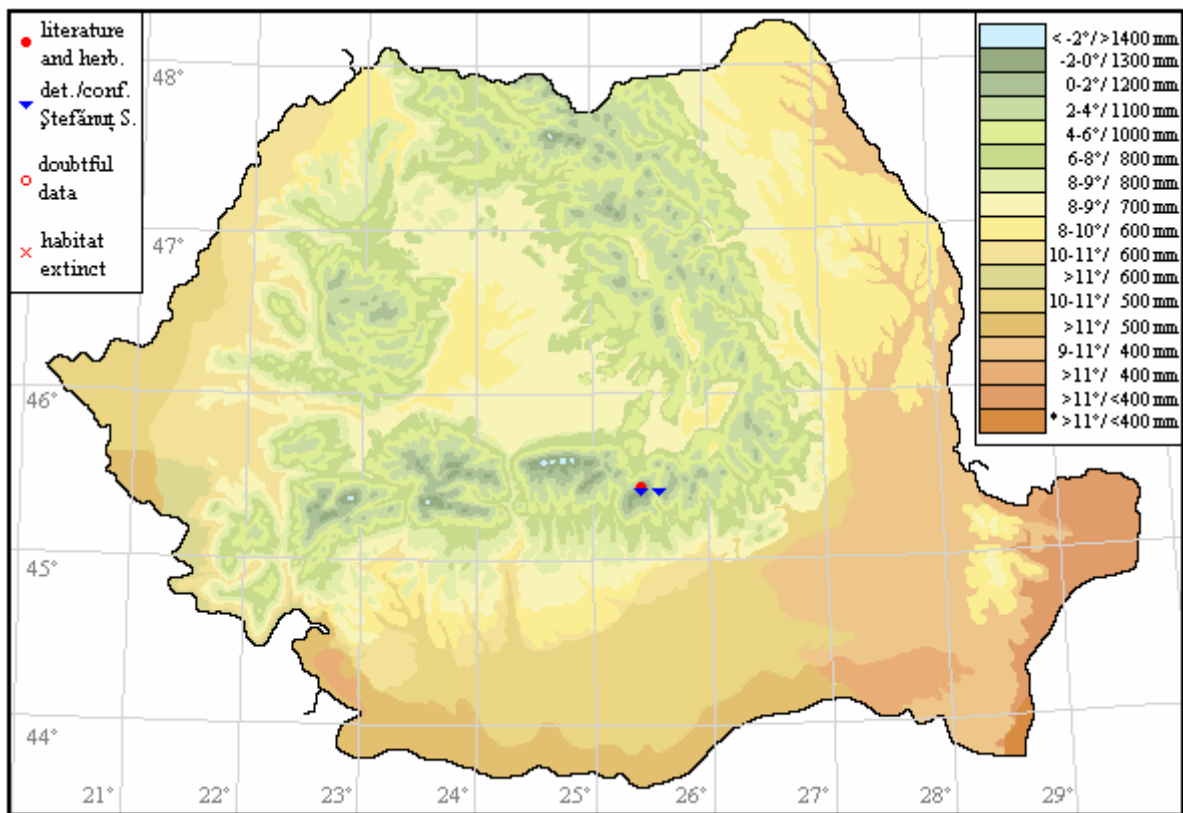


Fig. 20. Distribution of *Asterella gracilis* (F. Weber) Underw. in Romania.

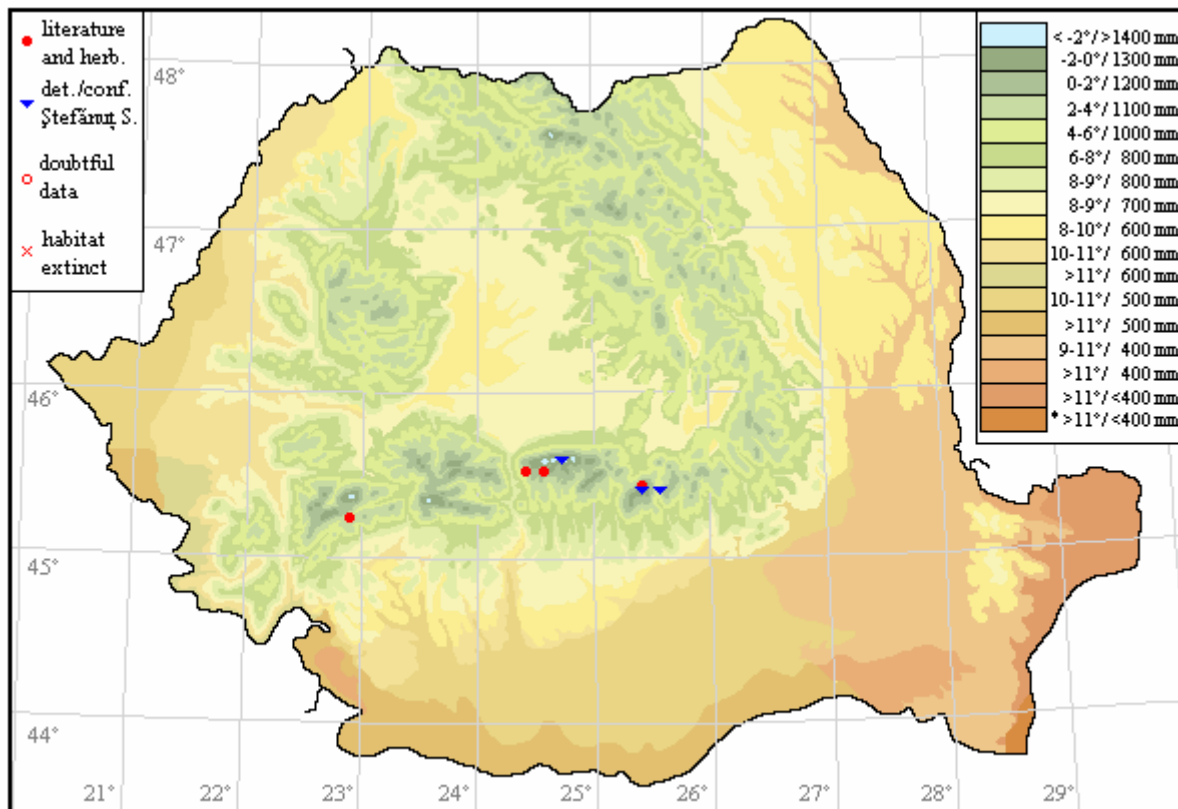


Fig. 21. Distribution of *Asterella lindenbergiana* (Corda ex Nees) Arnell in Romania.

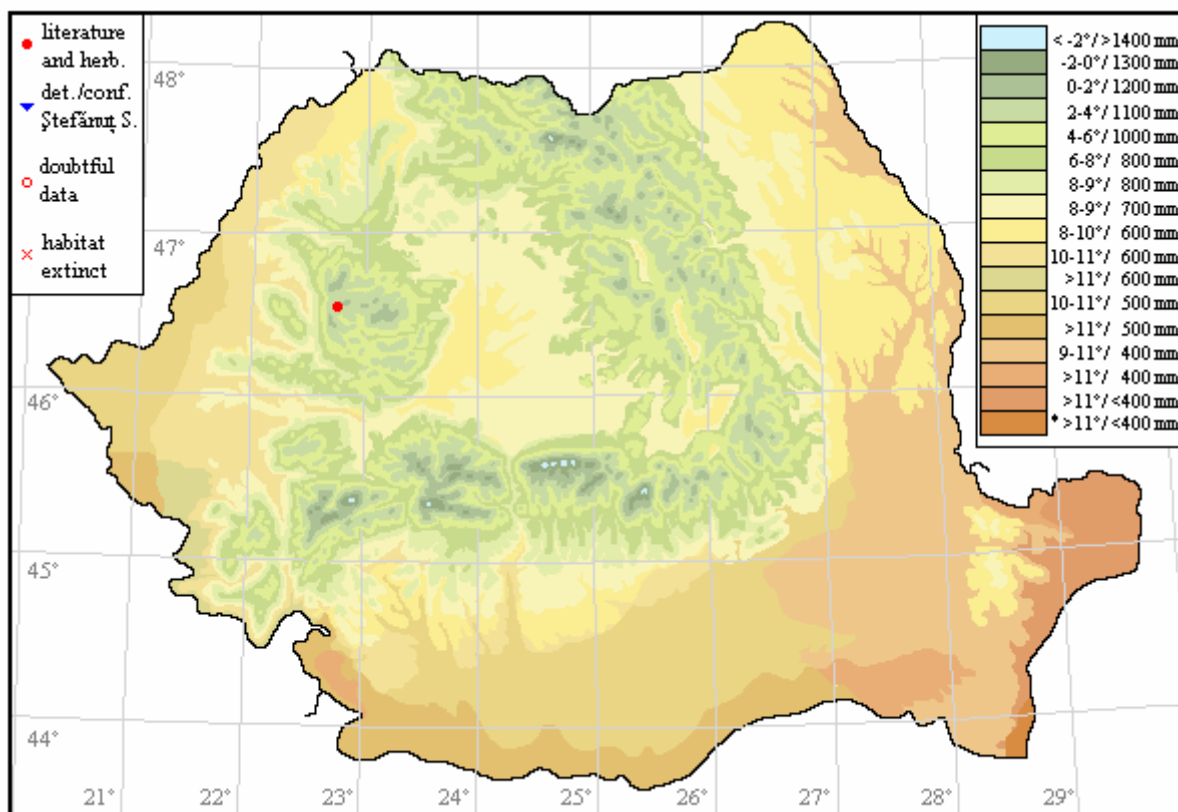


Fig. 22. Distribution of *Asterella saccata* (Wahlenb.) A. Evans in Romania.

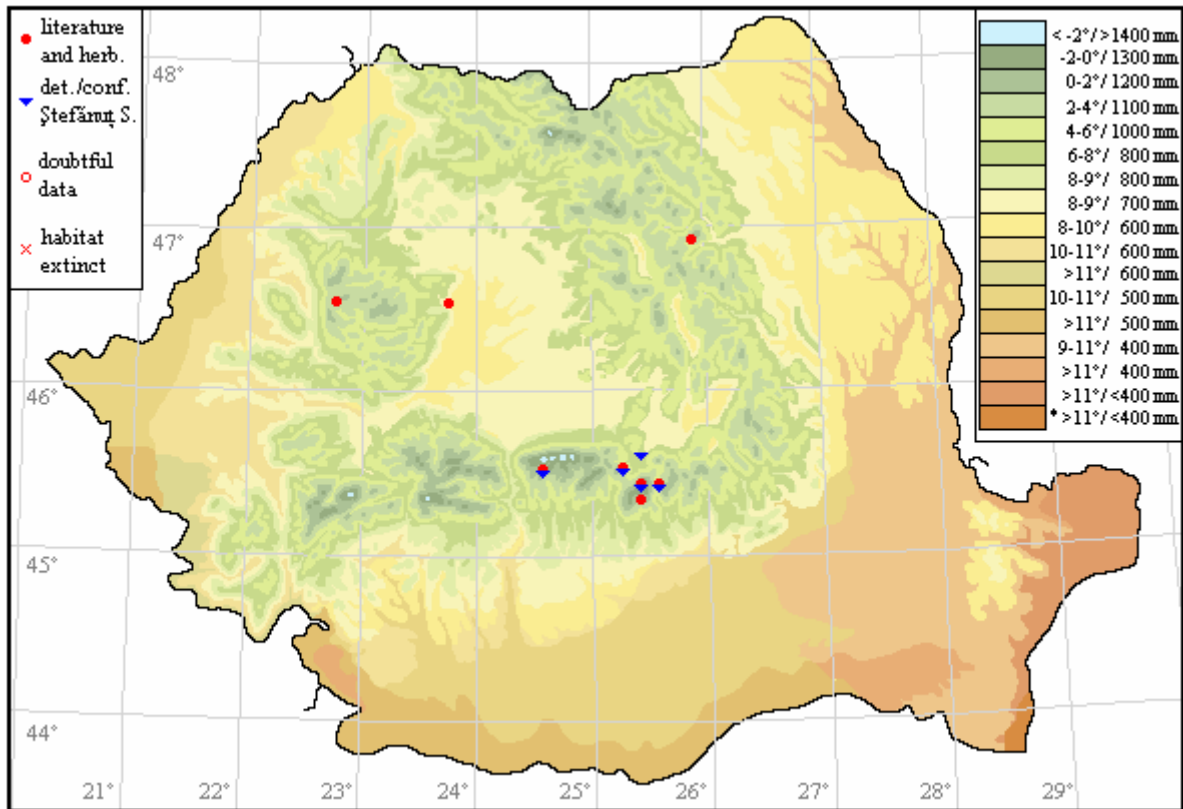


Fig. 23. Distribution of *Athalamia hyalina* (Sommerf.) S. Hatt. in Romania.

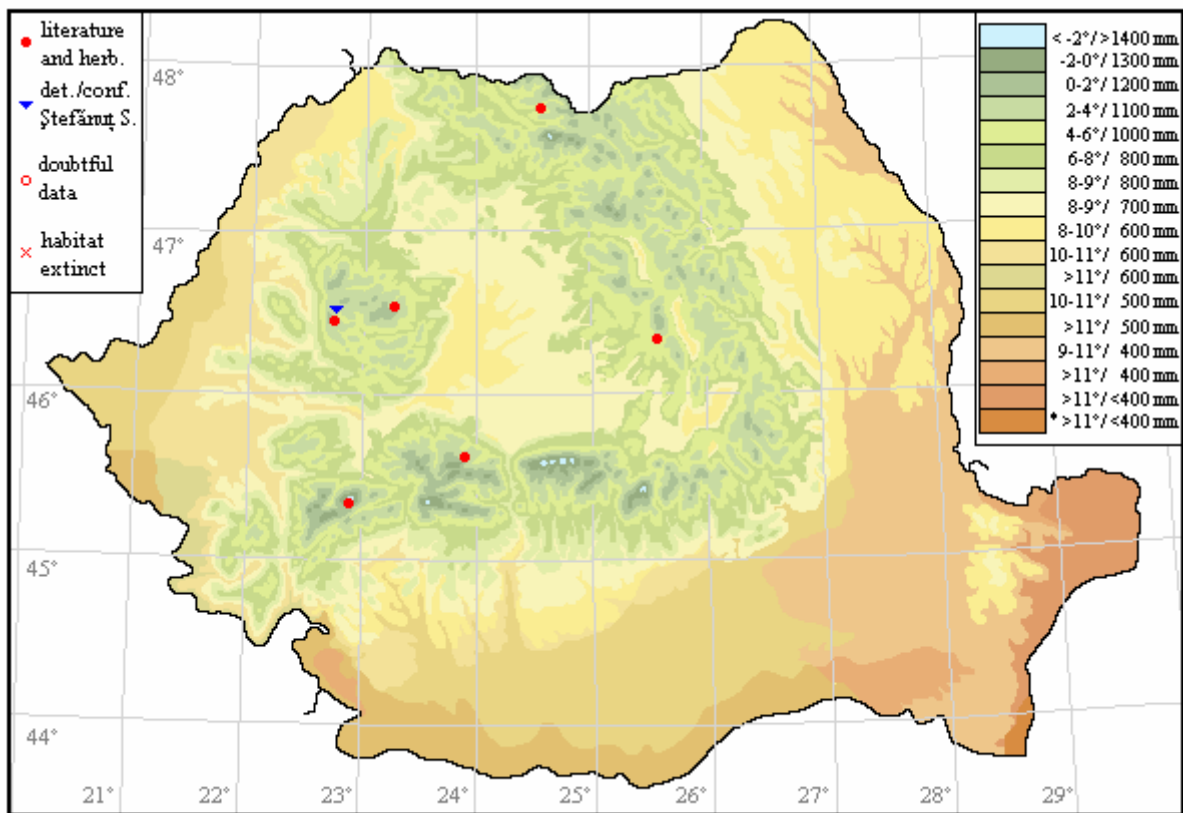


Fig. 24. Distribution of *Barbilophozia attenuata* (Mart.) Loeske in Romania.

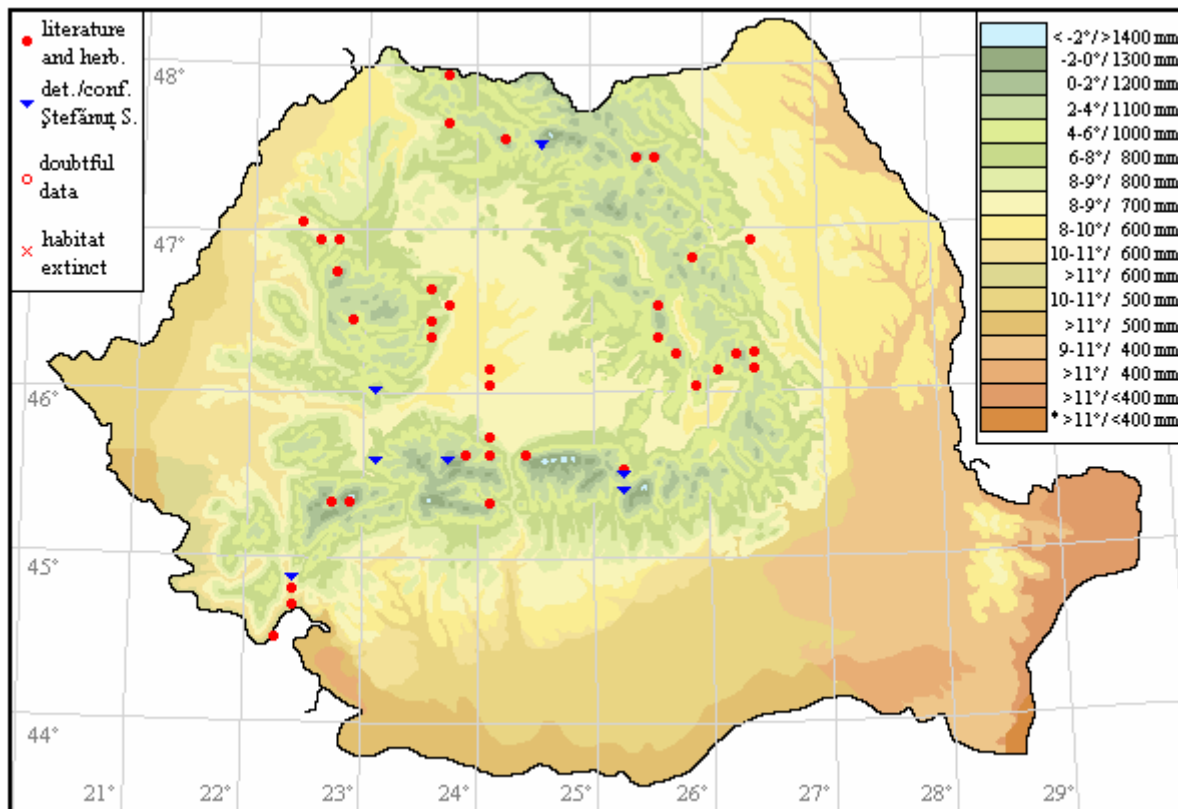


Fig. 25. Distribution of *Barbilophozia barbata* (Schmidel ex Schreb.) Loeske in Romania.

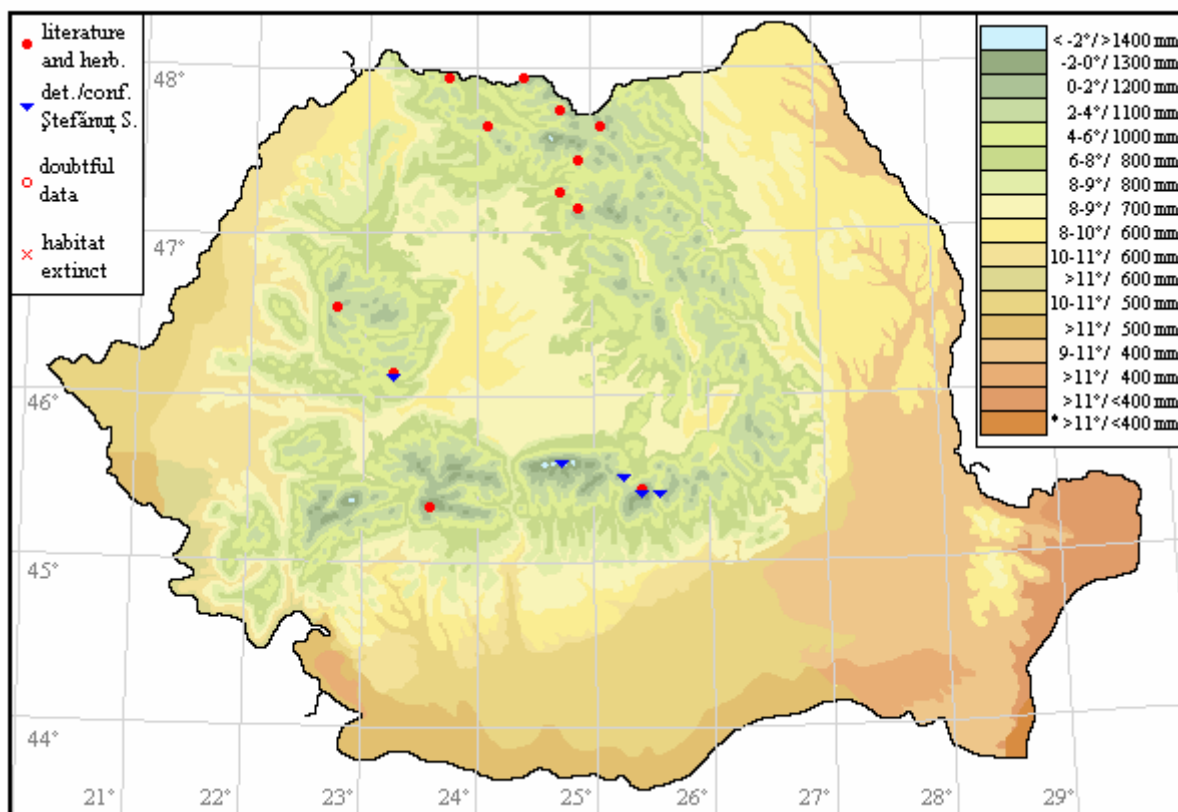


Fig. 26. Distribution of *Barbilophozia floerkei* (F. Weber et D. Mohr) Loeske in Romania.

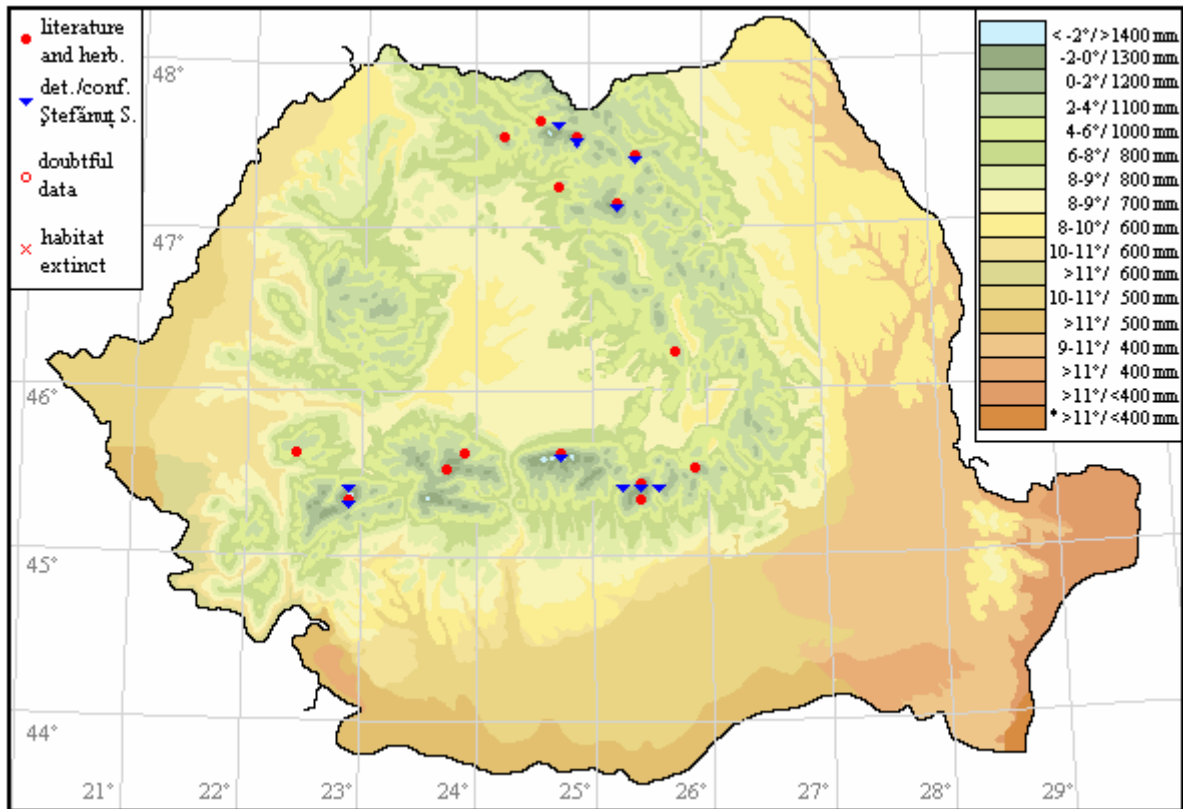


Fig. 27. Distribution of *Barbilophozia hatcheri* (A. Evans) Loeske in Romania.

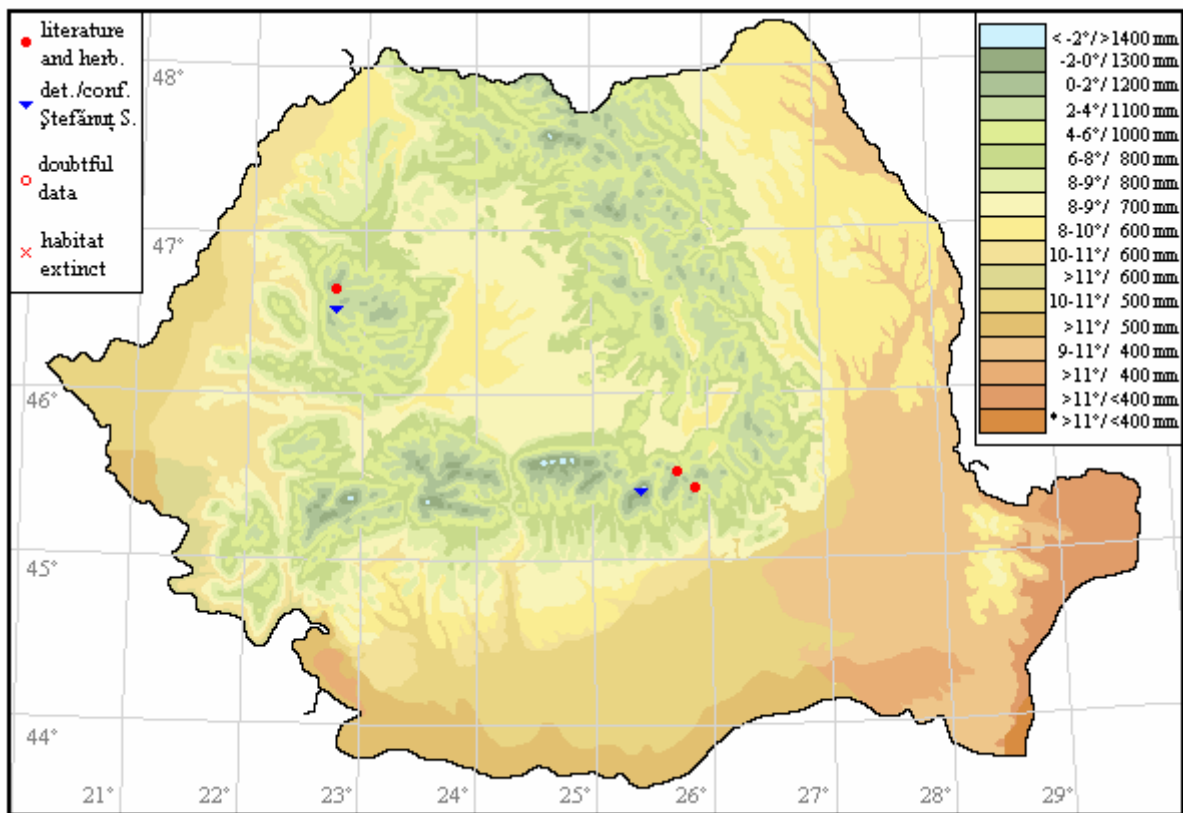


Fig. 28. Distribution of *Barbilophozia kunzeana* (Huebener) Müll. Frib. in Romania.

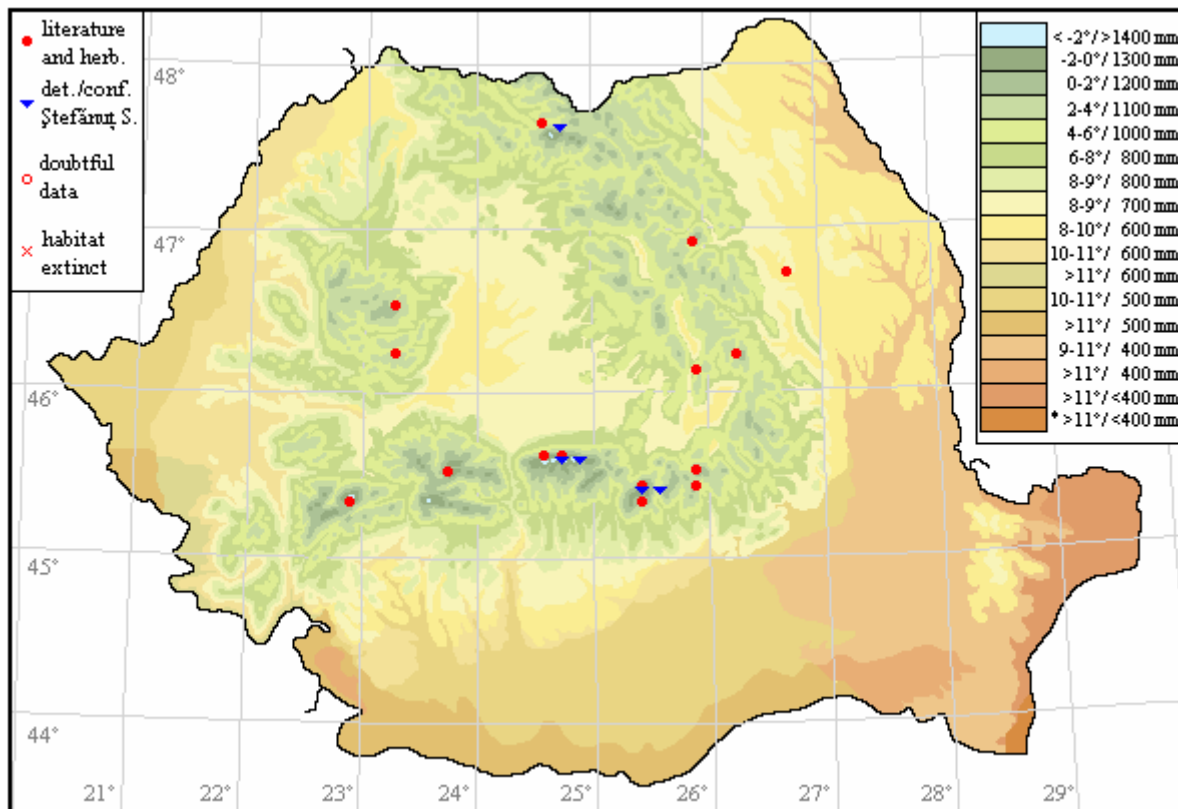


Fig. 29. Distribution of *Barbilophozia lycopodioides* (Wallr.) Loeske in Romania.

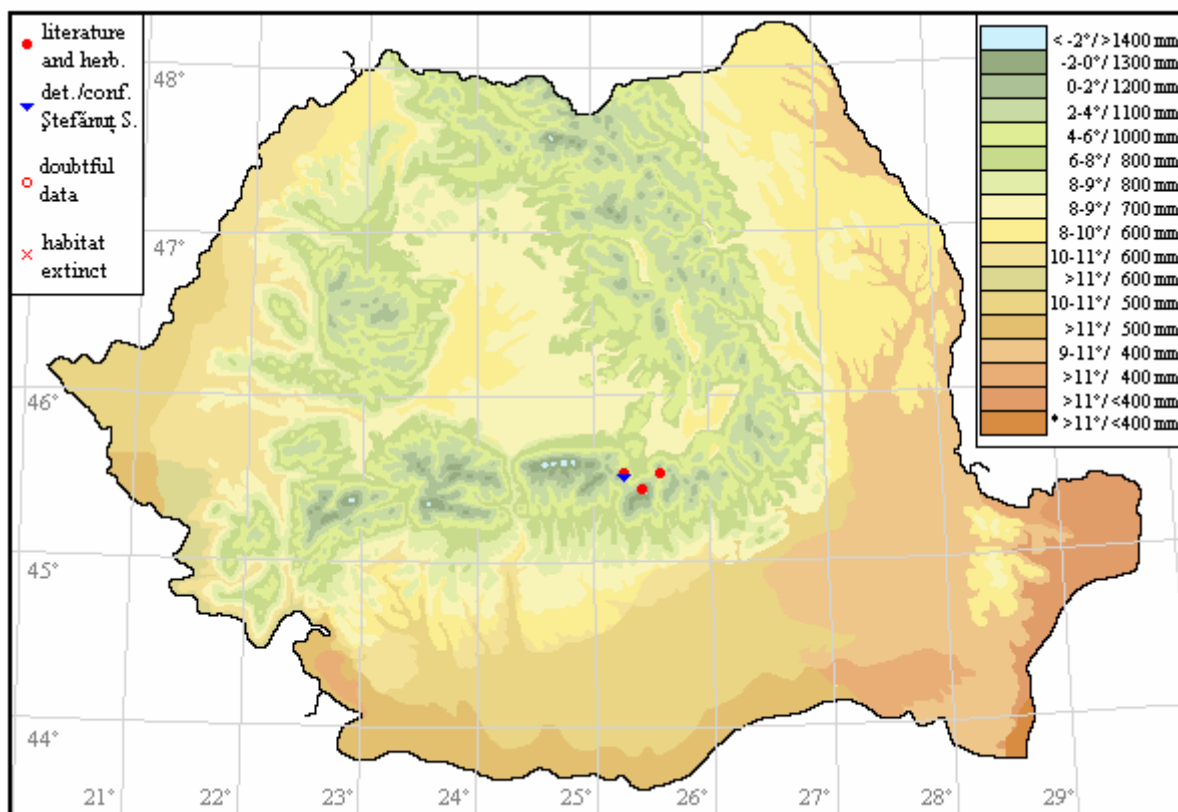


Fig. 30. Distribution of *Barbilophozia quadriloba* (Lindb.) Loeske in Romania.

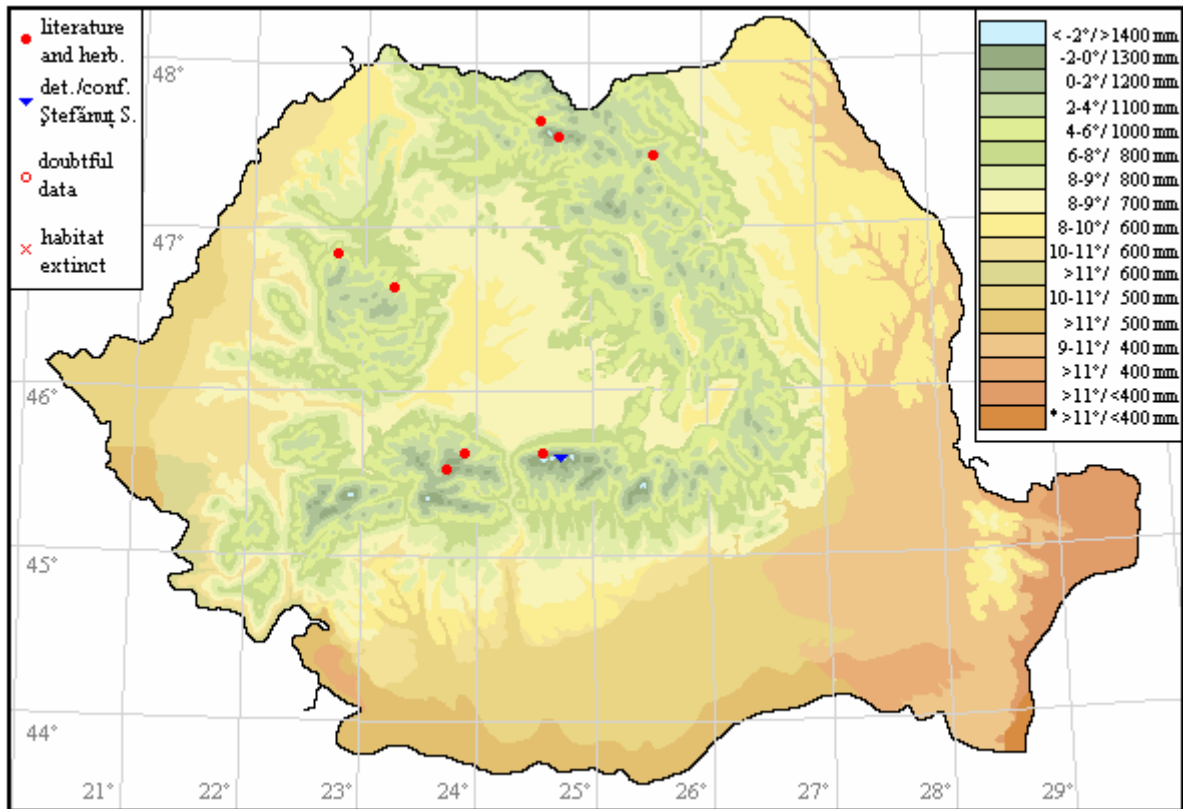


Fig. 31. Distribution of *Bazzania flaccida* (Dumort.) Grolle in Romania.

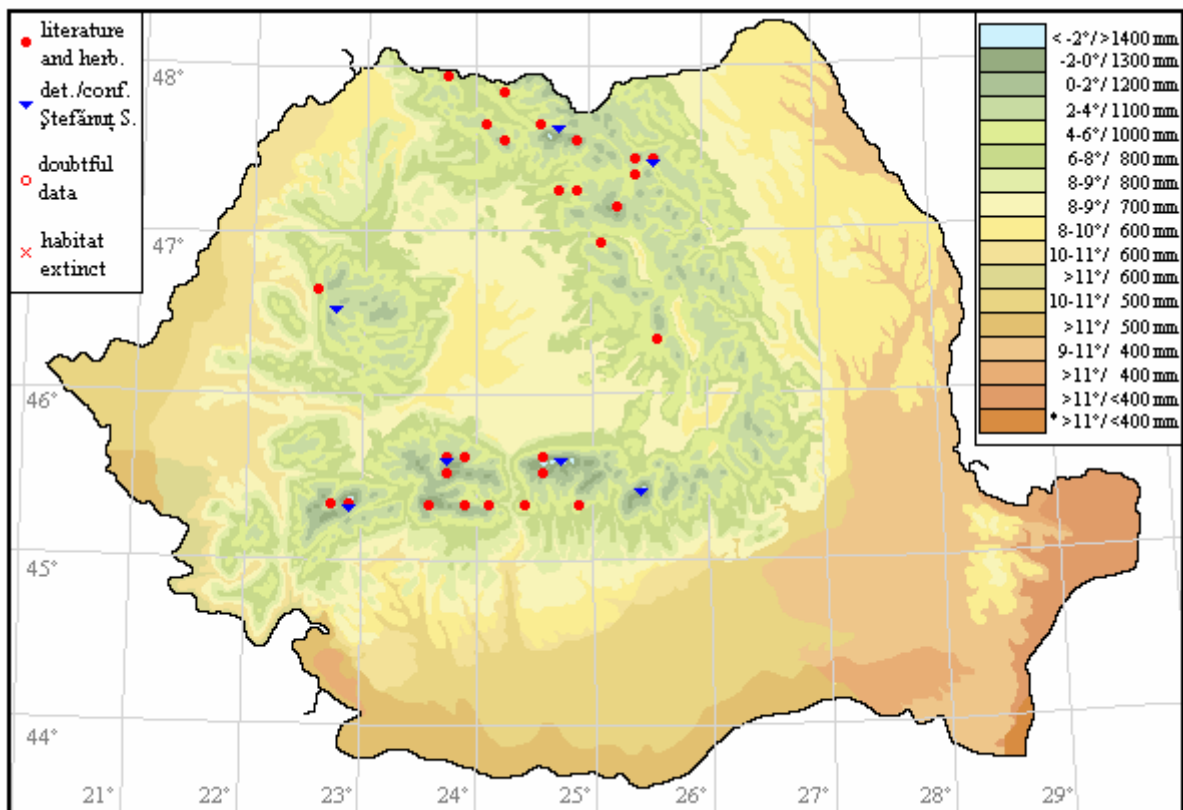


Fig. 32. Distribution of *Bazzania tricrenata* (Wahlenb.) Lindb. in Romania.

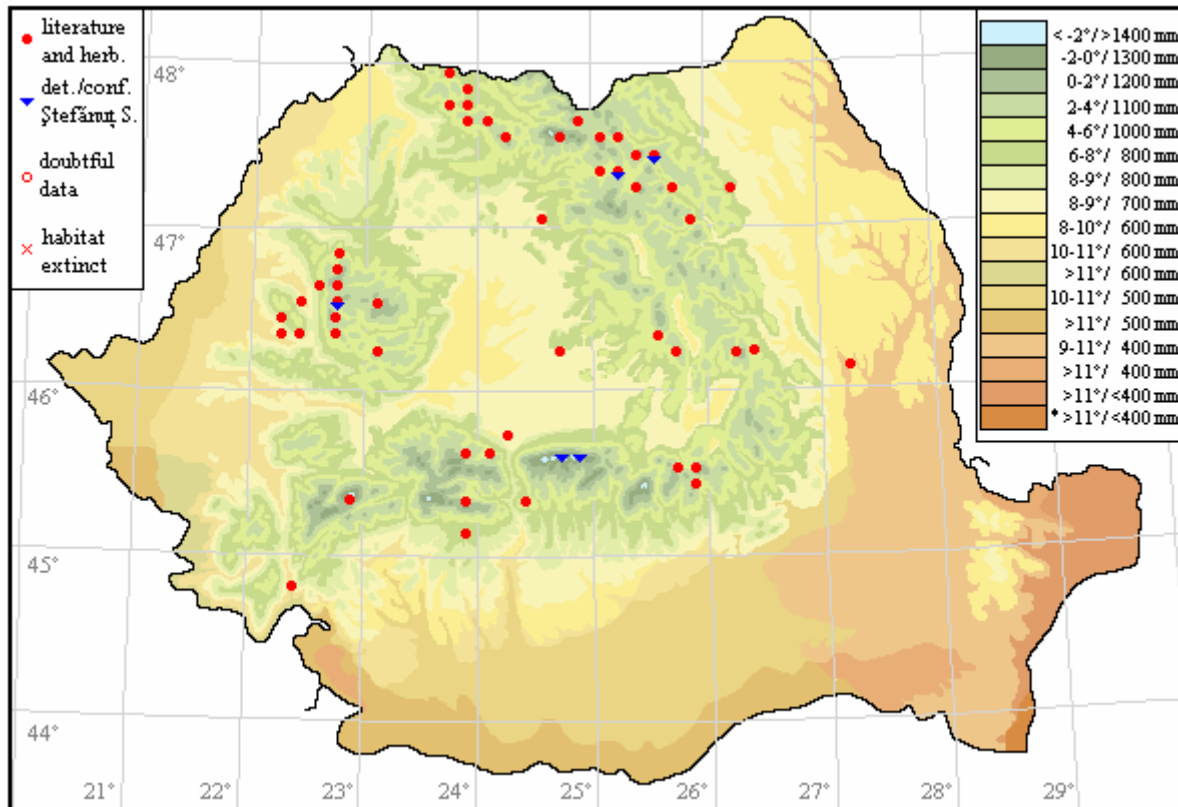


Fig. 33. Distribution of *Bazzania trilobata* (L.) Gray in Romania.

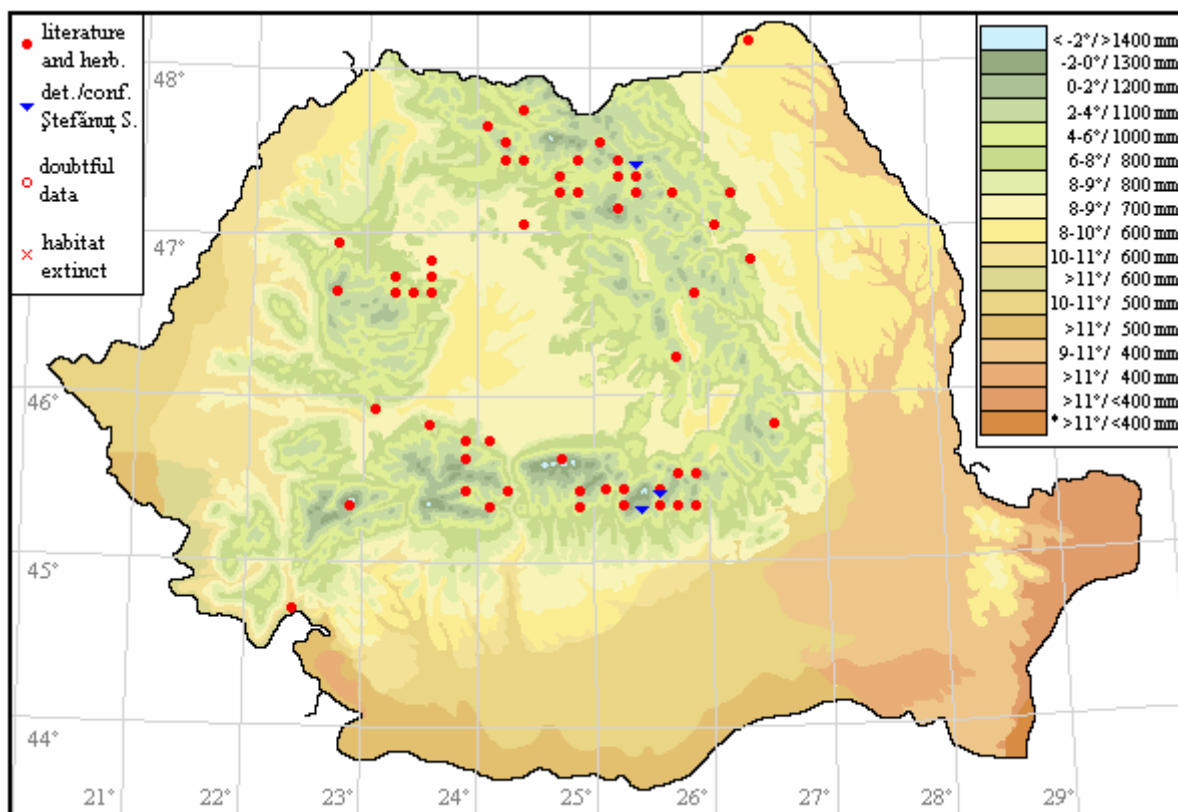


Fig. 34. Distribution of *Blasia pusilla* L. in Romania.

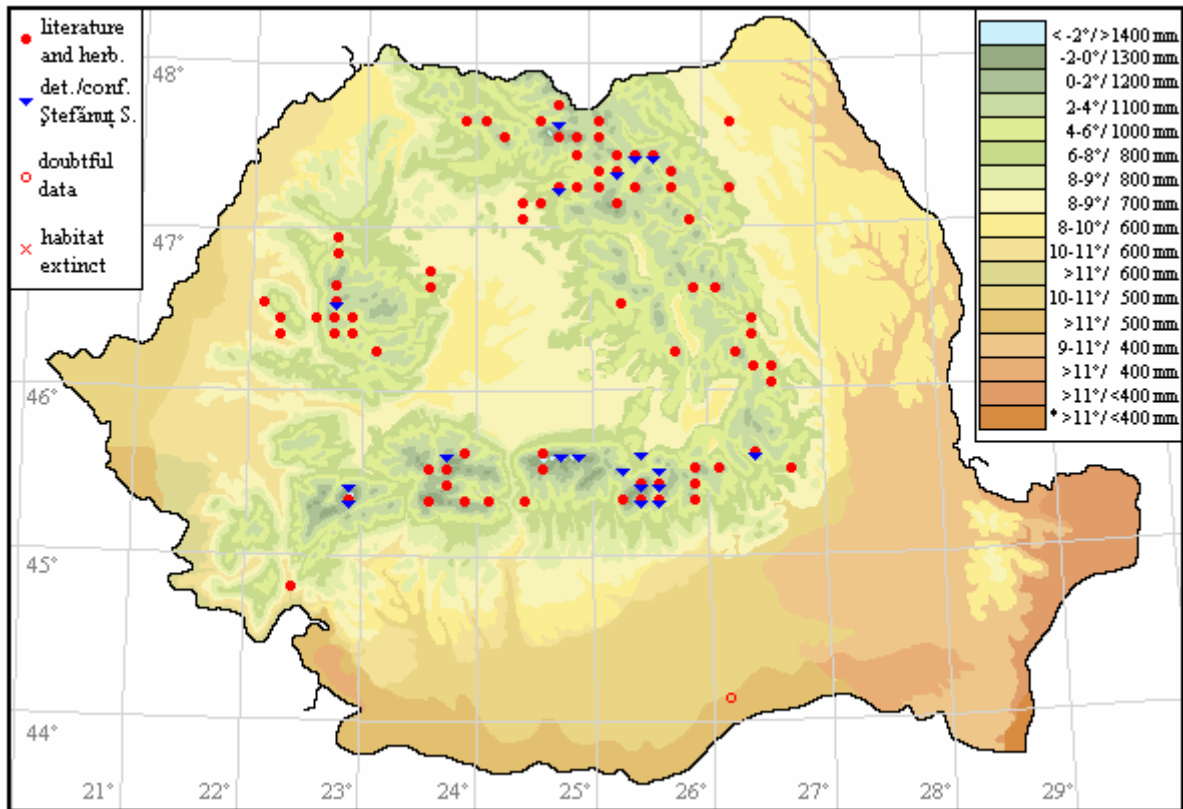


Fig. 35. Distribution of *Blepharostoma trichophyllum* (L.) Dumort. in Romania.

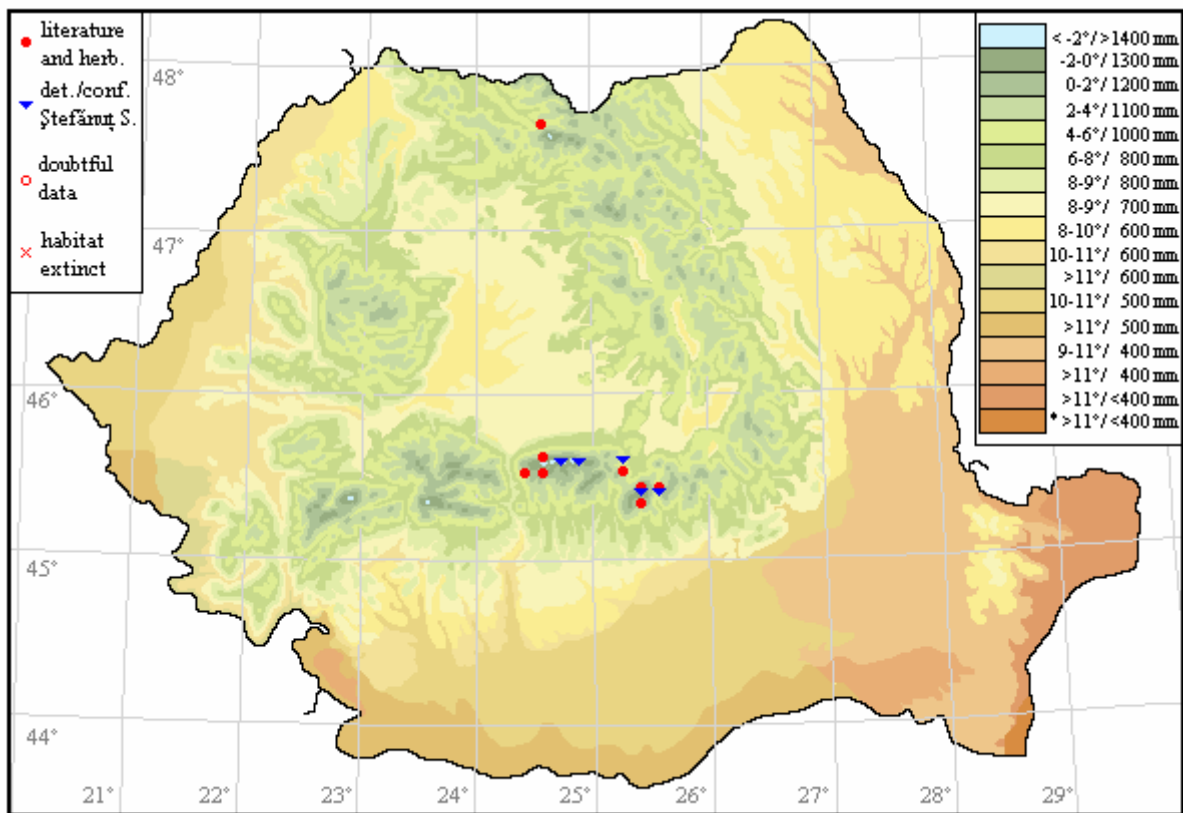


Fig. 36. Distribution of *Bucegia romanica* Radian in Romania.

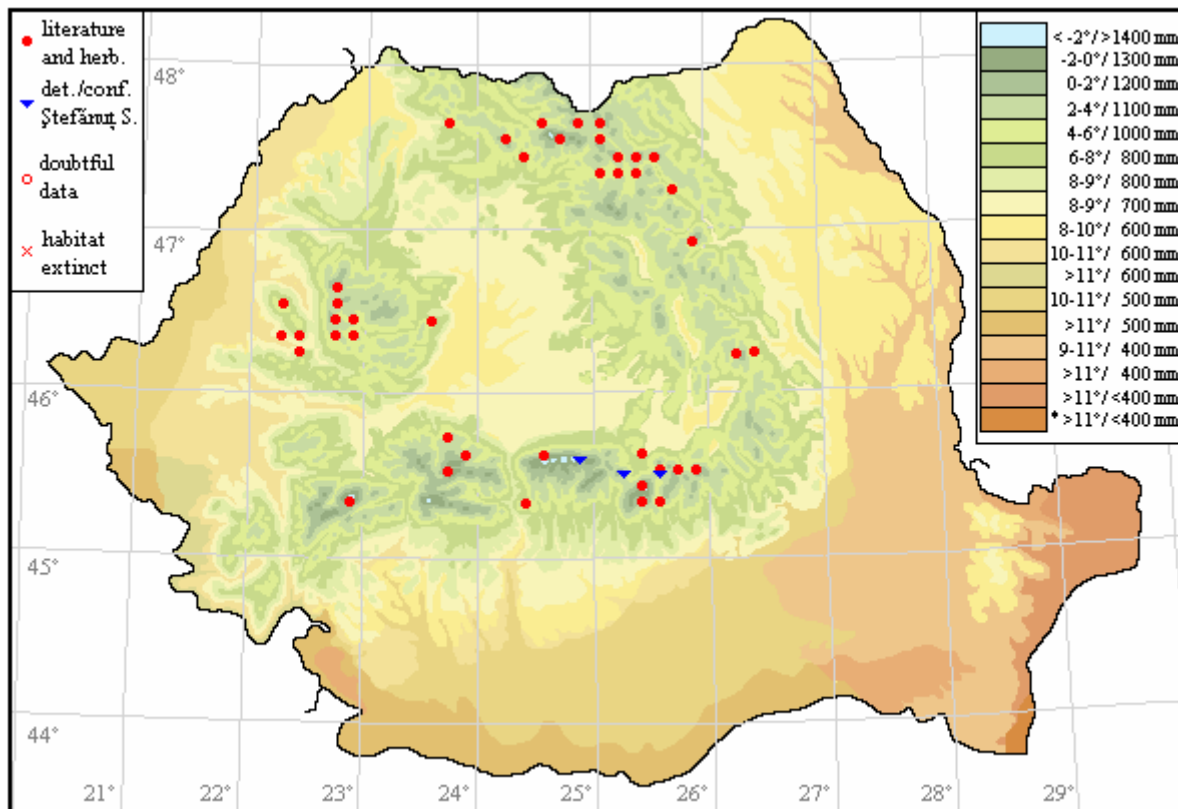


Fig. 37. Distribution of *Calypogeia azurea* Sotler et Crotz in Romania.

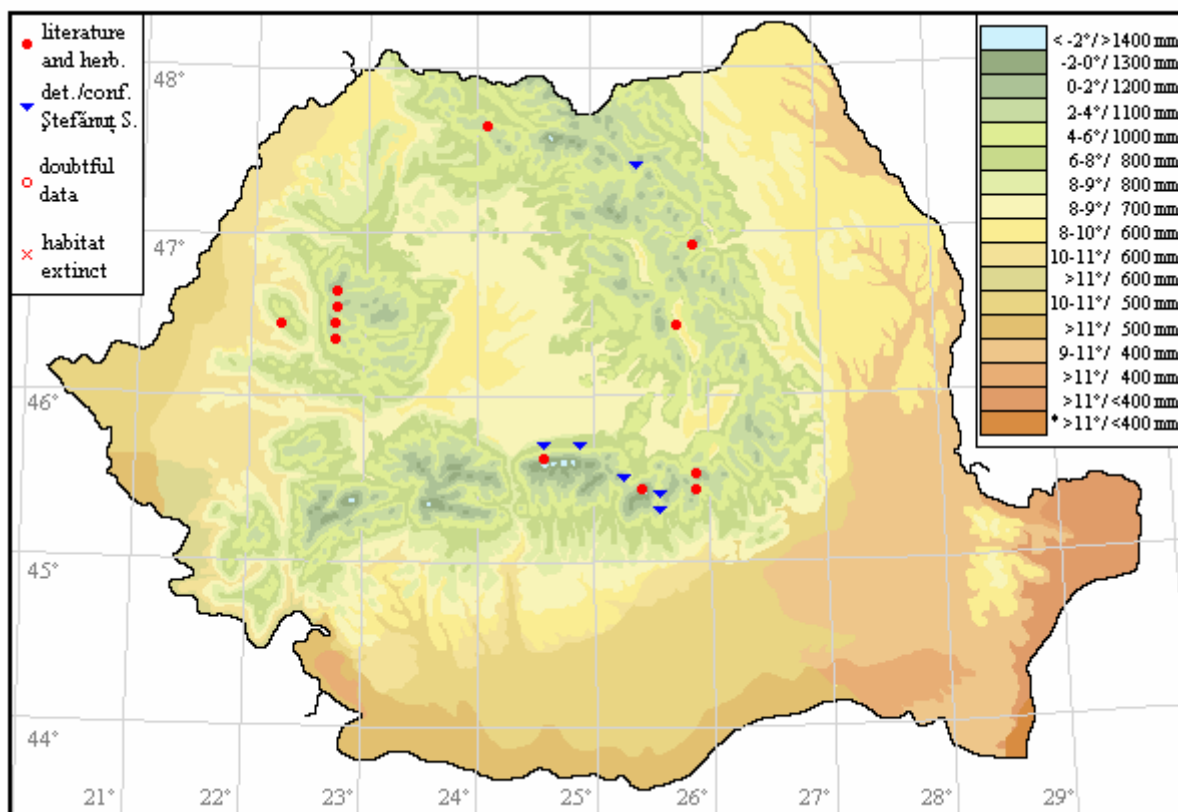


Fig. 38. Distribution of *Calypogeia fissa* (L.) Raddi in Romania.

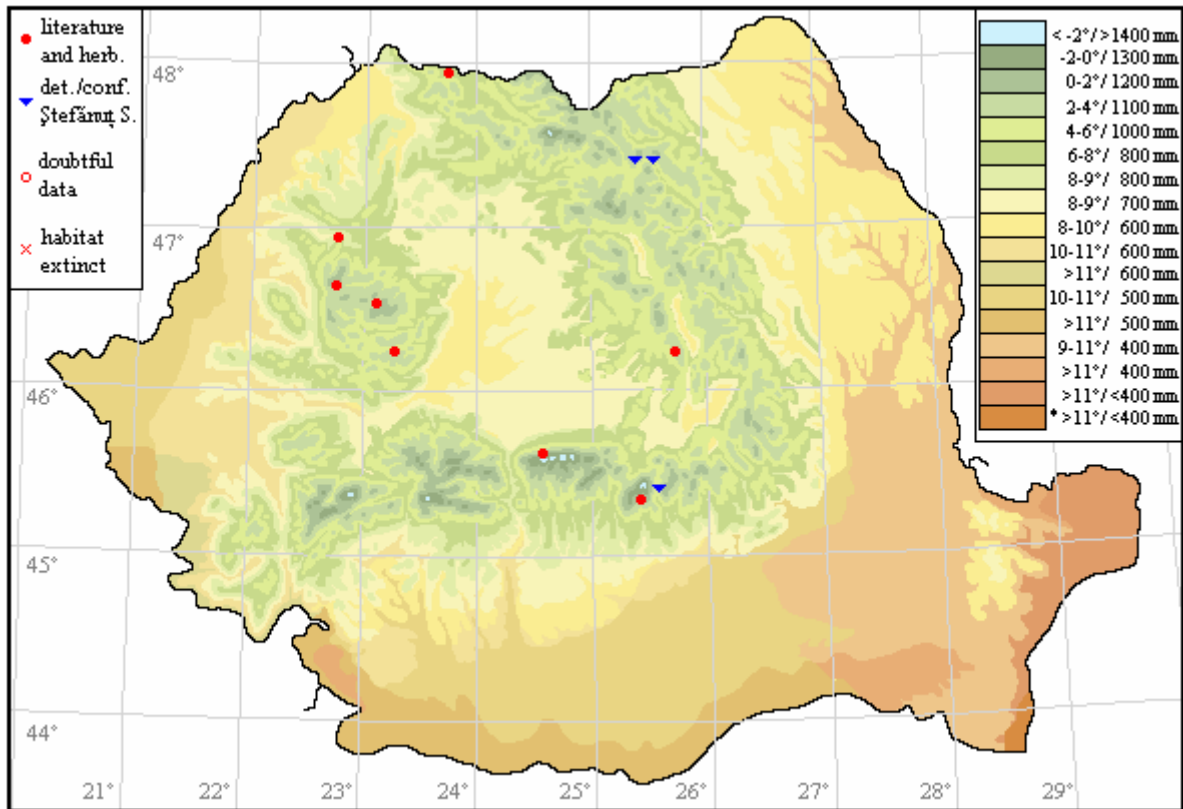


Fig. 39. Distribution of *Calypogeia integristipula* Steph. in Romania.

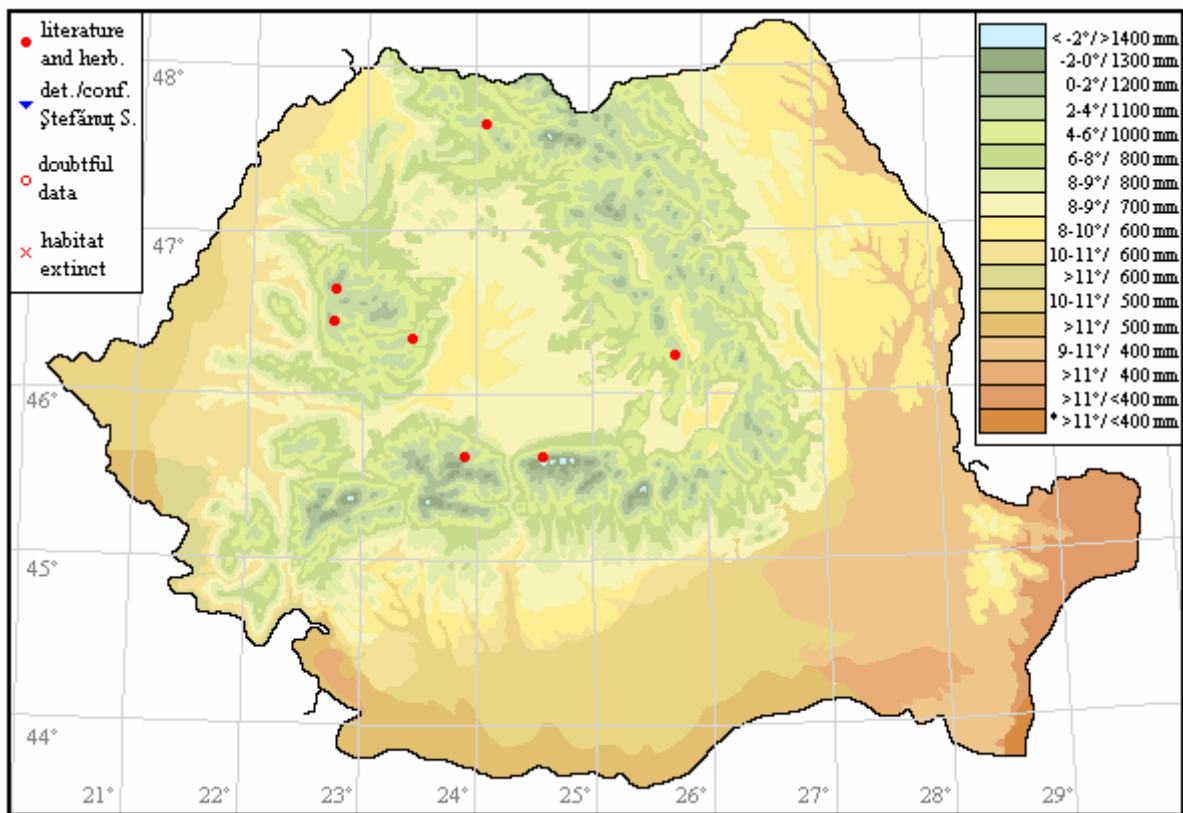


Fig. 40. Distribution of *Calypogeia muelleriana* (Schiffn.) Müll. Frib. in Romania.

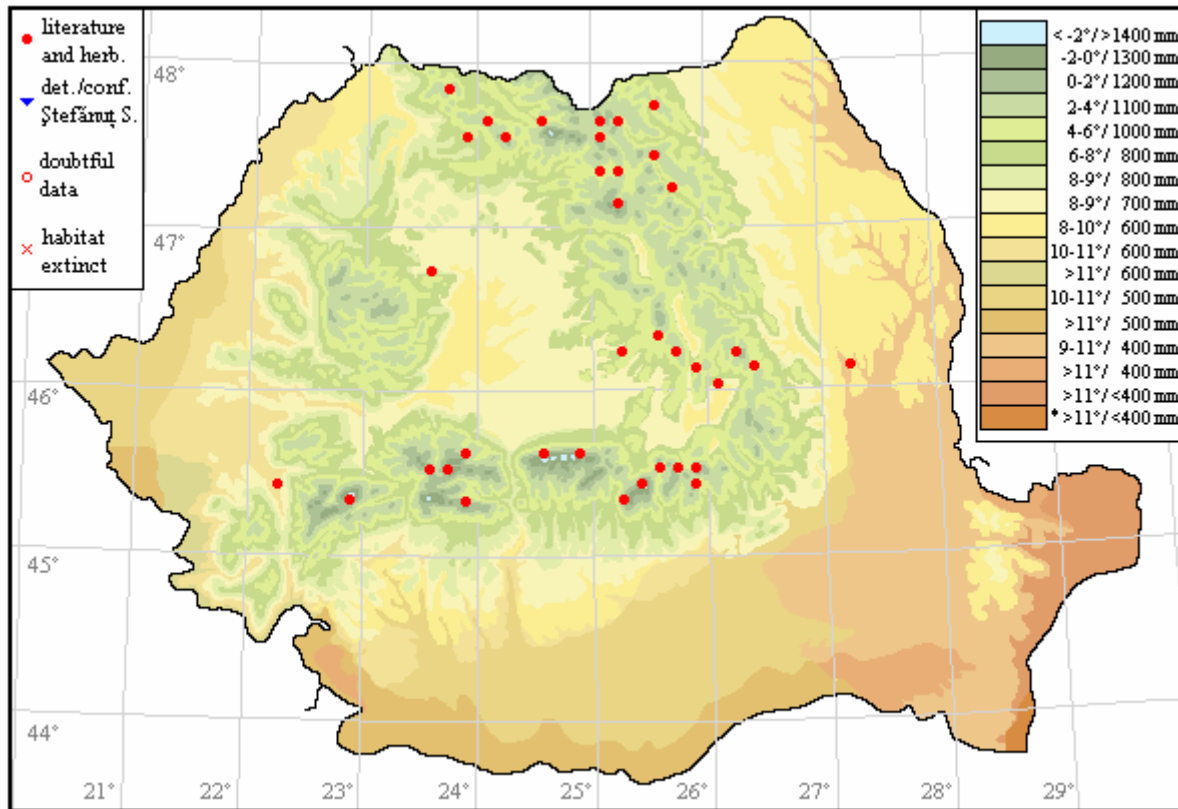


Fig. 41. Distribution of *Calypogeia neesiana* (C. Massal. et Carestia) Müll. Frib. in Romania.

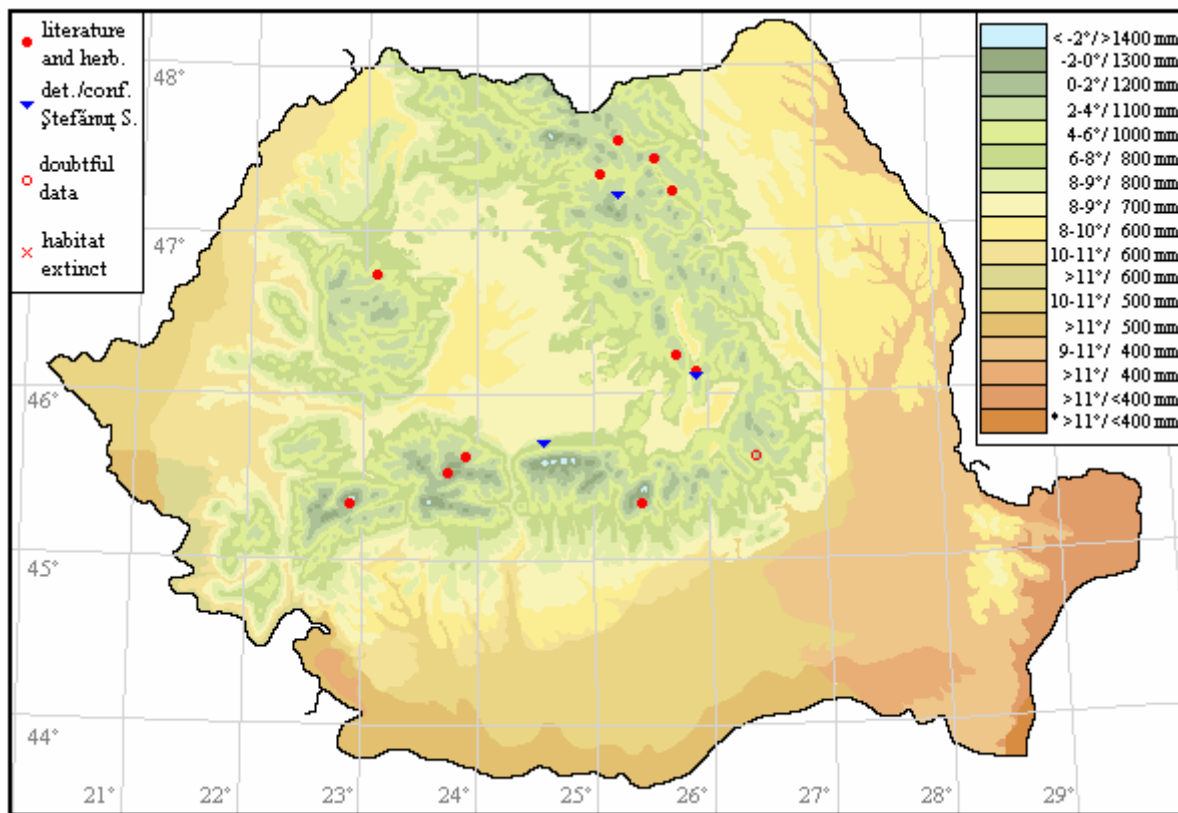


Fig. 42. Distribution of *Calypogeia sphagnicola* (Arnell et J. Perss.) Warnst. et Loeske in Romania.

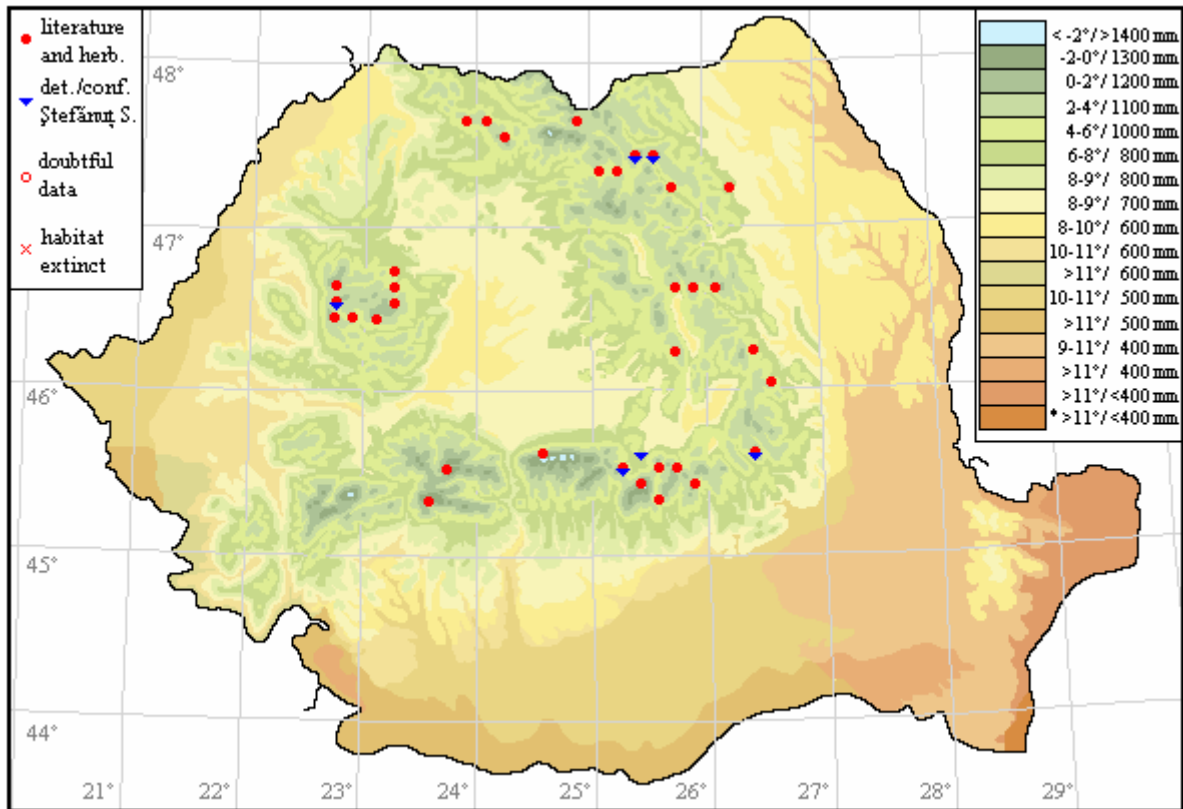


Fig. 43. Distribution of *Calypogeia suecica* (Arnell et J. Perss.) Müll. Frib. in Romania.

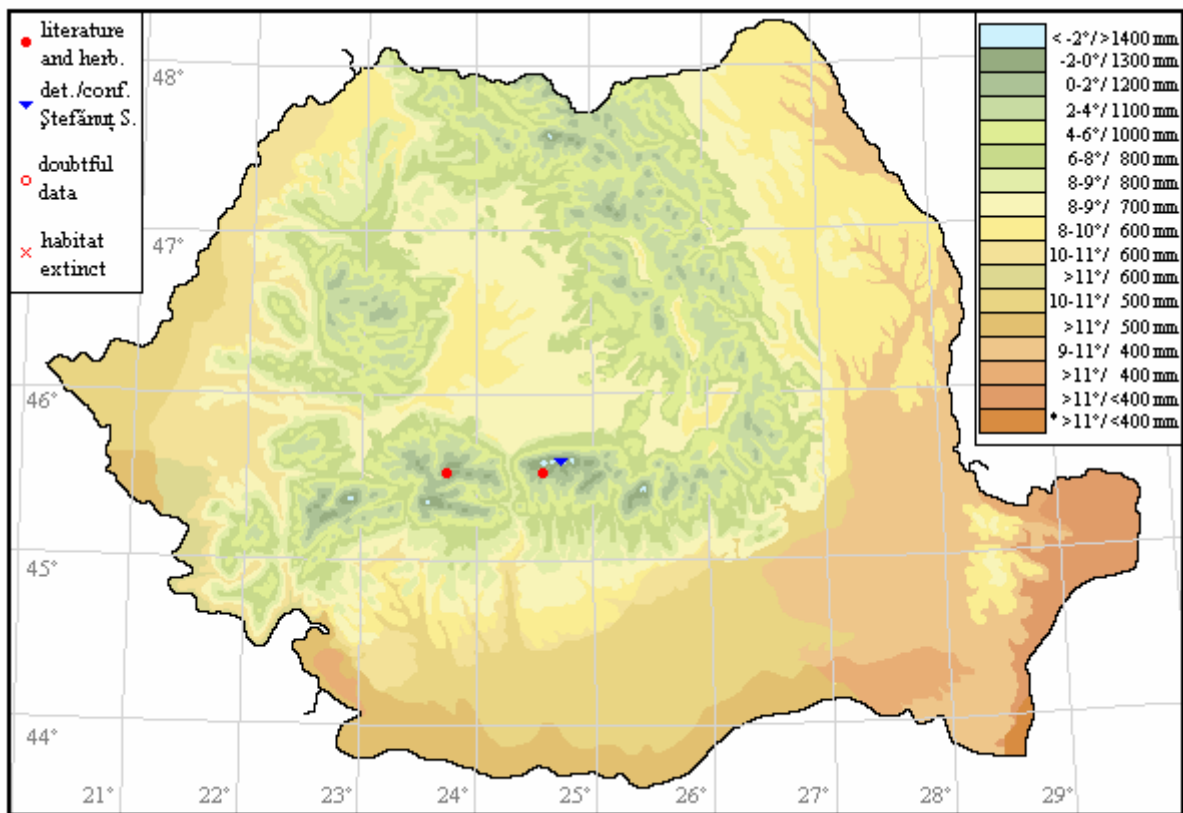


Fig. 44. Distribution of *Cephalozia ambigua* C. Massal. in Romania.

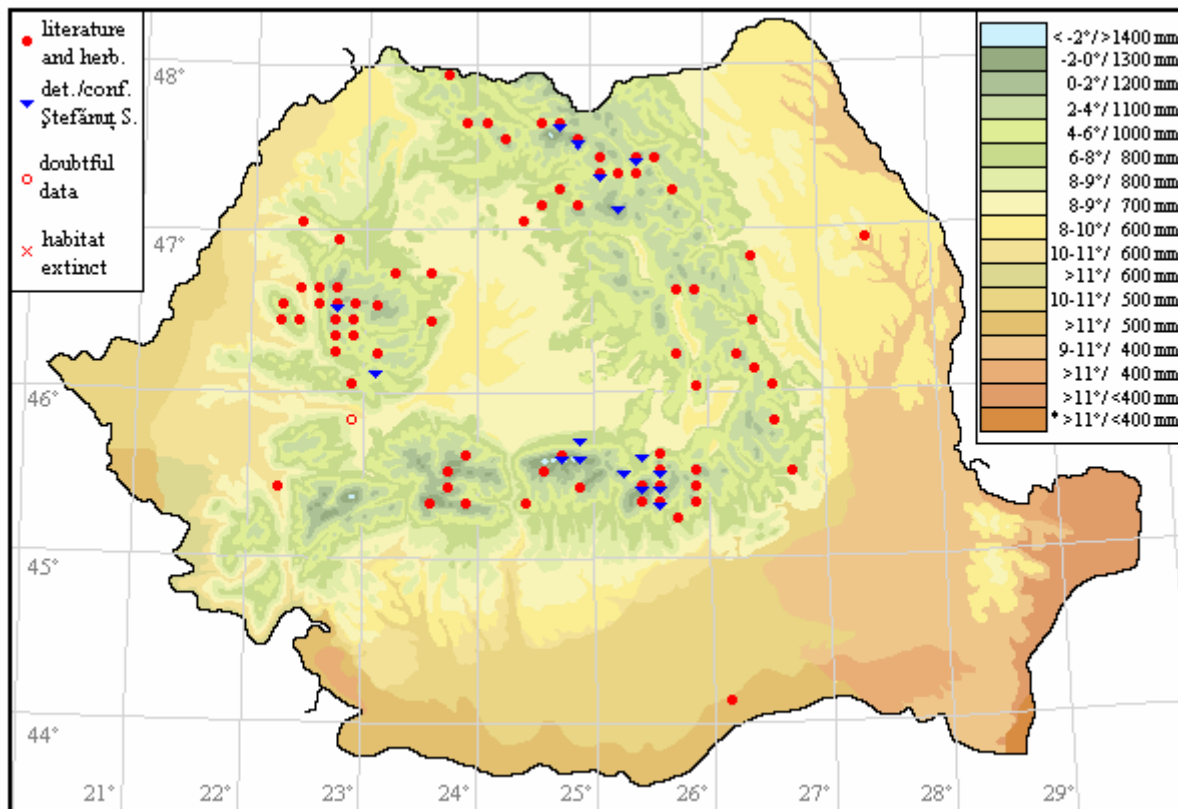


Fig. 45. Distribution of *Cephalozia bicuspidata* (L.) Dumort. in Romania.

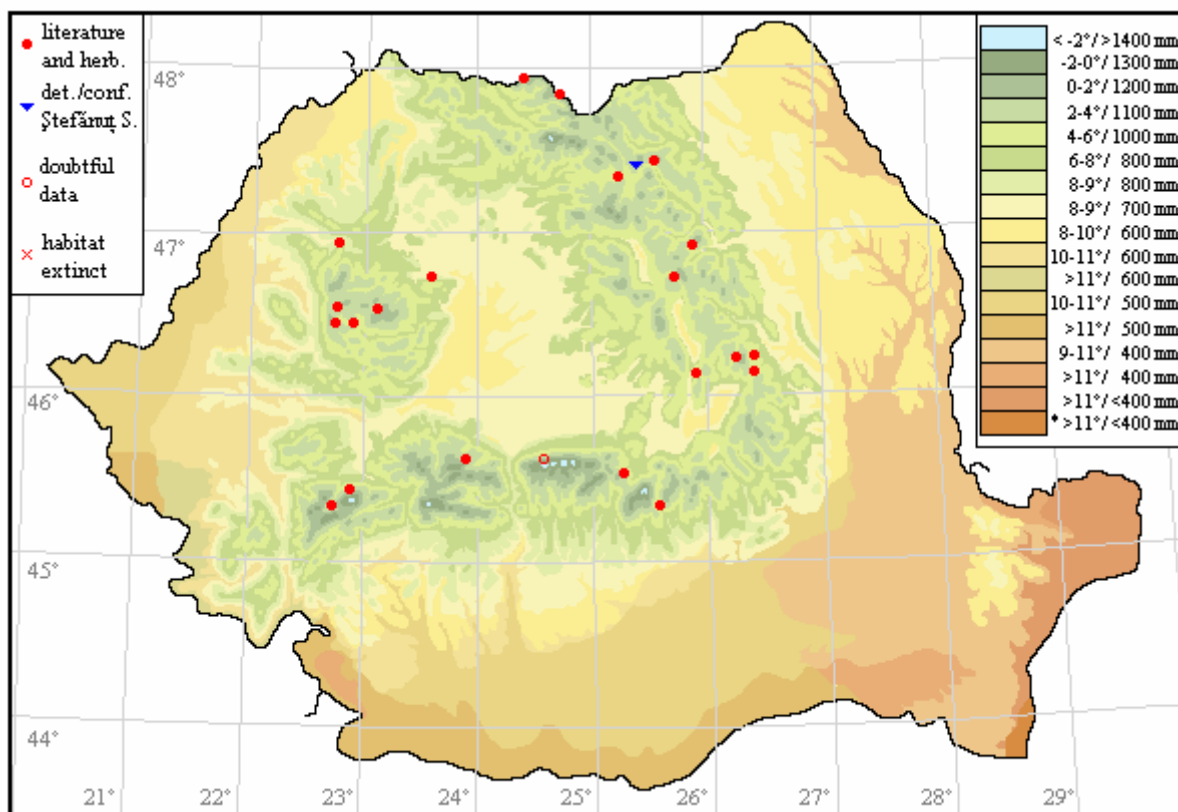


Fig. 46. Distribution of *Cephalozia catenulata* (Huebener) Lindb. in Romania.

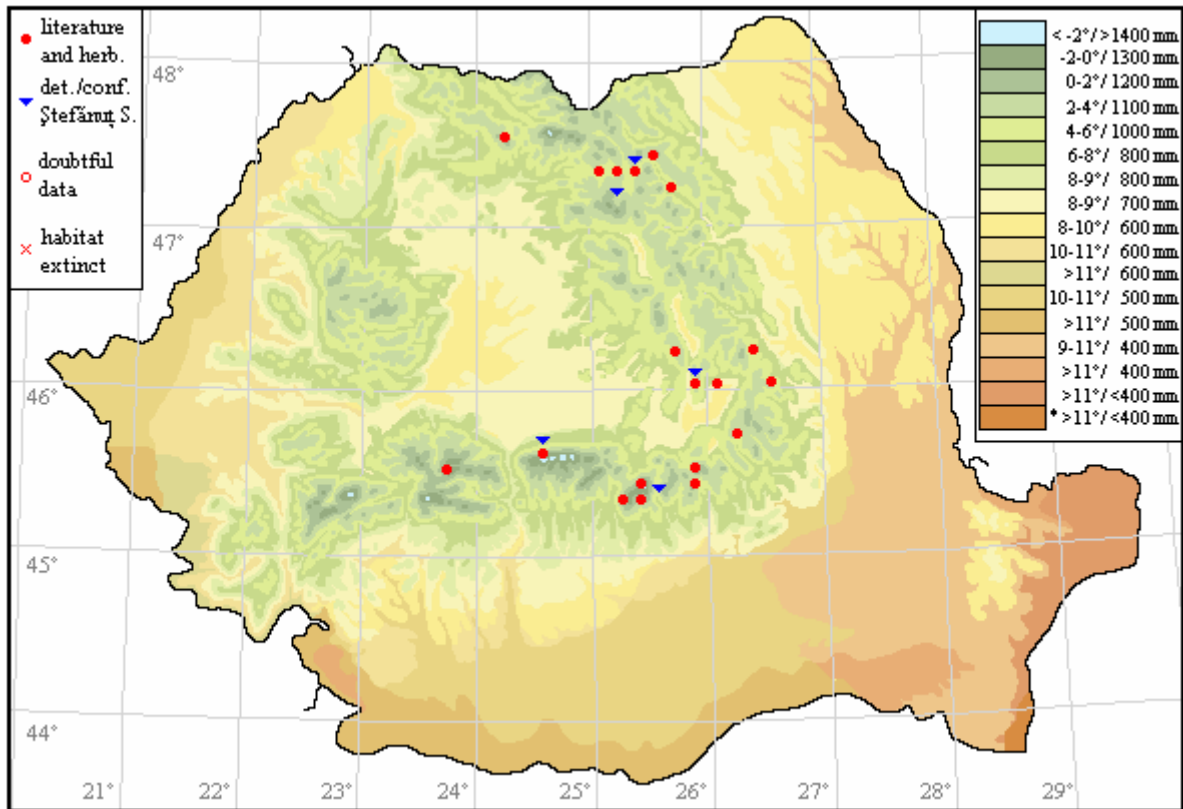


Fig. 47. Distribution of *Cephalozia connivens* (Dicks.) Lindb. in Romania.

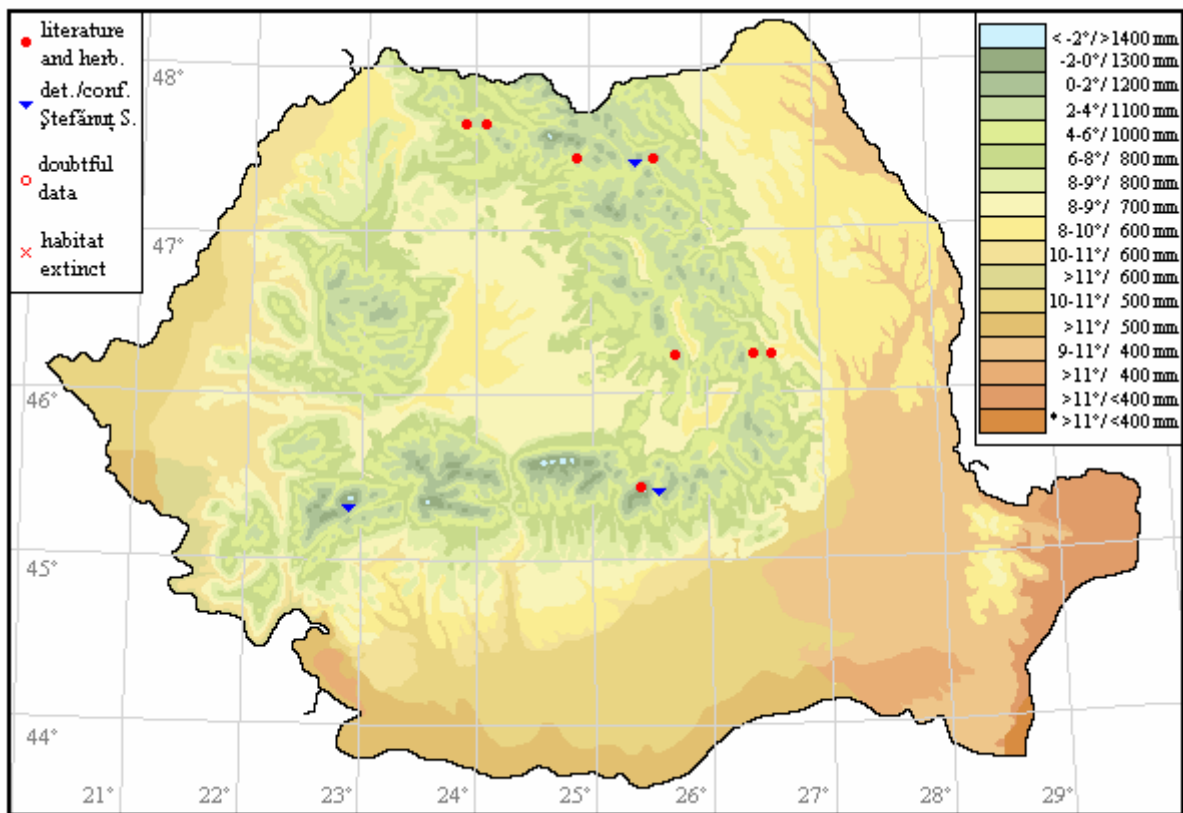


Fig. 48. Distribution of *Cephalozia laciniolata* J.B. Jack ex Spruce in Romania.

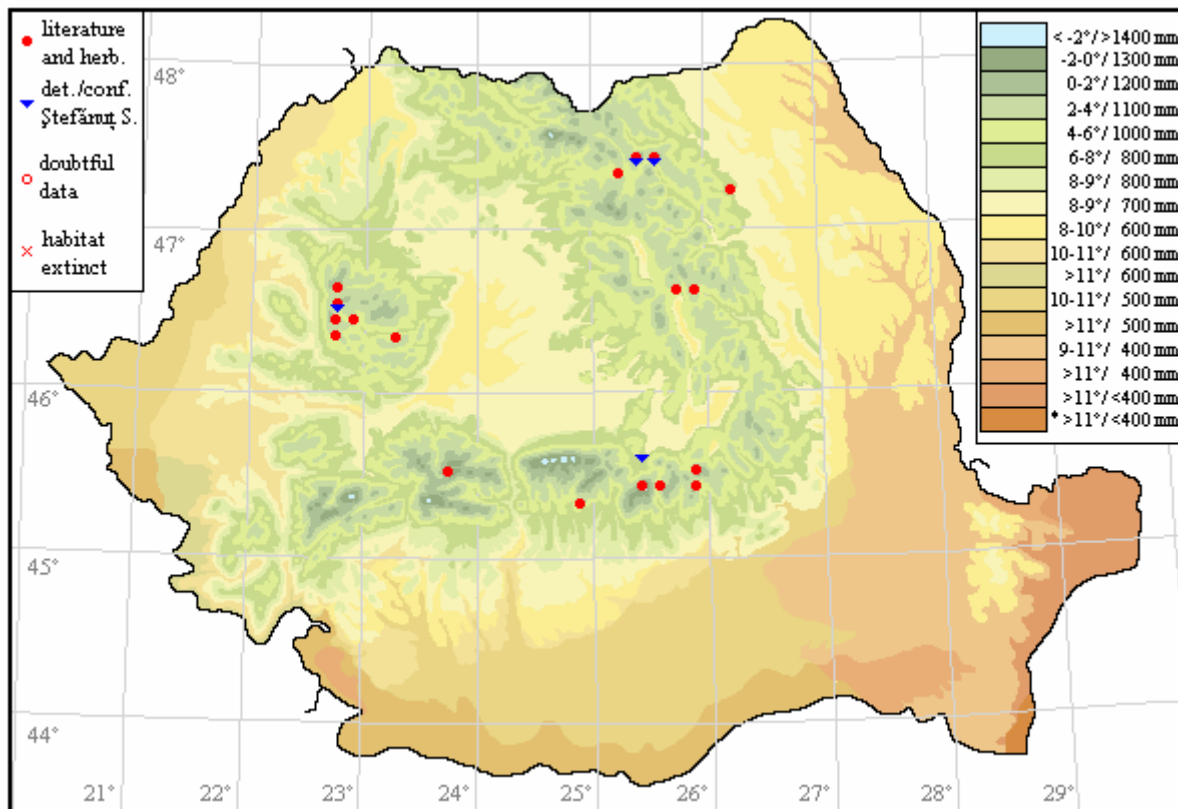


Fig. 49. Distribution of *Cephalozia leucantha* Spruce in Romania.

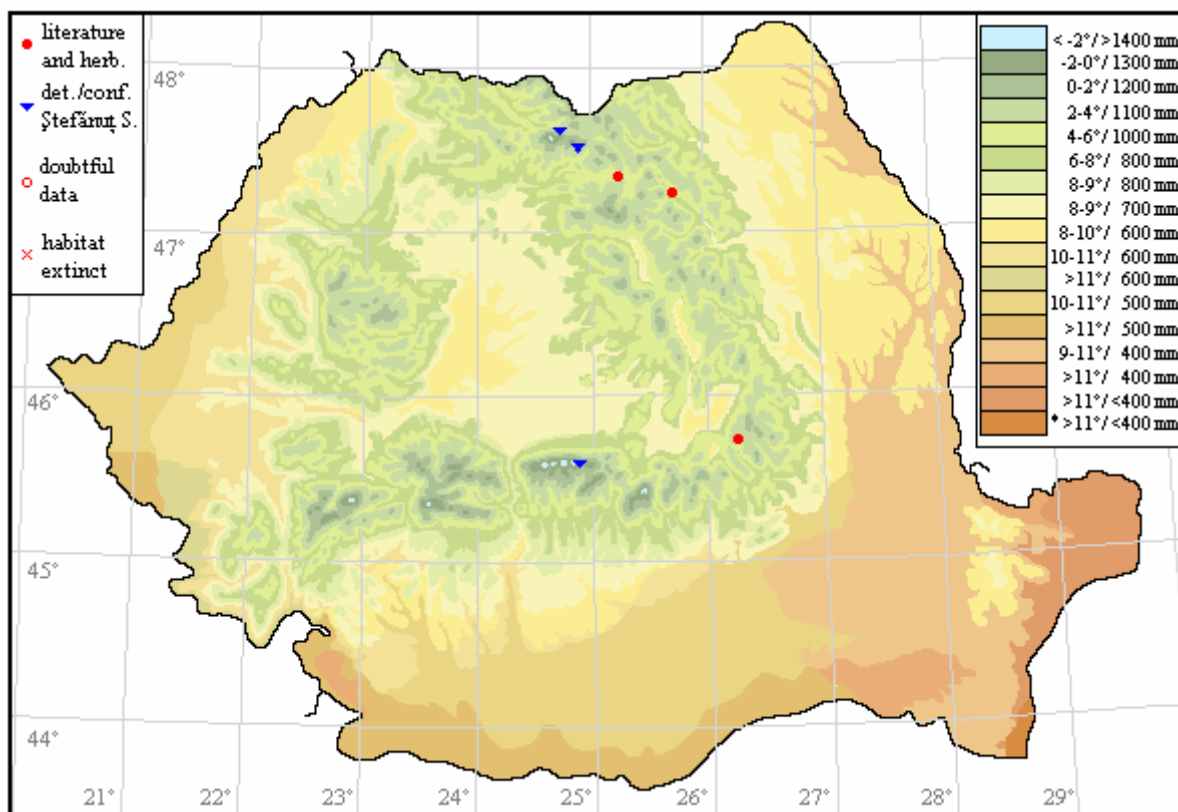


Fig. 50. Distribution of *Cephalozia loitlesbergeri* Schiffn. in Romania.

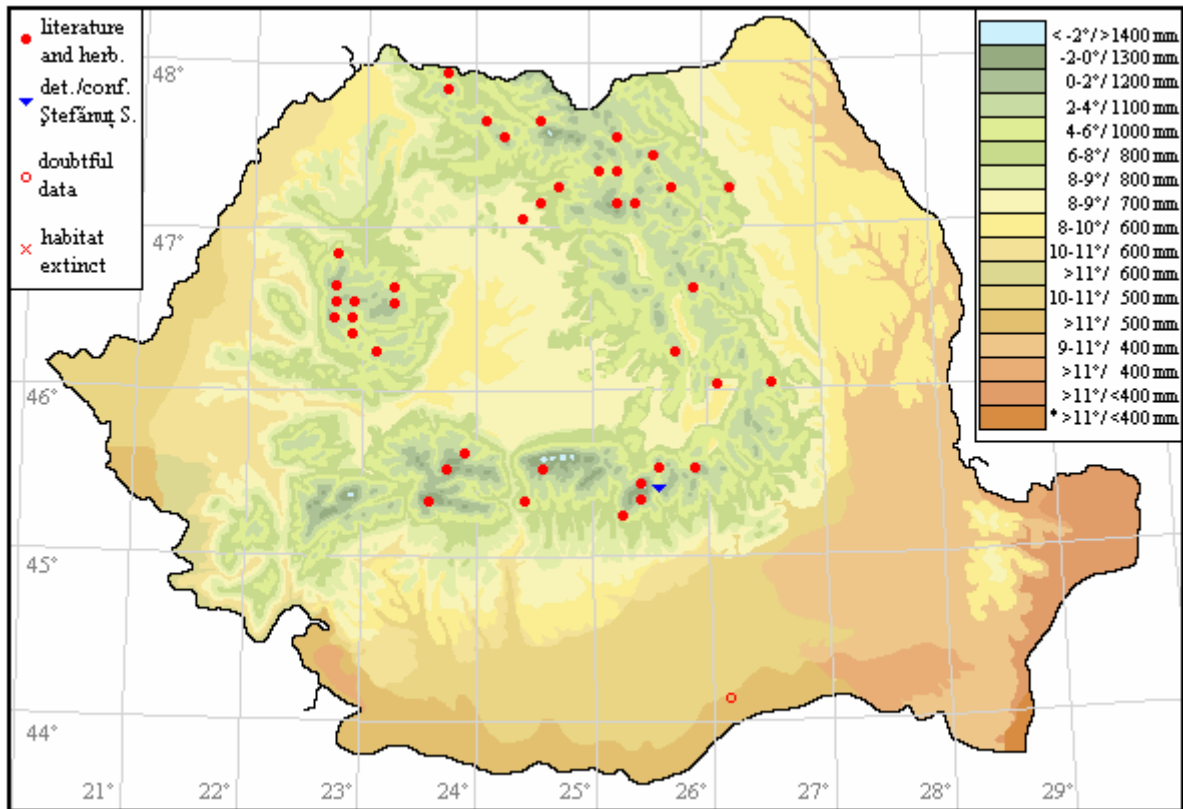


Fig. 51. Distribution of *Cephalozia lunulifolia* (Dumort.) Dumort. in Romania.

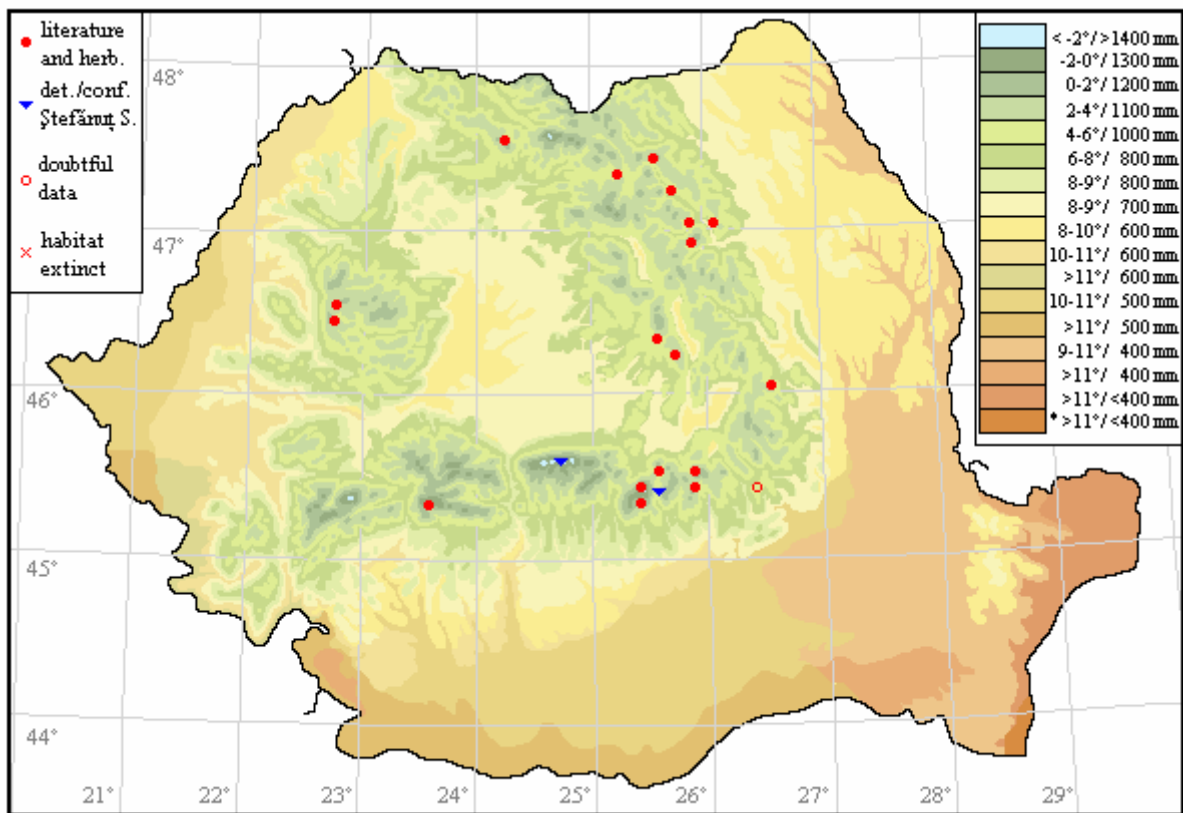


Fig. 52. Distribution of *Cephalozia pleniceps* (Austin) Lindb. in Romania.

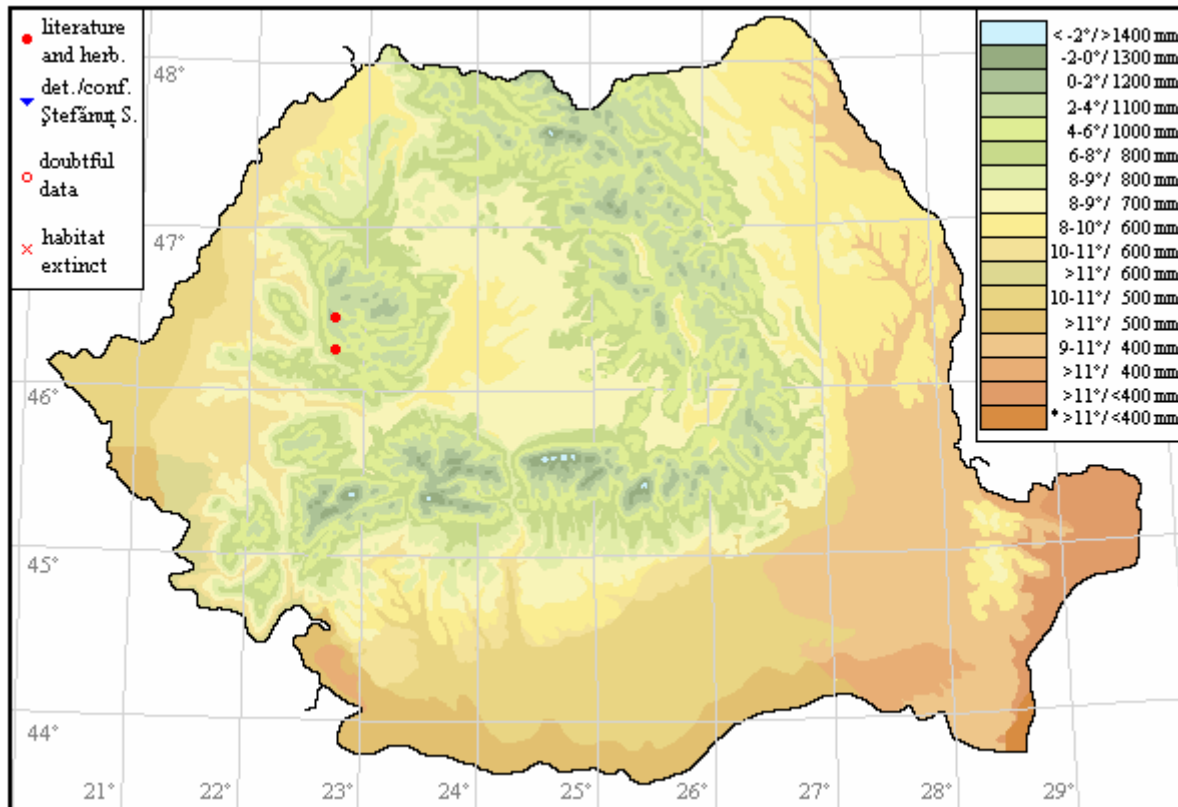


Fig. 53. Distribution of *Cephaloziella baumgartneri* Schiffn. in Romania.

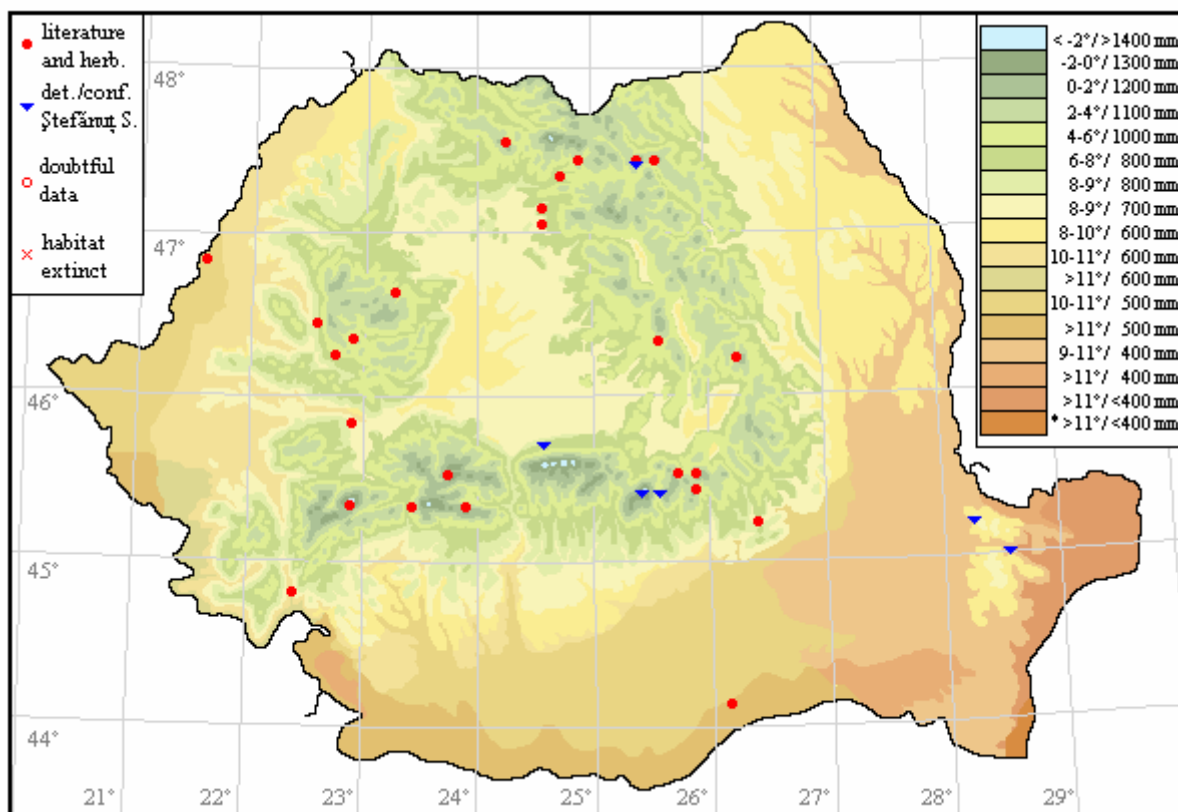


Fig. 54. Distribution of *Cephaloziella divaricata* (Sm.) Schiffn. in Romania.

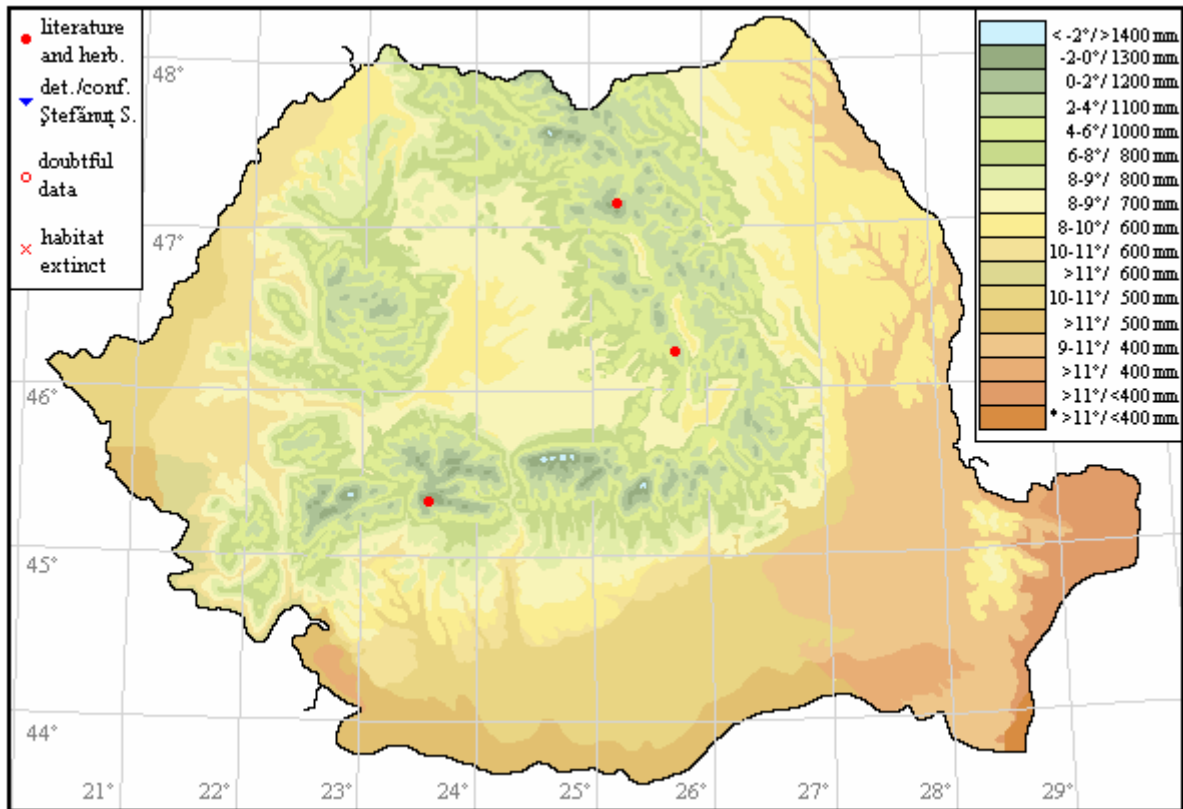


Fig. 55. Distribution of *Cephaloziella elachista* (J.B. Jack ex Gottsche et Rabenh.) Schiffn. in Romania.

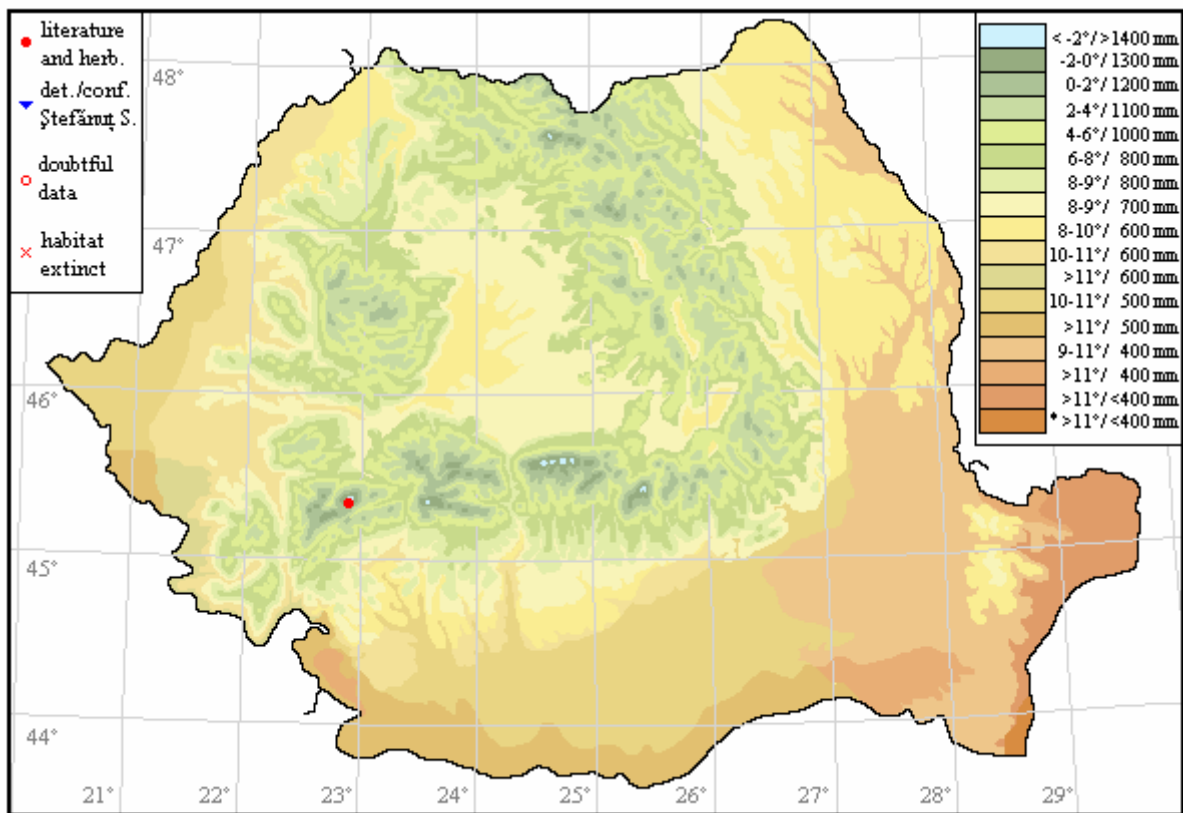


Fig. 56. Distribution of *Cephaloziella elegans* (Heeg) Schiffn. in Romania.

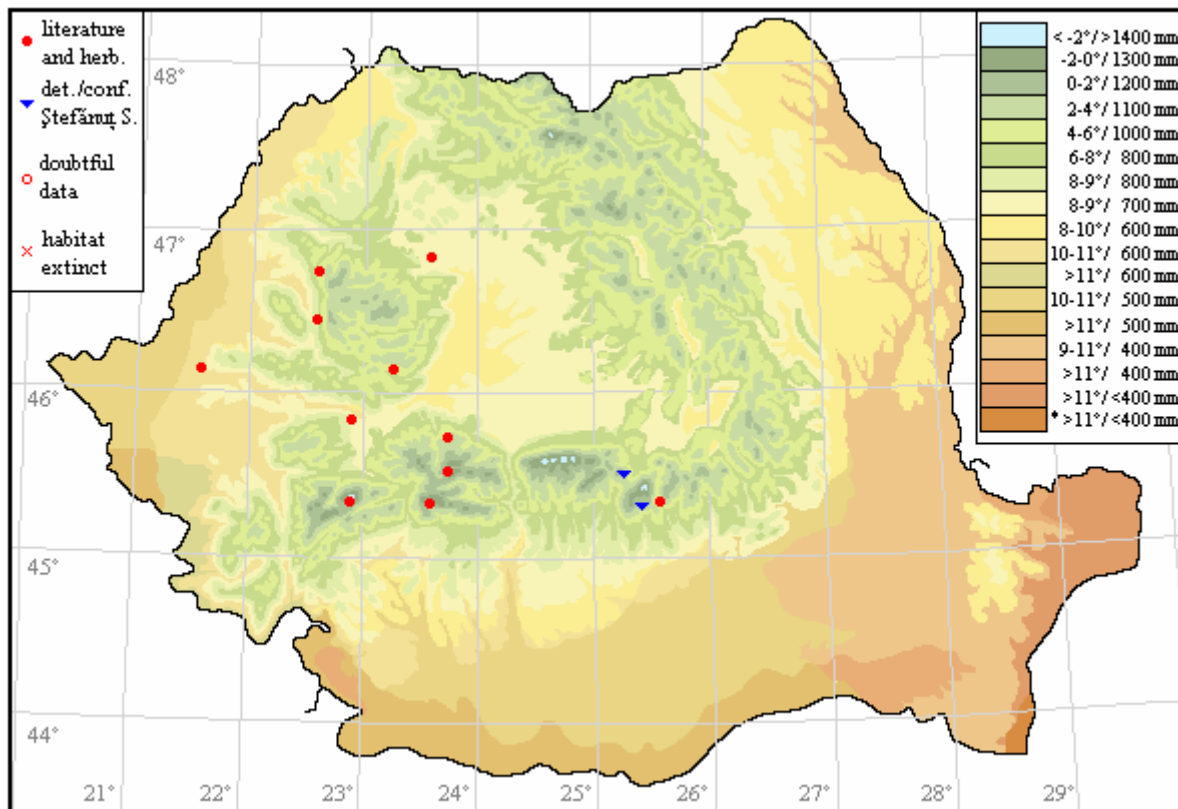


Fig. 57. Distribution of *Cephaloziella hampeana* (Nees) Schiffn. in Romania.

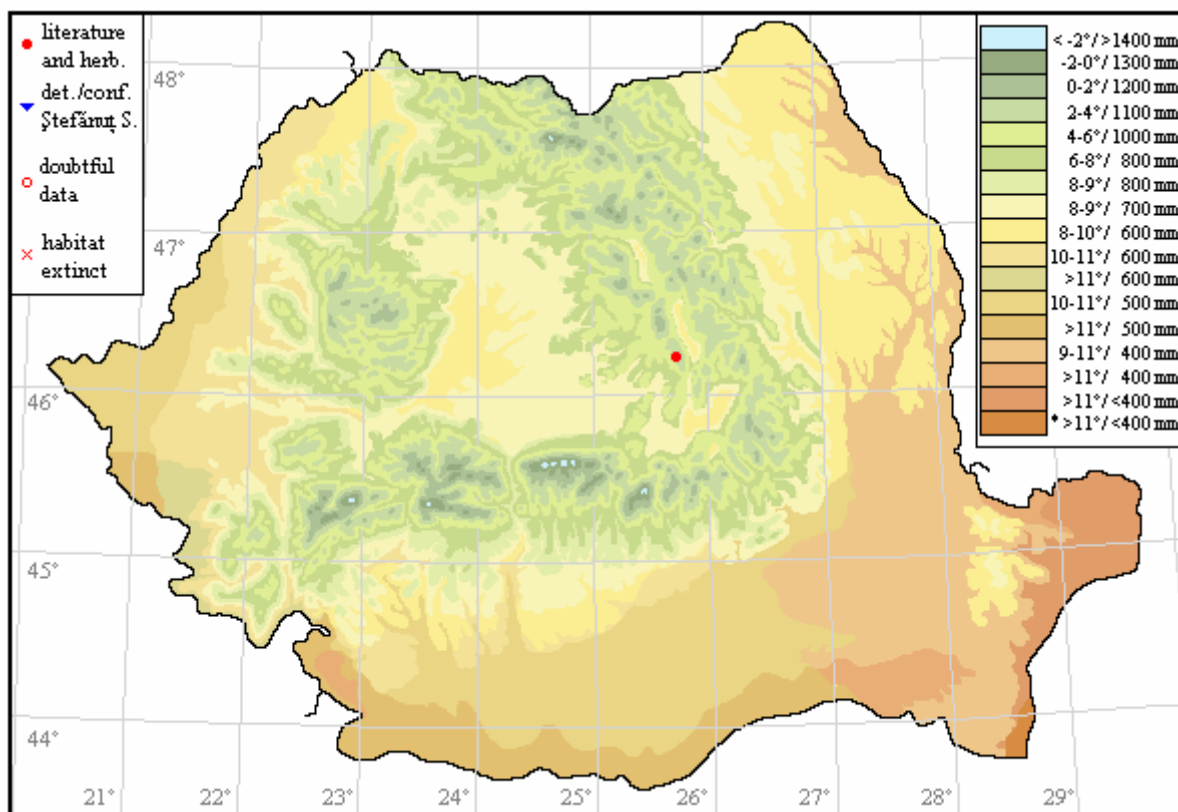


Fig. 58. Distribution of *Cephaloziella integerrima* (Lindb.) Warnst. in Romania.

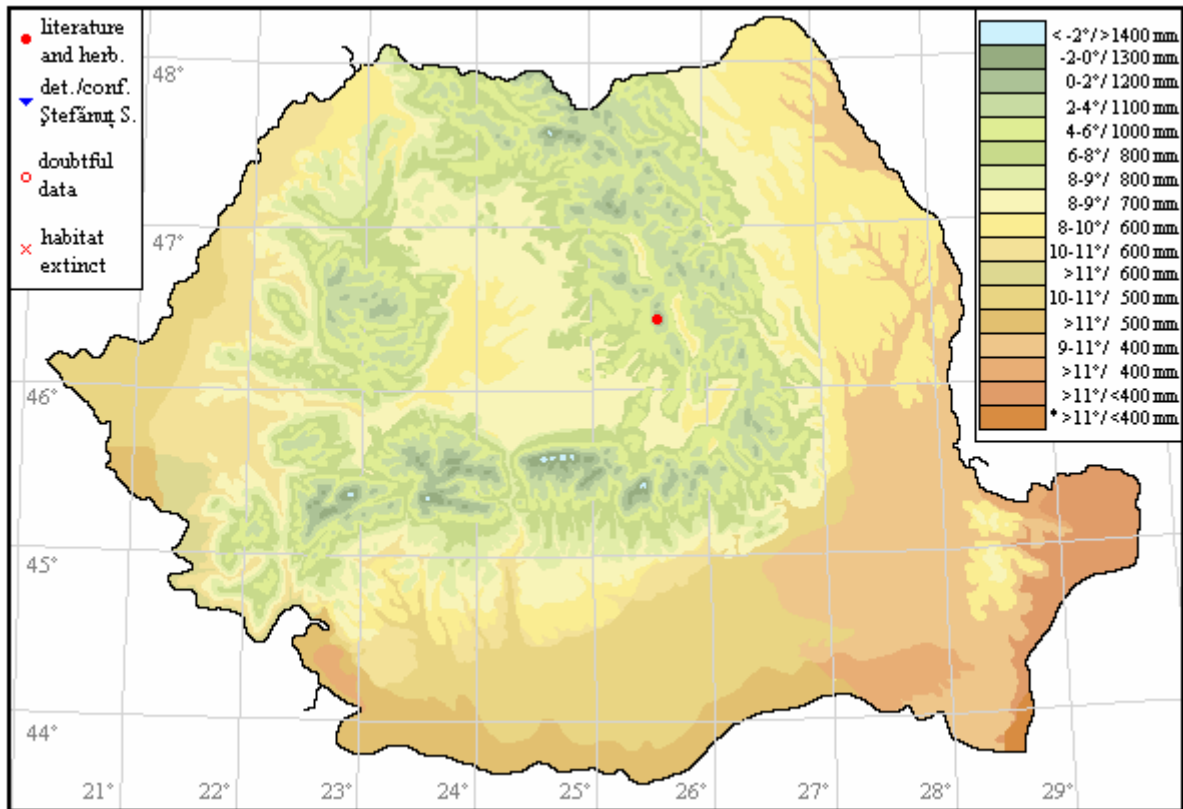


Fig. 59. Distribution of *Cephaloziella massalongi* (Spruce) Müll. Frib. in Romania.

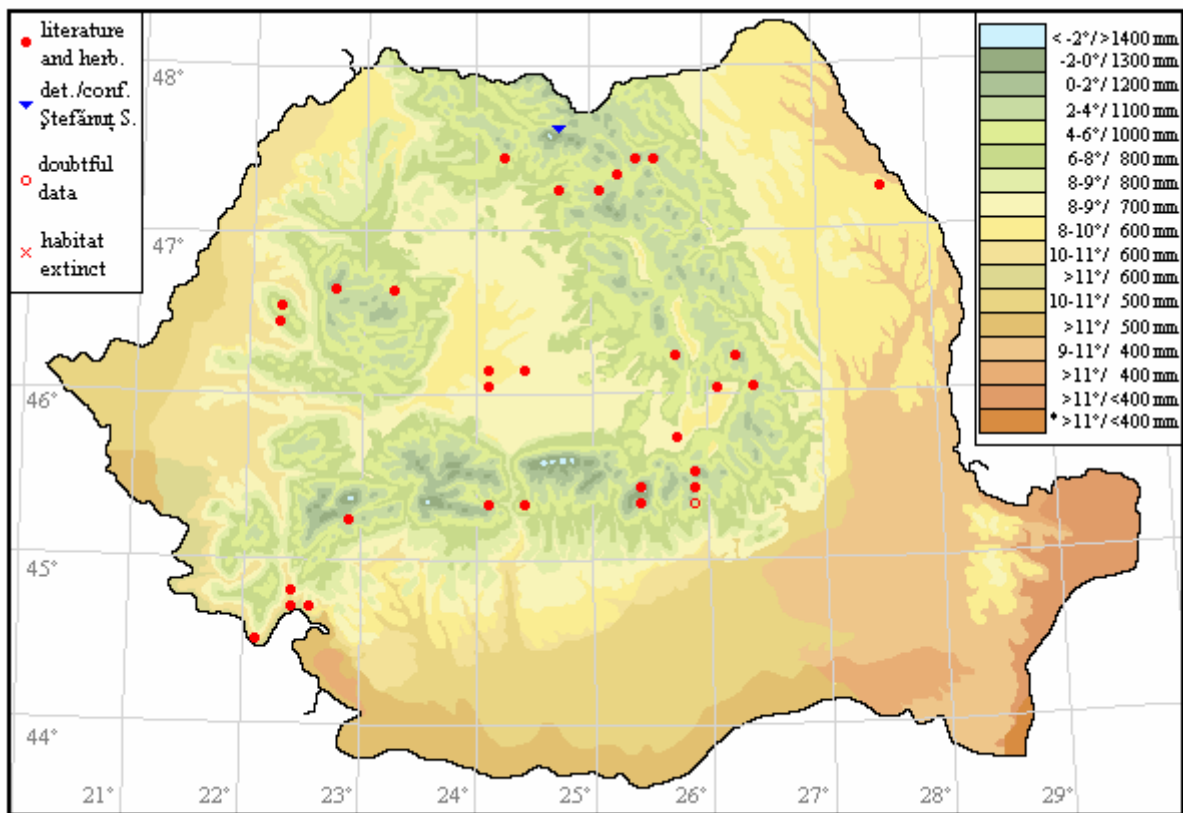


Fig. 60. Distribution of *Cephaloziella rubella* (Nees) Warnst. in Romania.

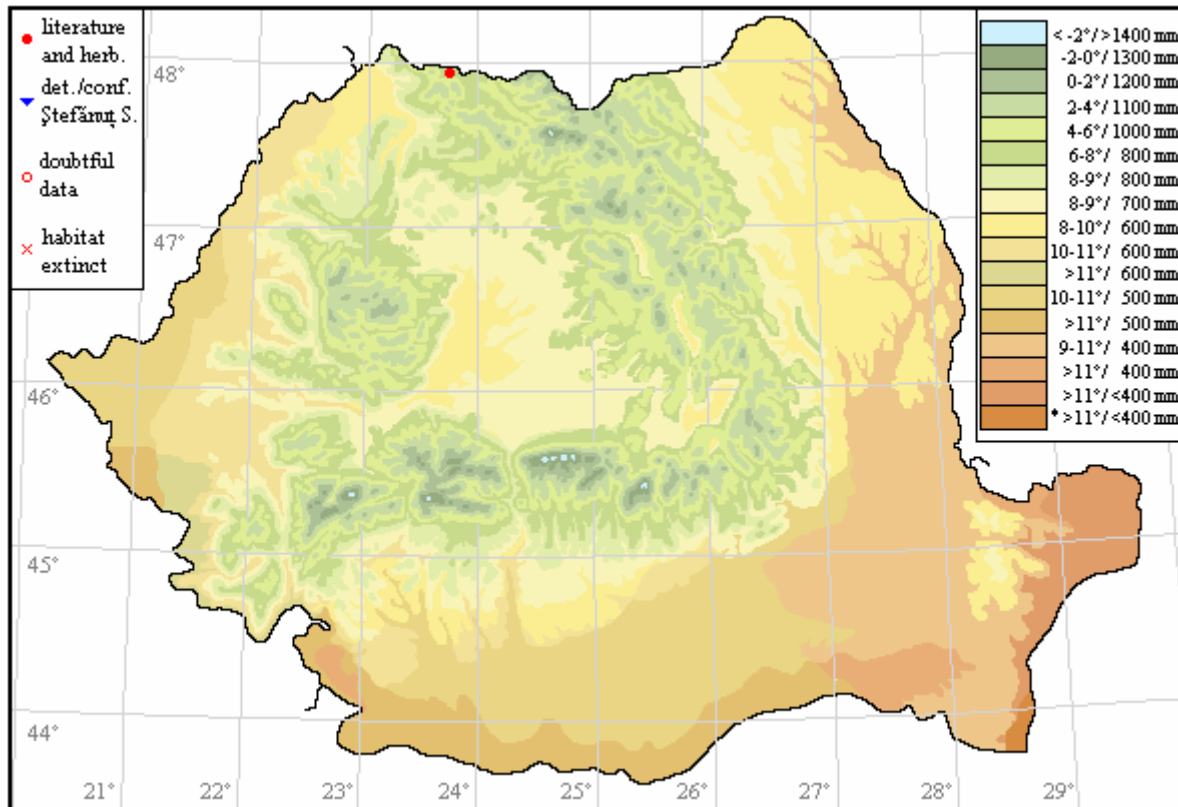


Fig. 61. Distribution of *Cephaloziella spinigera* (Lindb.) Warnst. in Romania.

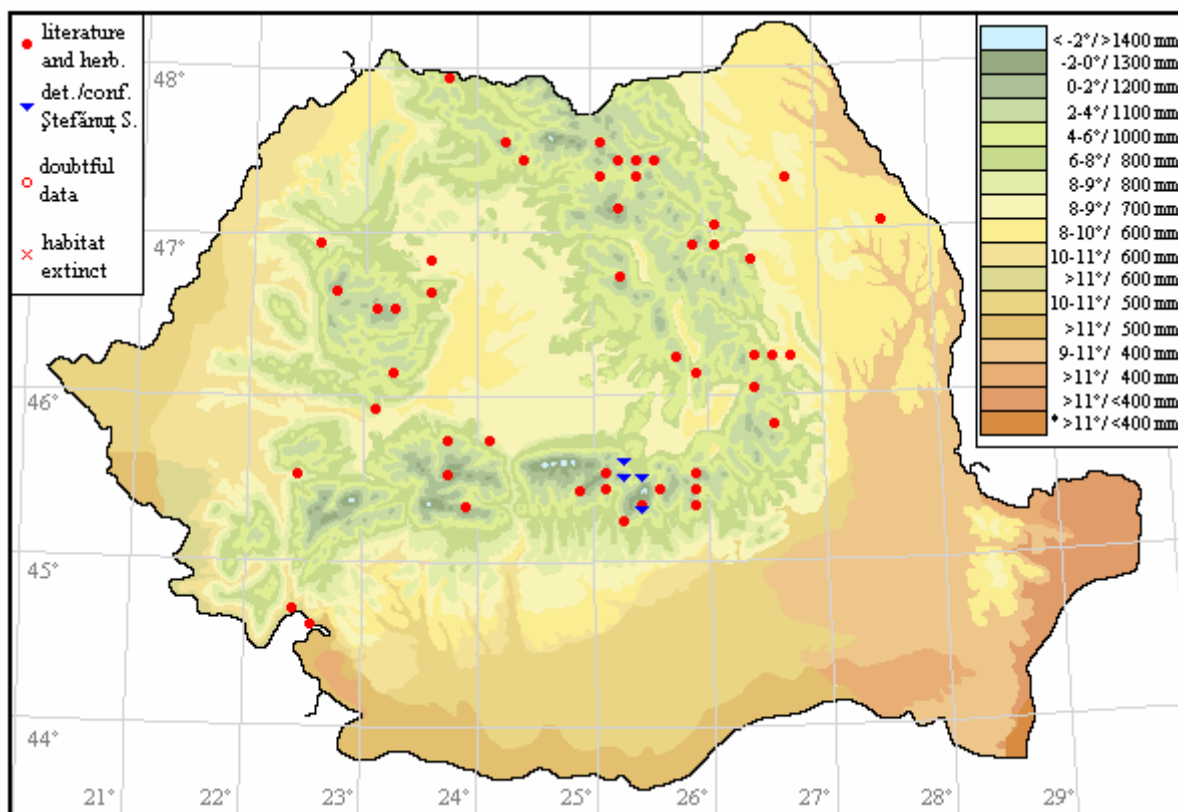


Fig. 62. Distribution of *Chiloscyphus pallescens* (Ehrh. ex Hoffm.) Dumort. in Romania.

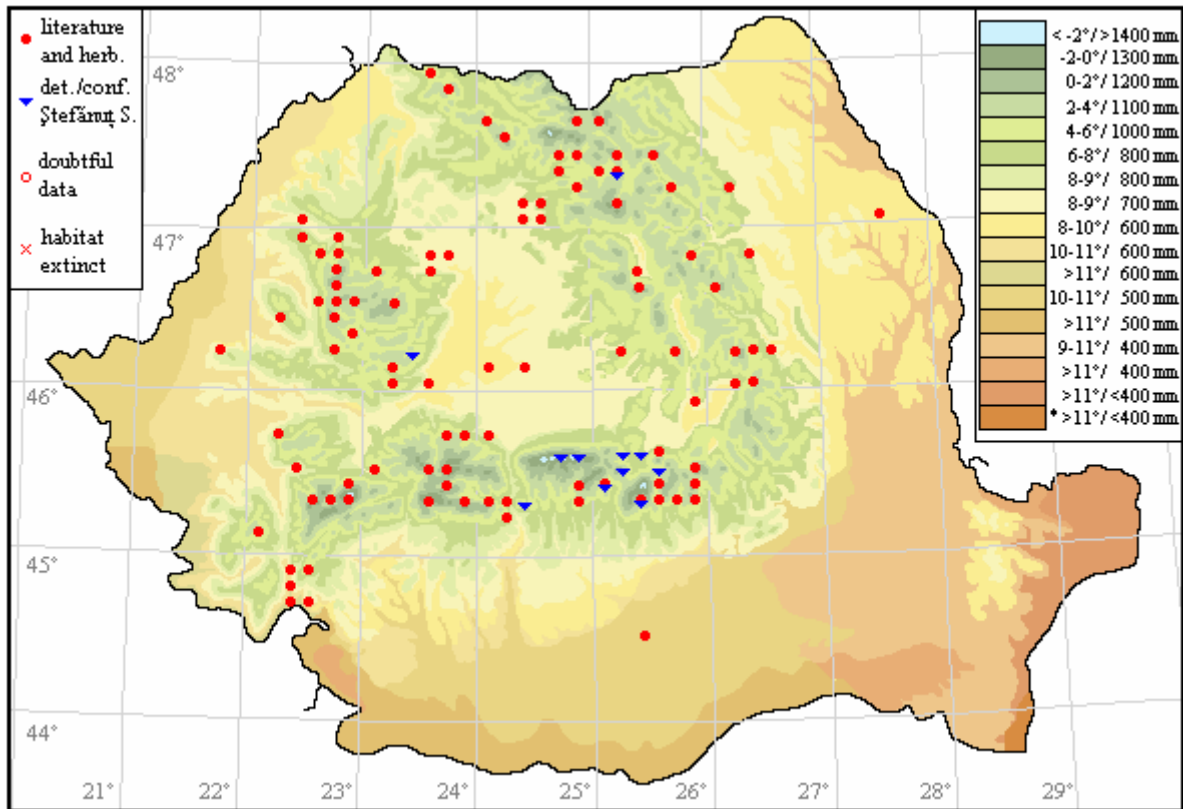


Fig. 63. Distribution of *Chiloscyphus polyanthos* (L.) Corda in Romania.

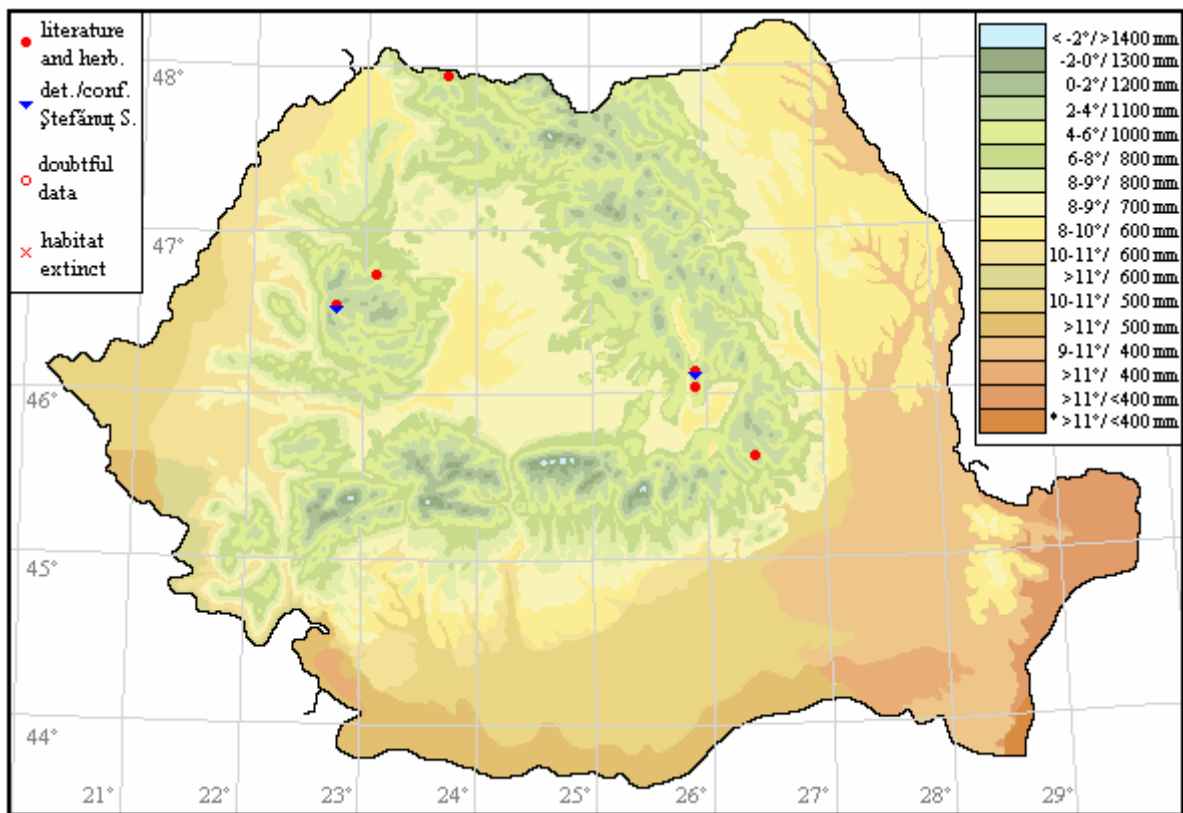


Fig. 64. Distribution of *Cladopodiella fluitans* (Nees) H. Buch in Romania.

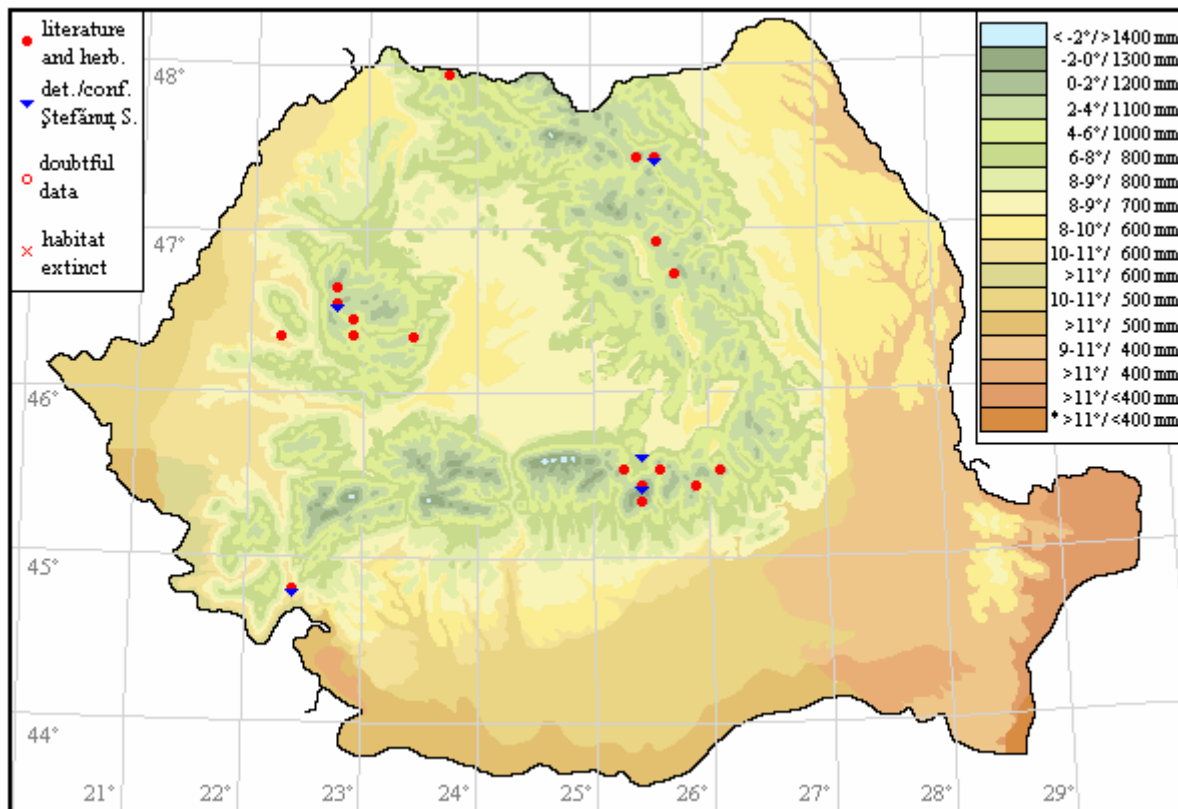


Fig. 65. Distribution of *Cololejeunea calcarea* (Lib.) Schiffn. in Romania.

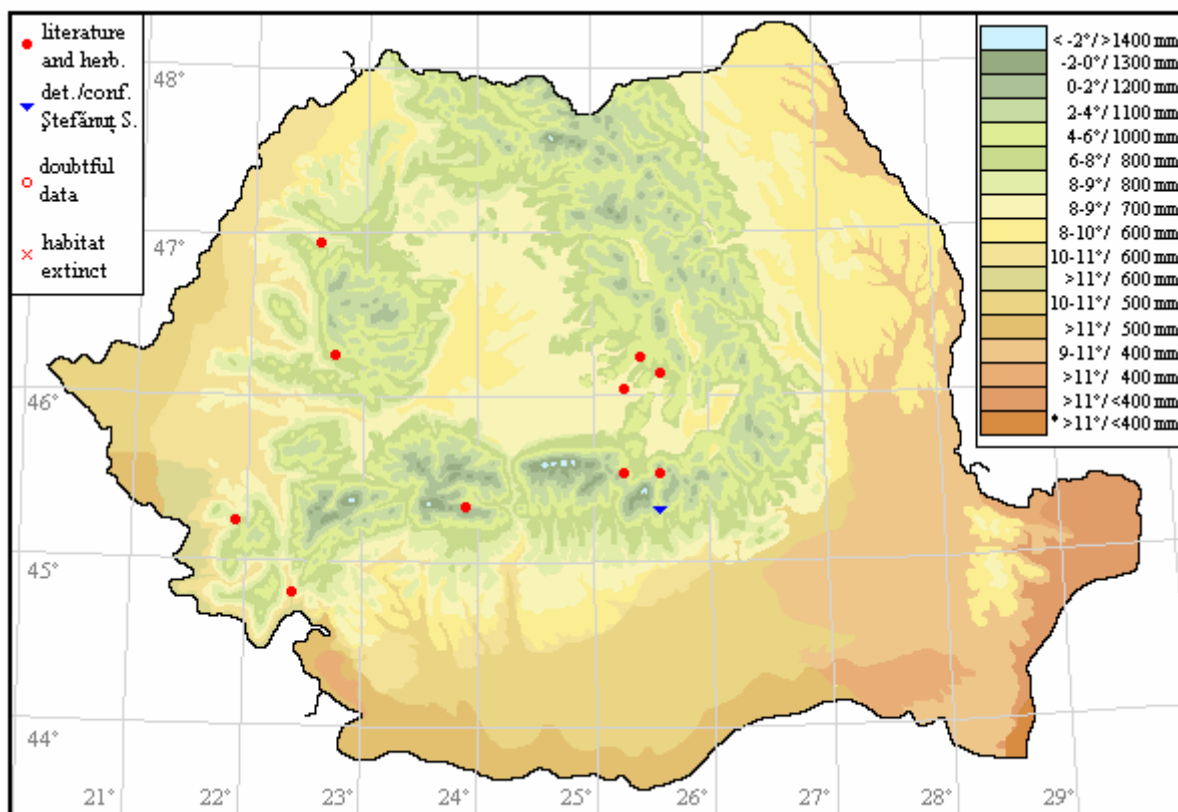


Fig. 66. Distribution of *Cololejeunea rossettiana* (C. Massal.) Schiffn. in Romania.

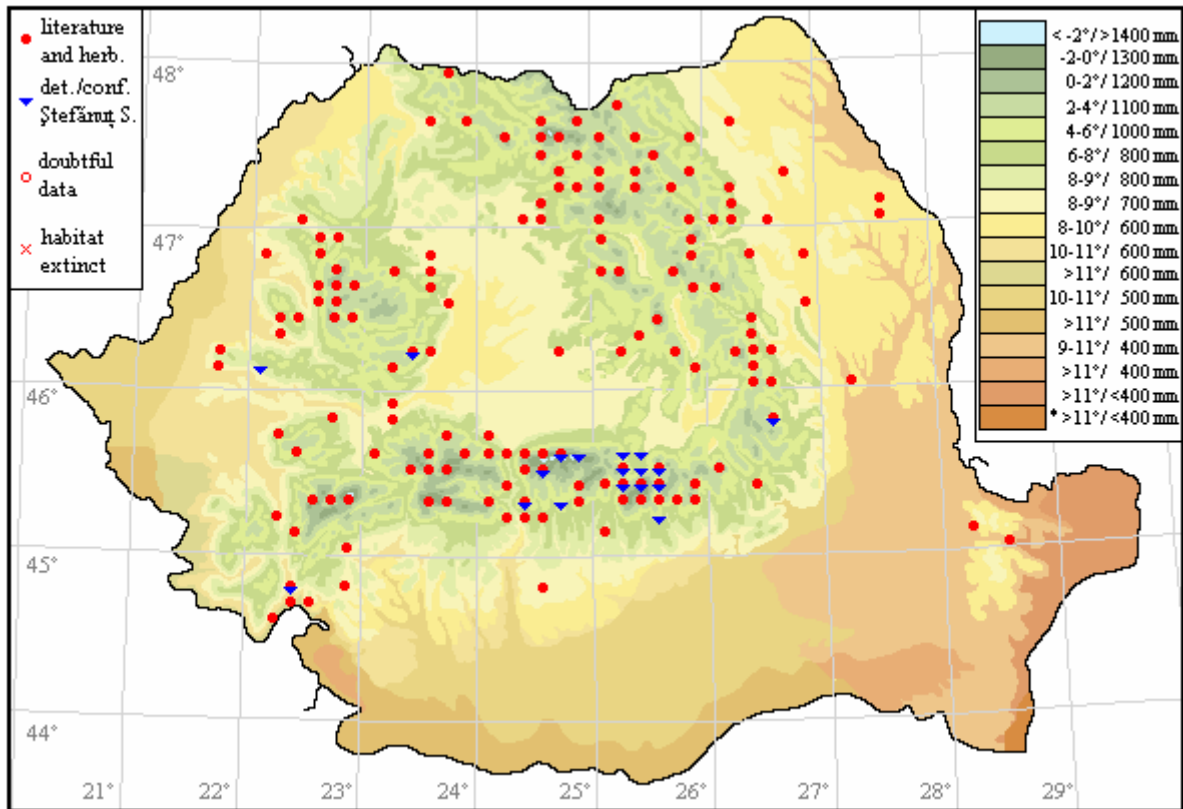


Fig. 67. Distribution of *Conocephalum conicum* (L.) Dumort. in Romania.

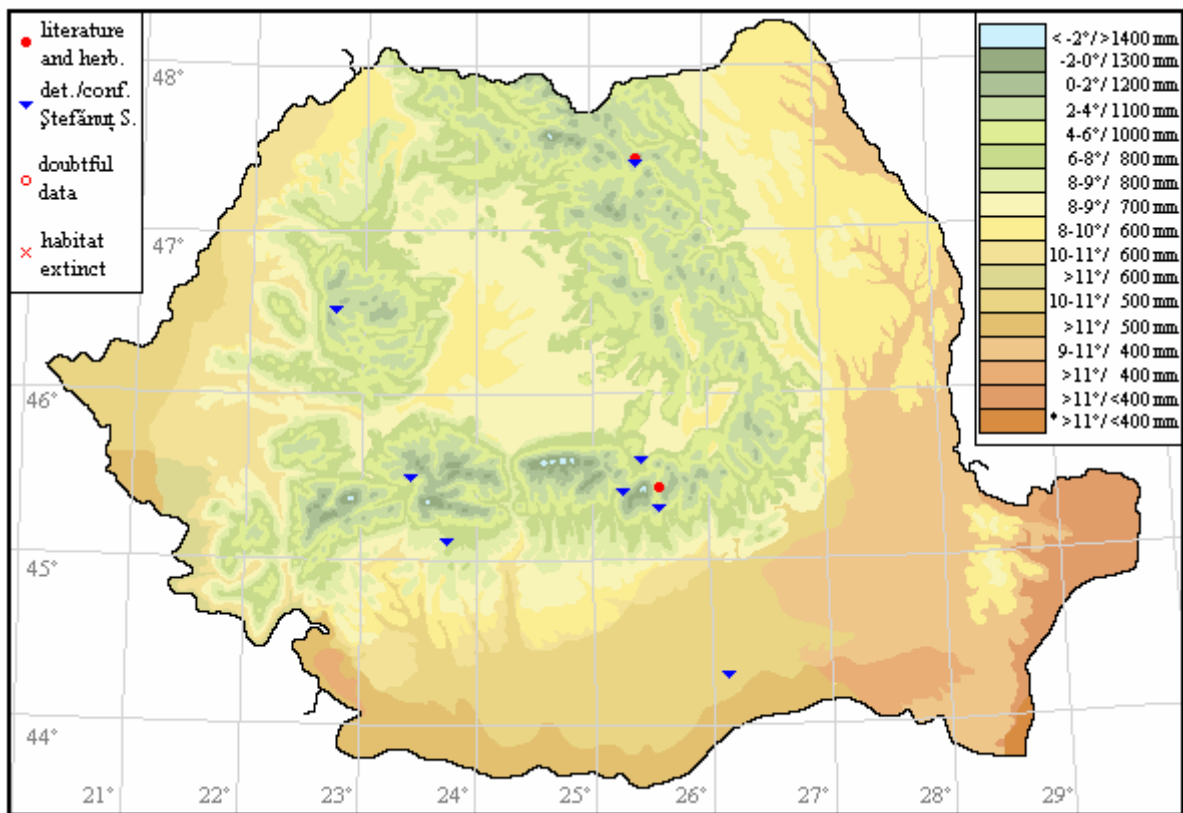


Fig. 68. Distribution of *Conocephalum salebrosum* Szweyk., Buczkowska & Odrzykoski in Romania.

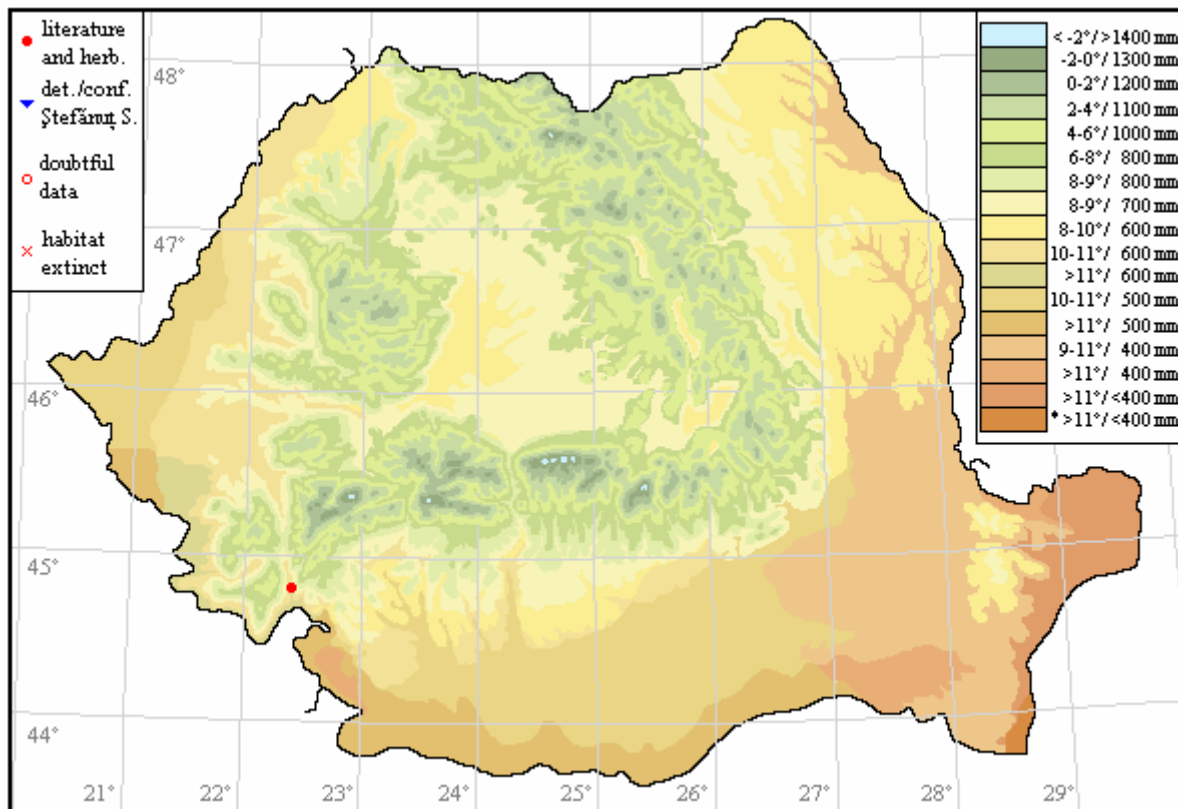


Fig. 69. Distribution of *Corsinia coriandrina* (Spreng.) Lindb. in Romania.

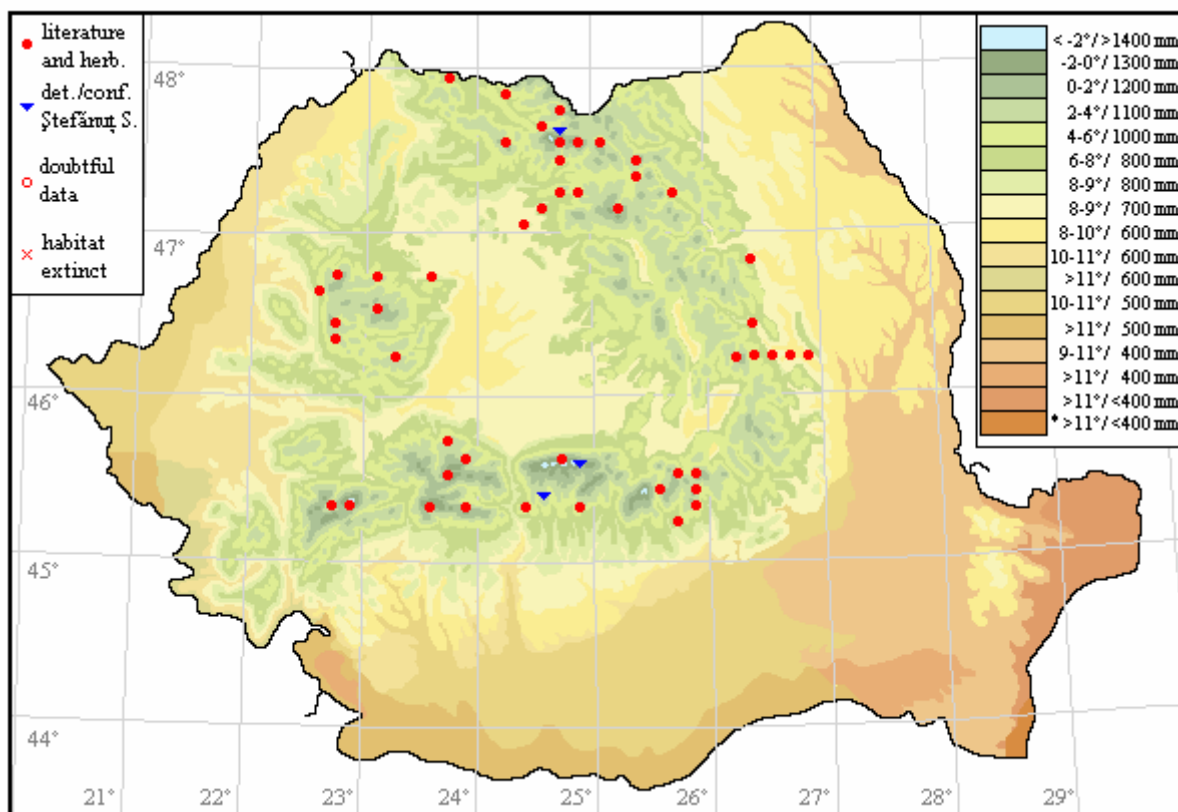


Fig. 70. Distribution of *Diplophyllum albicans* (L.) Dumort. in Romania.

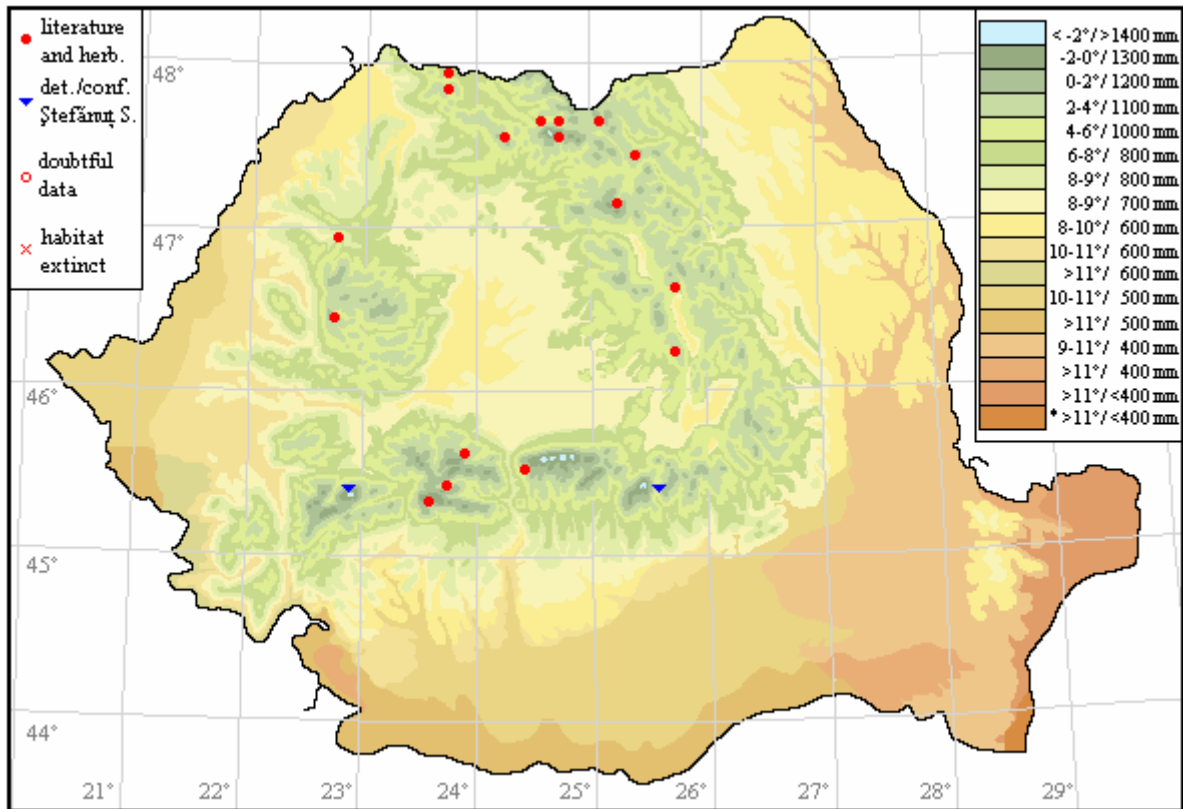


Fig. 71. Distribution of *Diplophyllum obtusifolium* (Hook.) Dumort. in Romania.

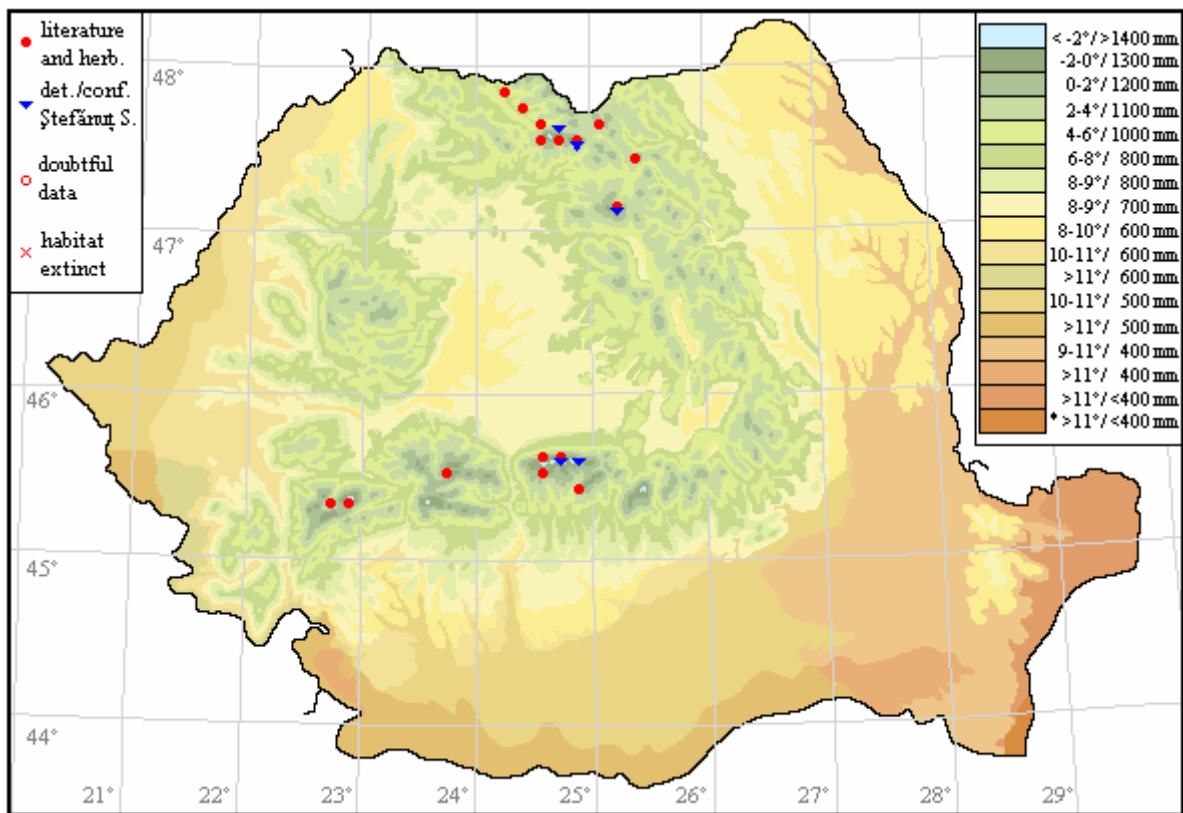


Fig. 72. Distribution of *Diplophyllum taxifolium* (Wahlenb.) Dumort. in Romania.

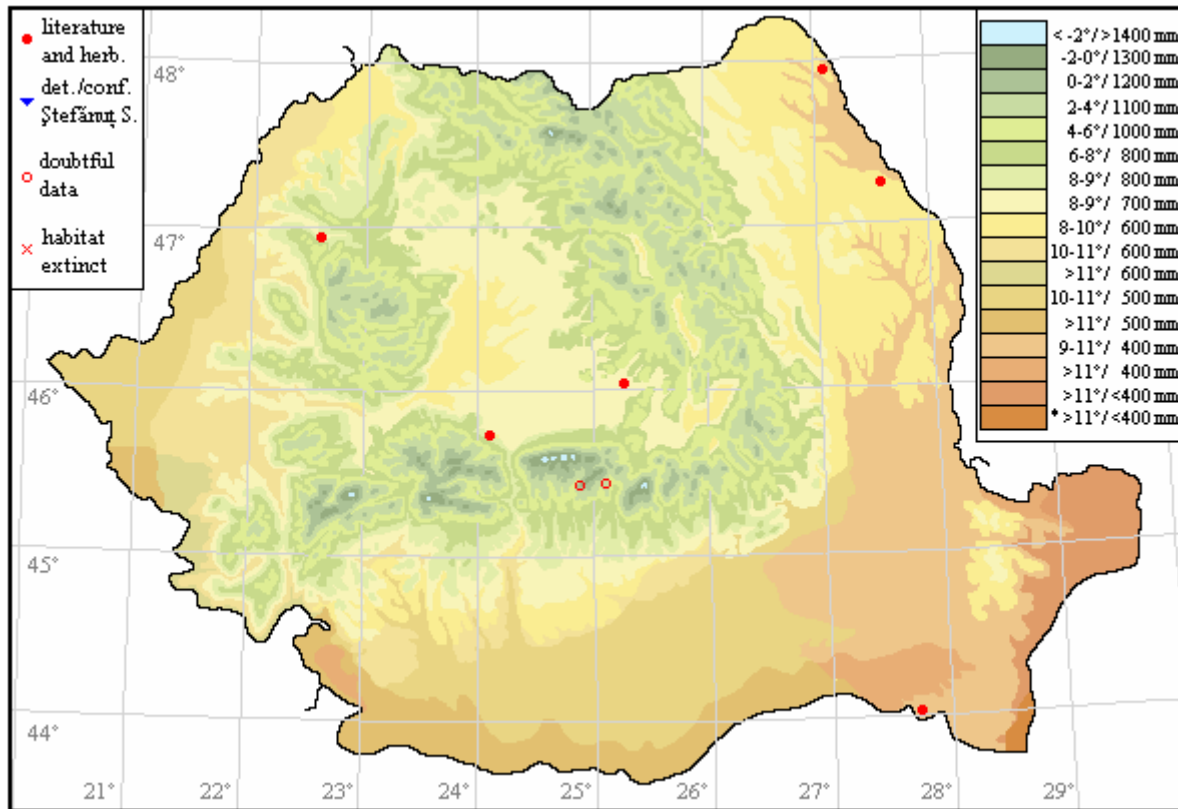


Fig. 73. Distribution of *Fossombronina pusilla* (L.) Nees in Romania.

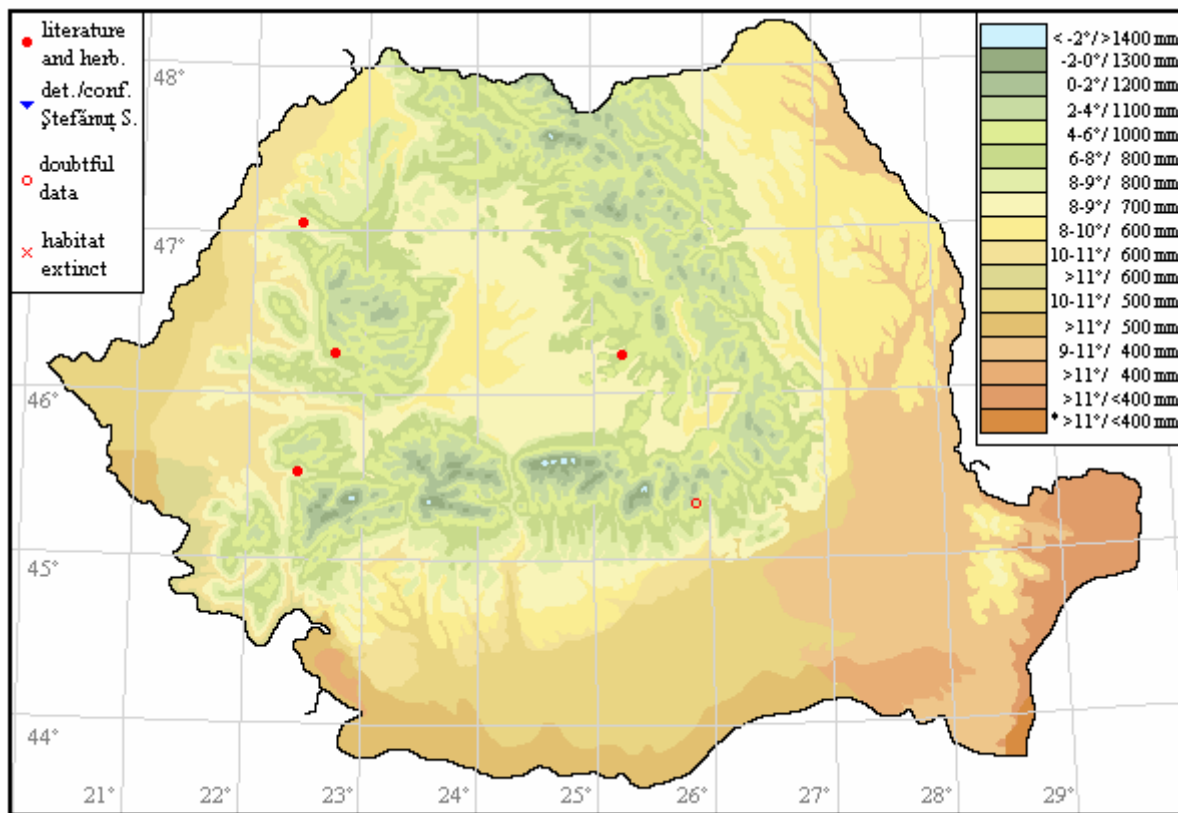


Fig. 74. Distribution of *Fossombronina wondraczekii* (Corda) Lindb. in Romania.

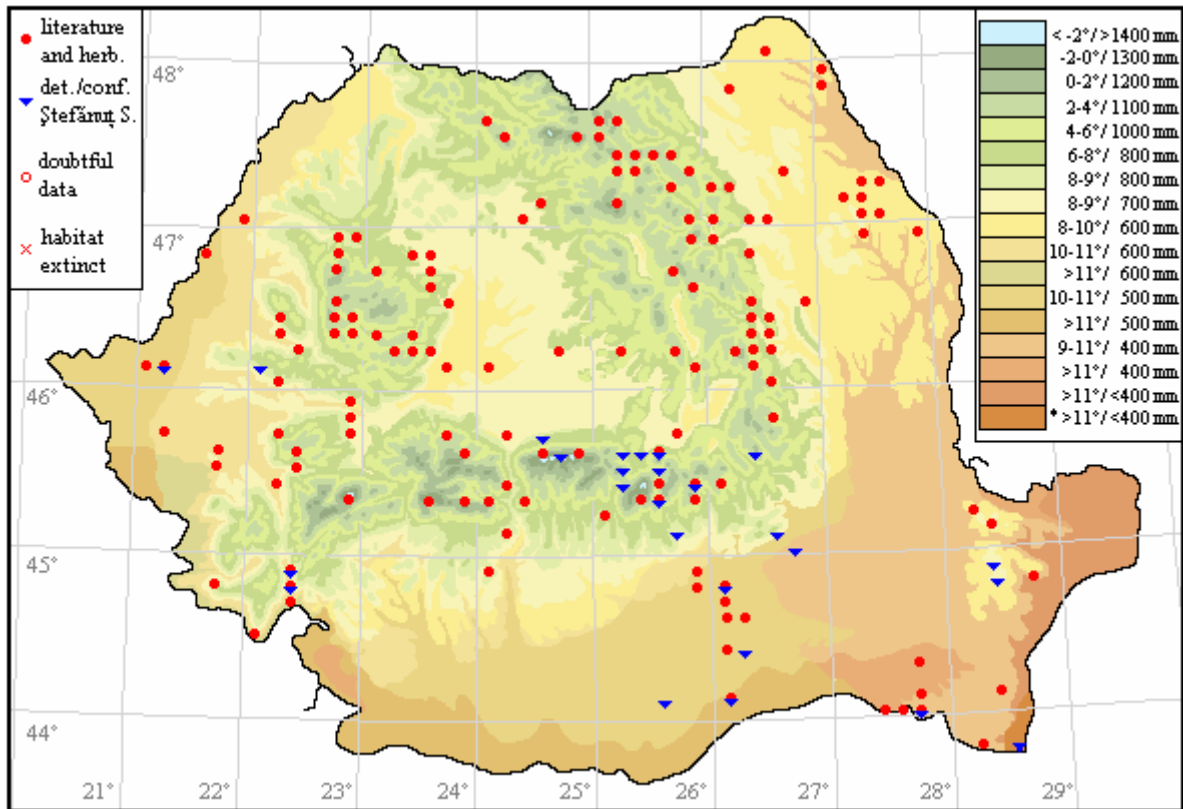


Fig. 75. Distribution of *Frullania dilatata* (L.) Dumort. in Romania.

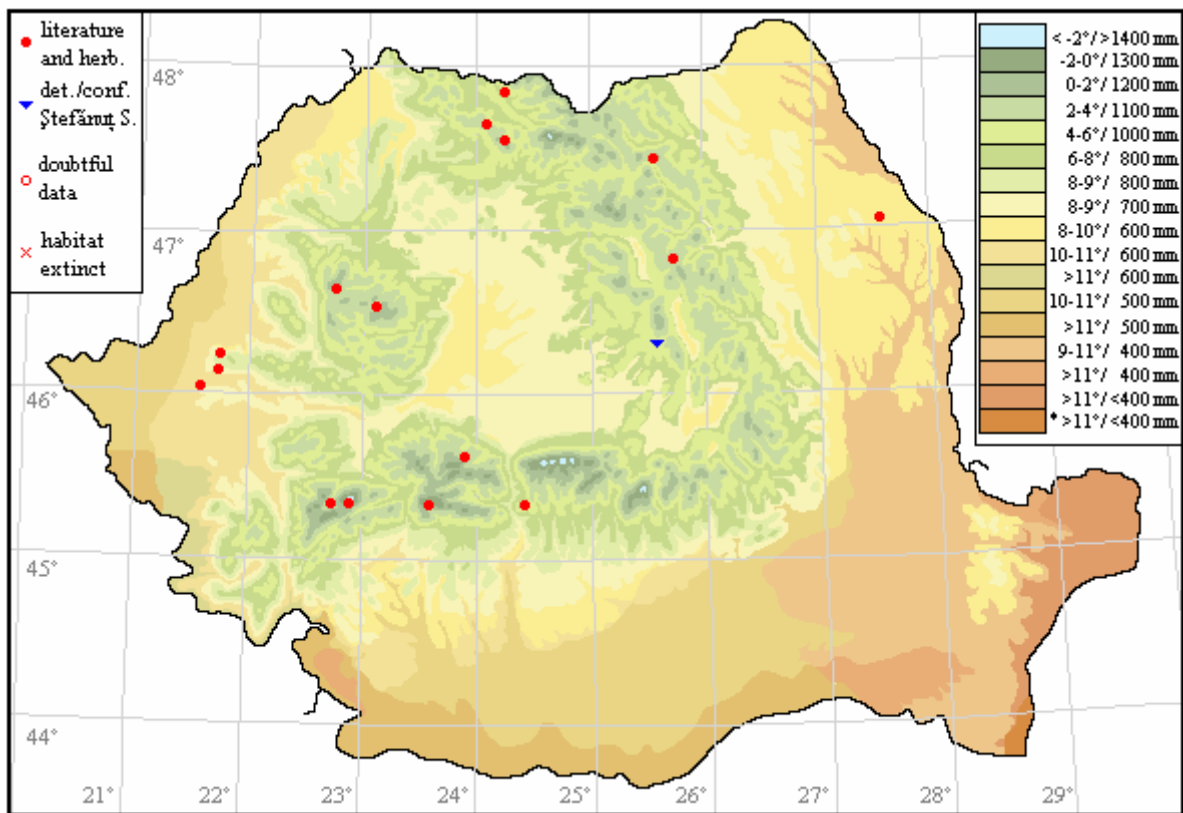


Fig. 76. Distribution of *Frullania fragilifolia* (Taylor) Gottsche et al. in Romania.

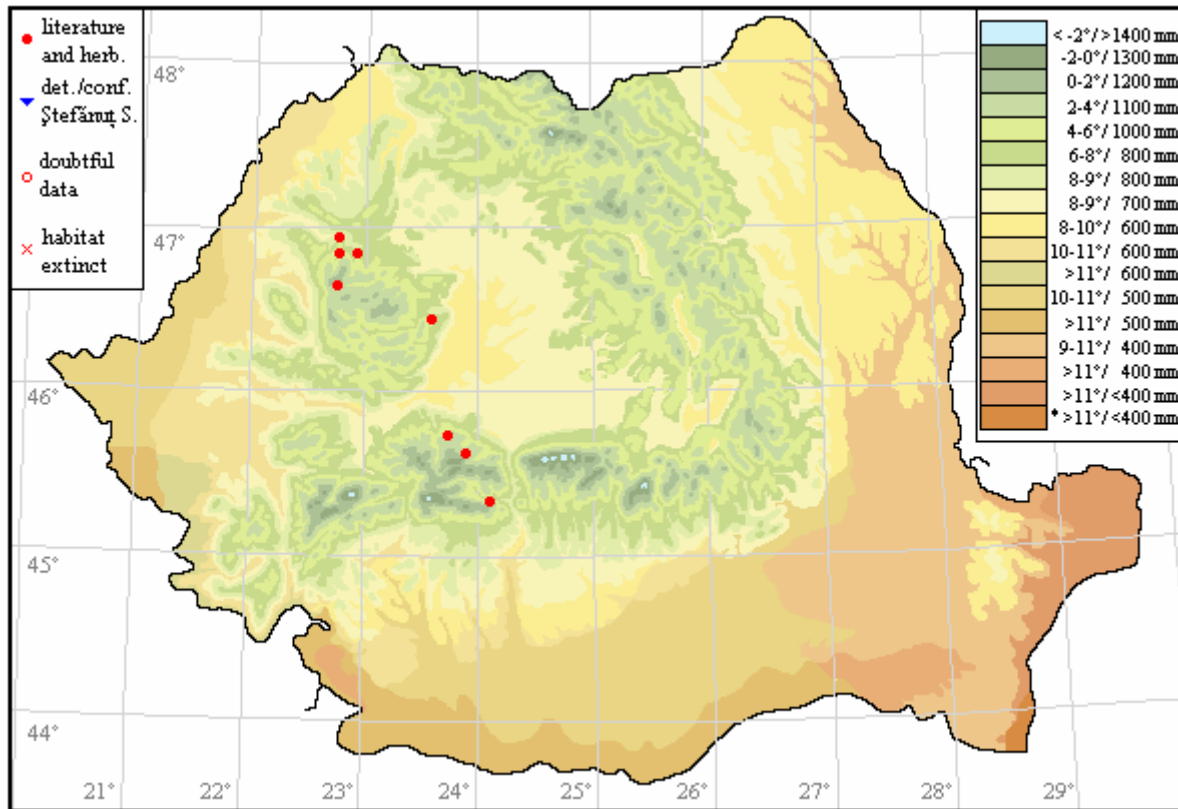


Fig. 77. Distribution of *Frullania jackii* Gottsche in Romania.

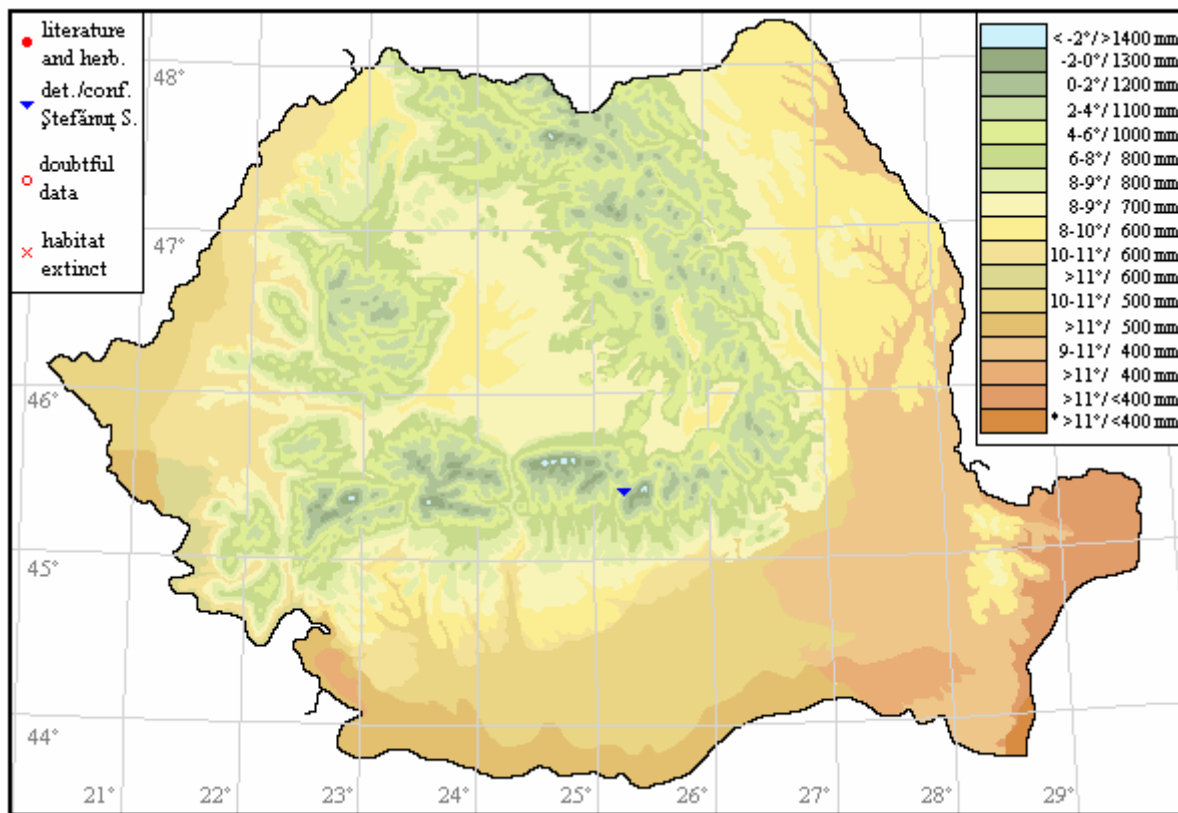


Fig. 78. Distribution of *Frullania parvistipula* Steph. in Romania.

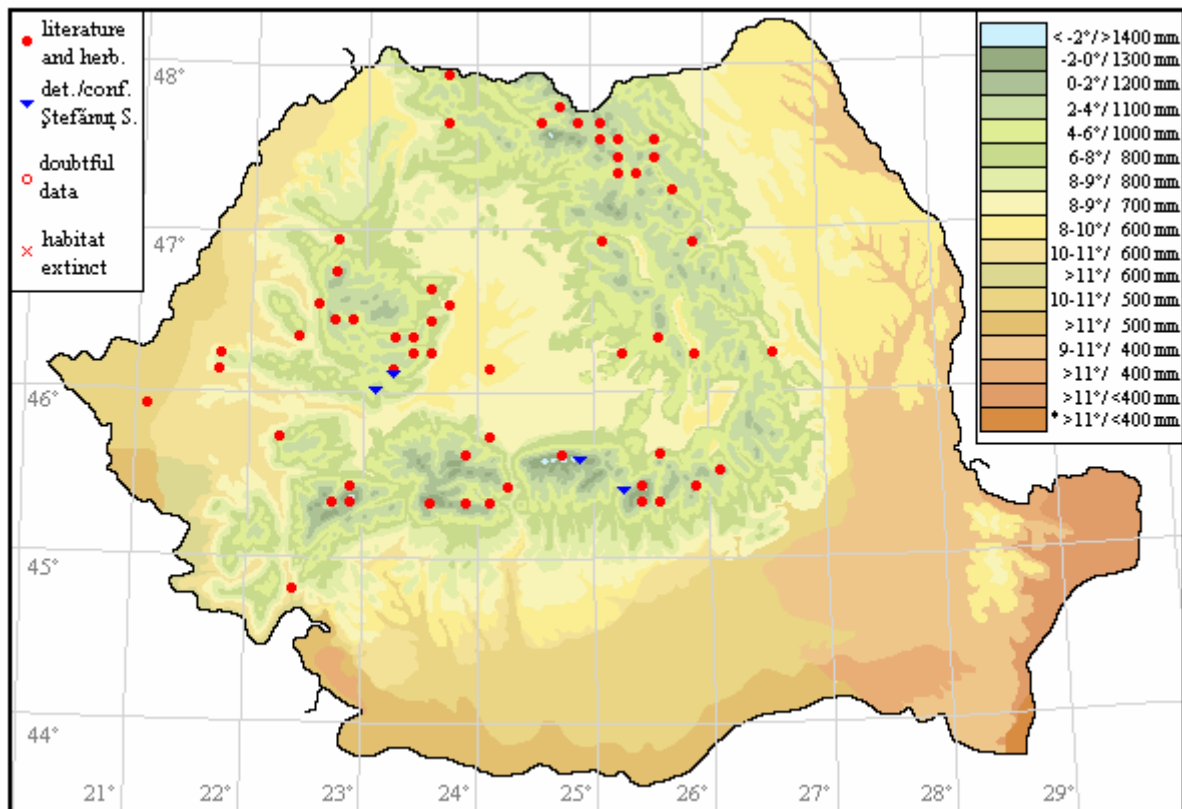


Fig. 79. Distribution of *Frullania tamarisci* (L.) Dumort. in Romania.

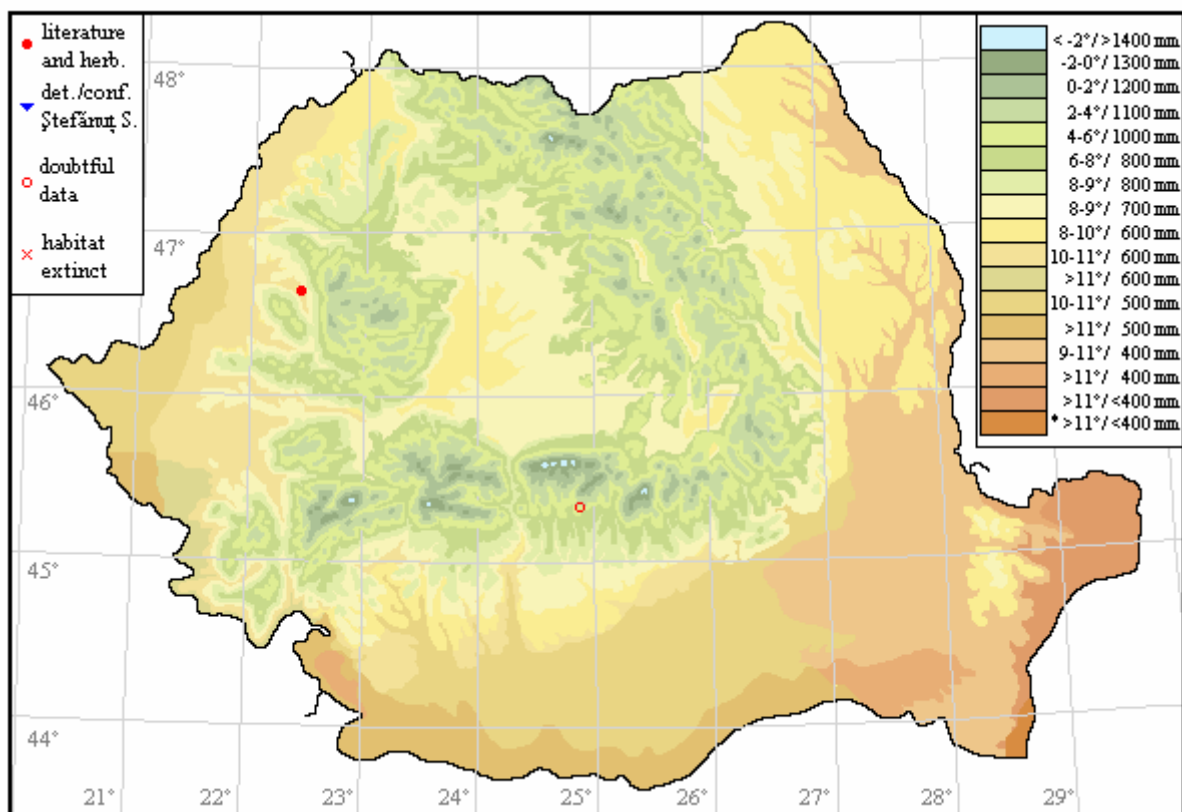


Fig. 80. Distribution of *Geocalyx graveolens* (Schr.) Nees in Romania.

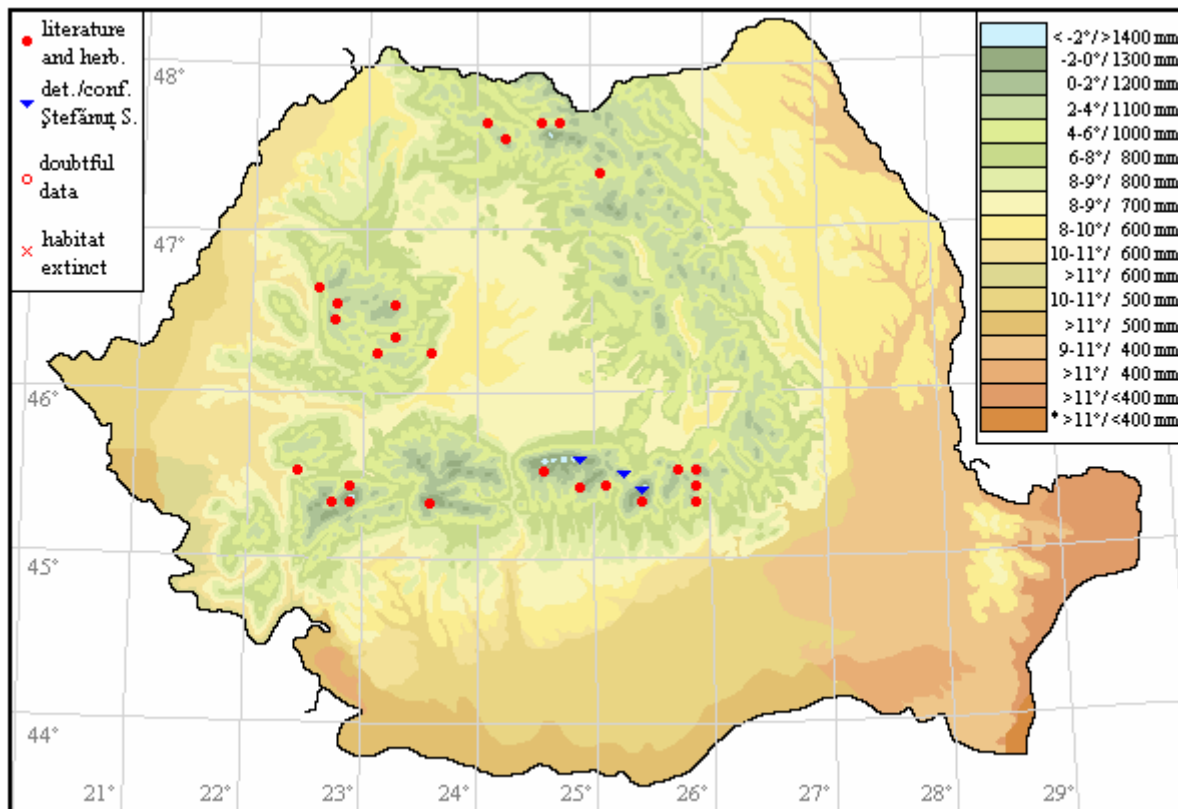


Fig. 81. Distribution of *Gymnocolea inflata* (Huds.) Dumort. in Romania.

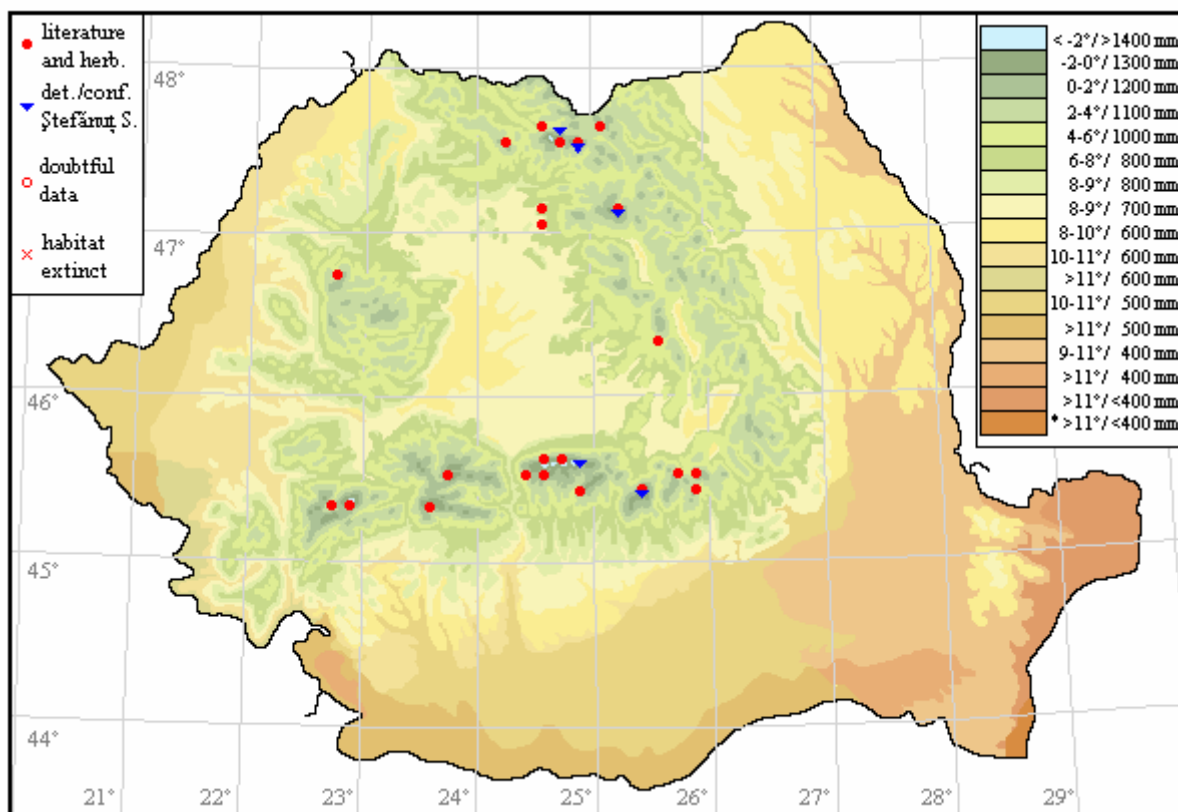


Fig. 82. Distribution of *Gymnomitrium concinnatum* (Lightf.) Lindb. in Romania.

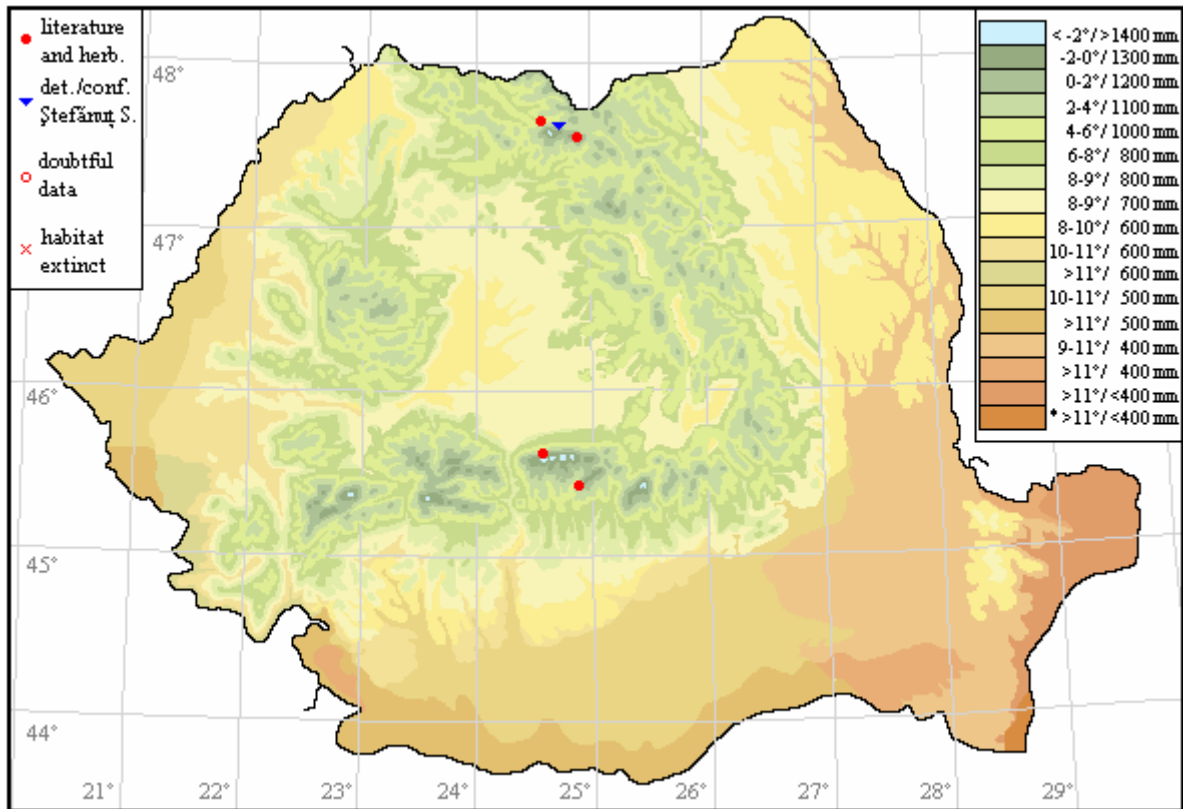


Fig. 83. Distribution of *Gymnomitrium corallioides* Nees in Romania.

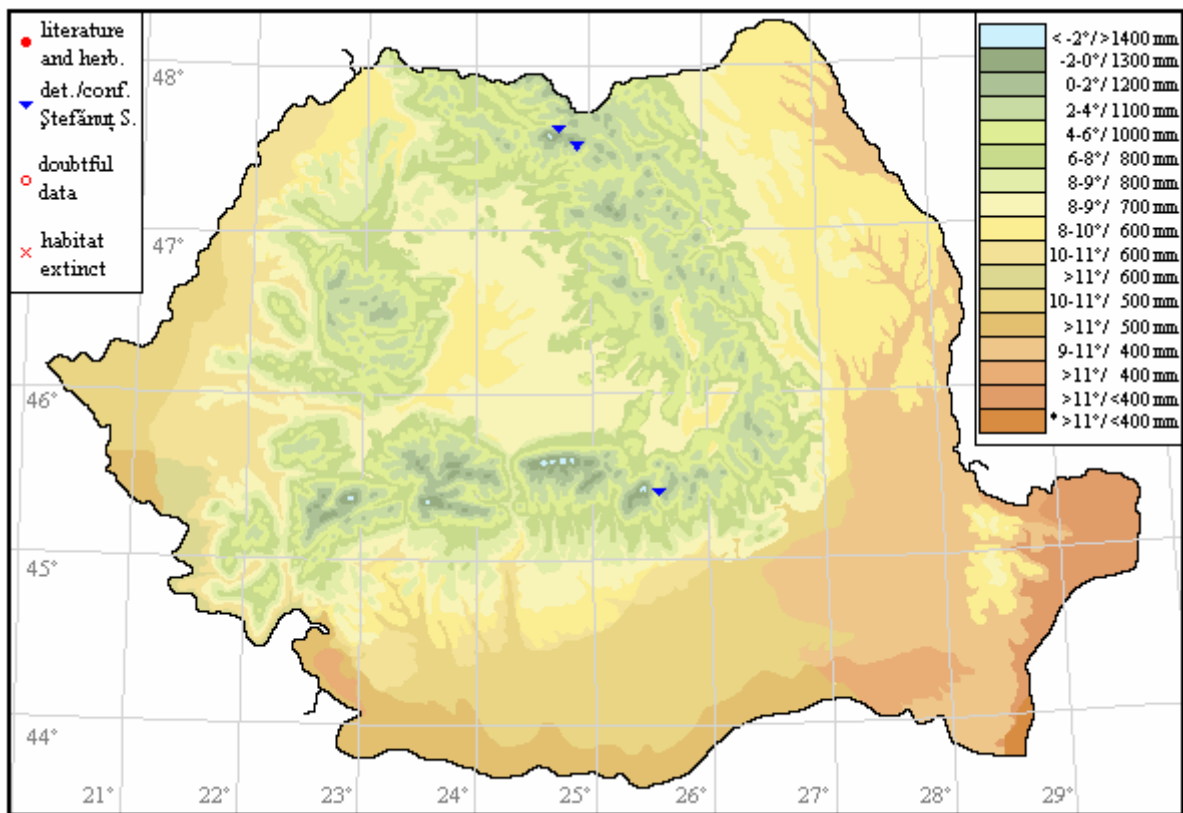


Fig. 84. Distribution of *Haplomitrium hookeri* (Sm.) Nees in Romania.

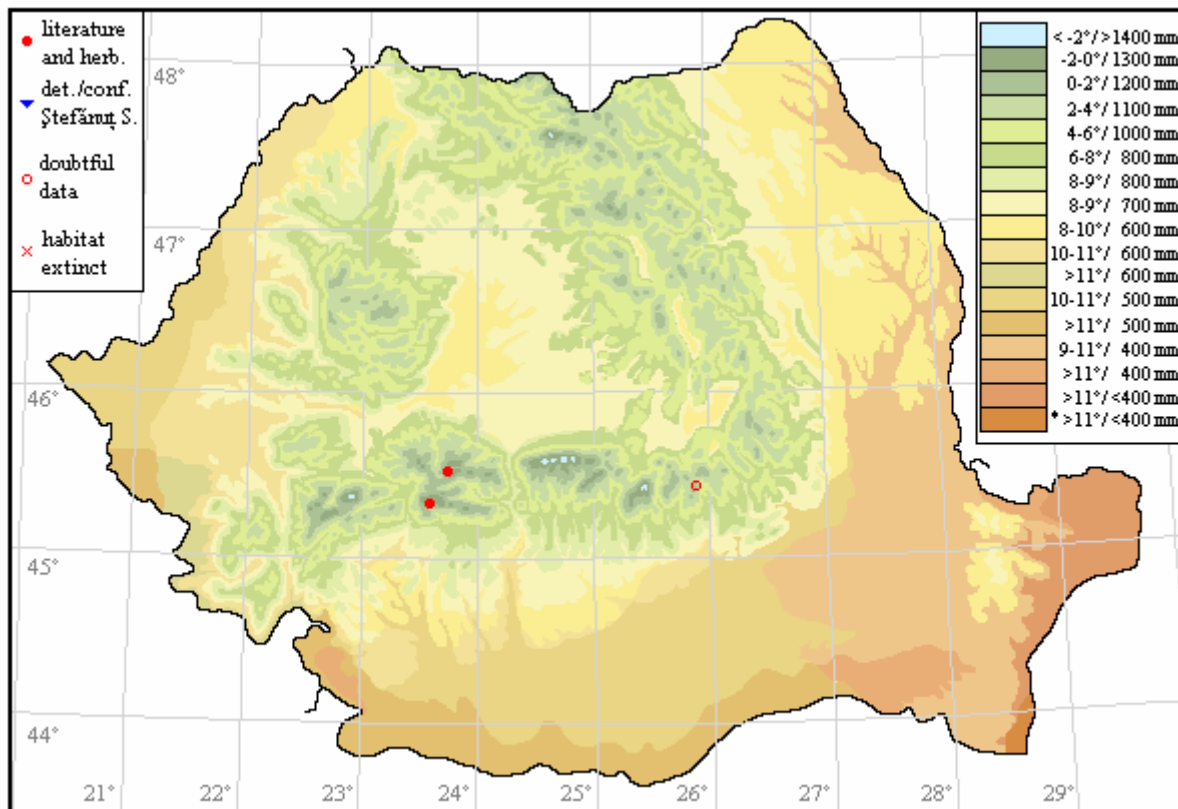


Fig. 85. Distribution of *Harpanthus flotovianus* (Nees) Nees in Romania.

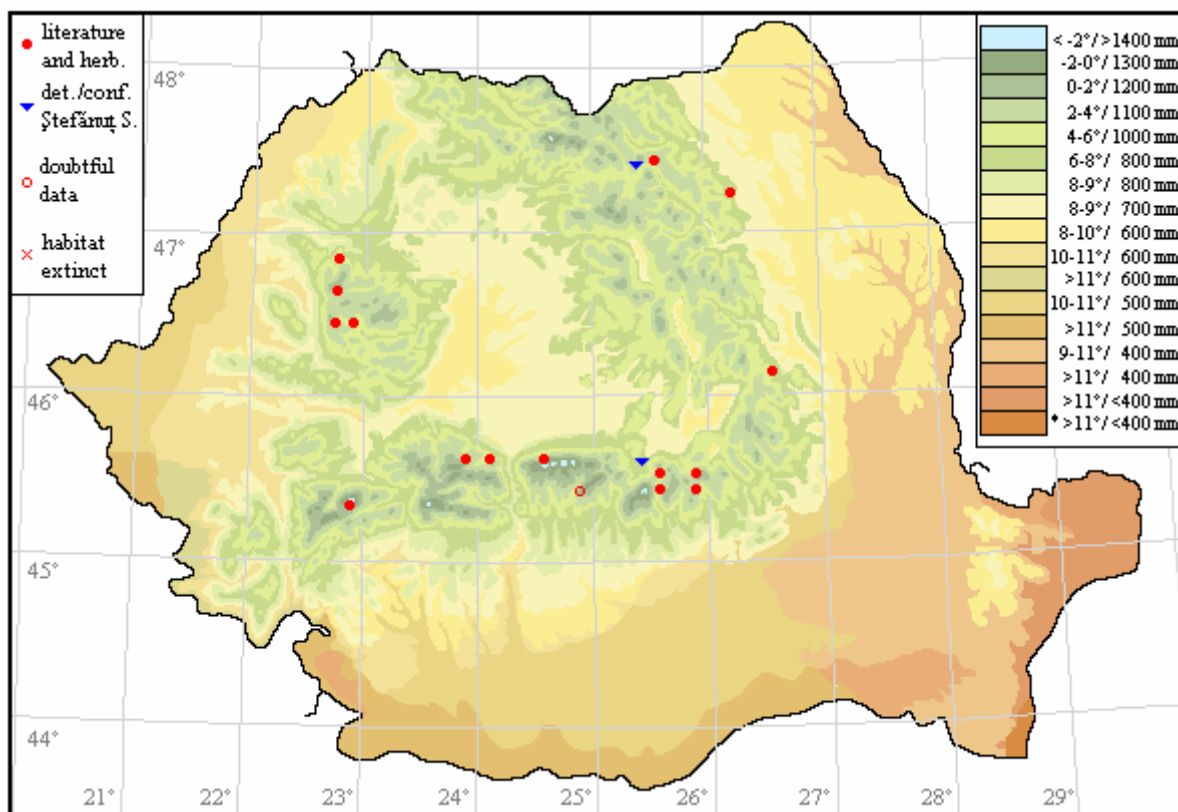


Fig. 86. Distribution of *Harpanthus scutatus* (F. Weber et D. Mohr) Spruce in Romania.

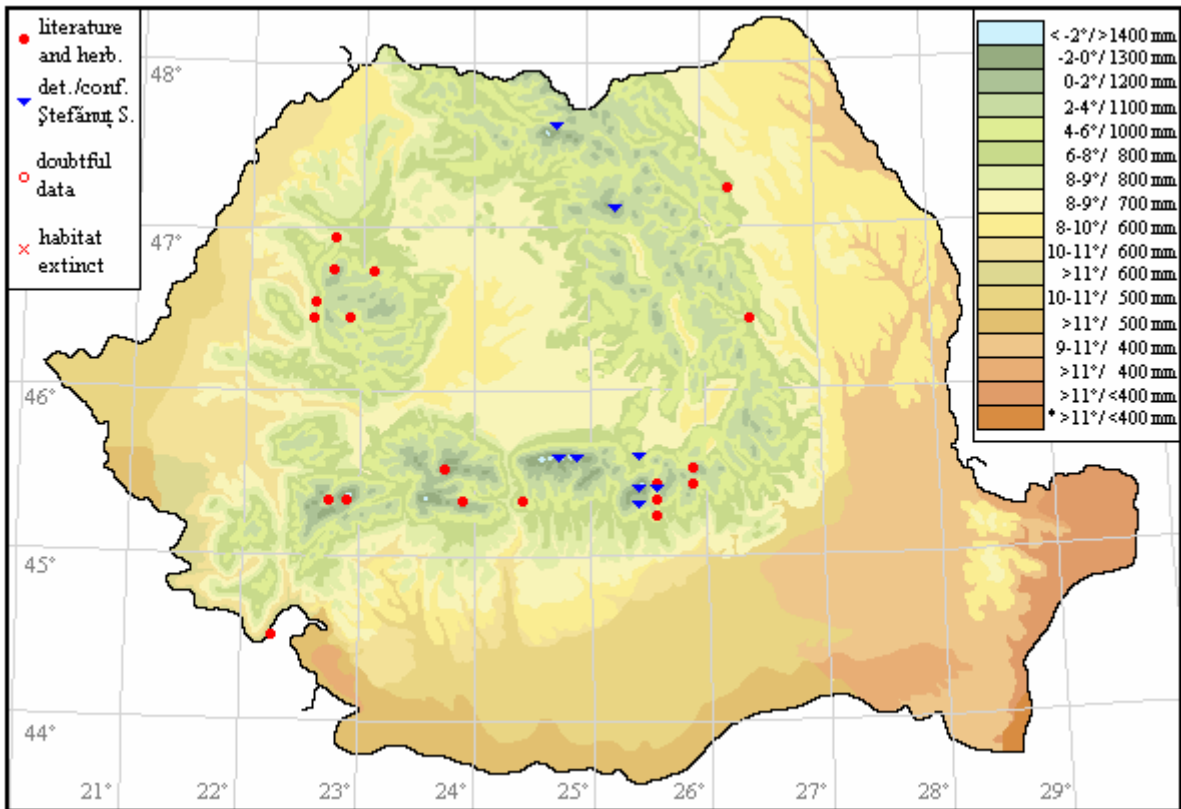


Fig. 87. Distribution of *Jamesoniella autumnalis* (DC.) Steph. in Romania.

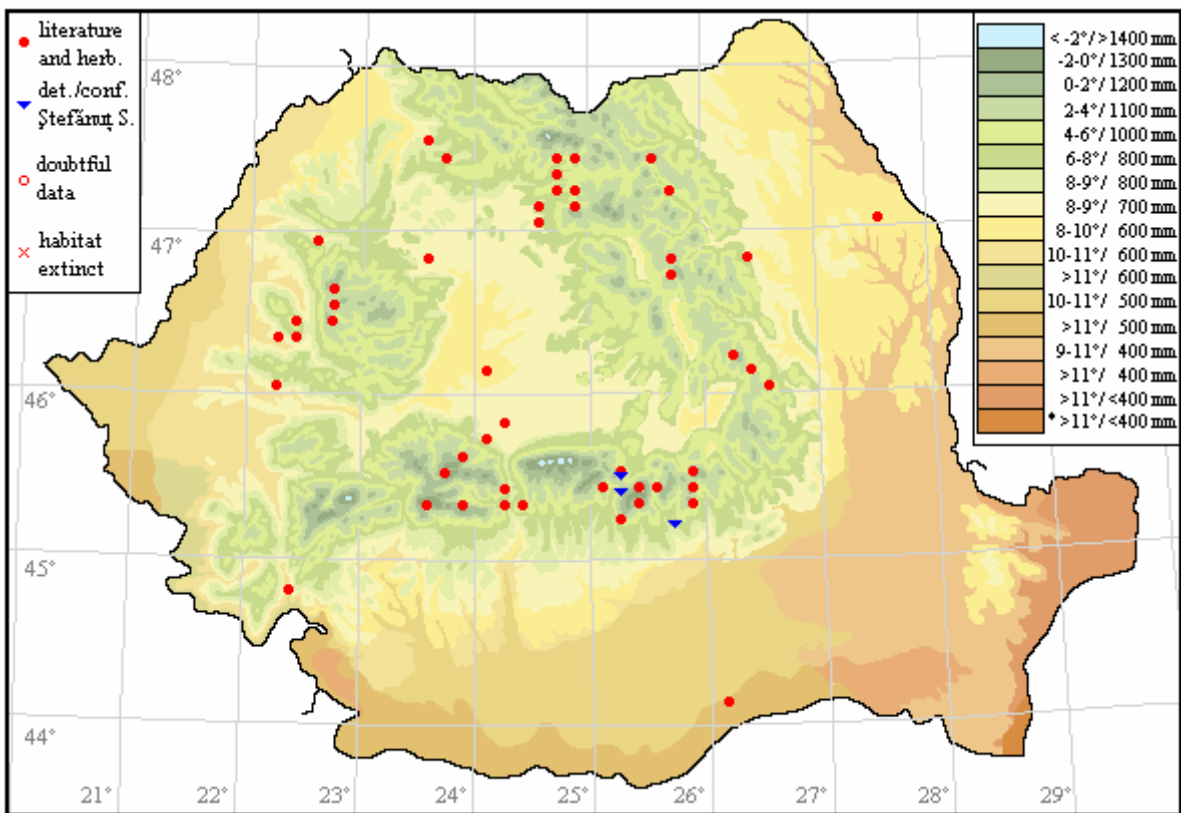


Fig. 88. Distribution of *Jungermannia atrovirens* Dumort. in Romania.

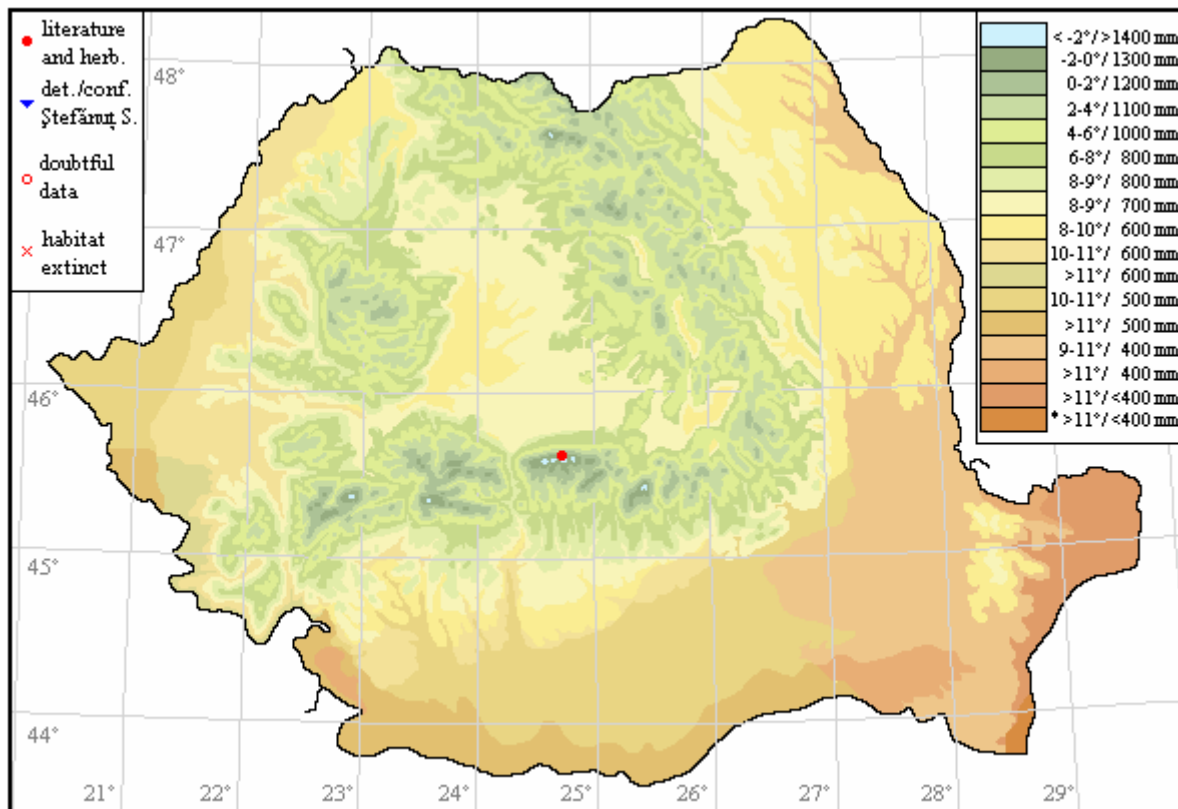


Fig. 89. Distribution of *Jungermannia borealis* Damsh. et Vana in Romania.

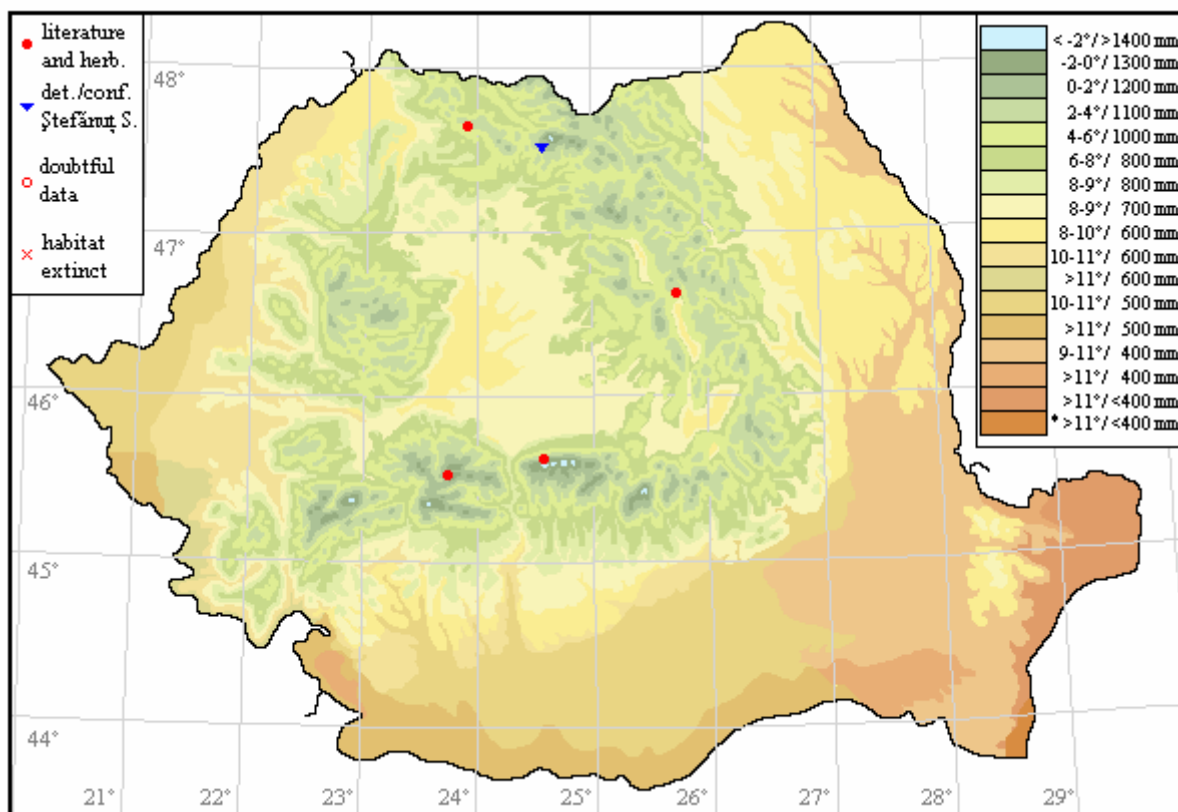


Fig. 90. Distribution of *Jungermannia caespiticia* Lindenb. in Romania.

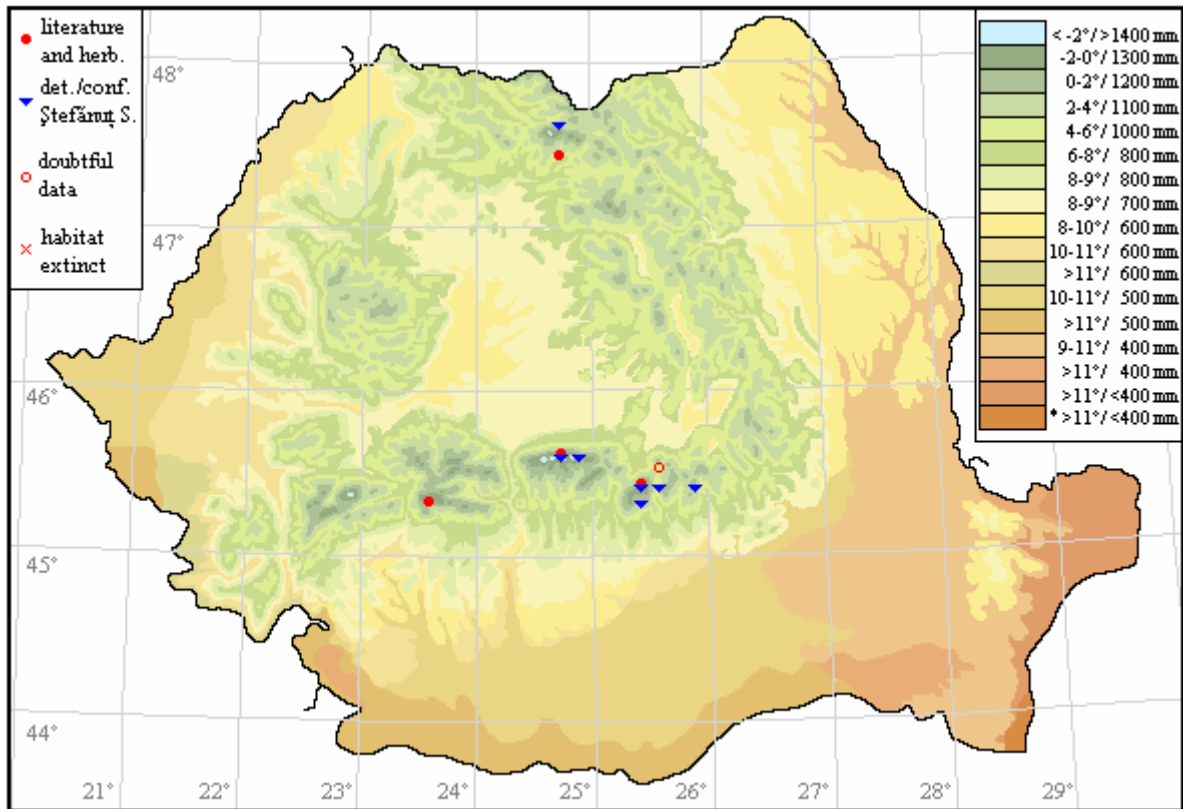


Fig. 91. Distribution of *Jungermannia confertissima* Nees in Romania.

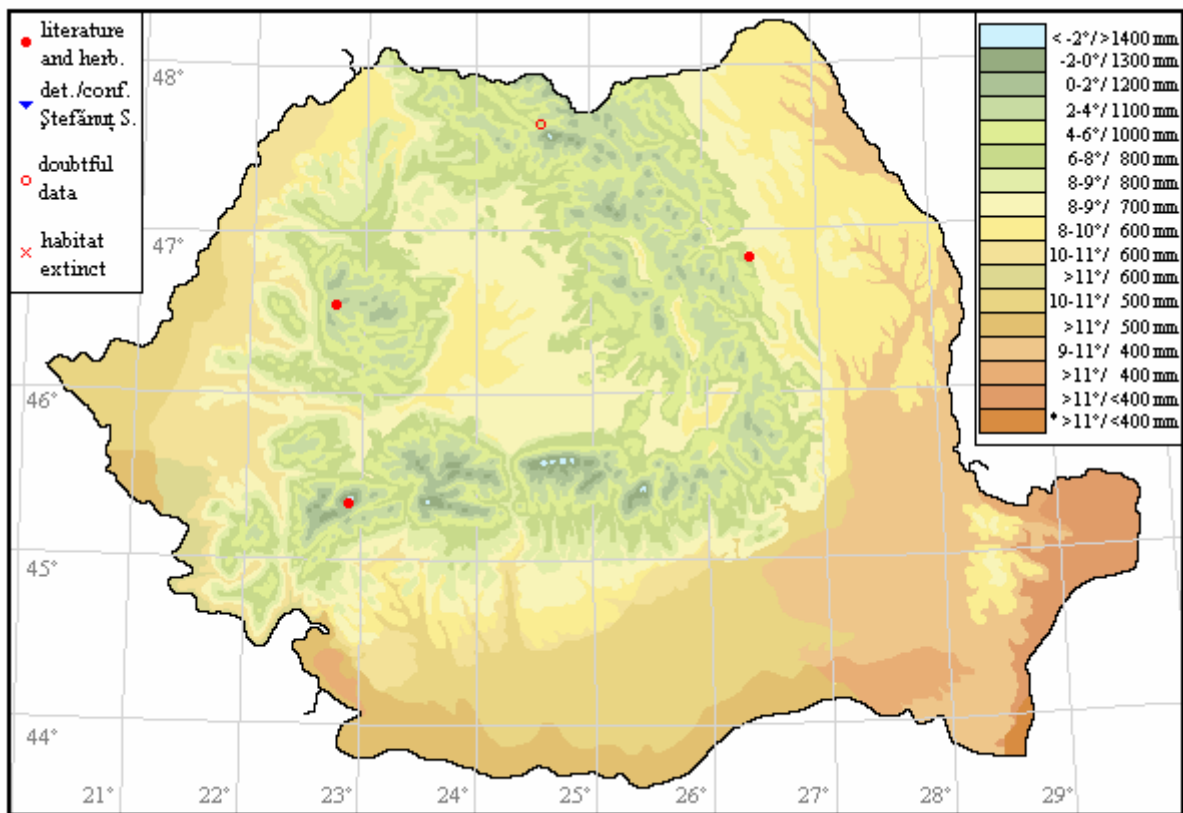


Fig. 92. Distribution of *Jungermannia exsertifolia* Steph. subsp. *cordifolia* (Dumort.) Văna in Romania.

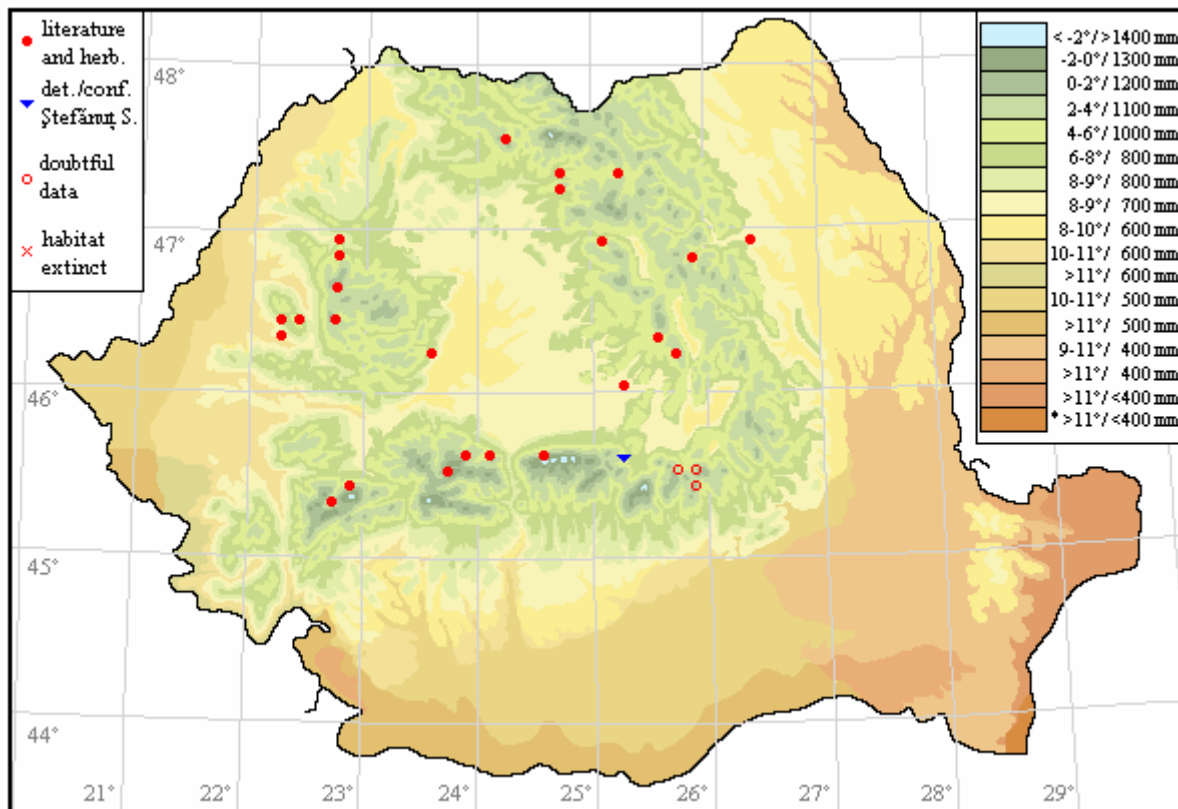


Fig. 93. Distribution of *Jungermannia gracillima* Sm. in Romania.

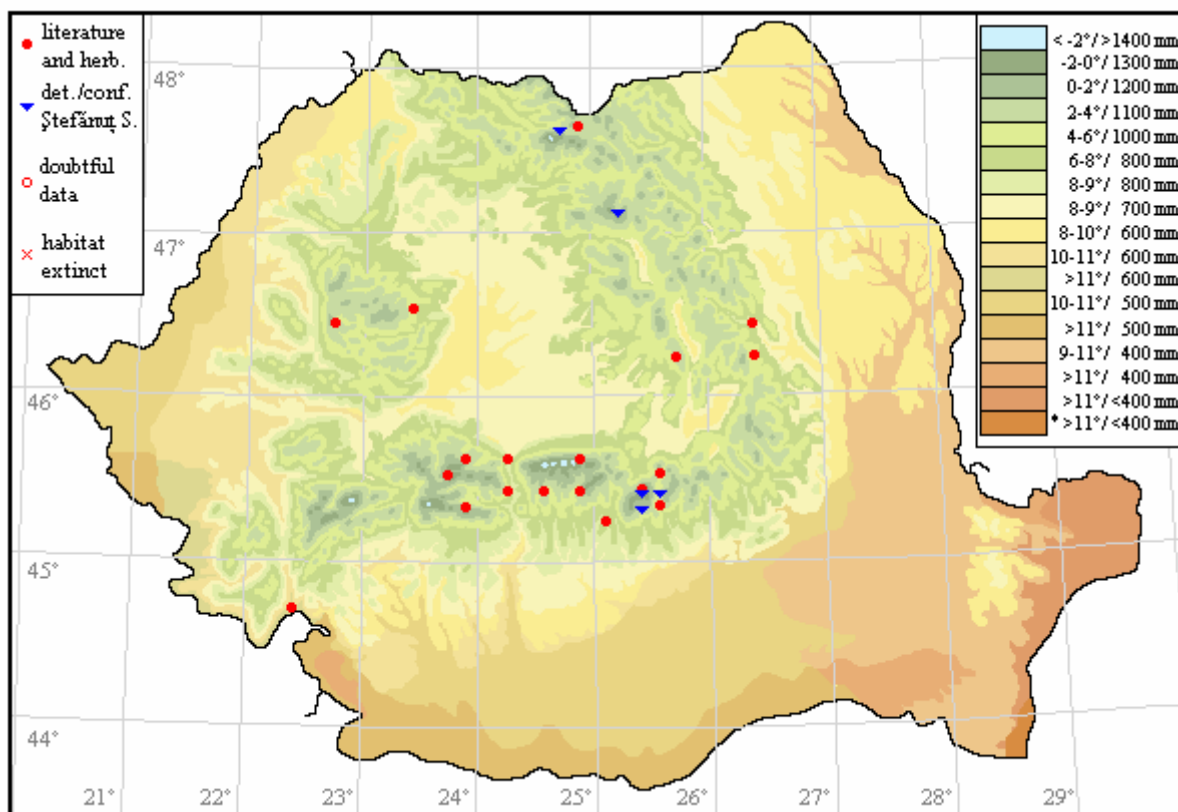


Fig. 94. Distribution of *Jungermannia hyalina* Lyell in Romania.

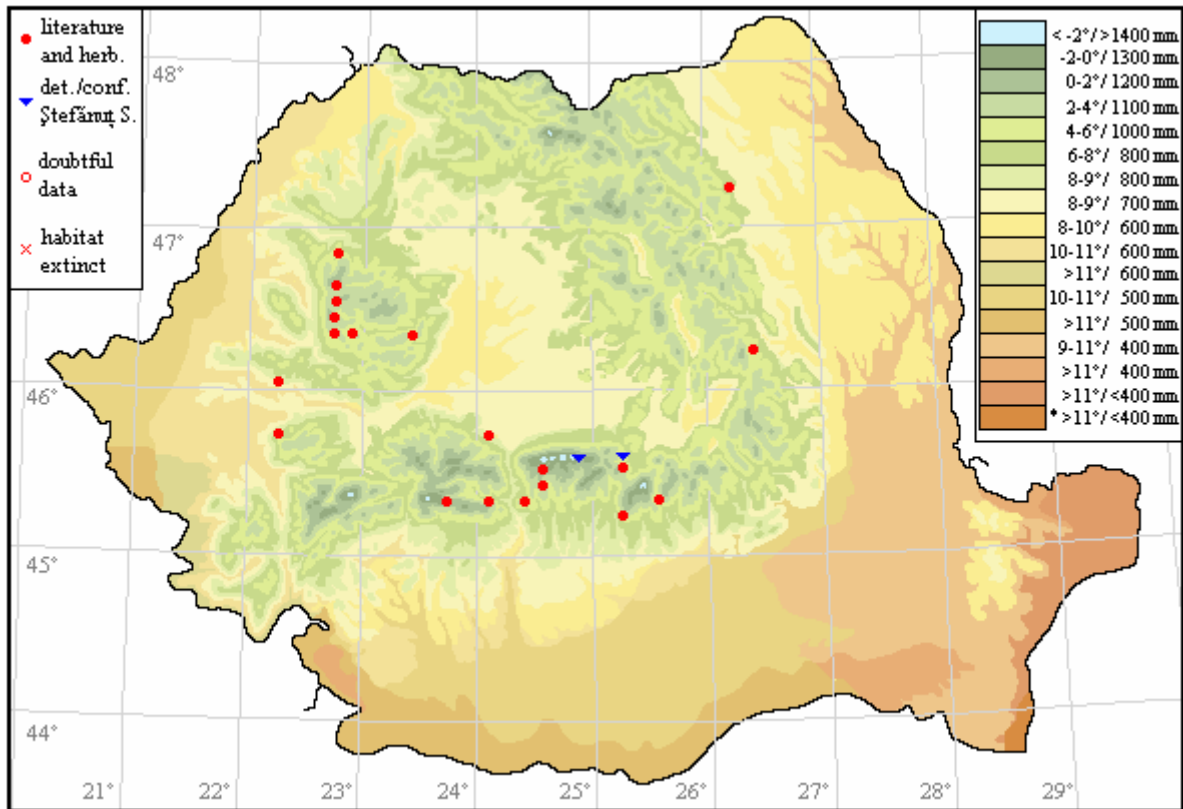


Fig. 95. Distribution of *Jungermannia leiantha* Grolle in Romania.

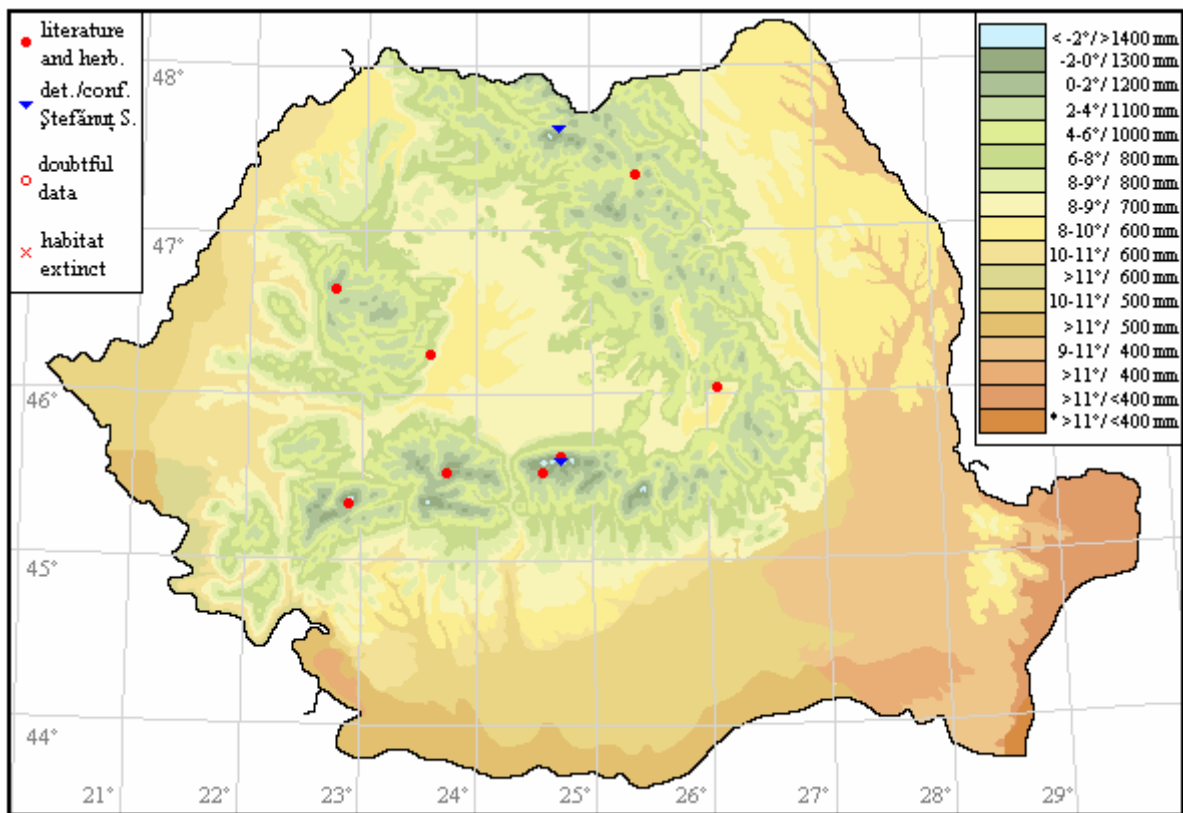


Fig. 96. Distribution of *Jungermannia obovata* Nees in Romania.

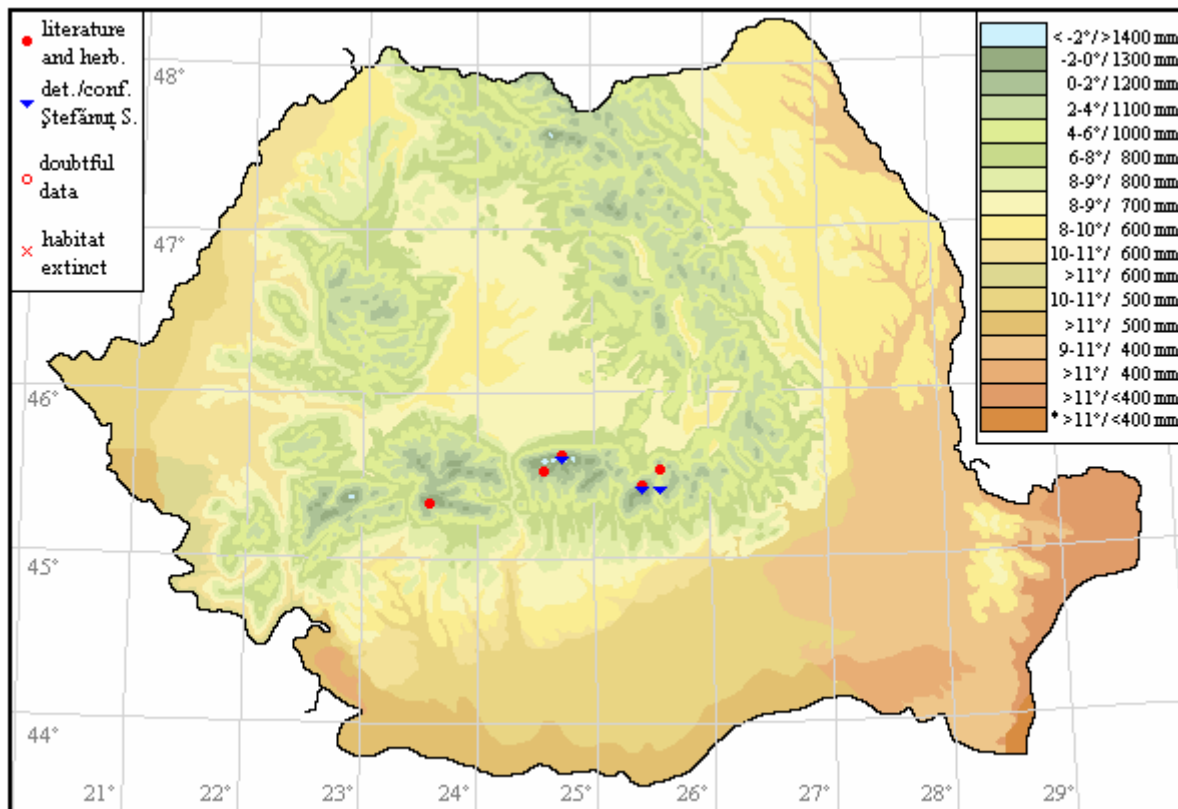


Fig. 97. Distribution of *Jungermannia polaris* Lindb. in Romania.

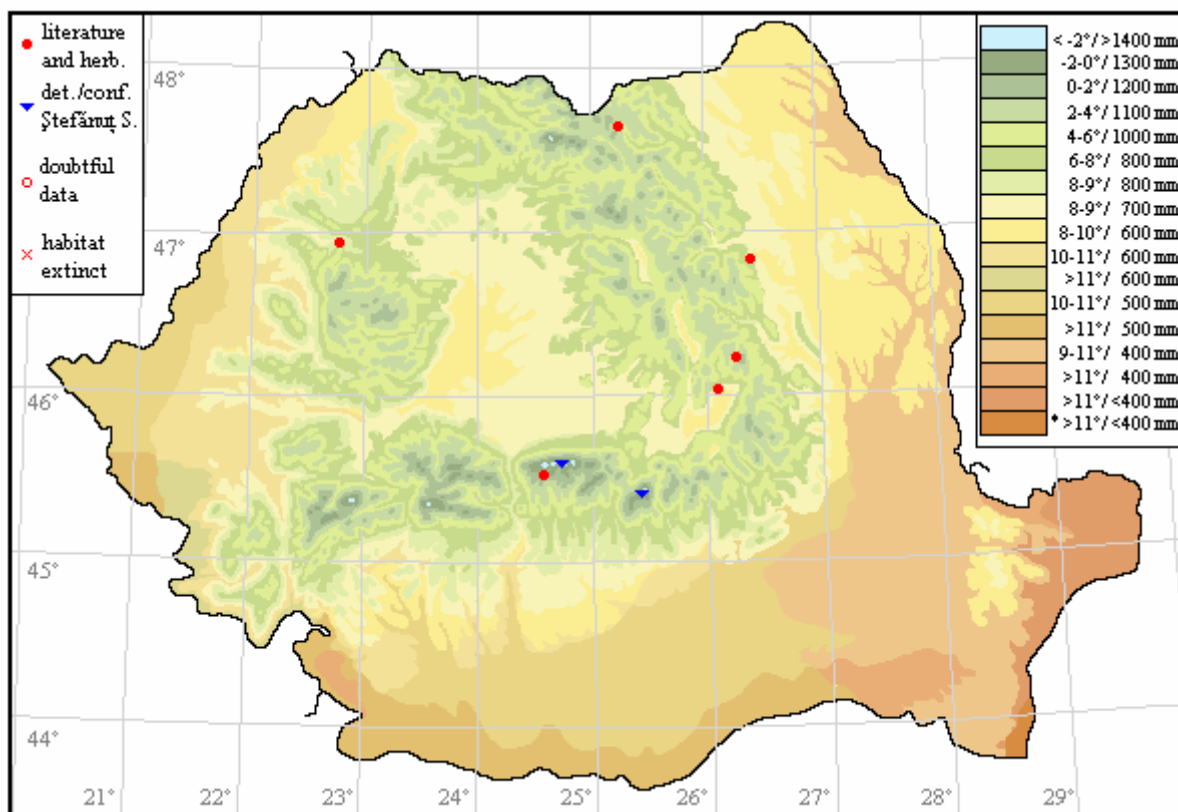


Fig. 98. Distribution of *Jungermannia pumila* With. in Romania.

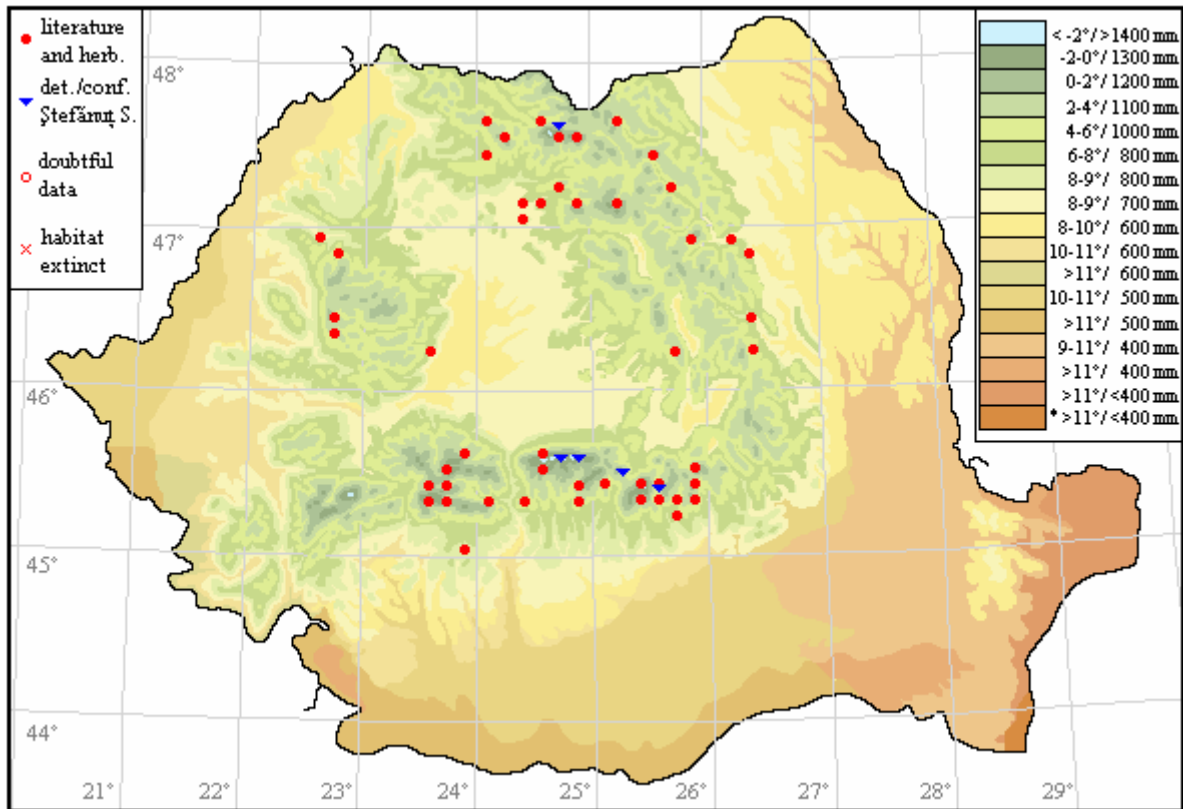


Fig. 99. Distribution of *Jungermannia sphaerocarpa* Hook. in Romania.

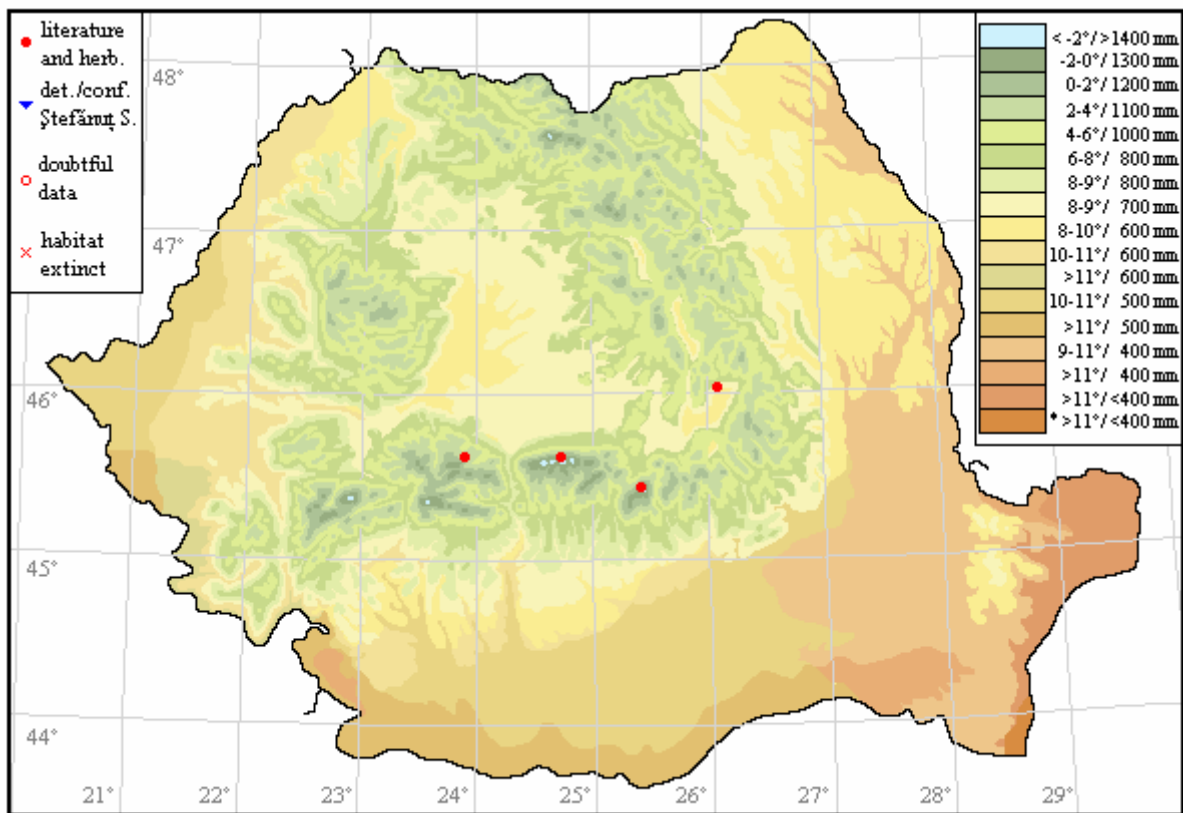


Fig. 100. Distribution of *Jungermannia subelliptica* (Lindb. ex Kaal.) Levier in Romania.

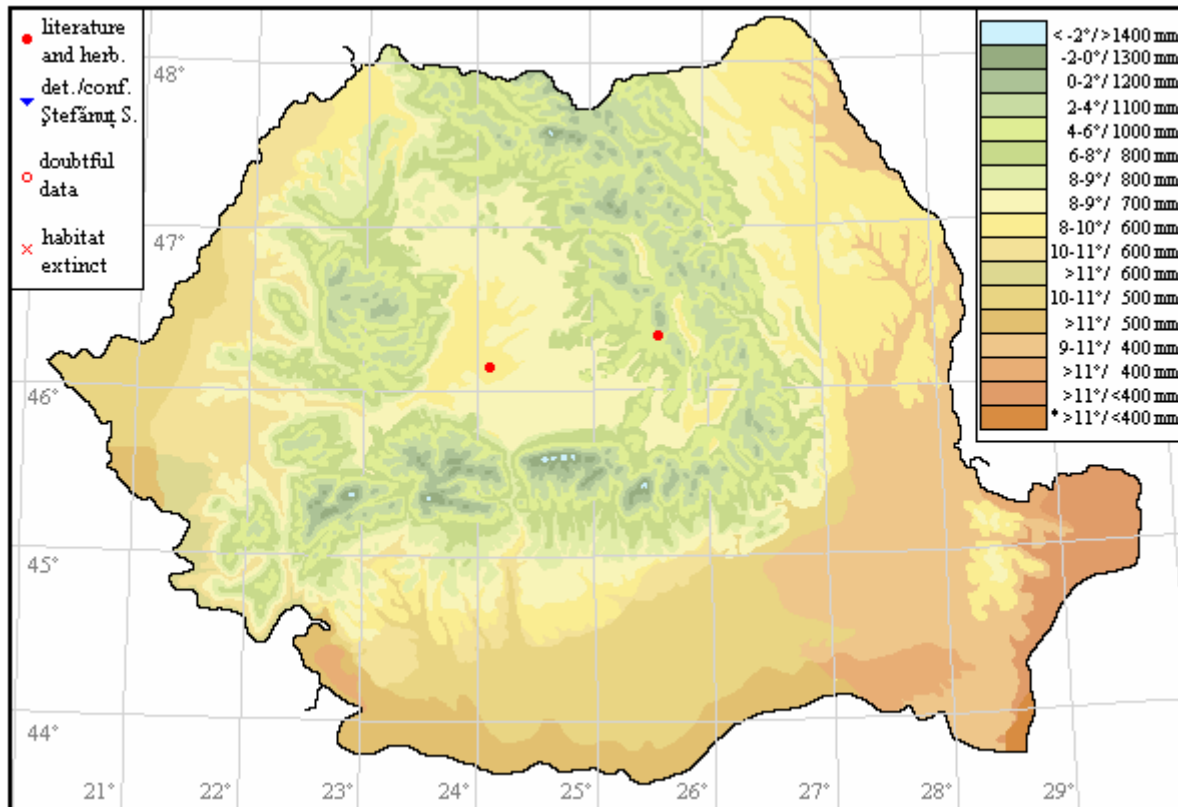


Fig. 101. Distribution of *Jungermannia subulata* A. Evans in Romania.

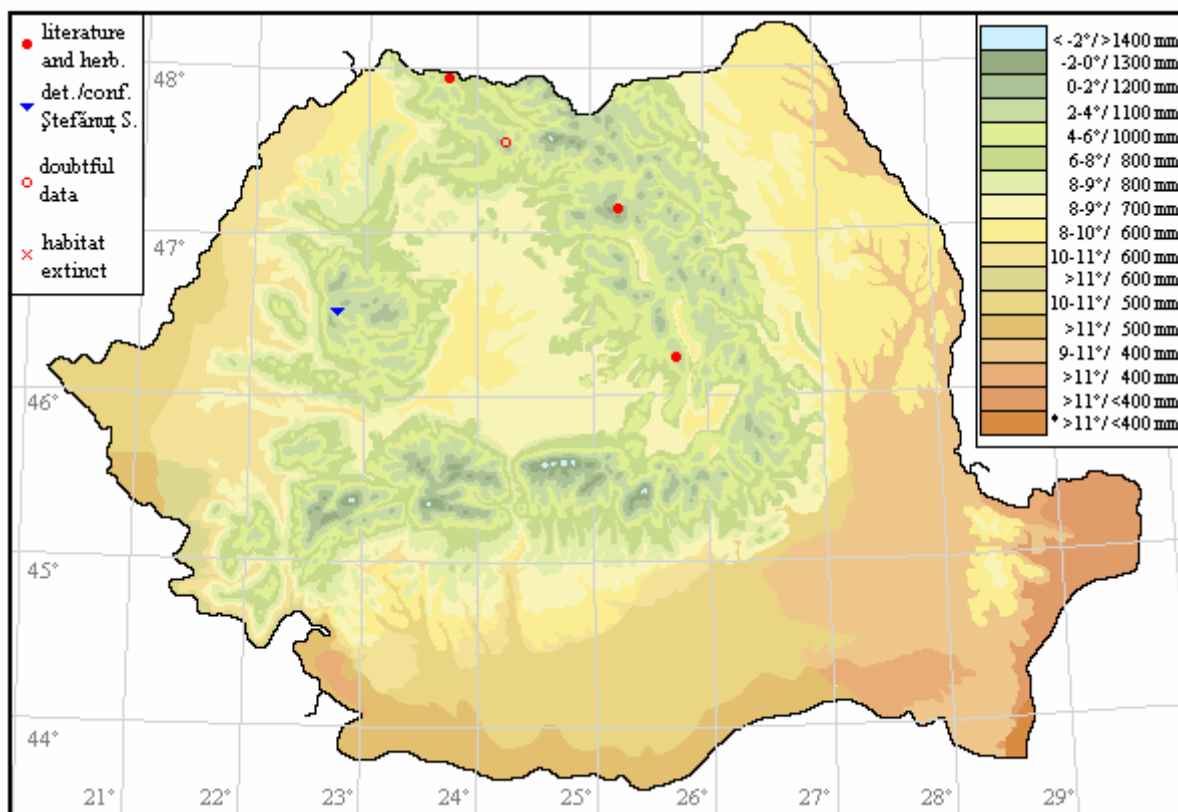


Fig. 102. Distribution of *Kurzia pauciflora* (Dicks.) Grolle in Romania.

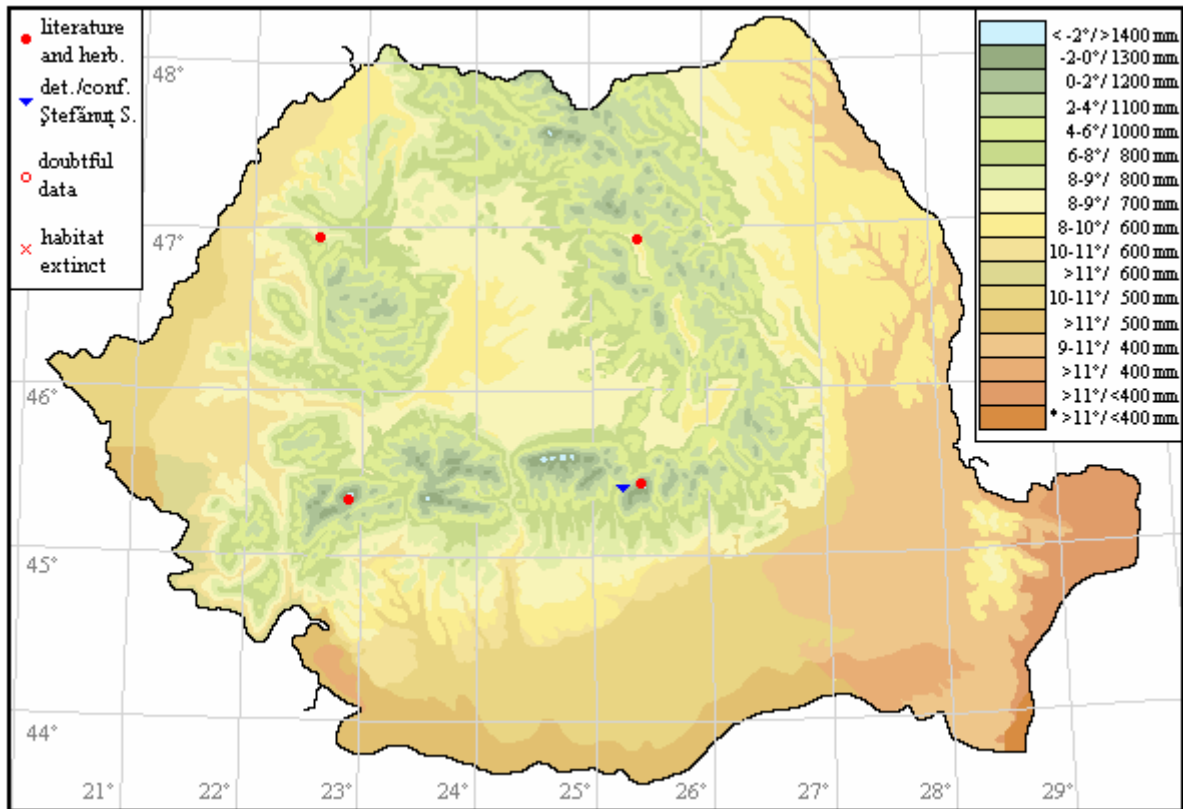


Fig. 103. Distribution of *Leiocolea badensis* (Gottsche) Jorg. in Romania.

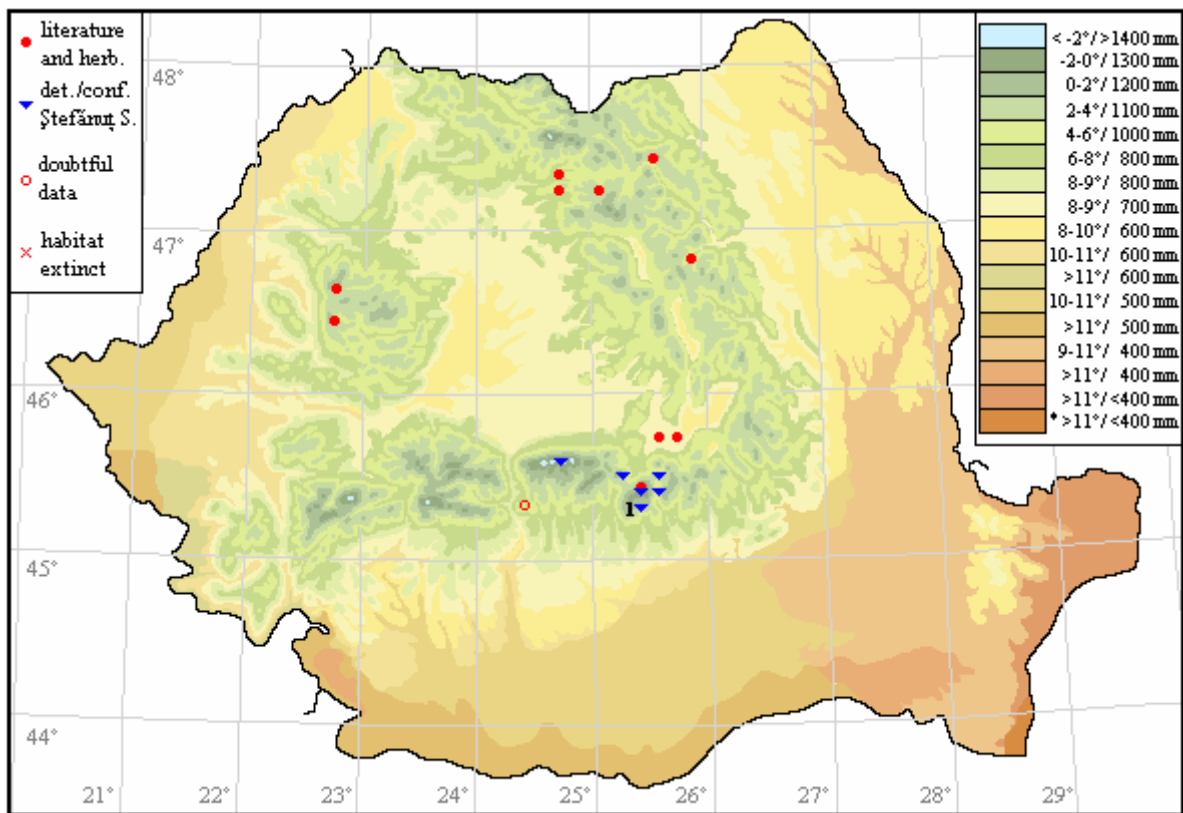


Fig. 104. Distribution of *Leiocolea bantriensis* (Hook.) Jorg. in Romania; 1 – subsp. *wallfischii* Ștefănuț, subsp. nov.

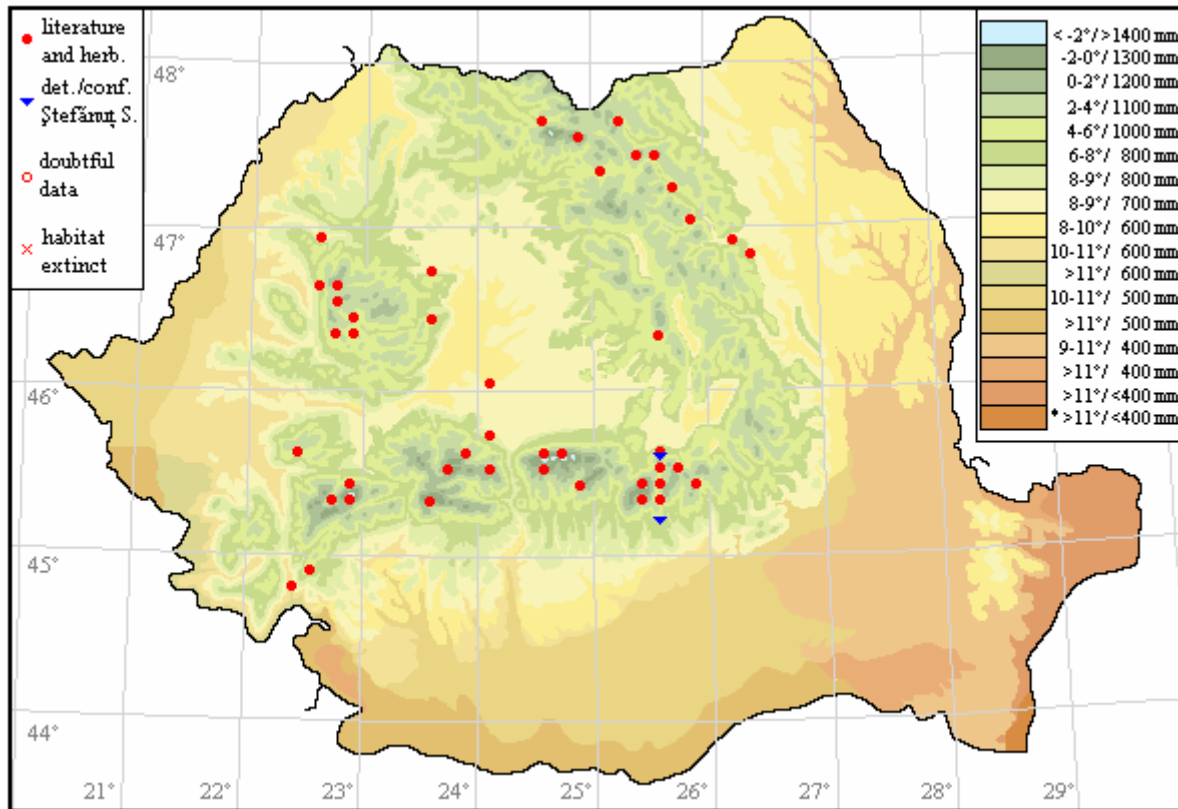


Fig. 105. Distribution of *Leiocolea collaris* (Nees) Schljakov in Romania.

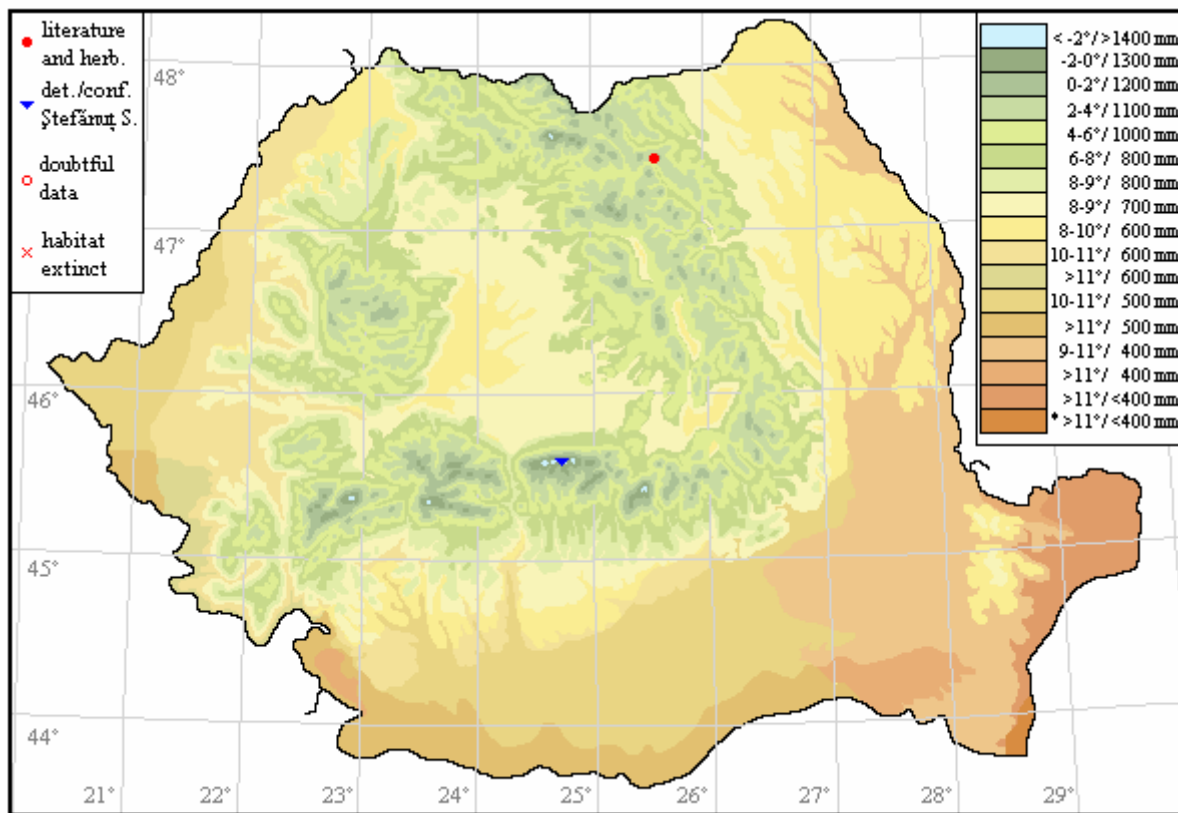


Fig. 106. Distribution of *Leiocolea gillmanii* (Austin) A. Evans. in Romania.

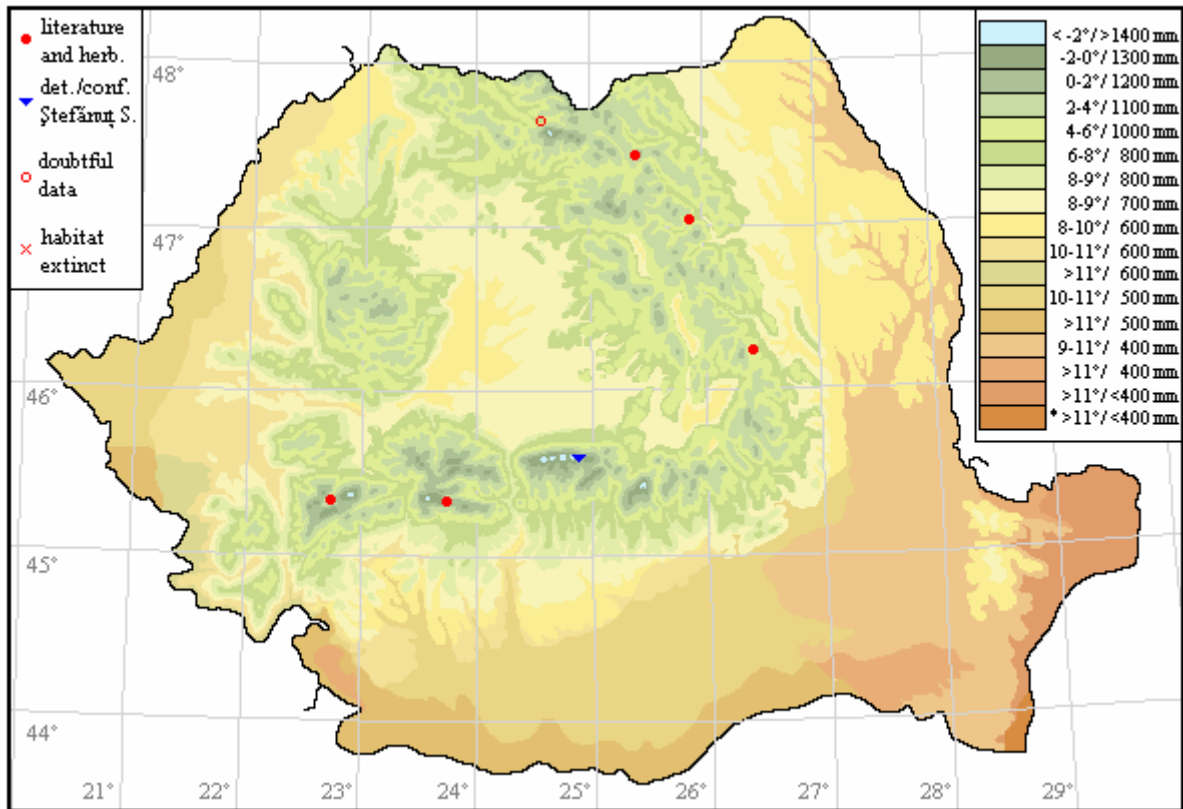


Fig. 107. Distribution of *Leiocolea heterocolpos* (Thed. ex C. Hartm.) H. Buch in Romania.

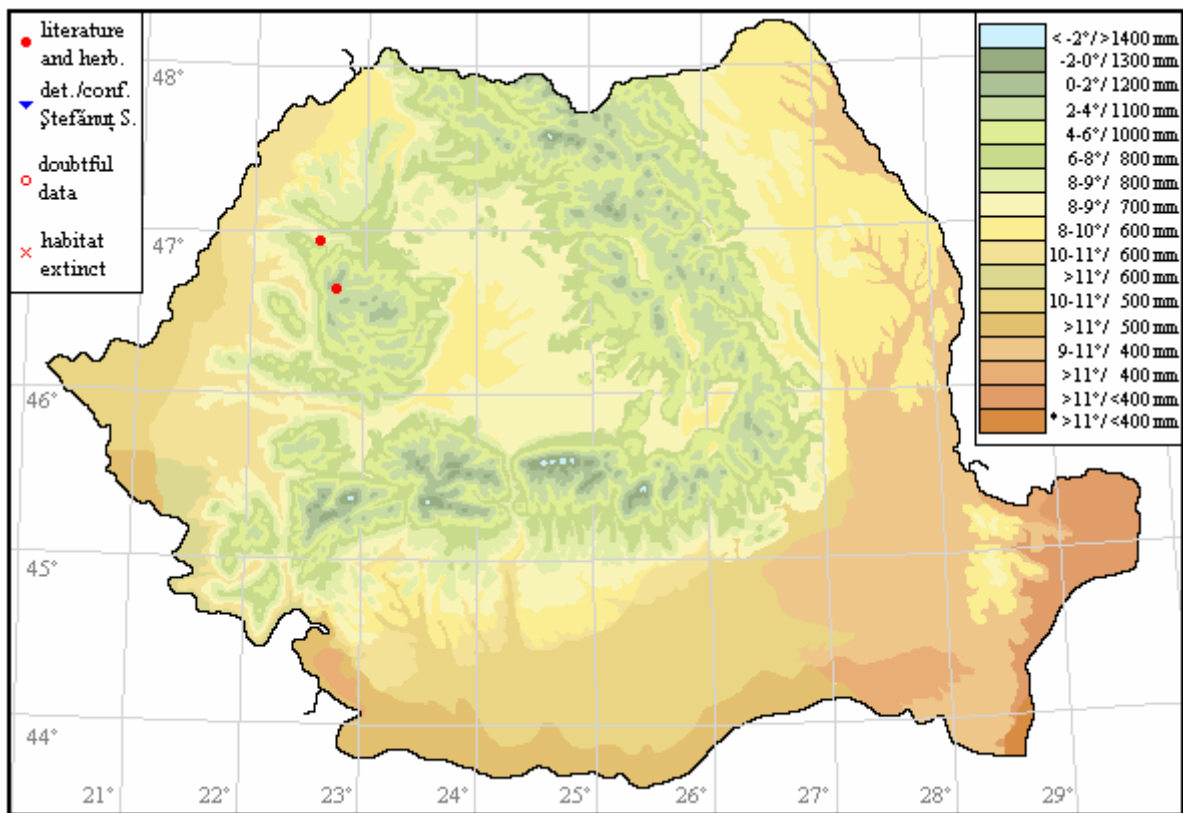


Fig. 108. Distribution of *Leiocolea turbinata* (Raddi) H. Buch in Romania.

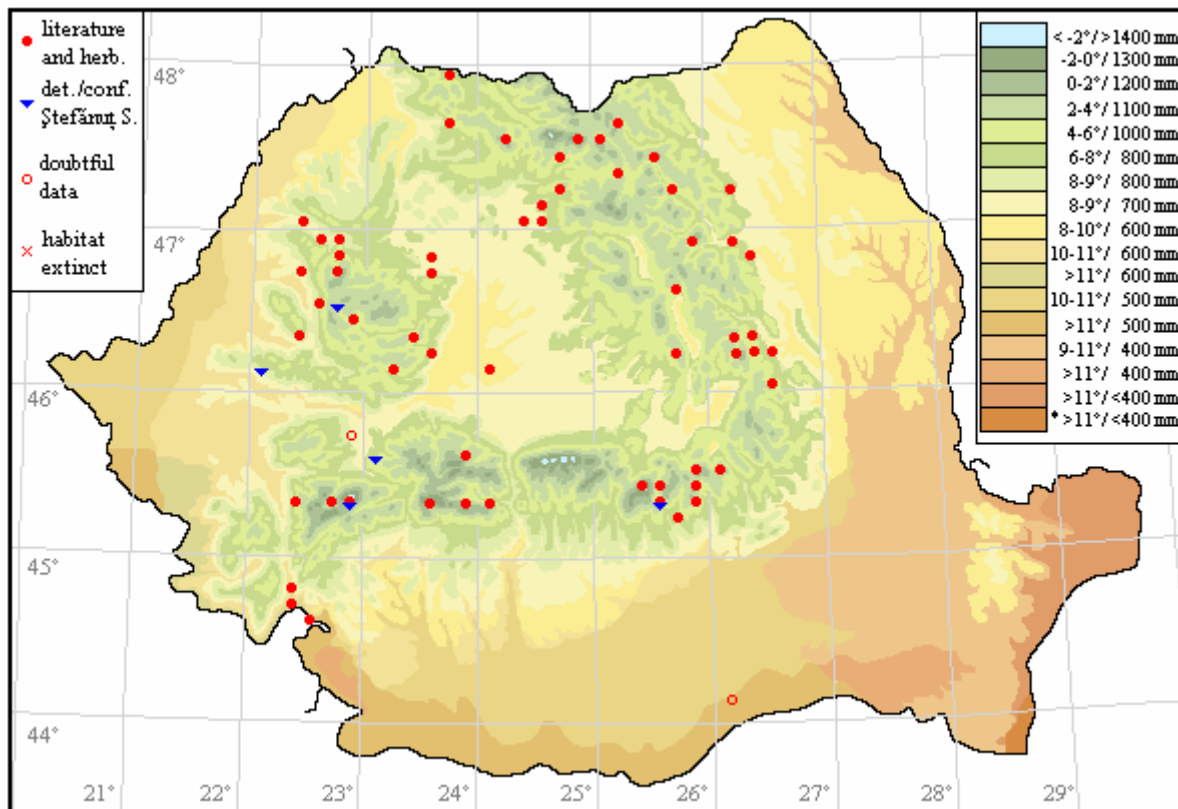


Fig. 109. Distribution of *Lejeunea cavifolia* (Ehrh.) Lindb. in Romania.

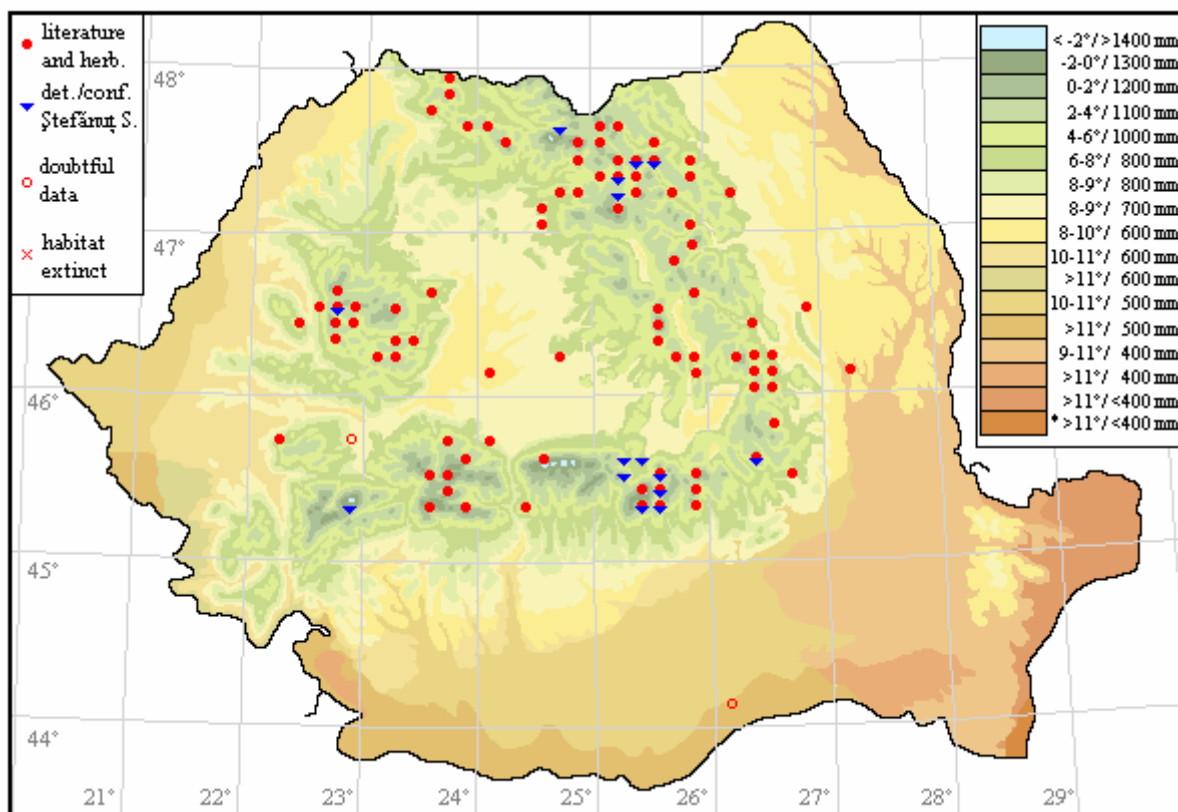


Fig. 110. Distribution of *Lepidozia reptans* (L.) Dumort. in Romania.

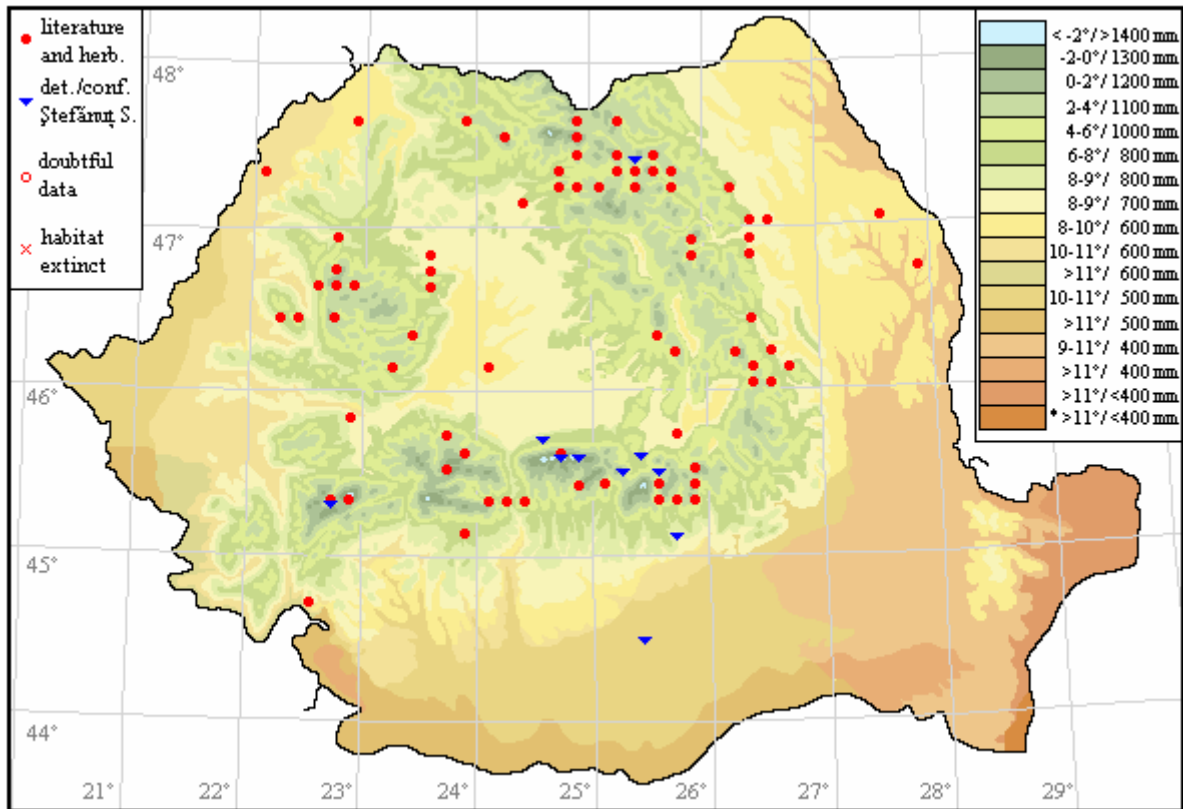


Fig. 111. Distribution of *Lophocolea bidentata* (L.) Dumort. in Romania.

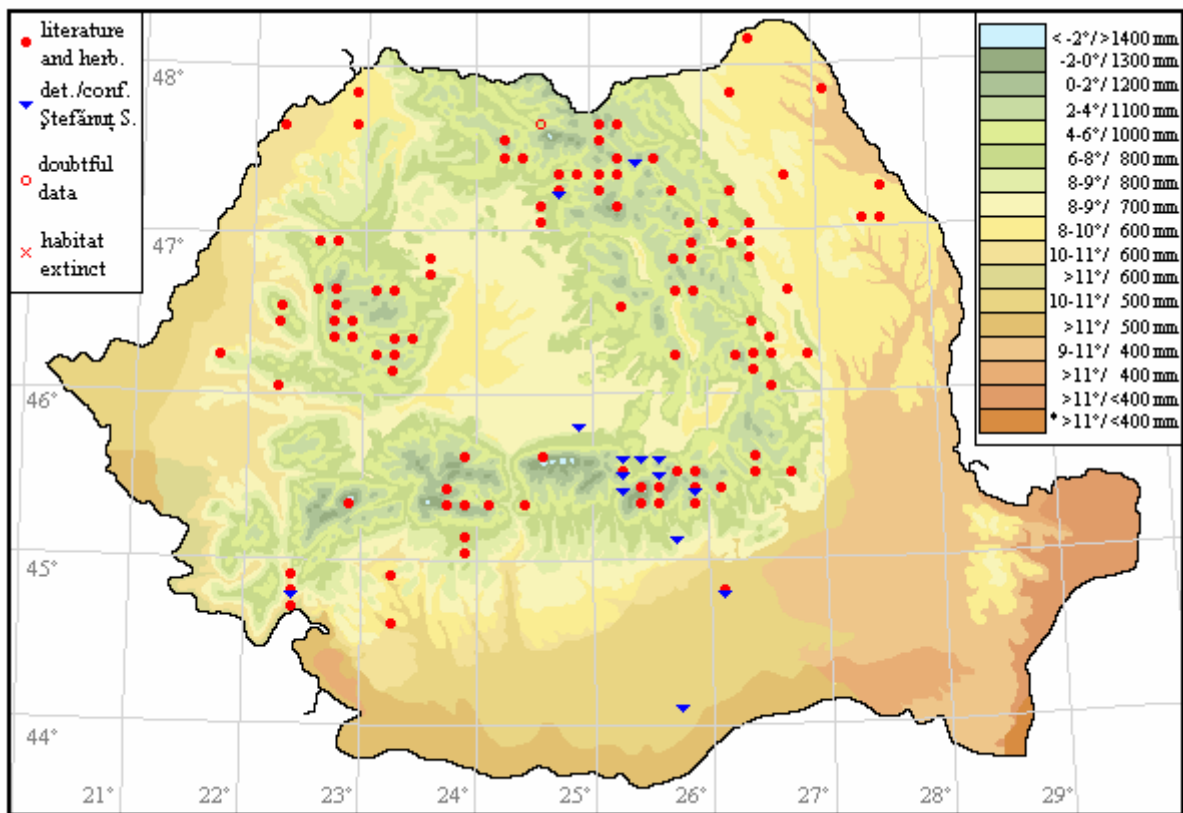


Fig. 112. Distribution of *Lophocolea heterophylla* (Schrad.) Dumort. in Romania.

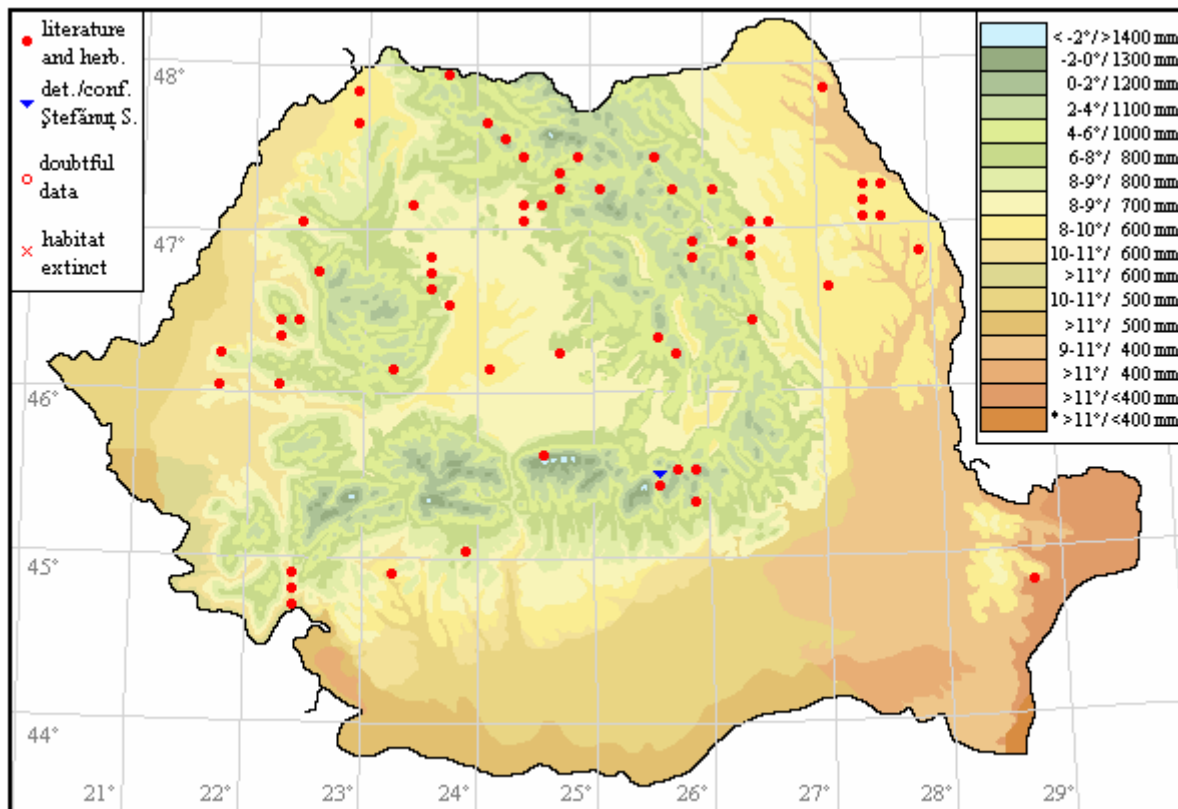


Fig. 113. Distribution of *Lophocolea minor* Nees in Romania.

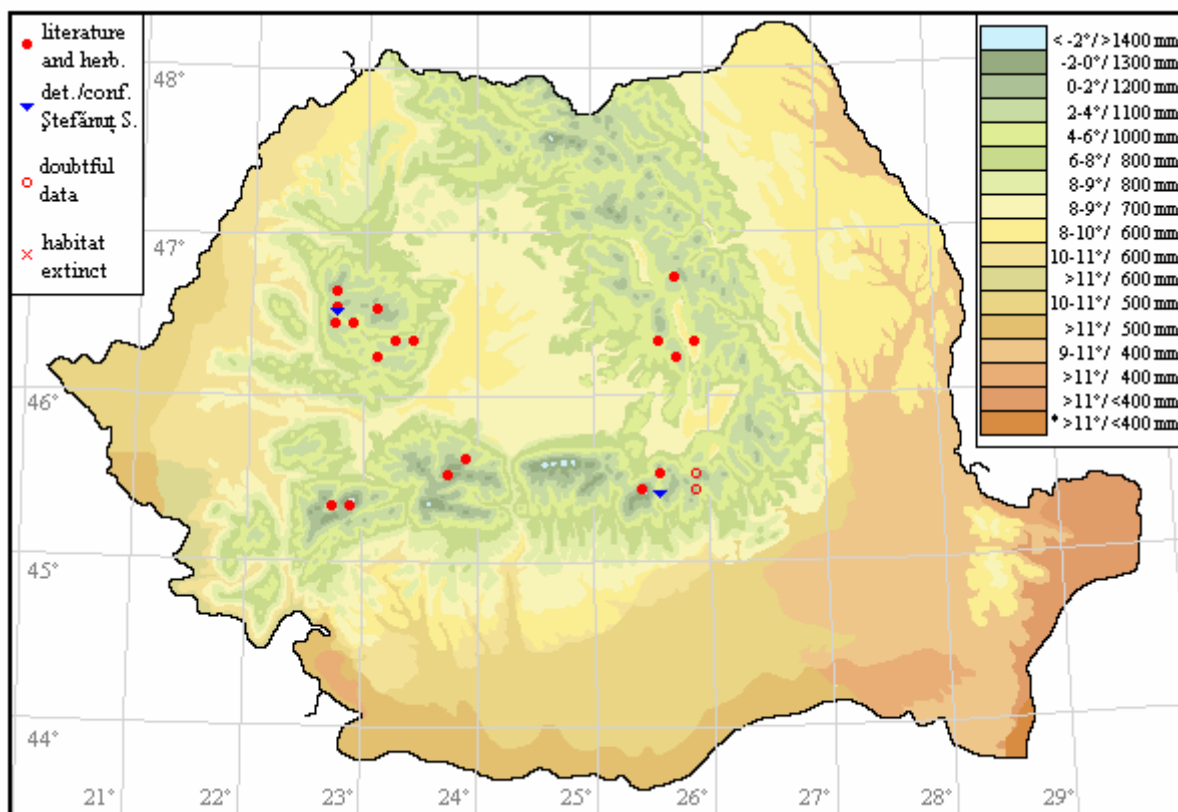


Fig. 114. Distribution of *Lophozia ascendens* (Warnst.) R.M. Schust. in Romania.

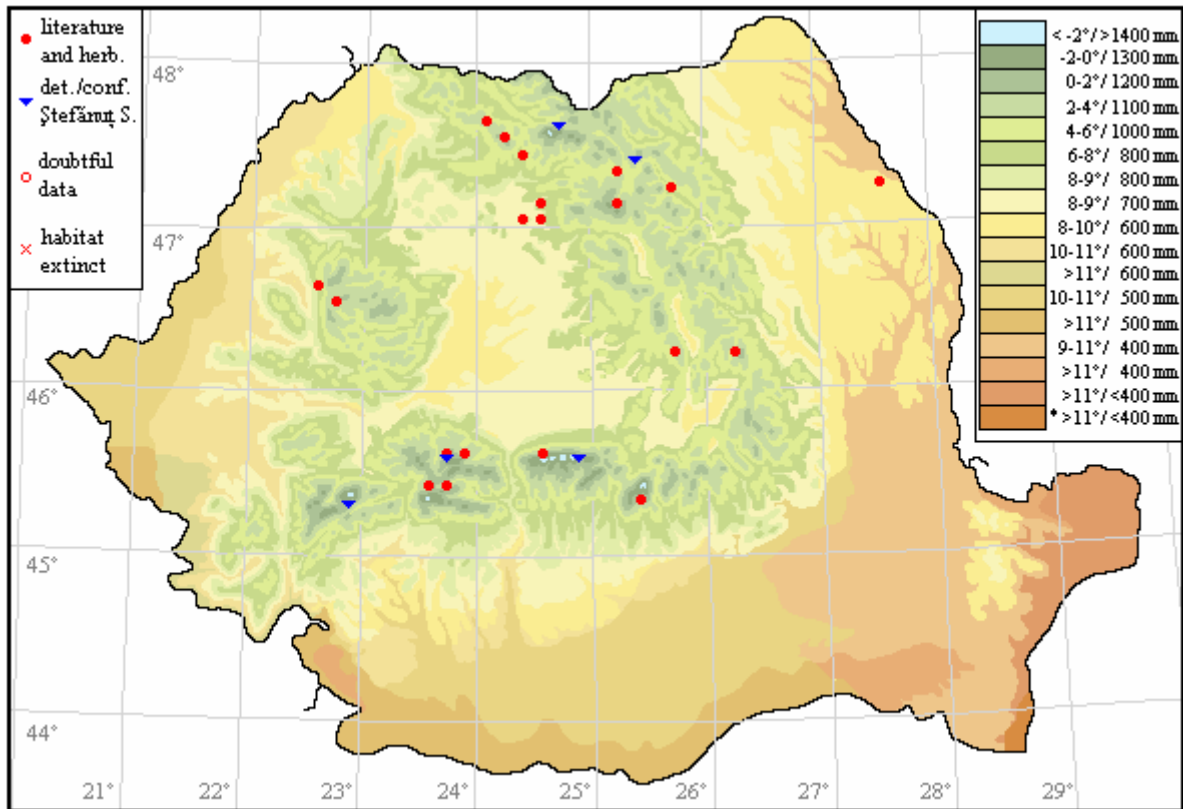


Fig. 115. Distribution of *Lophozia bicrenata* (Schmidel ex Hoffm.) Dumort. in Romania.

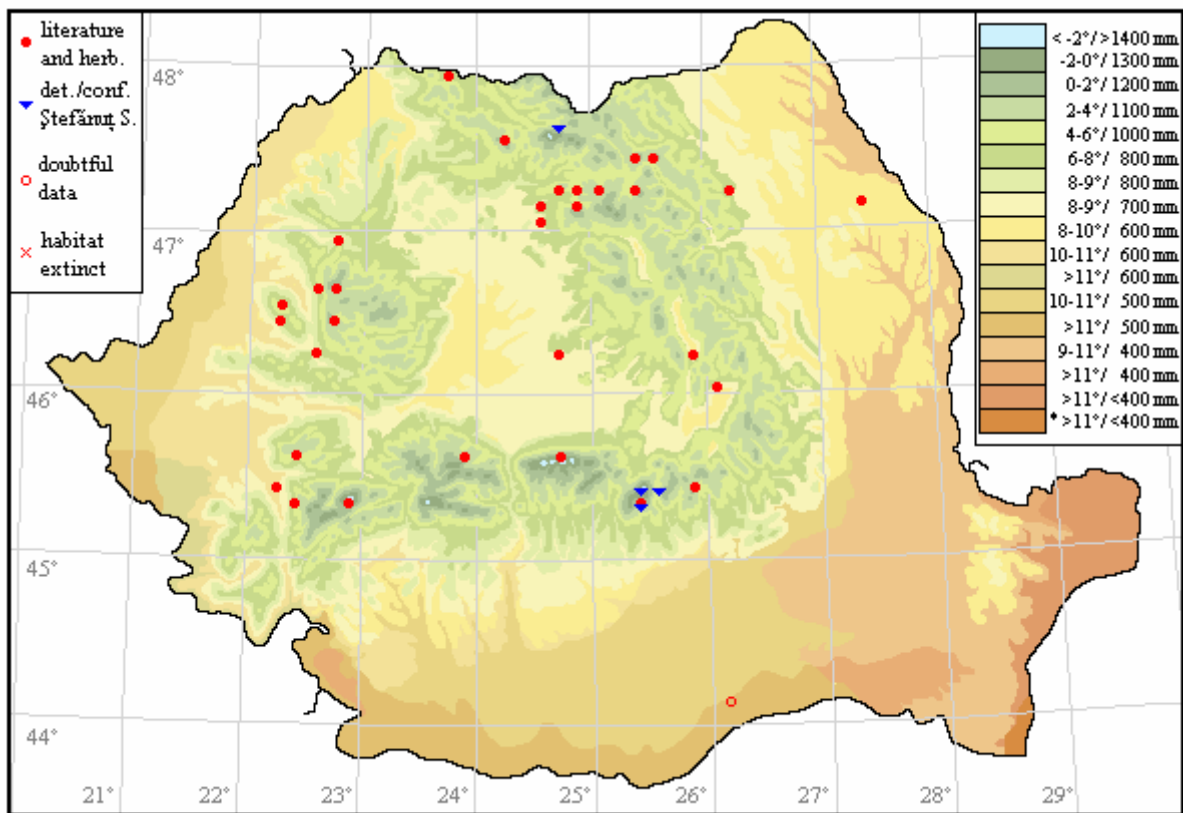


Fig. 116. Distribution of *Lophozia excisa* (Dicks.) Dumort. in Romania.

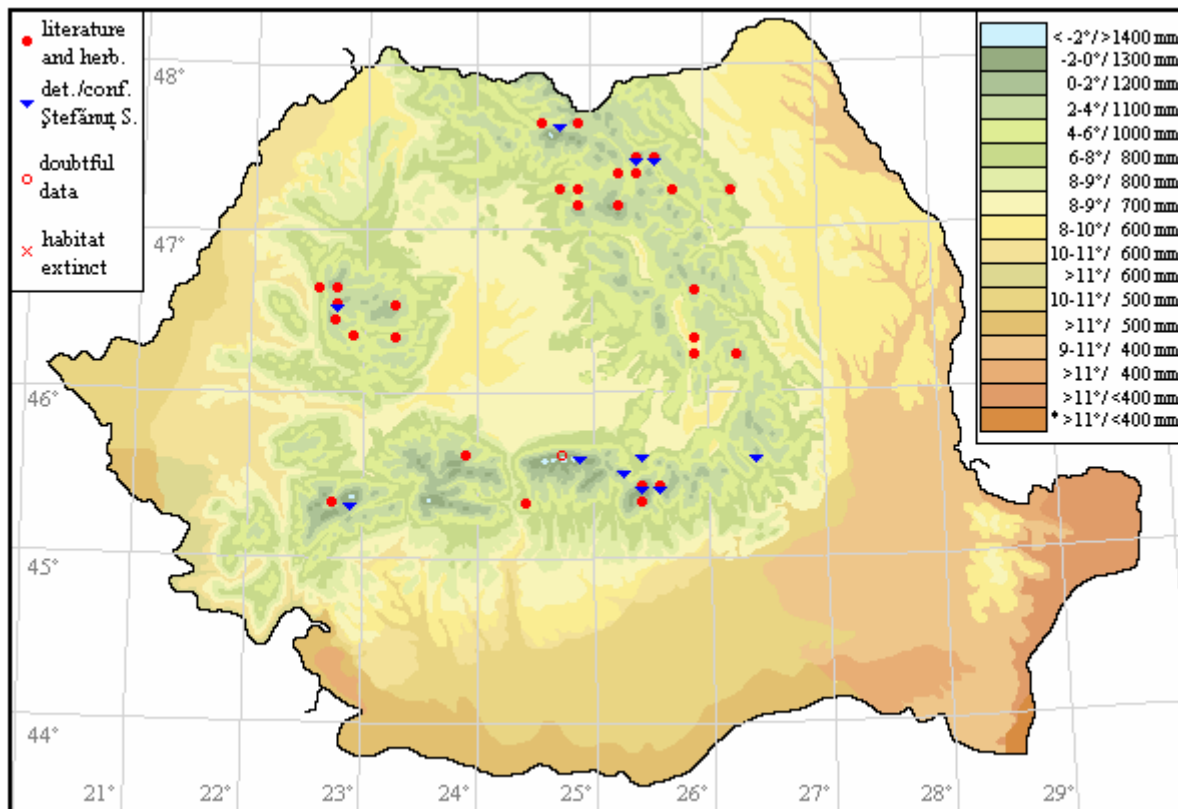


Fig. 117. Distribution of *Lophozia incisa* (Schrad.) Dumort. in Romania.

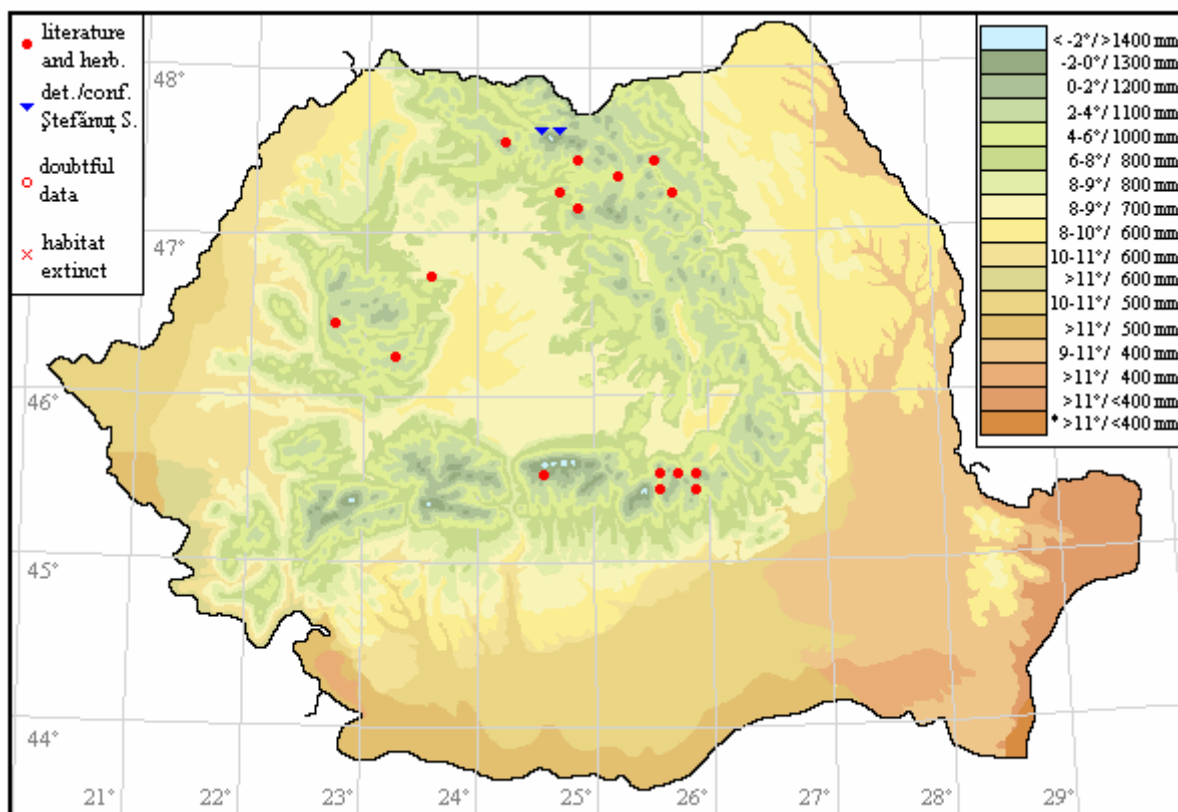


Fig. 118. Distribution of *Lophozia longidens* (Lindb.) Macoun in Romania.

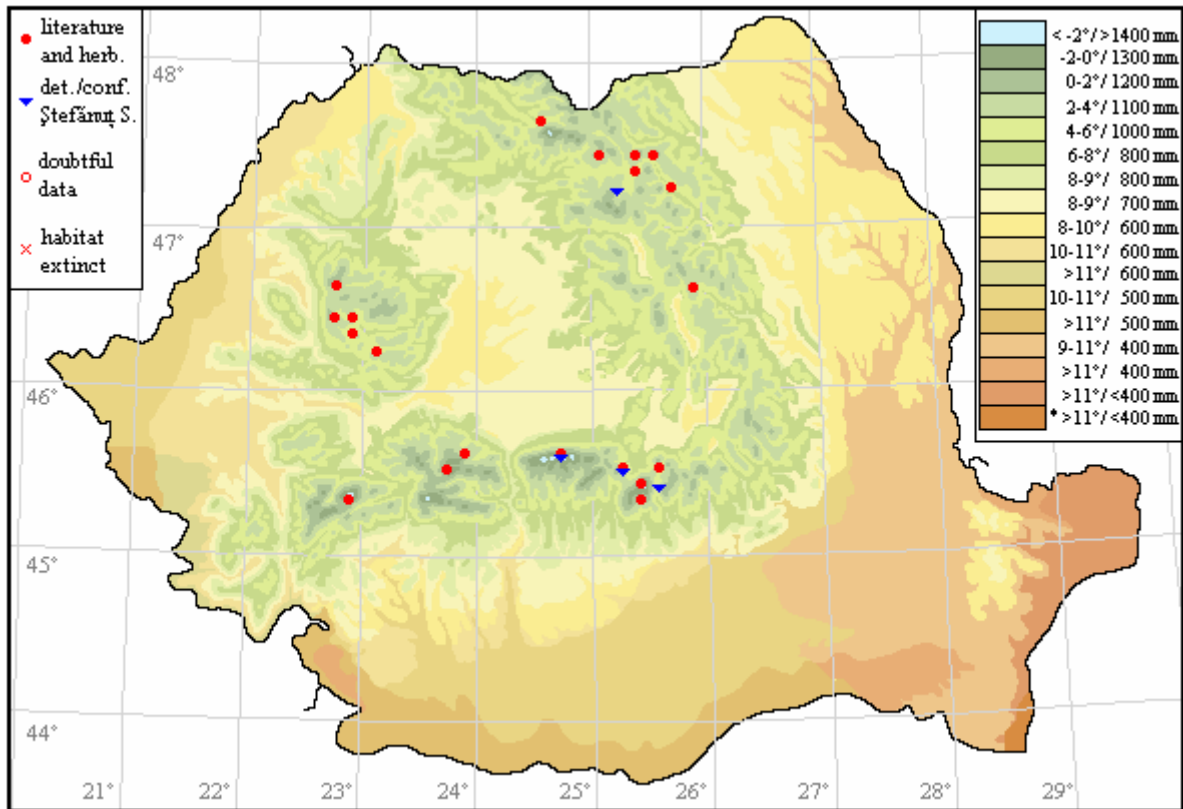


Fig. 119. Distribution of *Lophozia longiflora* (Nees) Schiffn. in Romania.

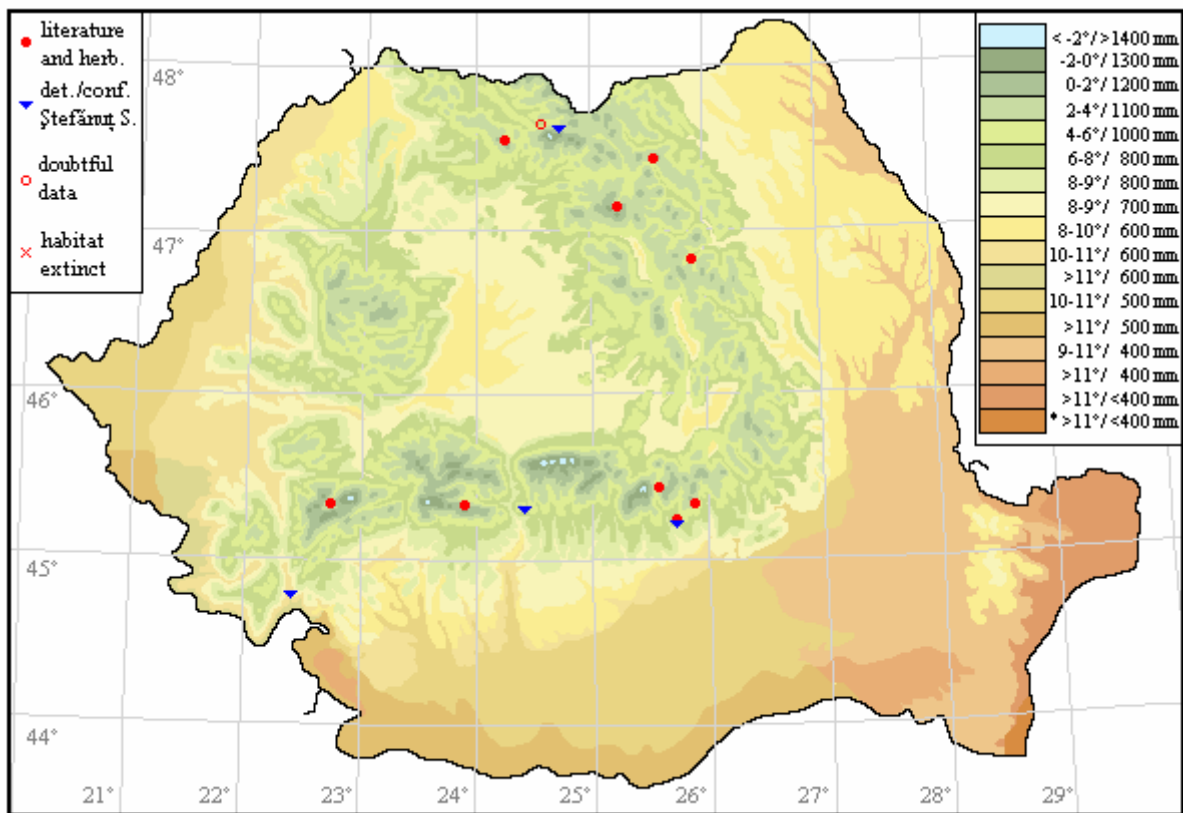


Fig. 120. Distribution of *Lophozia obtusa* (Lindb.) A. Evans in Romania.

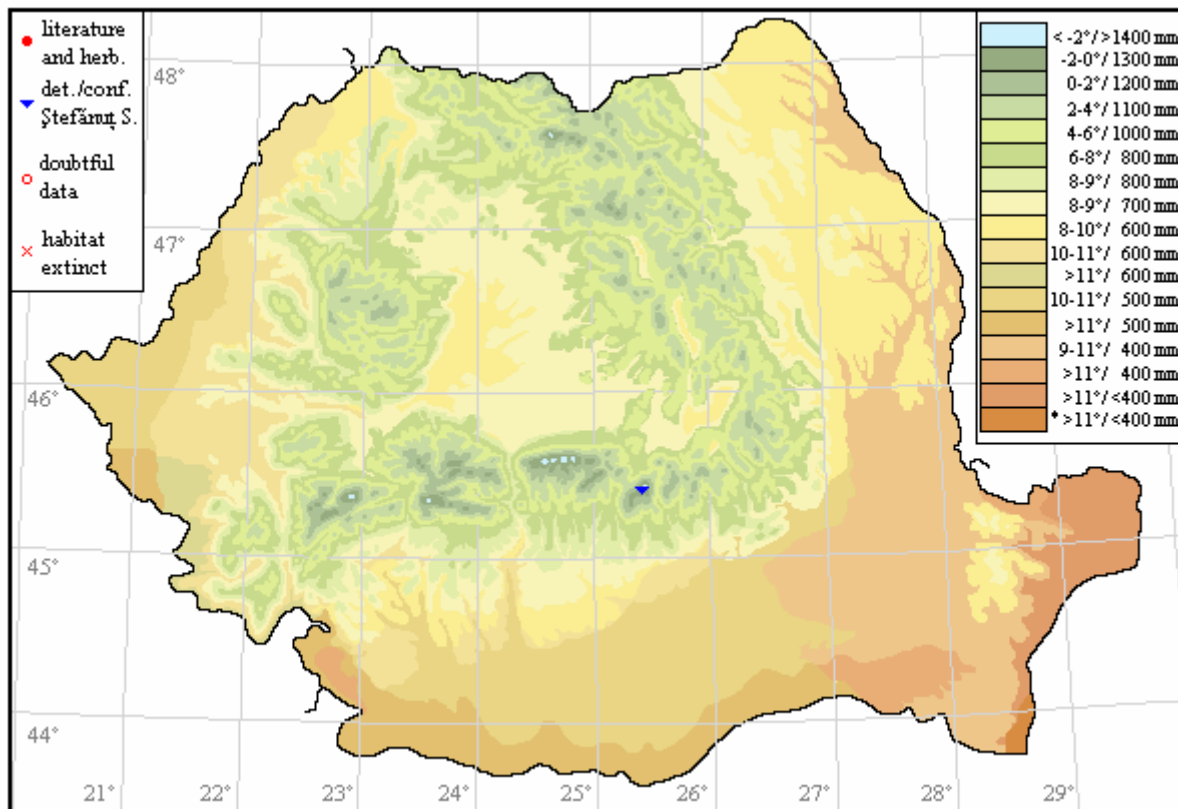


Fig. 121. Distribution of *Lophozia opacifolia* Culm. ex Meyl. in Romania.

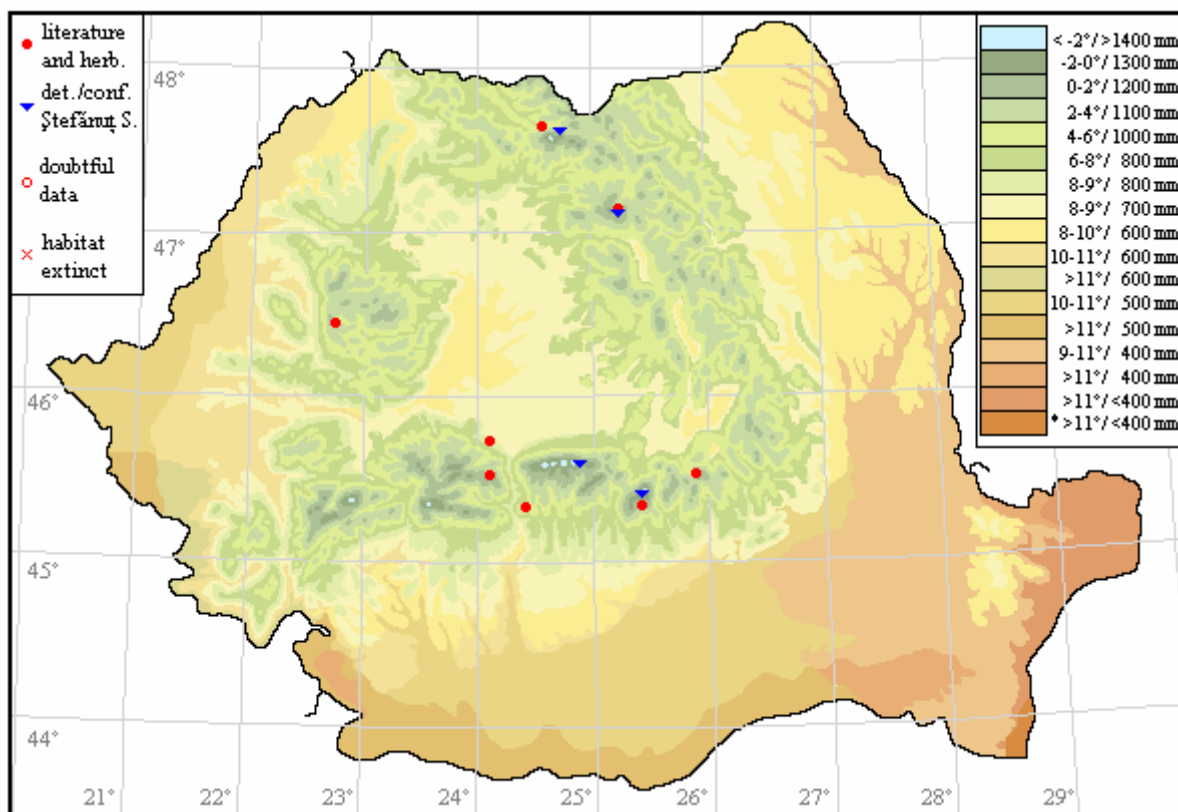


Fig. 122. Distribution of *Lophozia sudetica* (Nees ex Huebener) Grolle in Romania.

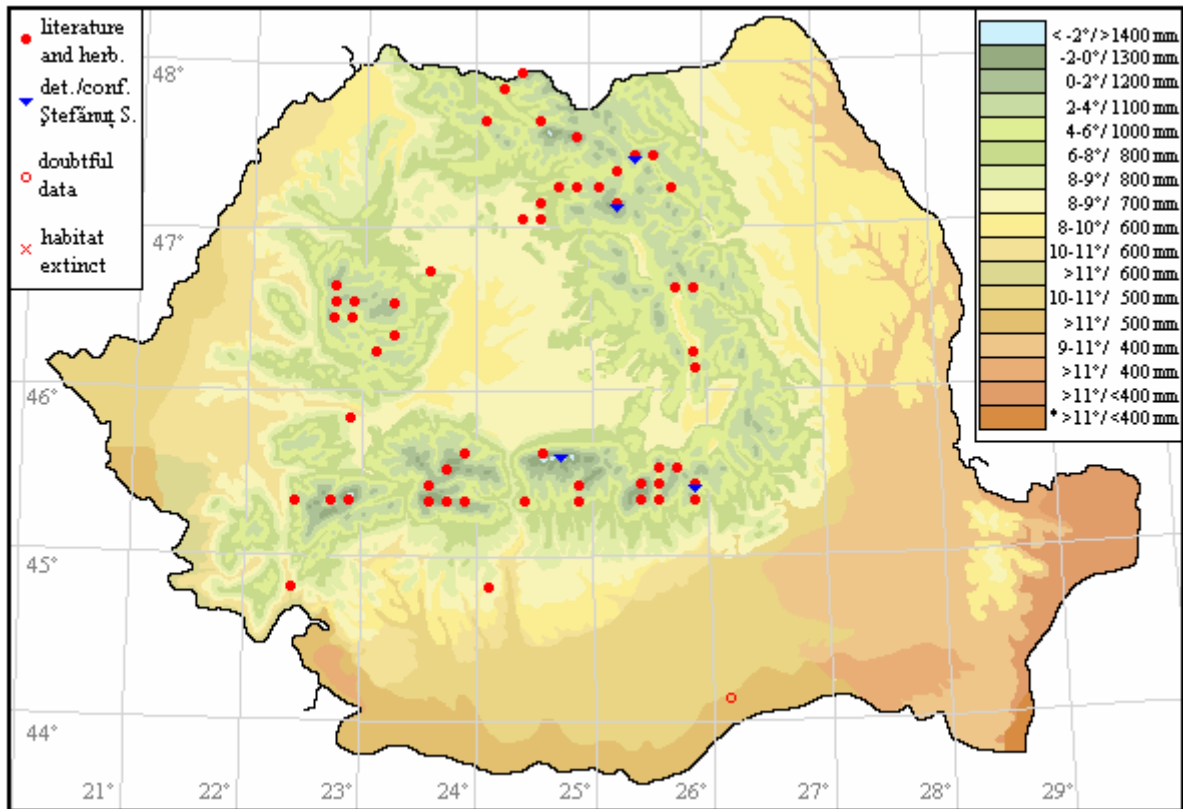


Fig. 123. Distribution of *Lophozia ventricosa* (Dicks.) Dumort. in Romania.

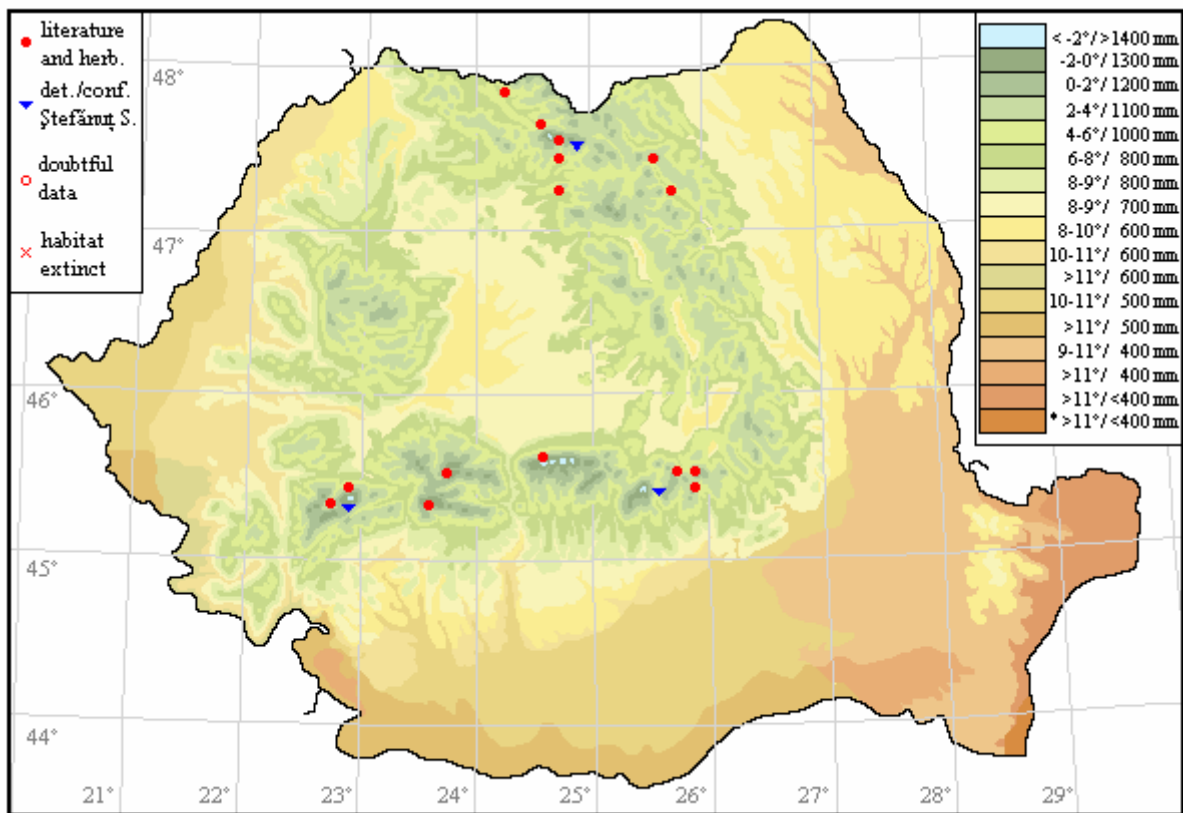


Fig. 124. Distribution of *Lophozia wenzelii* (Nees) Steph. in Romania.

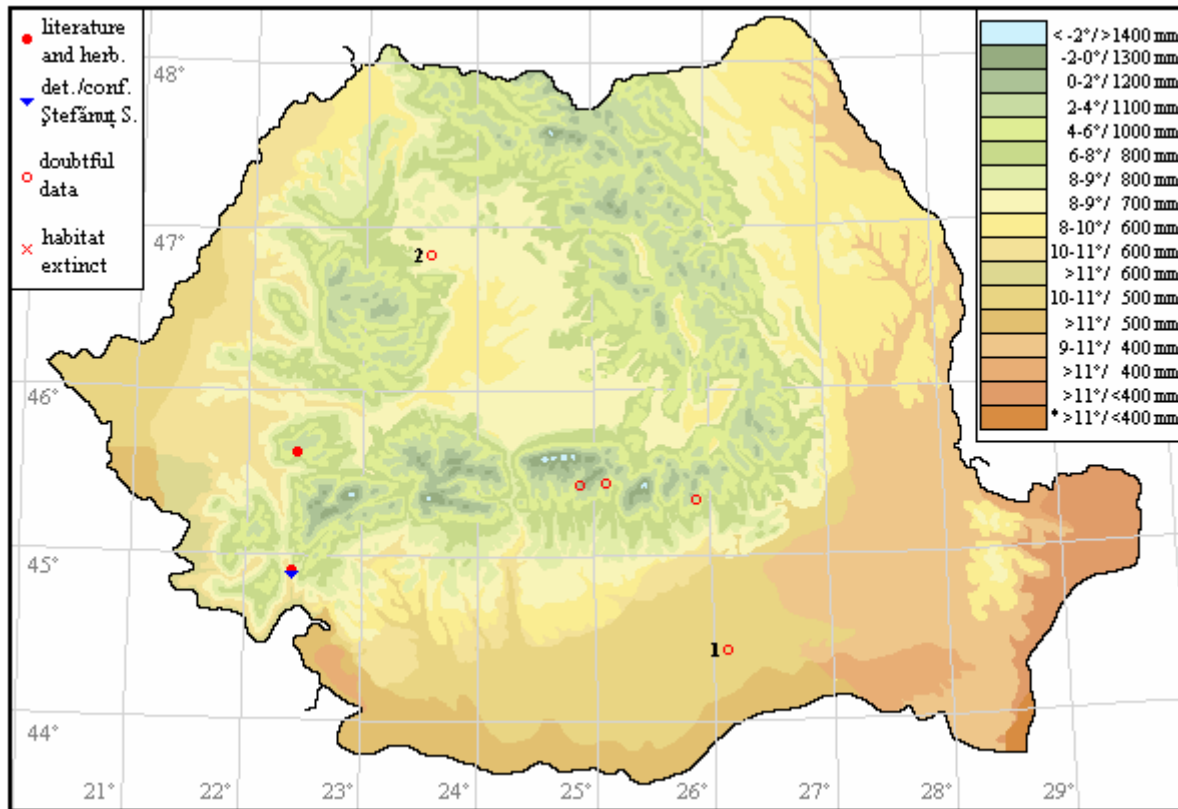


Fig. 125. Distribution of *Lunularia cruciata* (L.) Lindb. in Romania; 1 – in Bucharest Botanical Garden greenhouse, 2 – in Cluj-Napoca Botanical Garden greenhouse.

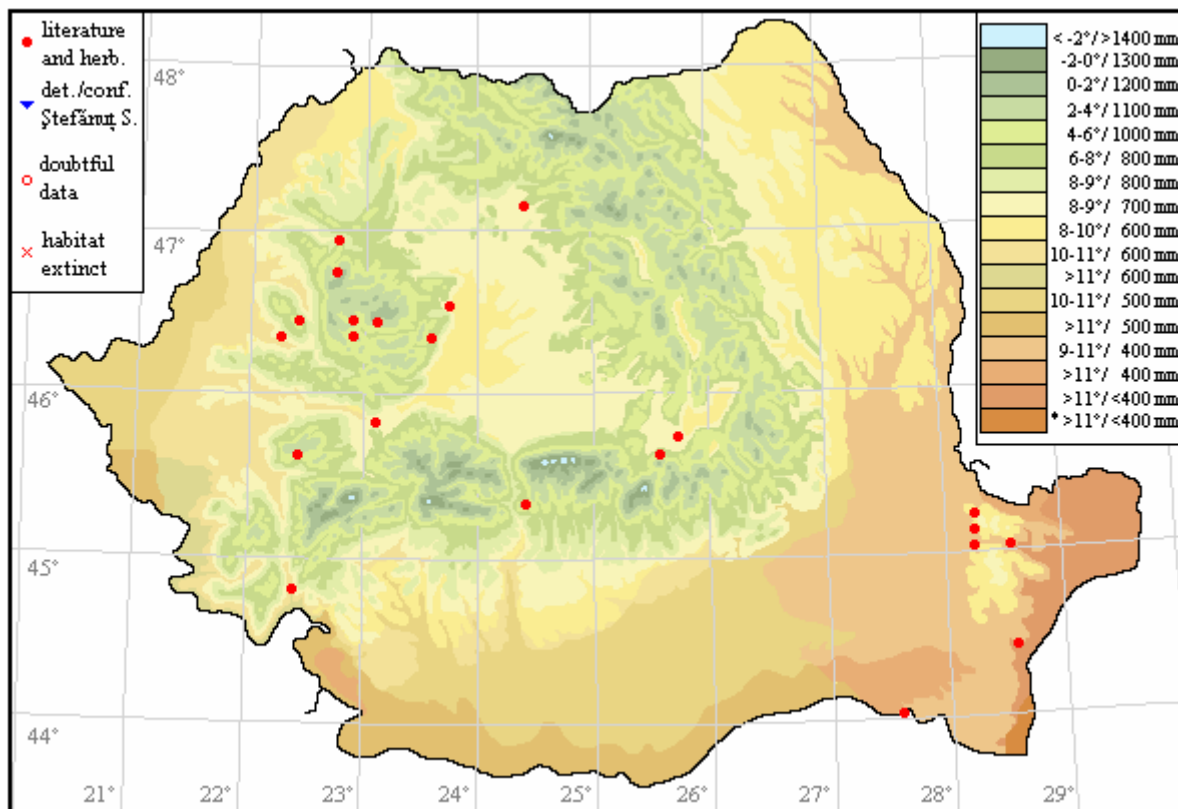


Fig. 126. Distribution of *Mannia fragrans* (Balb.) Frye et L. Clark in Romania.

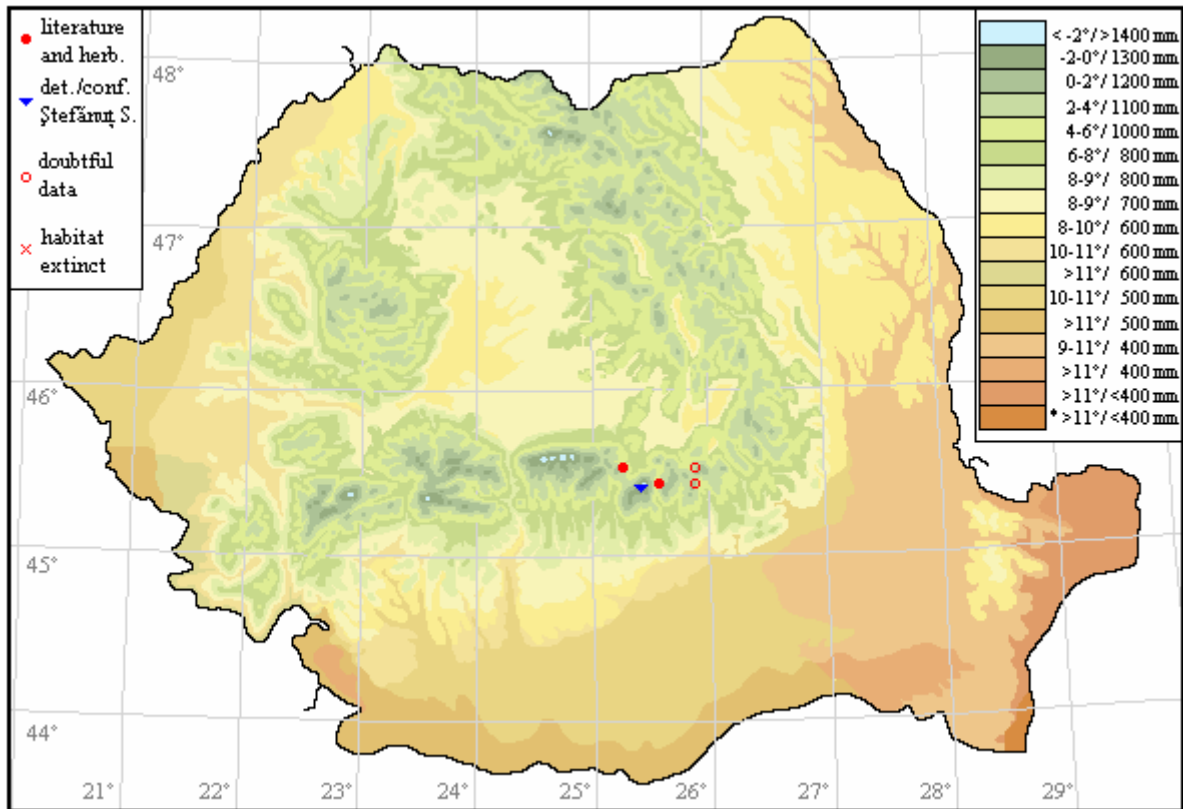


Fig. 127. Distribution of *Mannia pilosa* (Hornem.) Frye et L. Clark in Romania.

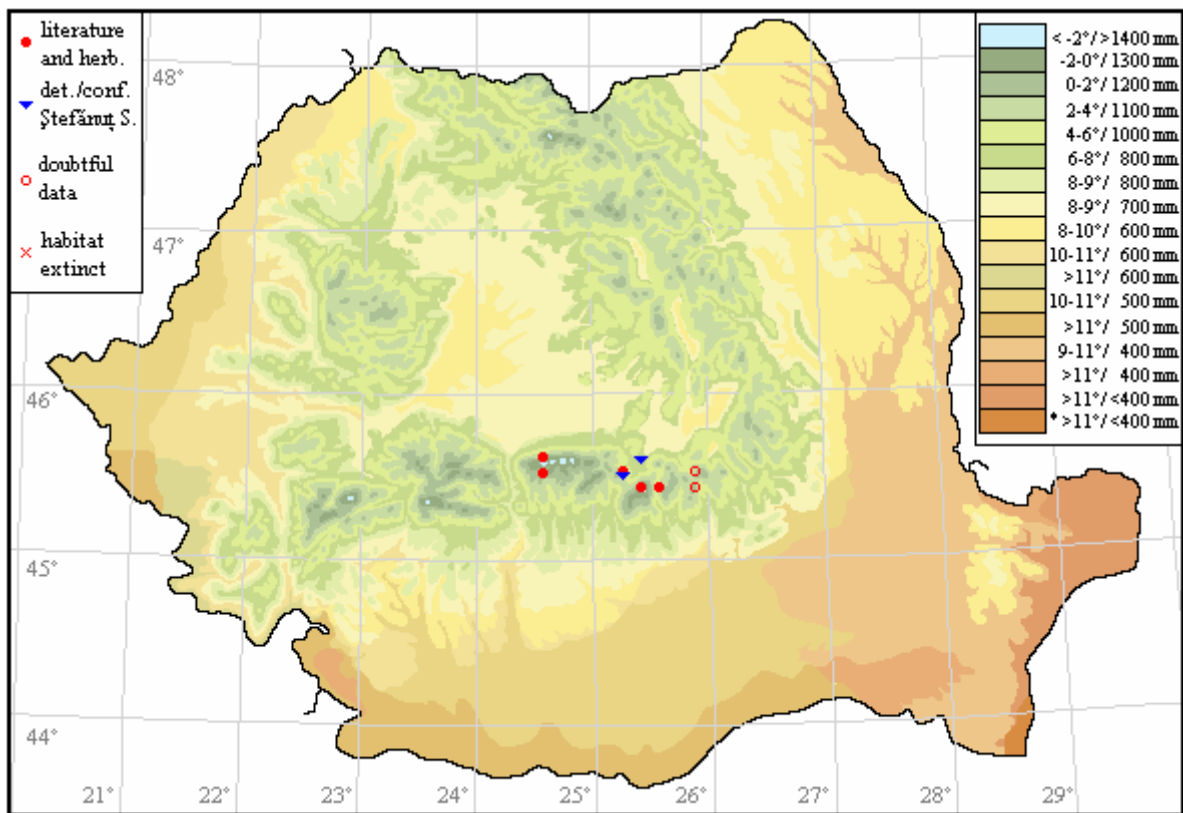


Fig. 128. Distribution of *Mannia triandra* (Scop.) Grolle in Romania.

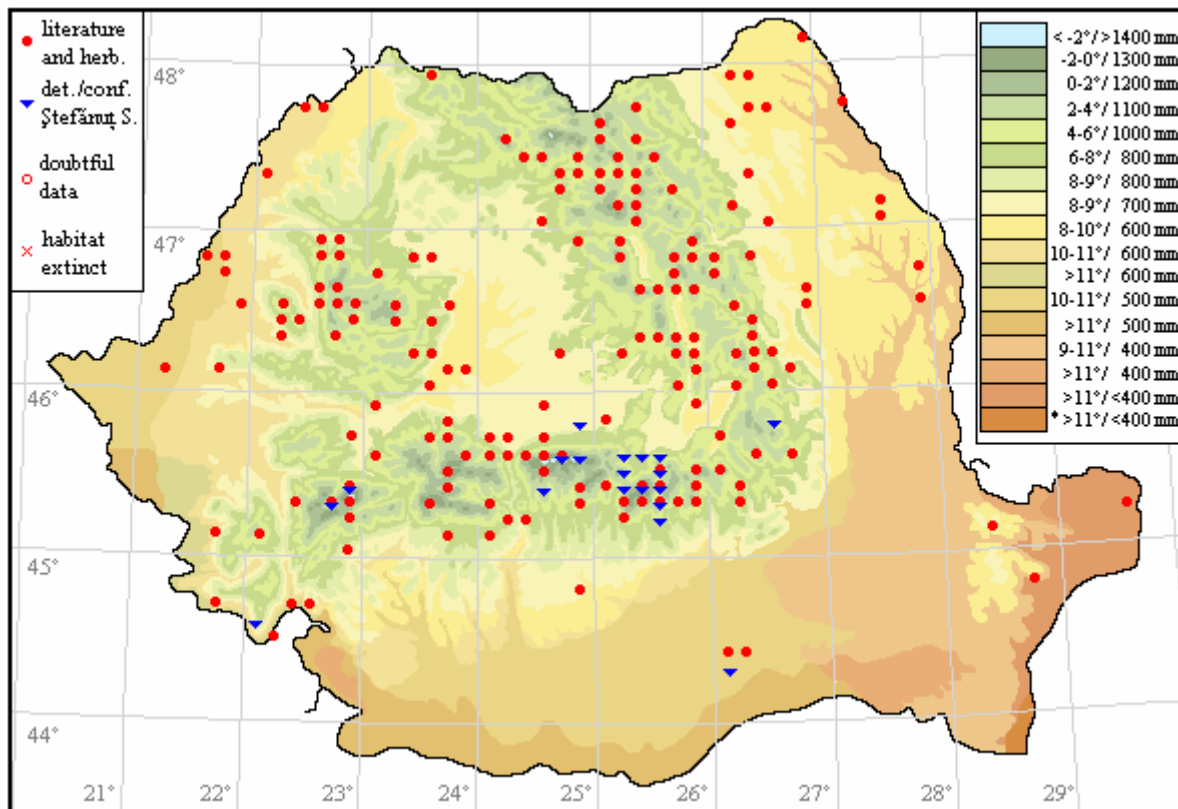


Fig. 129. Distribution of *Marchantia polymorpha* L. in Romania.

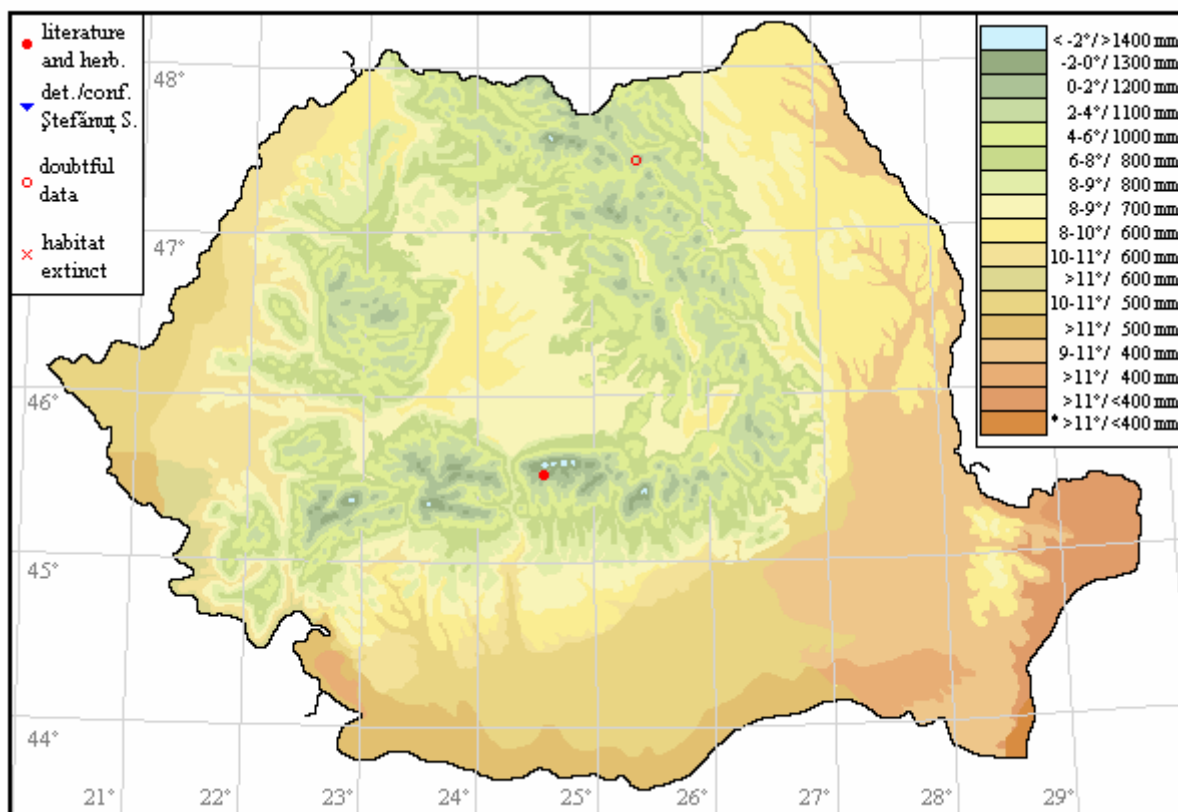


Fig. 130. Distribution of *Marsupella boeckii* (Austin) Kaal. in Romania.

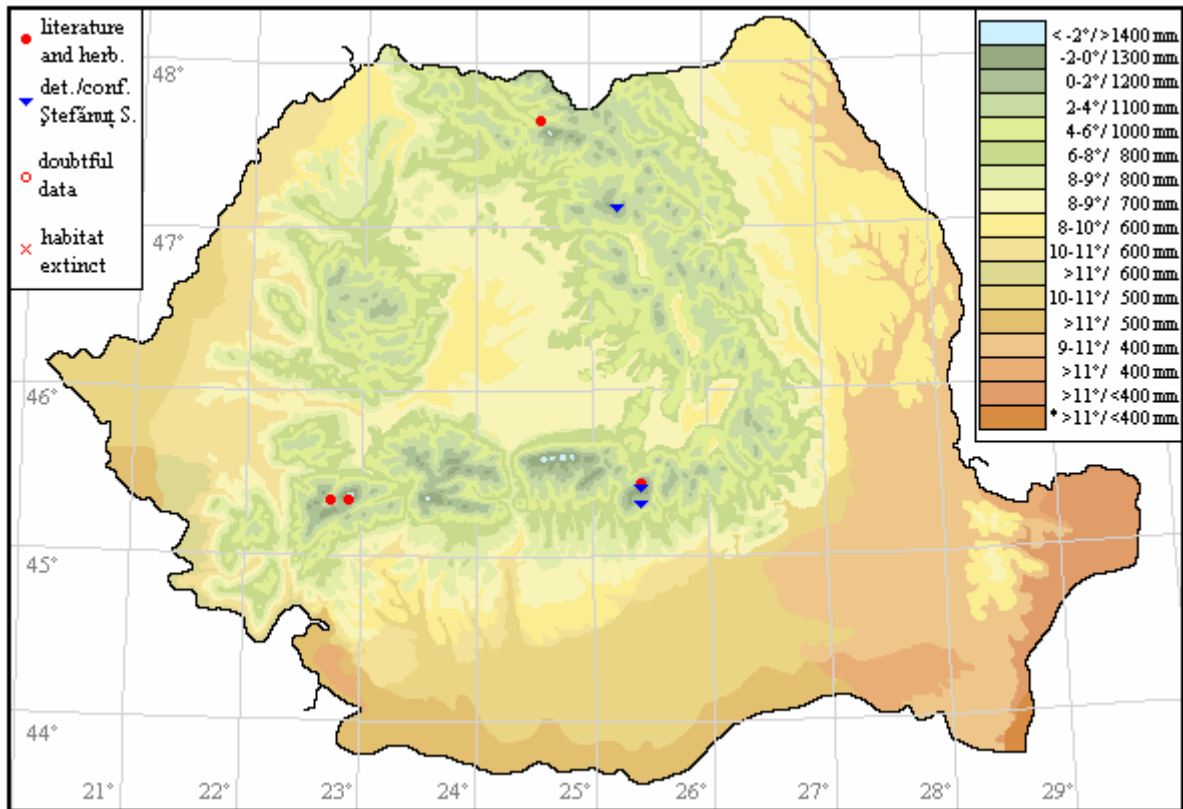


Fig. 131. Distribution of *Marsupella brevissima* (Dumort.) Grolle in Romania.

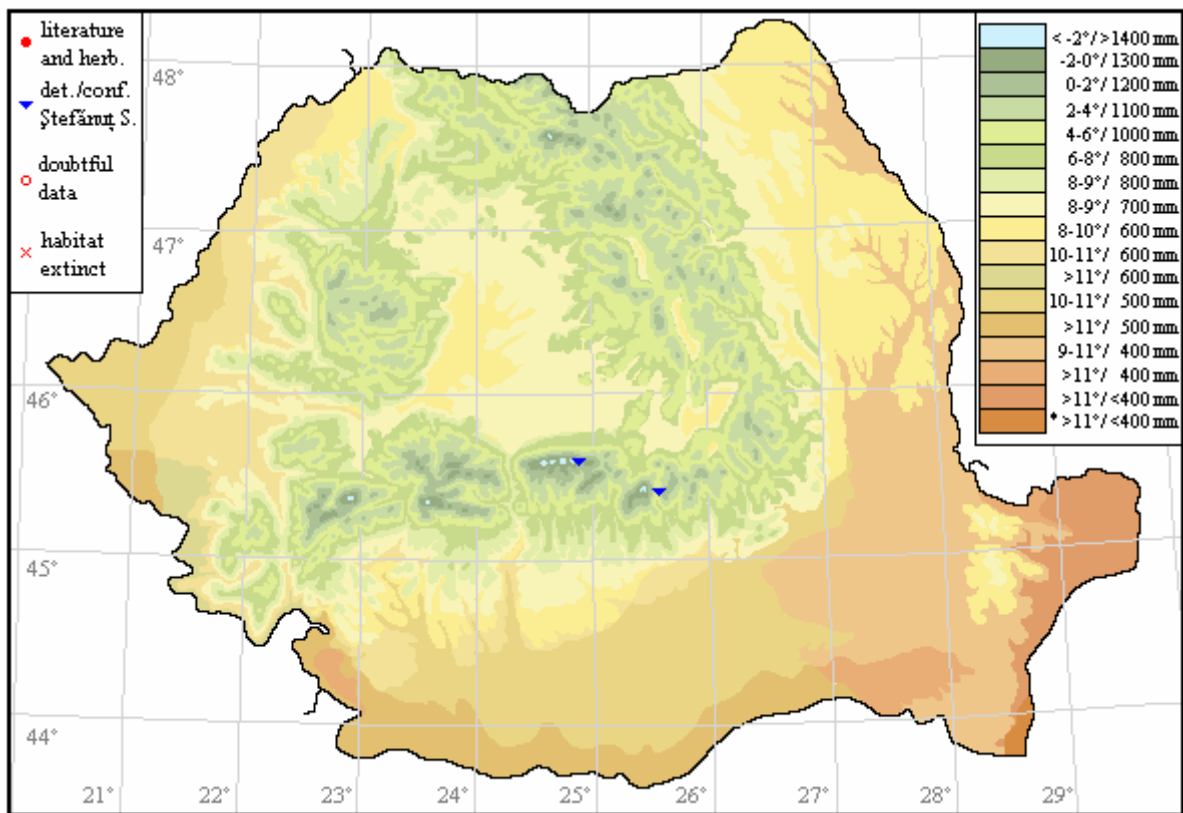


Fig. 132. Distribution of *Marsupella commutata* (Limpr.) Bernet in Romania.

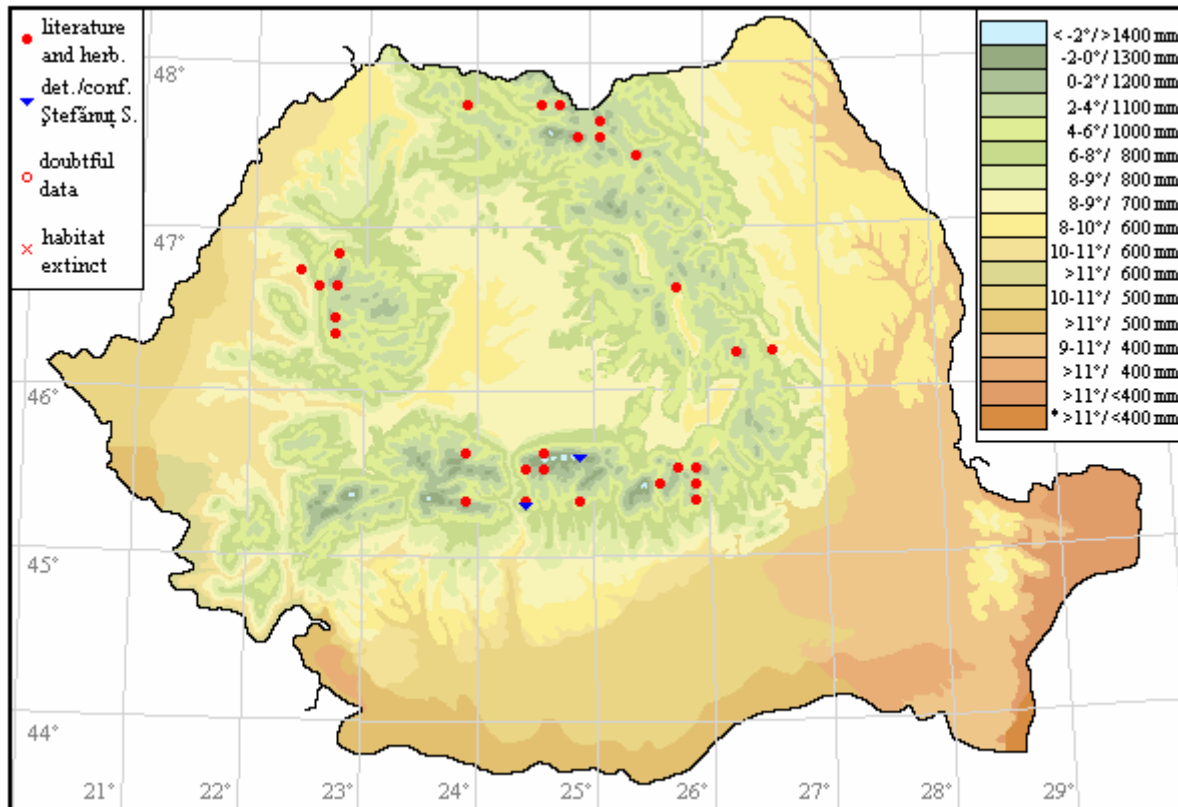


Fig. 133. Distribution of *Marsupella emarginata* (Ehrh.) Dumort. in Romania.

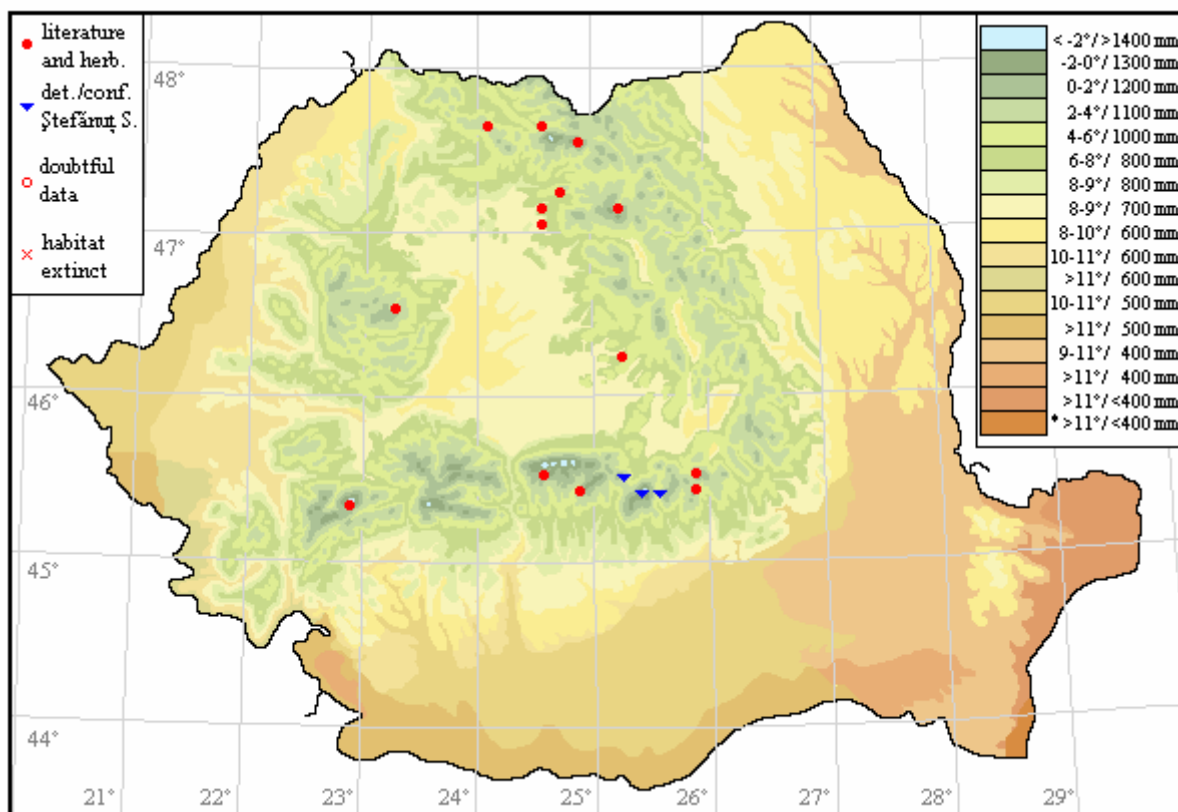


Fig. 134. Distribution of *Marsupella funckii* (F. Weber et D. Mohr) Dumort. in Romania.

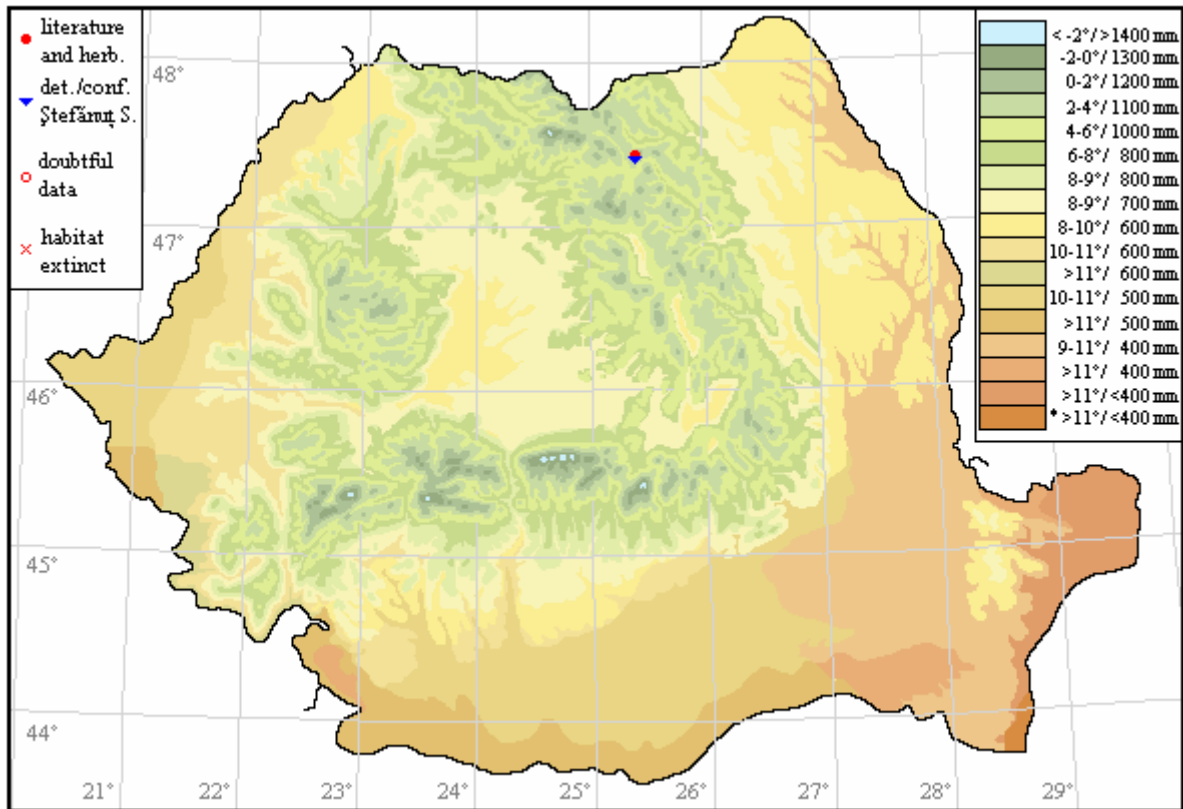


Fig. 135. Distribution of *Marsupella ramosa* Müll. Frib. in Romania.

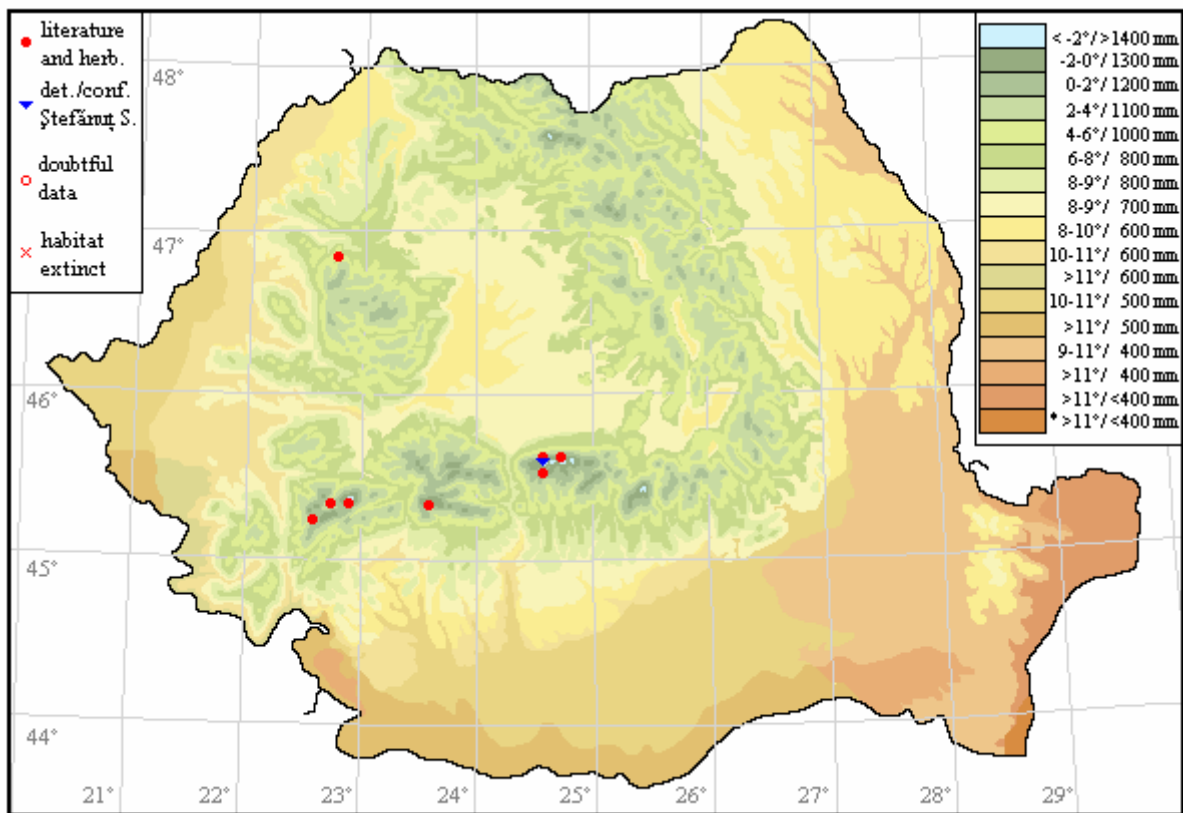


Fig. 136. Distribution of *Marsupella sphacelata* (Gieseke et Lindenb.) Dumort. in Romania.

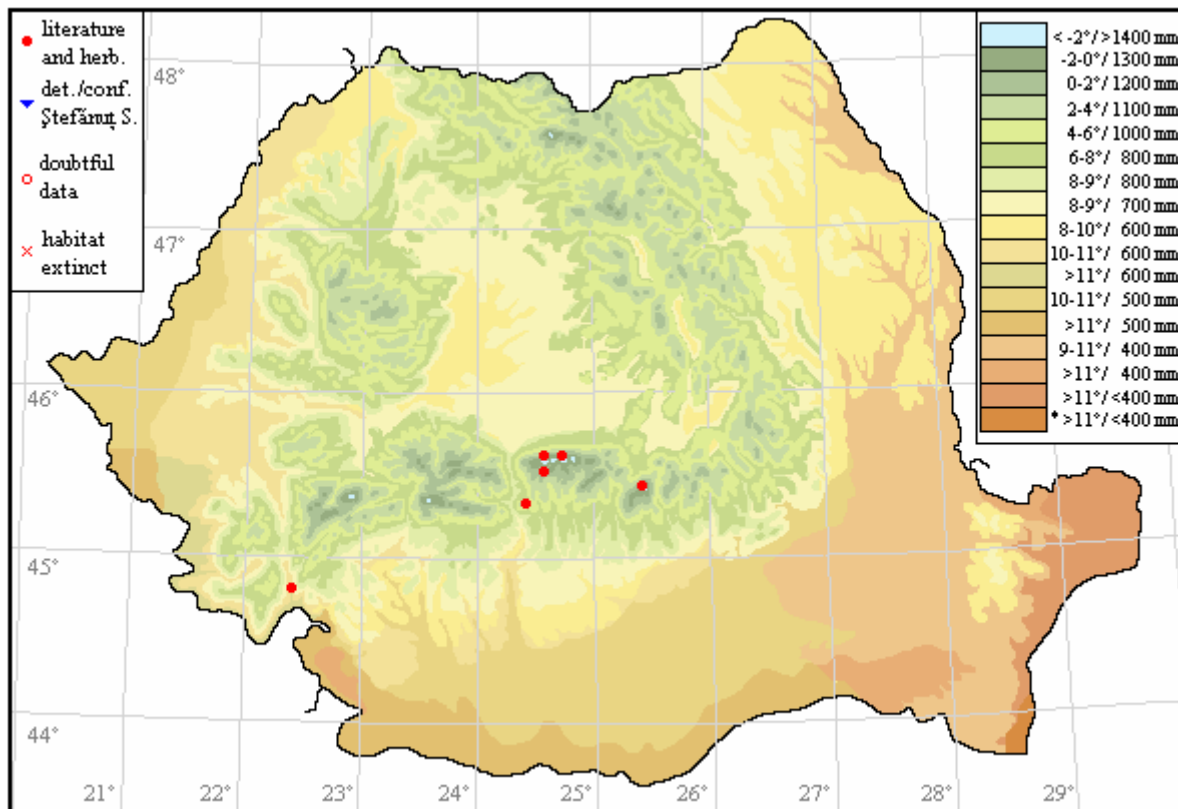


Fig. 137. Distribution of *Marsupella sprucei* (Limpr.) Bernet. in Romania.

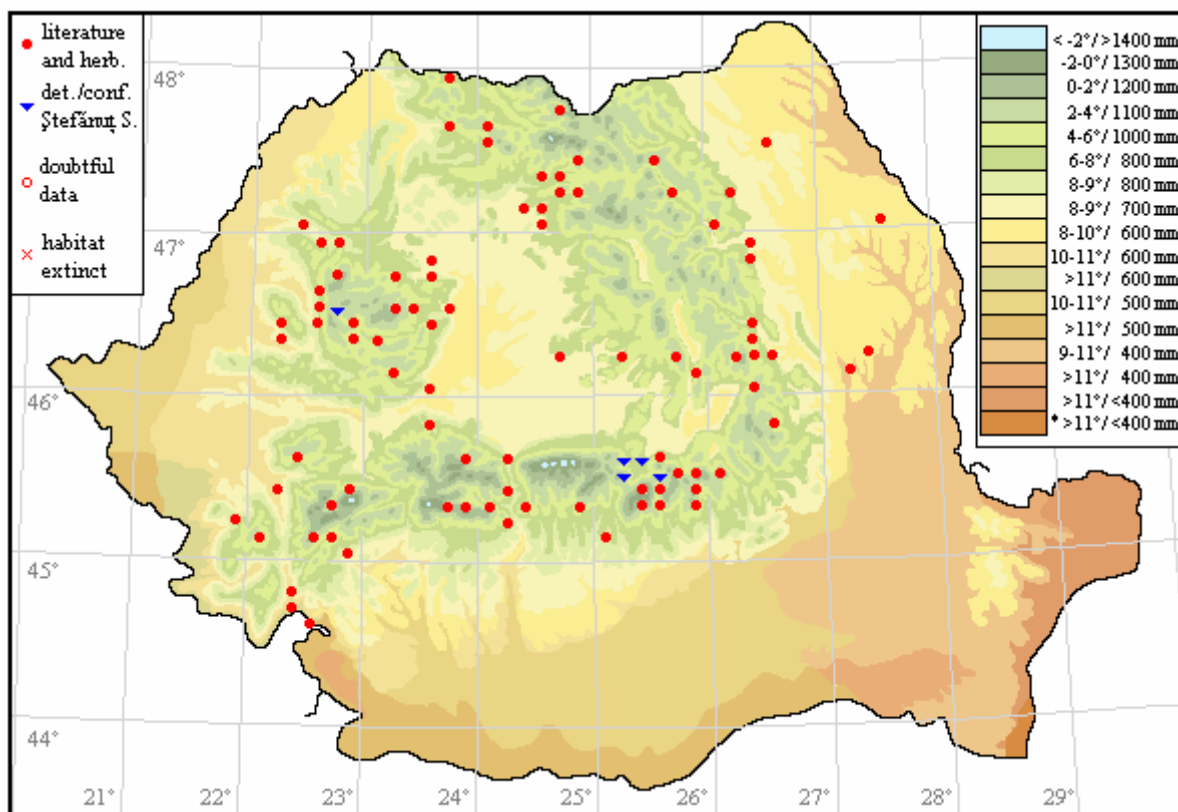


Fig. 138. Distribution of *Metzgeria conjugata* Lindb. in Romania.

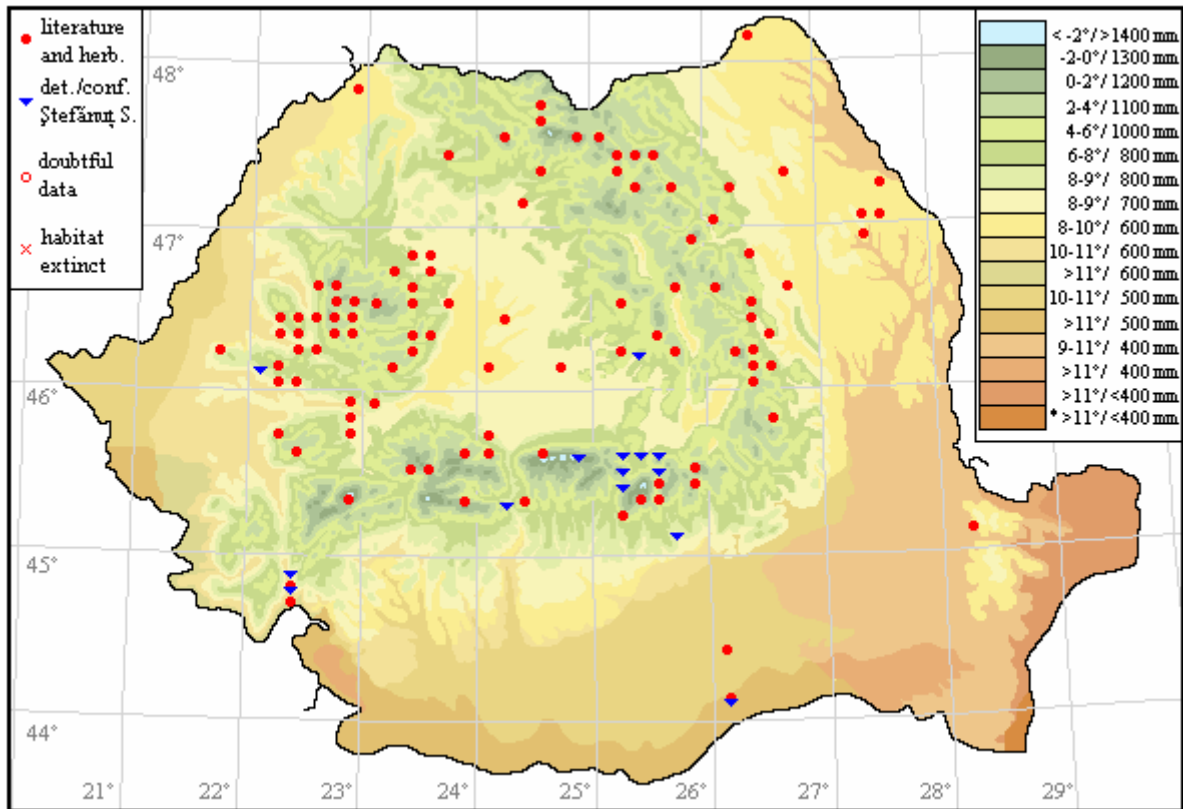


Fig. 139. Distribution of *Metzgeria furcata* (L.) Dumort. in Romania.

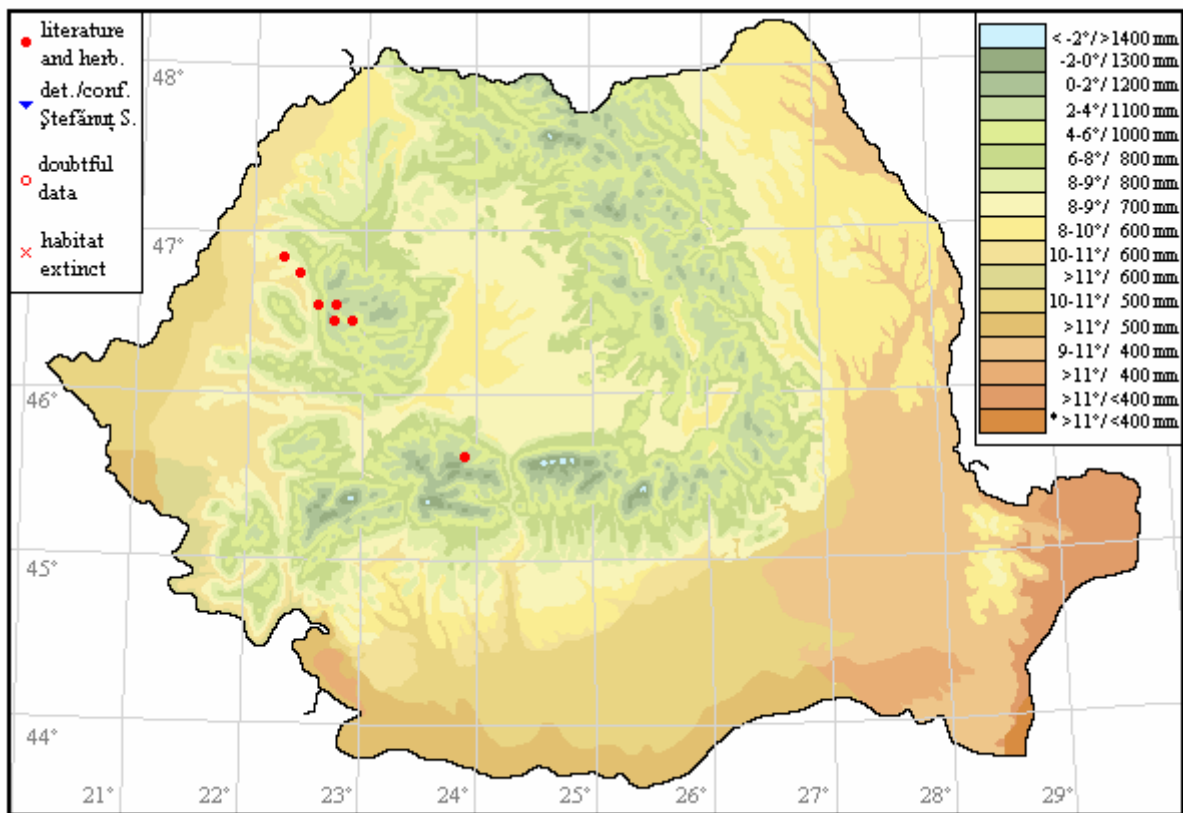


Fig. 140. Distribution of *Metzgeria violacea* (Ach.) Dumort. in Romania.

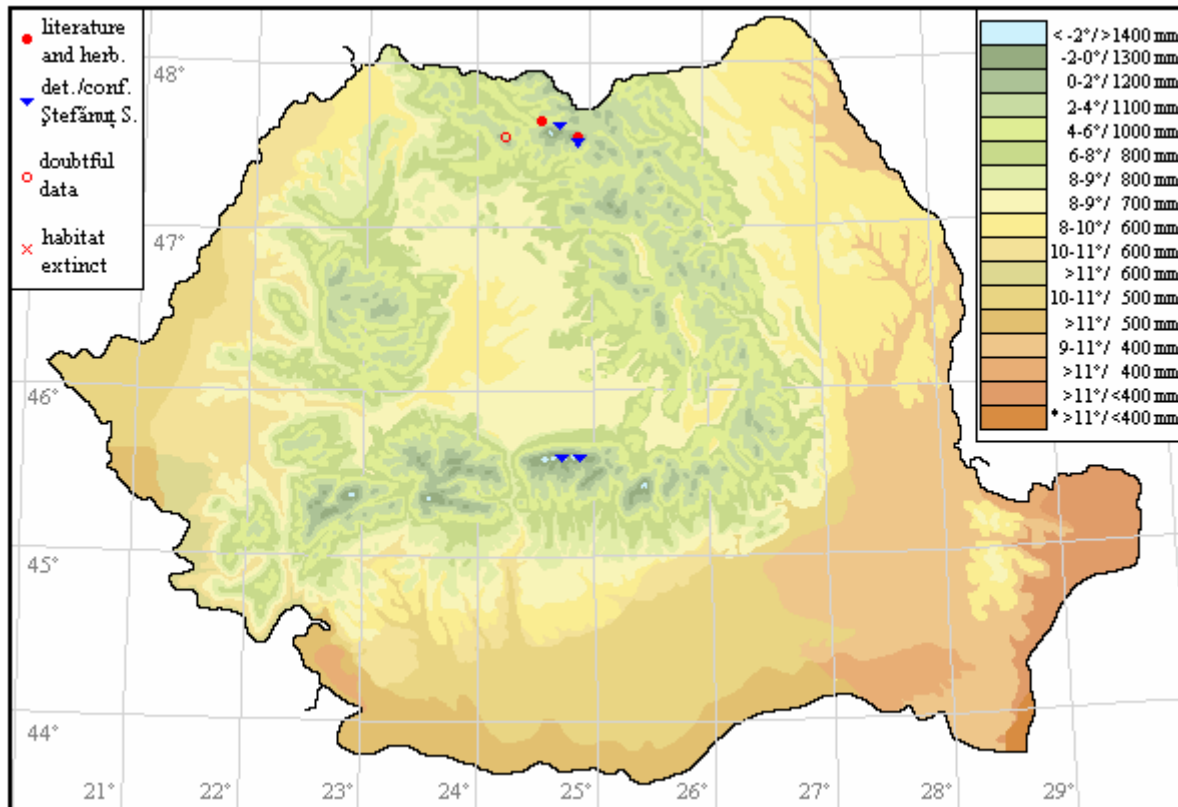


Fig. 141. Distribution of *Moerckia blytii* (Morch) Brockm. in Romania.

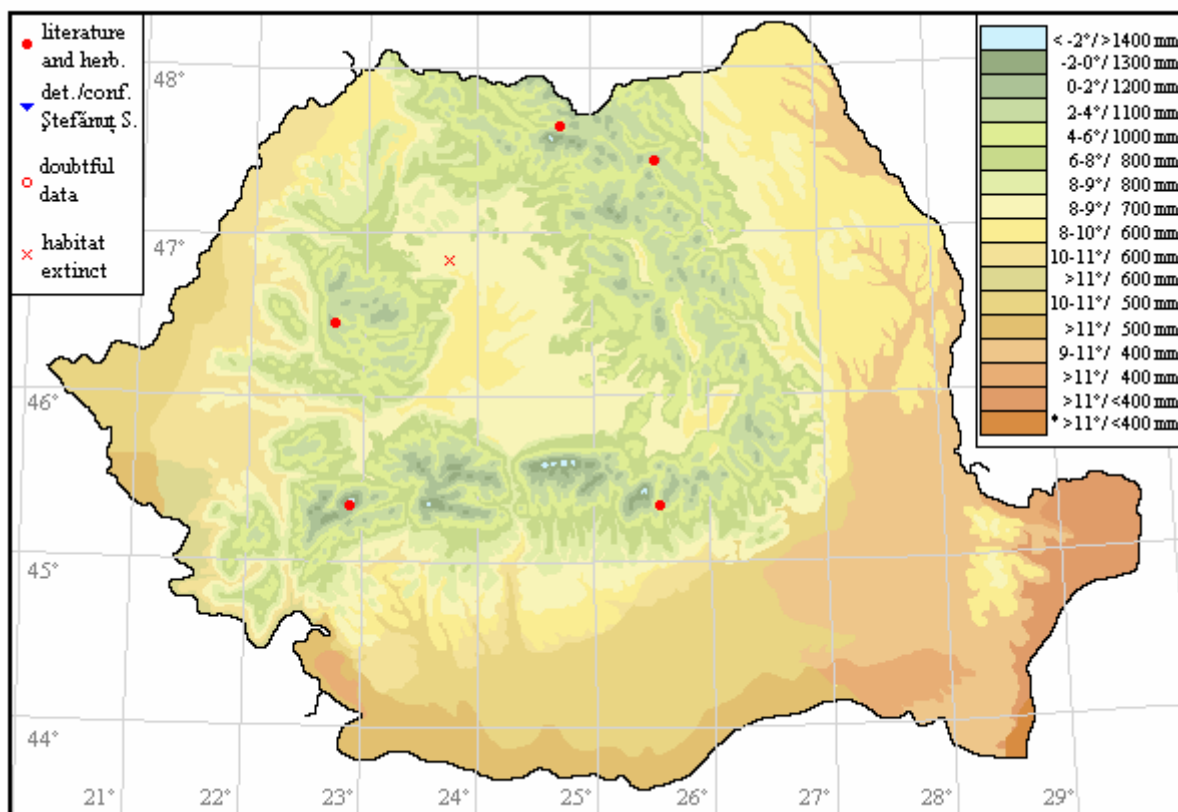


Fig. 142. Distribution of *Moerckia hibernica* (Hook.) Gottsche in Romania.

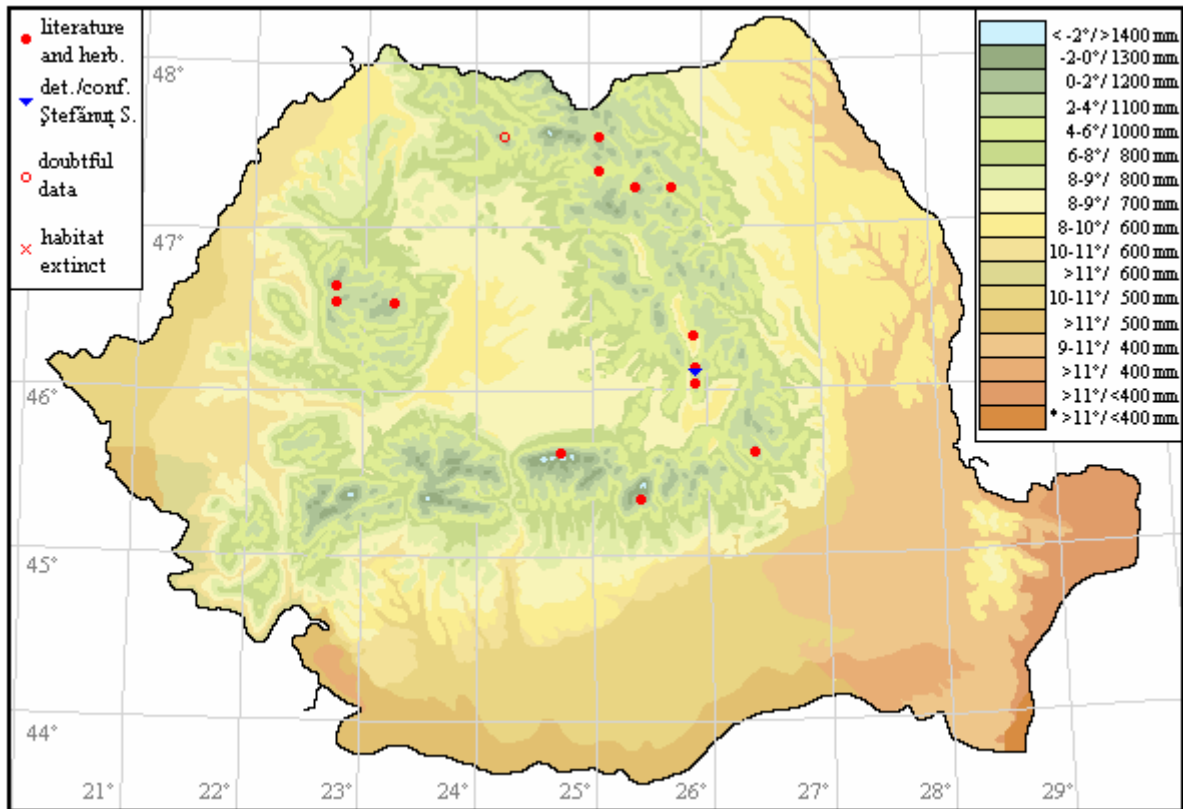


Fig. 143. Distribution of *Mylia anomala* (Hook.) Gray in Romania.

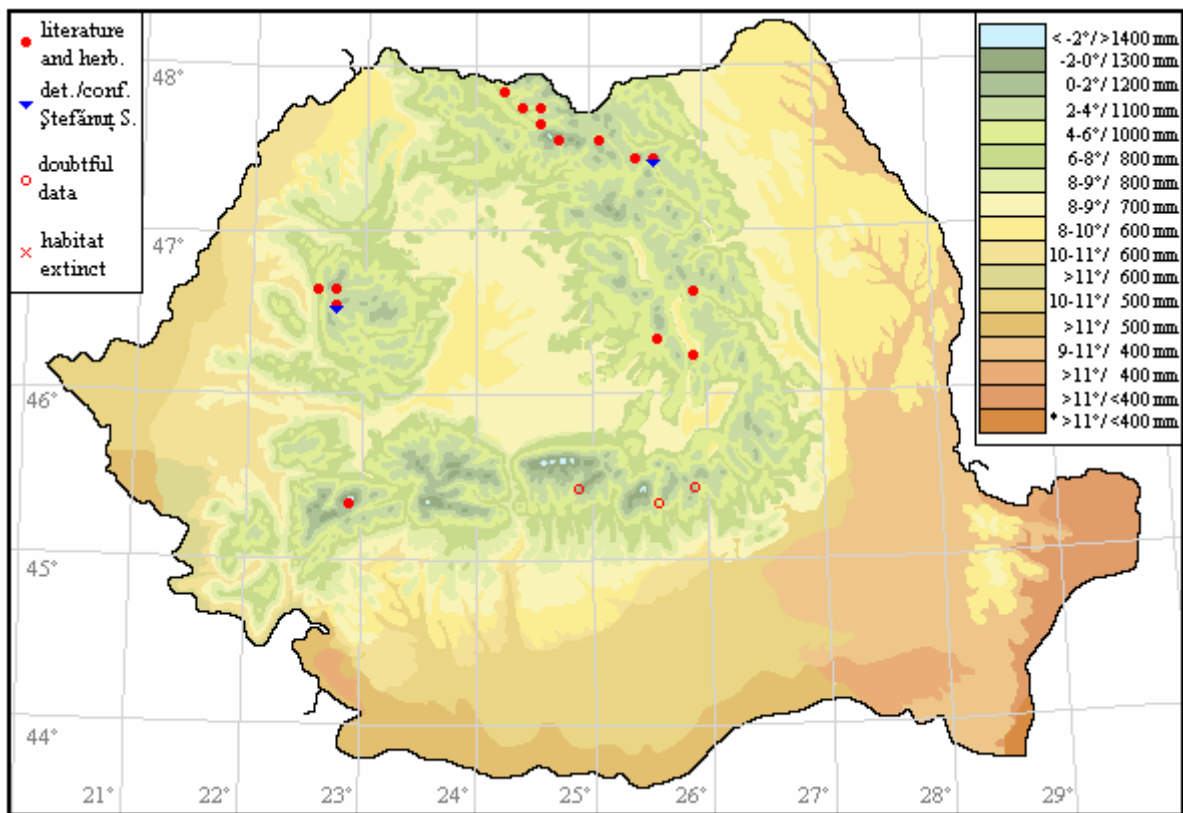


Fig. 144. Distribution of *Mylia taylorii* (Hook.) Gray in Romania.

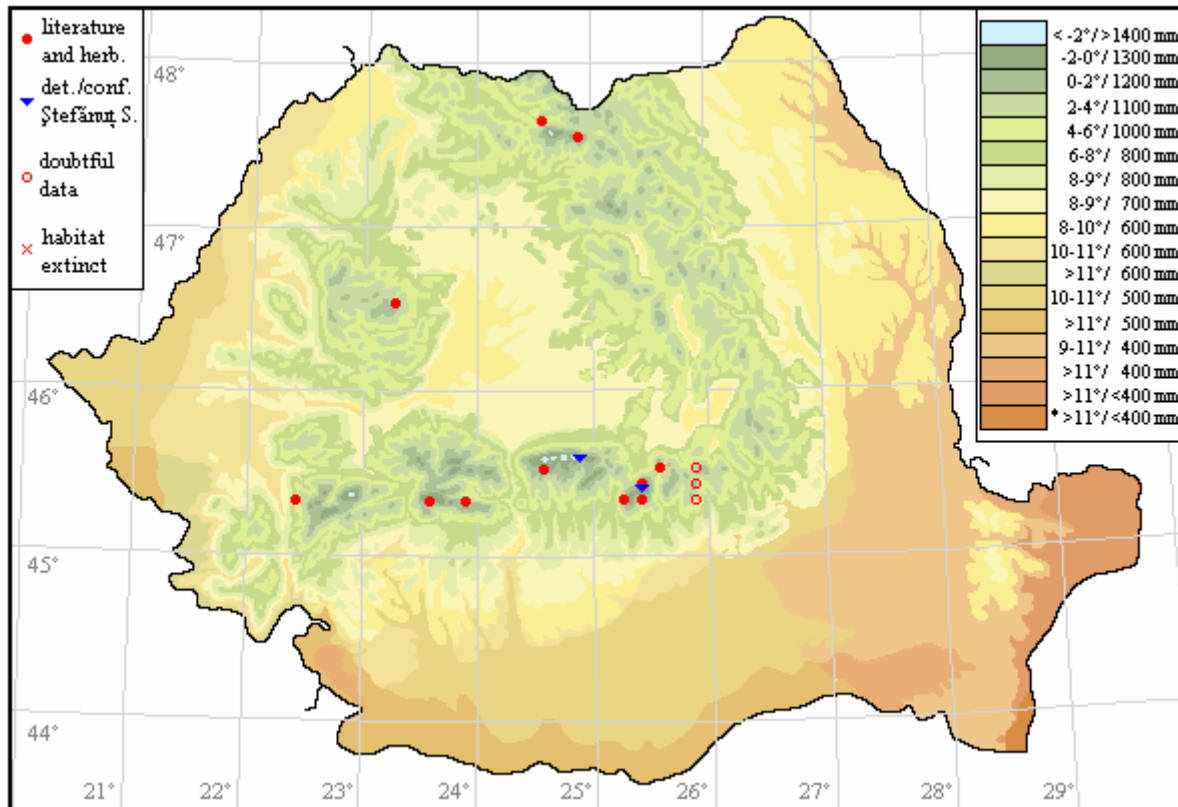


Fig. 145. Distribution of *Nardia geosecyphus* (De Not.) Lindb. in Romania.

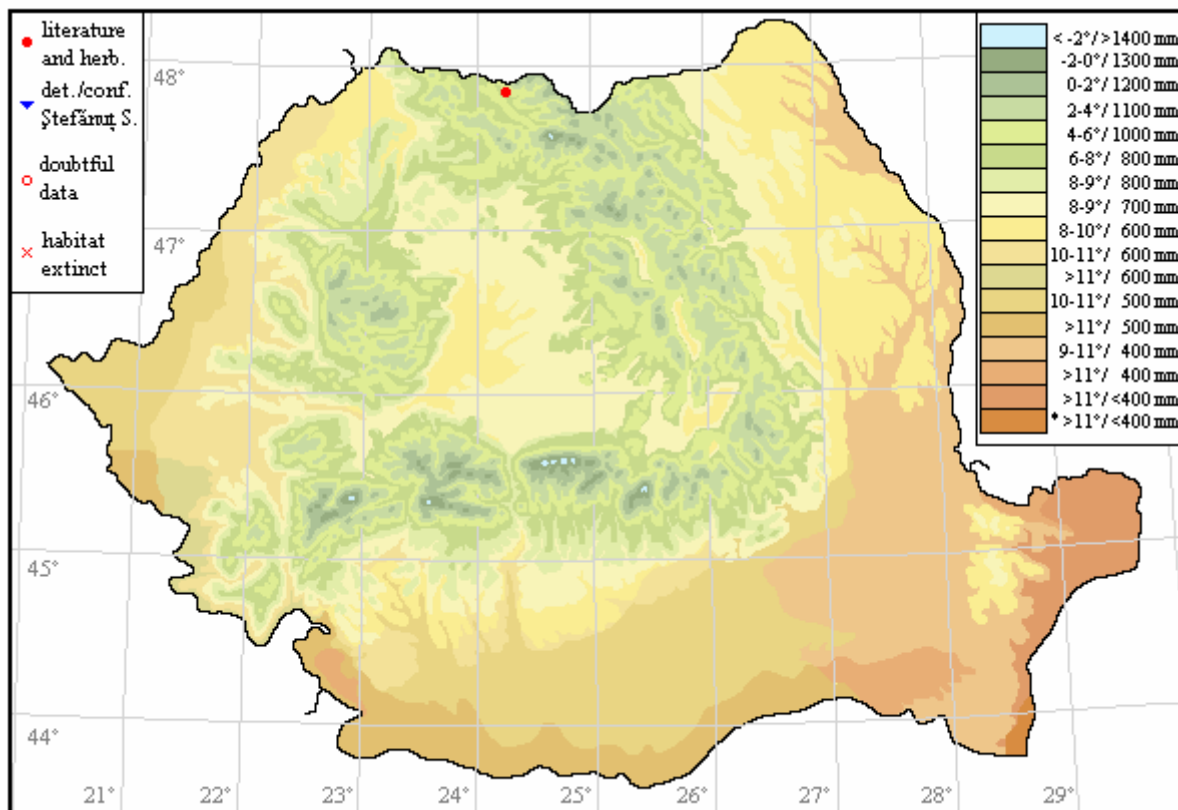


Fig. 146. Distribution of *Nardia insecta* Lindb. in Romania.

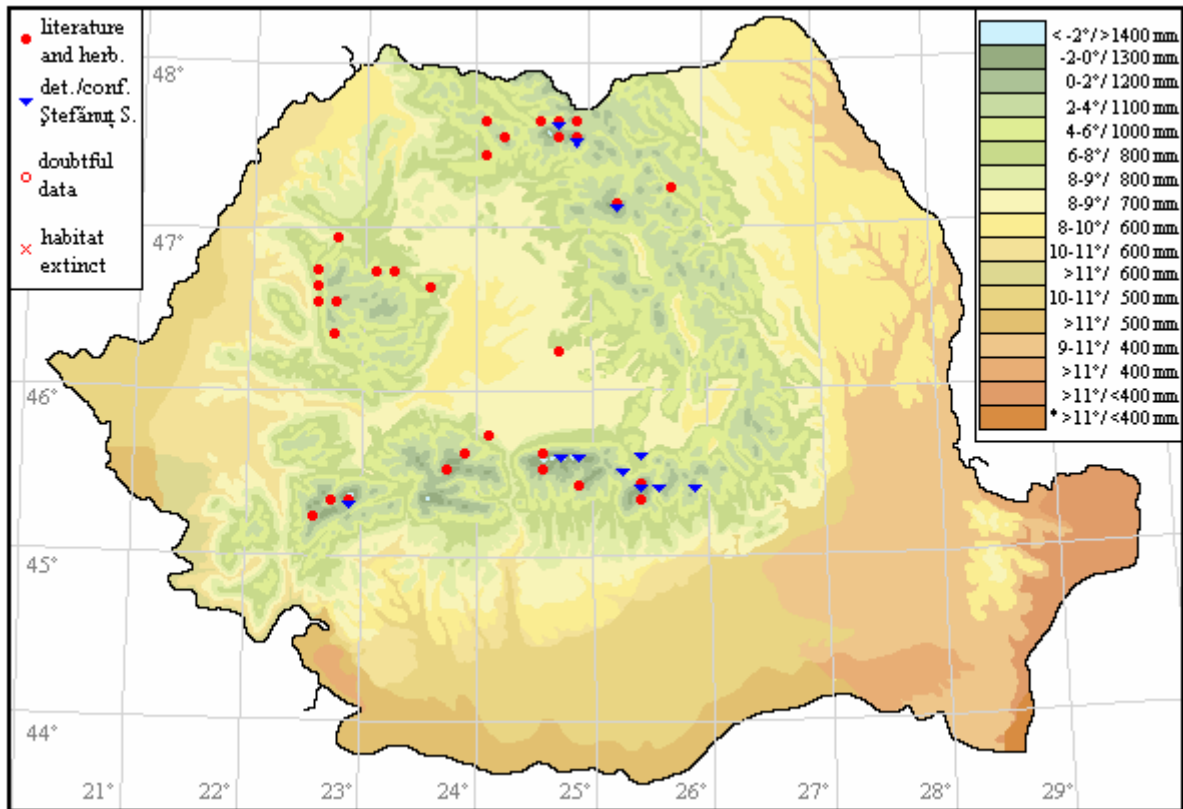


Fig. 147. Distribution of *Nardia scalaris* S.F. Gray in Romania.

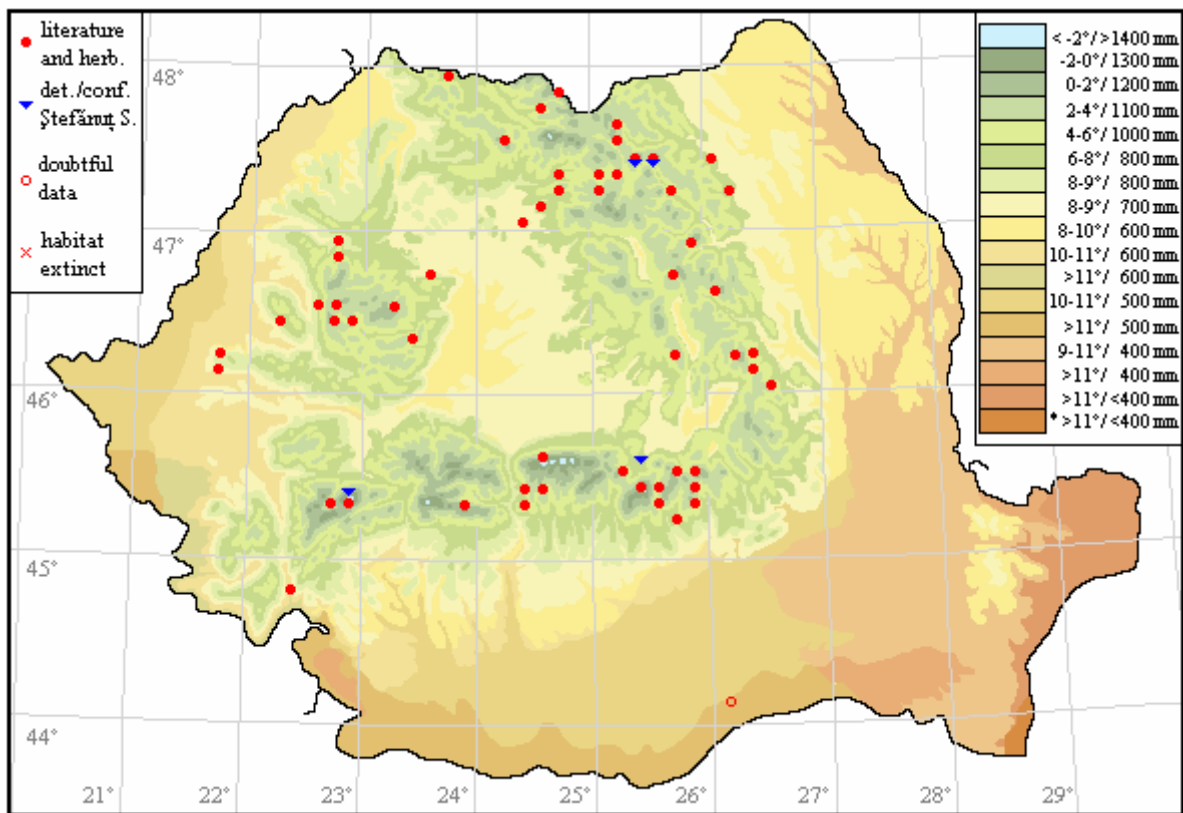


Fig. 148. Distribution of *Nowellia curvifolia* (Dicks.) Mitt. in Romania.

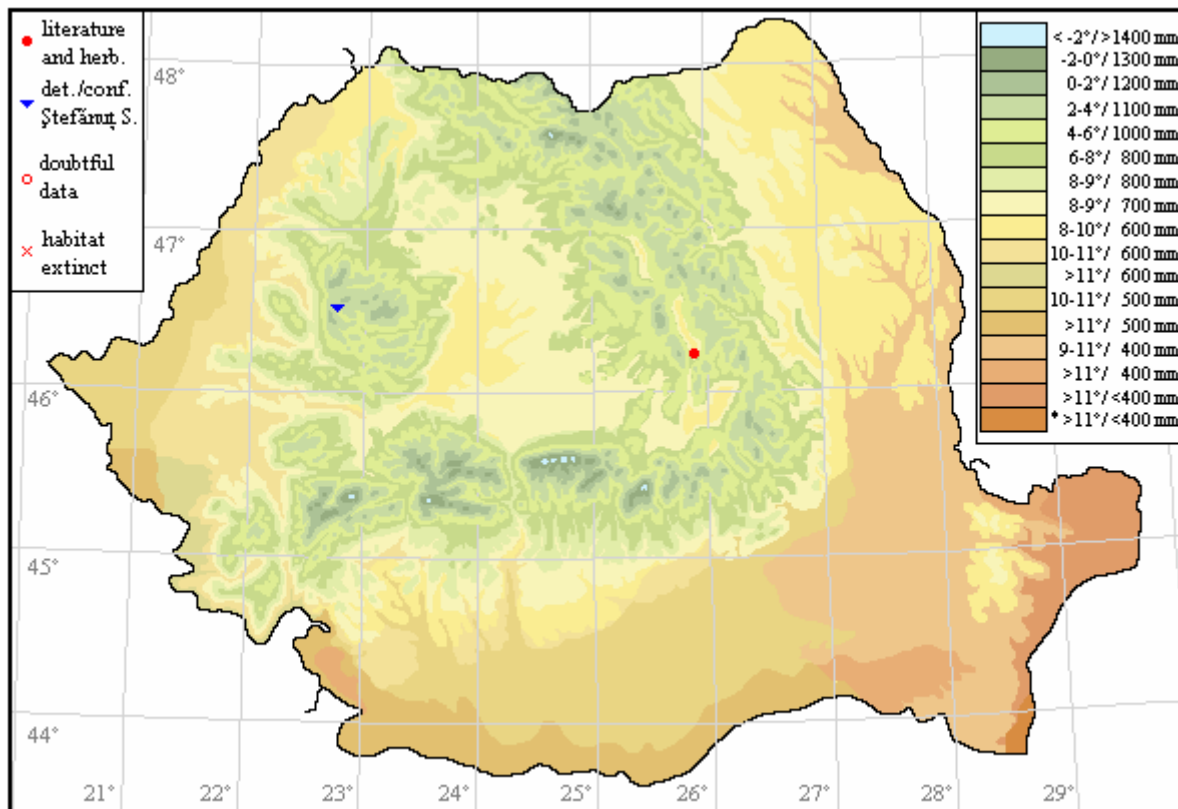


Fig. 149. Distribution of *Odontoschisma denudatum* (Mart.) Dumort. in Romania.

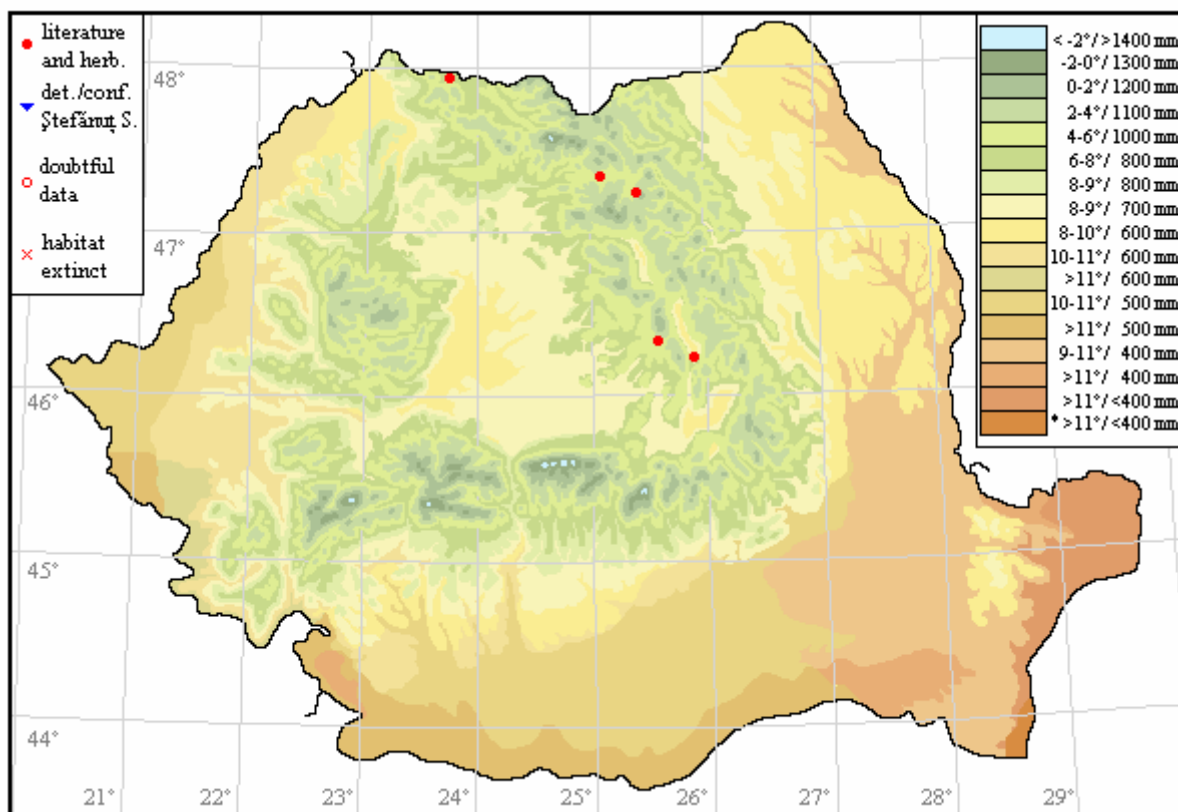


Fig. 150. Distribution of *Odontoschisma sphagni* (Dicks.) Dumort. in Romania.

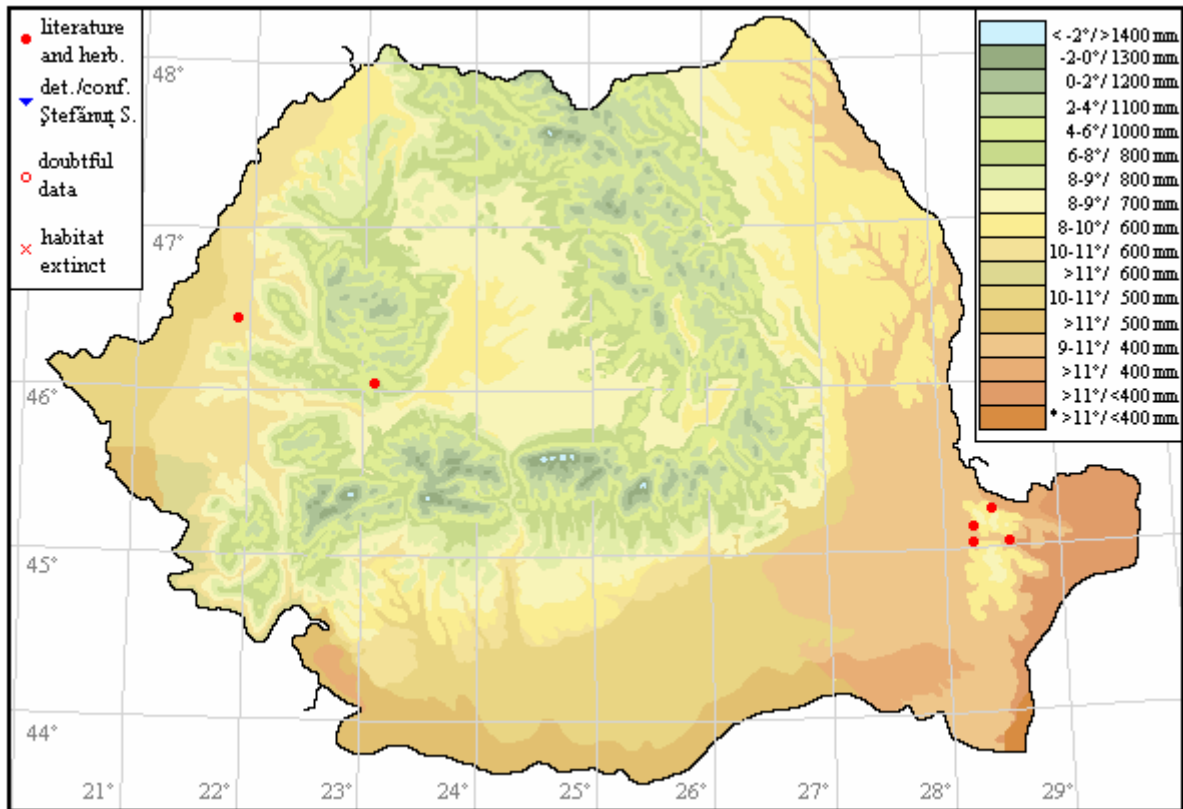


Fig. 151. Distribution of *Oxymitra incrassata* (Brot.) Sérgio et Sim-Sim in Romania.

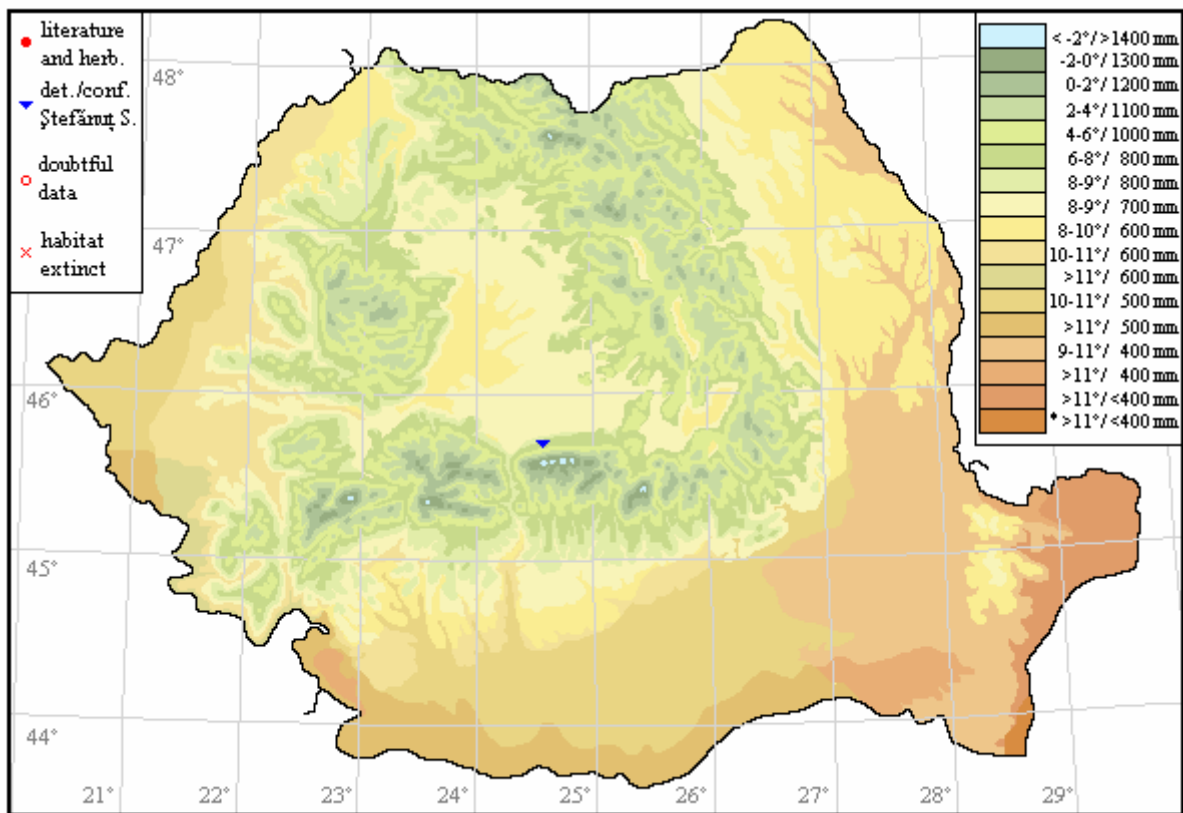


Fig. 152. Distribution of *Pallavicinia lyellii* (Hook.) Carruth. in Romania.

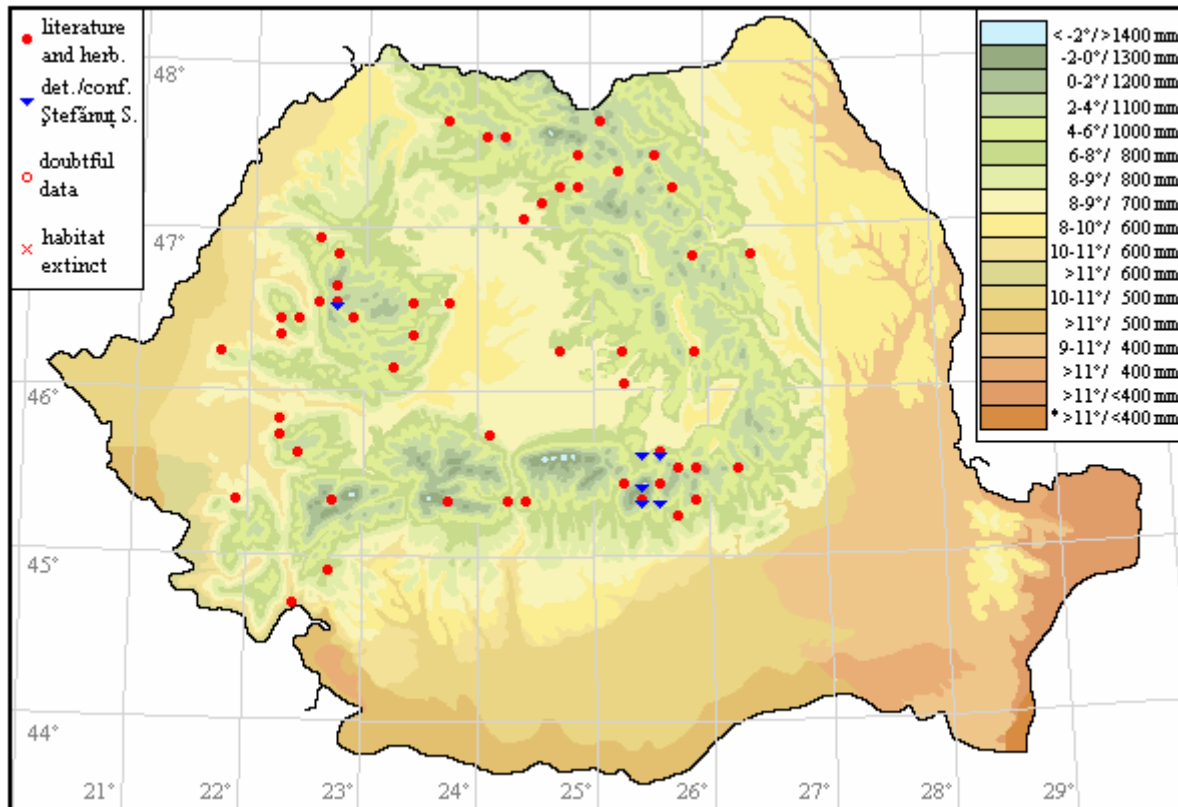


Fig. 153. Distribution of *Pedinophyllum interruptum* (Nees) Kaal. in Romania.

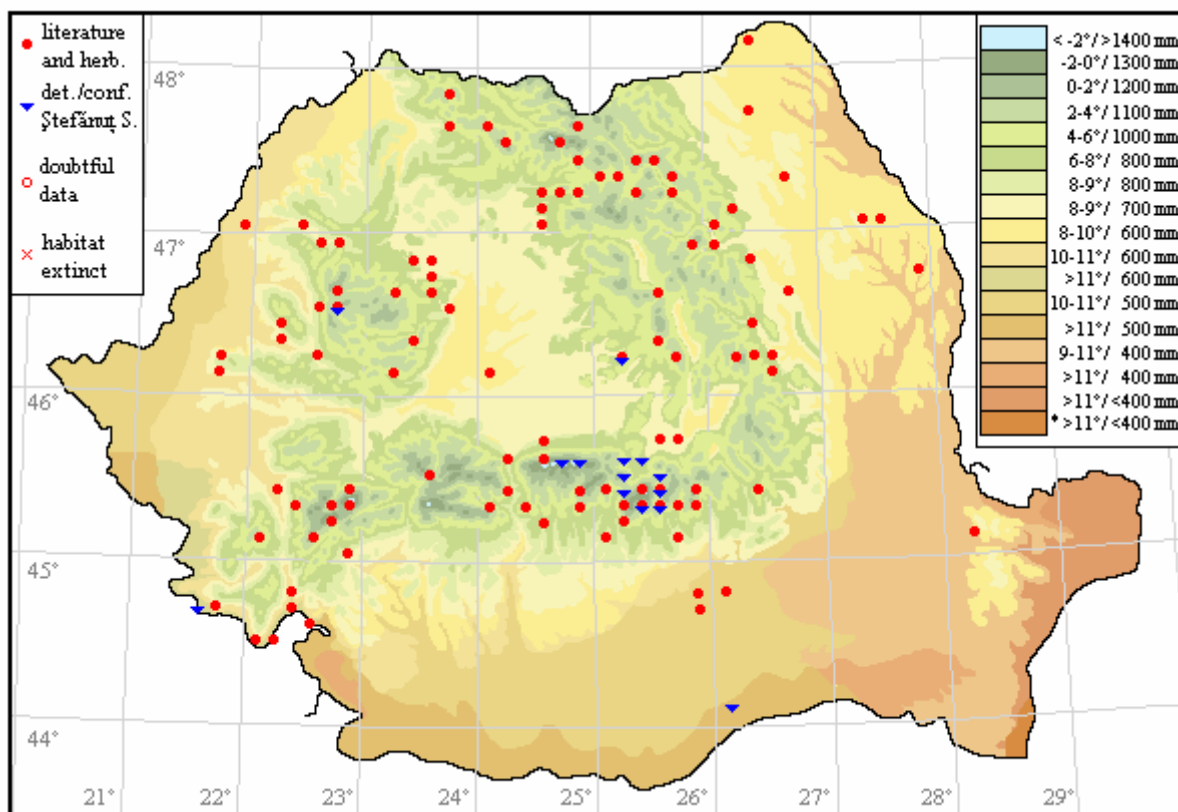


Fig. 154. Distribution of *Pellia endiviifolia* (Dicks.) Dumort. in Romania.

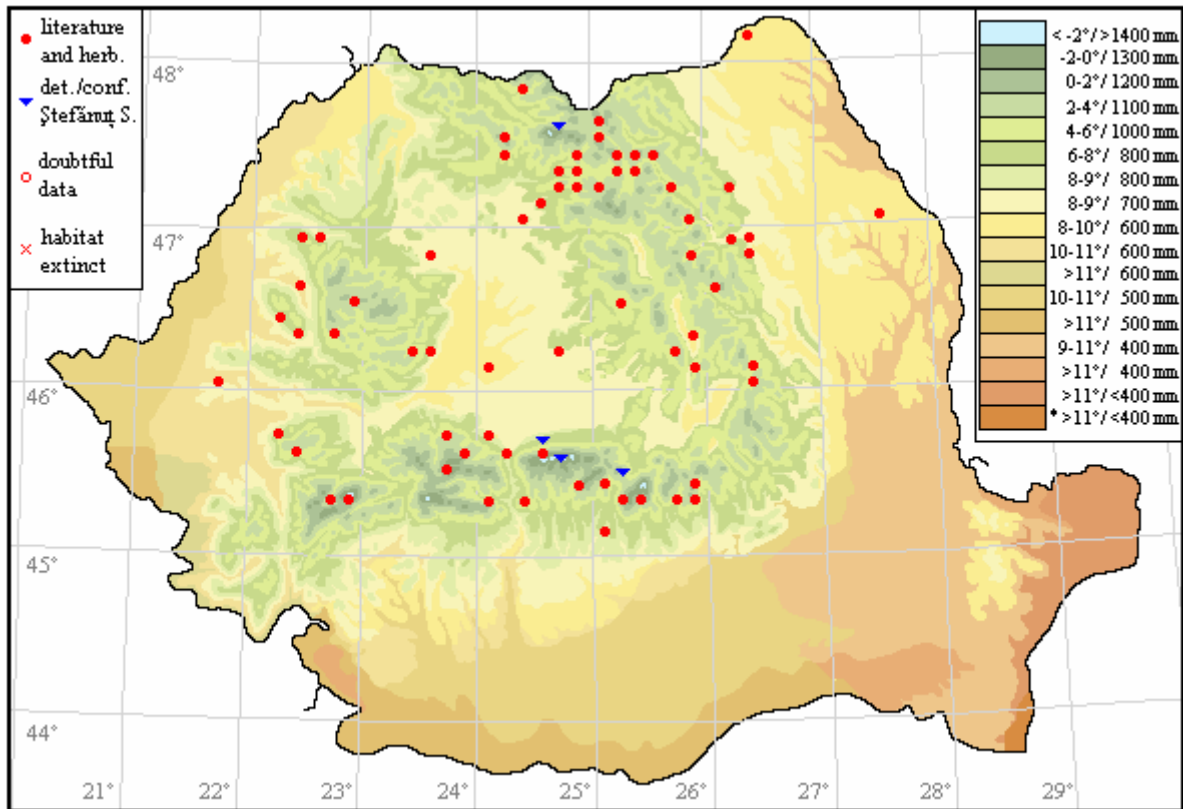


Fig. 155. Distribution of *Pellia epiphylla* (L.) Corda in Romania.

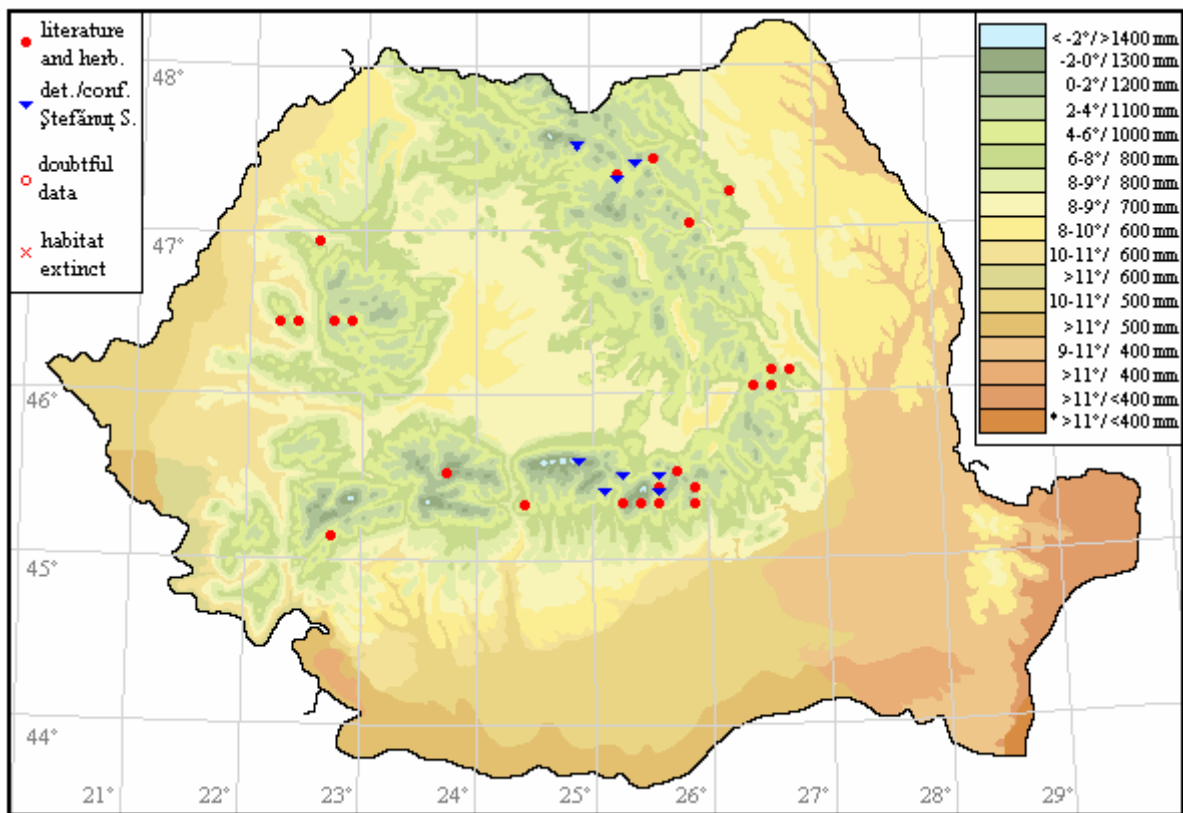


Fig. 156. Distribution of *Pellia neesiana* (Gottsche) Limpr. in Romania.

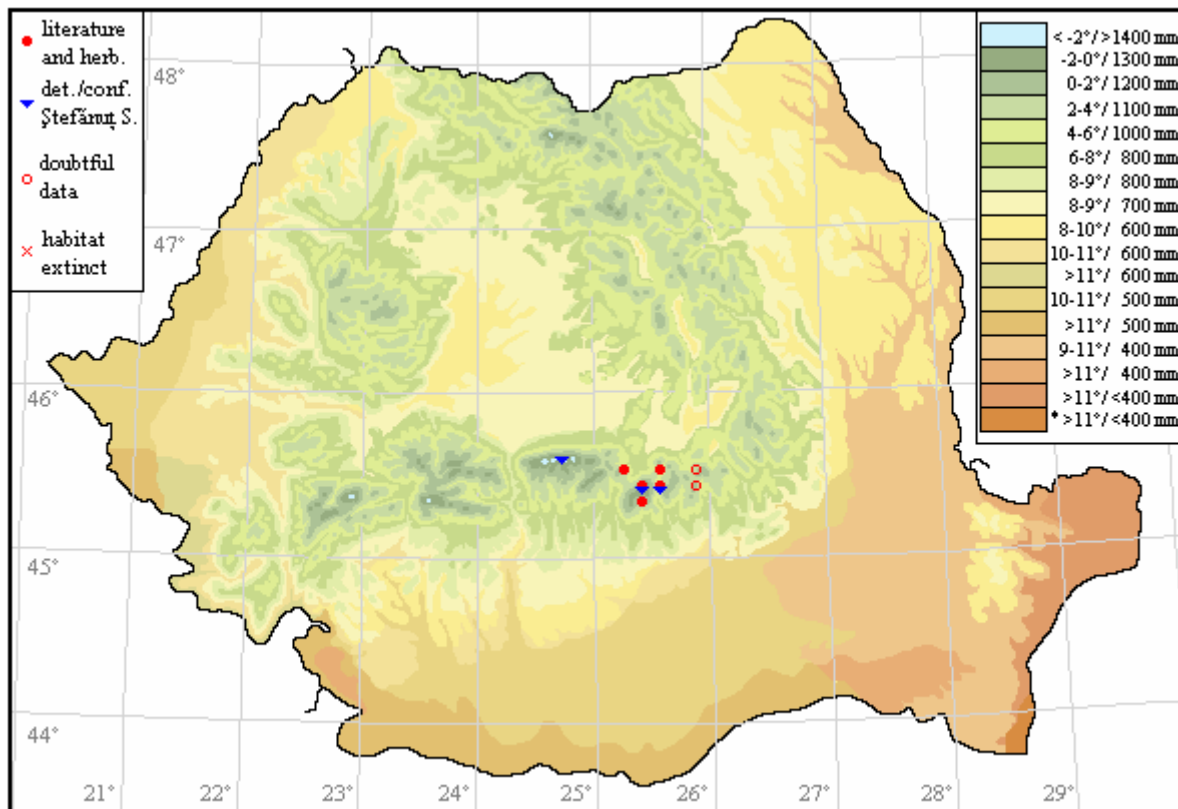


Fig. 157. Distribution of *Peltolepis quadrata* (Saut.) Müll. Frib. in Romania.

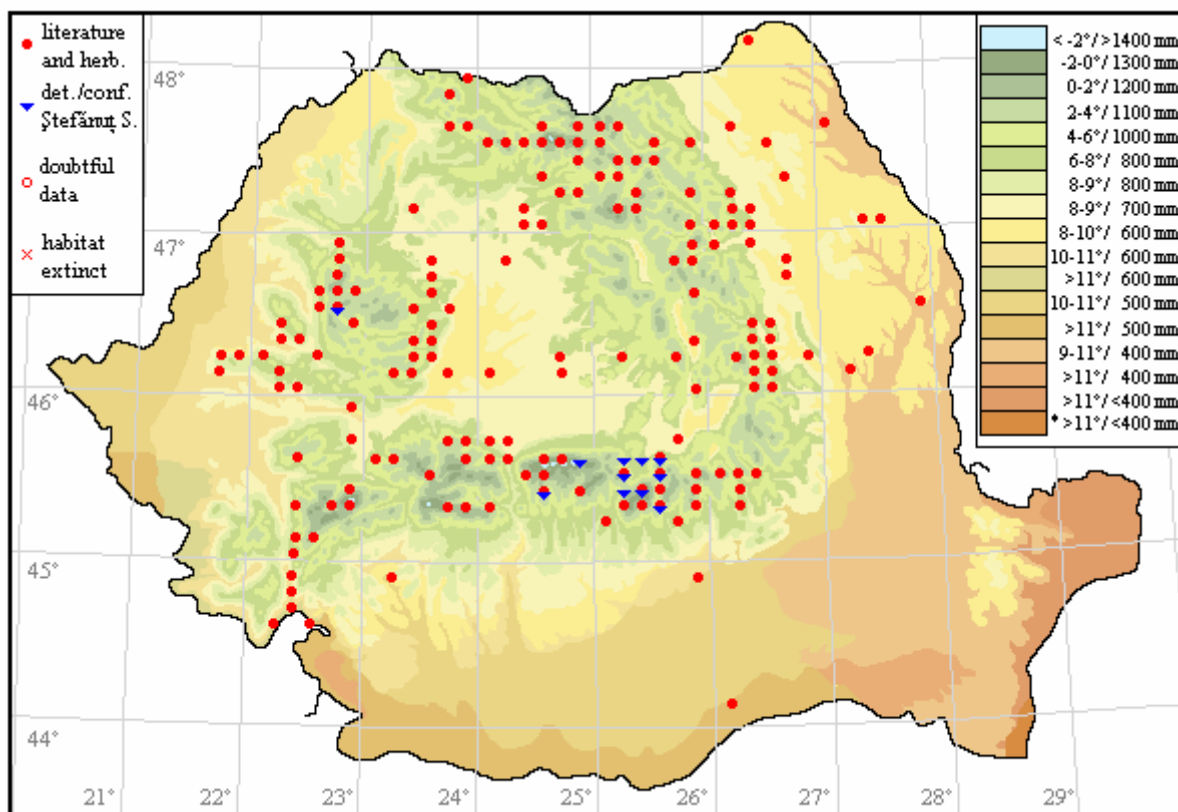


Fig. 158. Distribution of *Plagiochila asplenioides* (L. emend. Taylor) Dumort. in Romania.

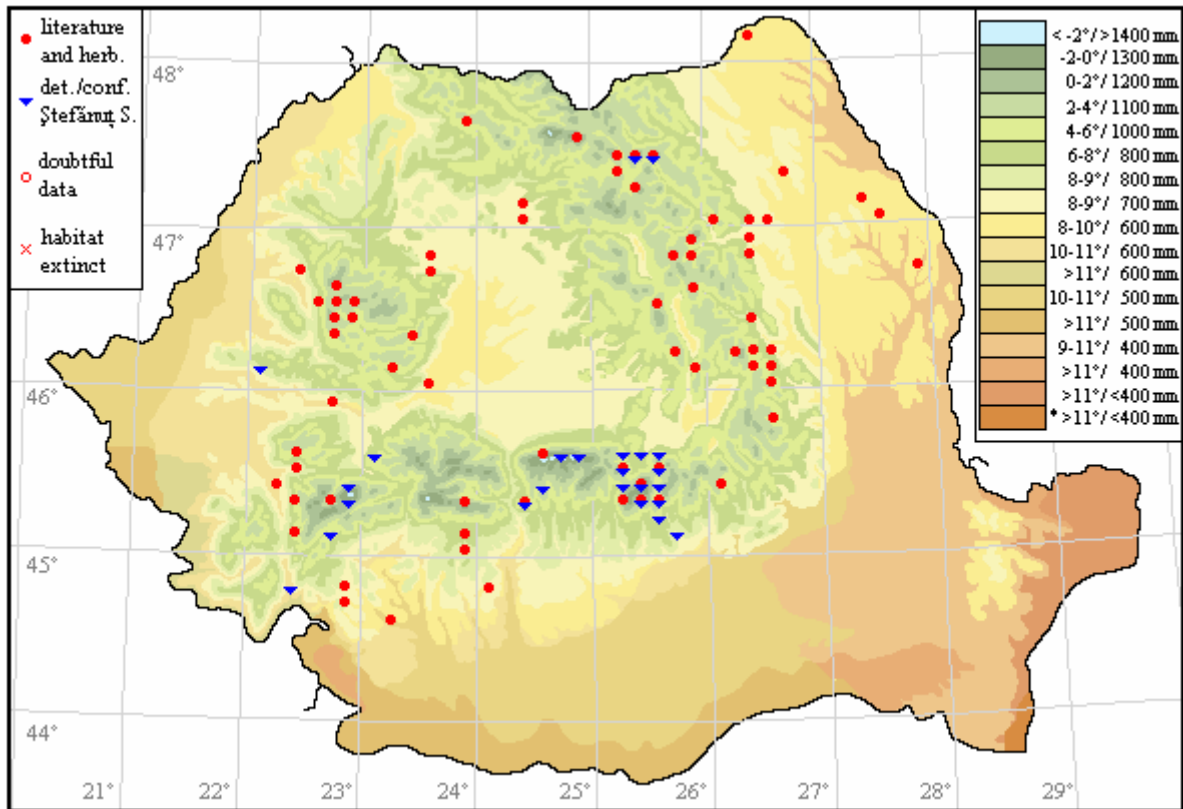


Fig. 159. Distribution of *Plagiochila porelloides* (Torrey ex Nees) Lindenb. in Romania.

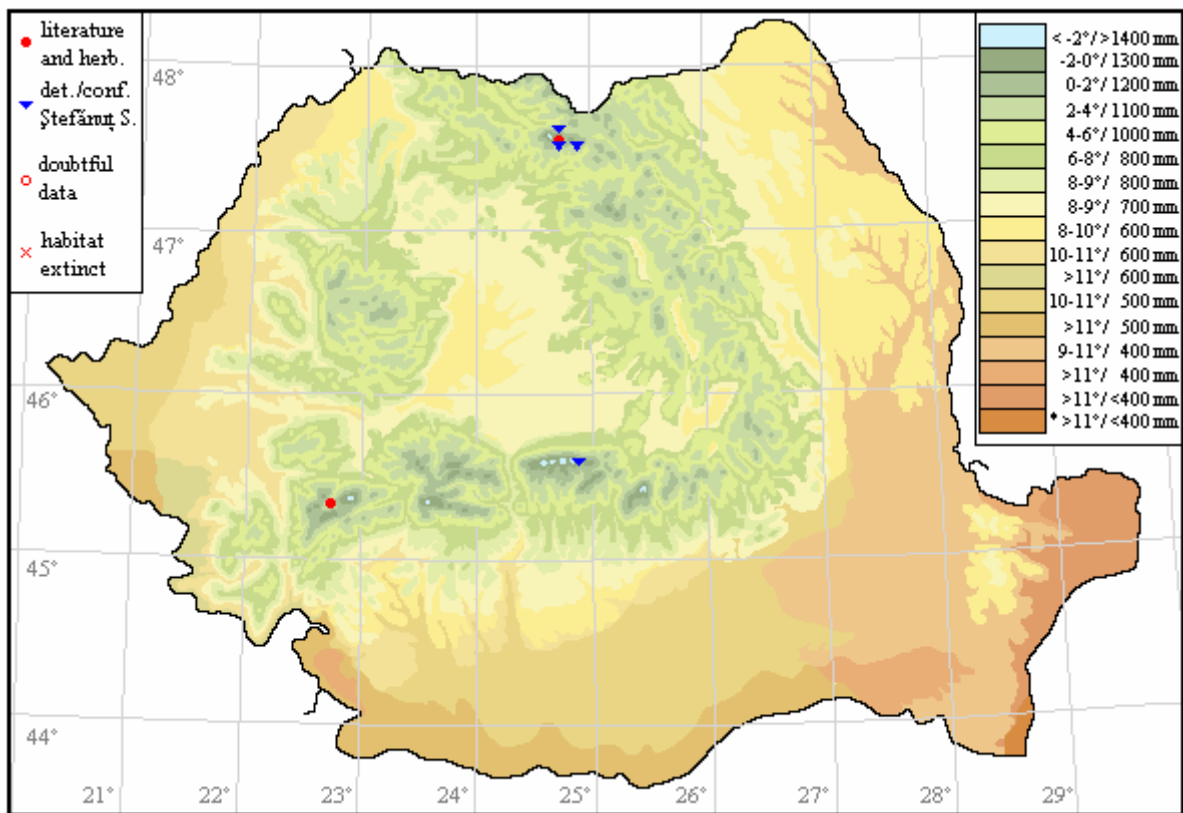


Fig. 160. Distribution of *Pleurocladula albescens* (Hook.) Grolle in Romania.

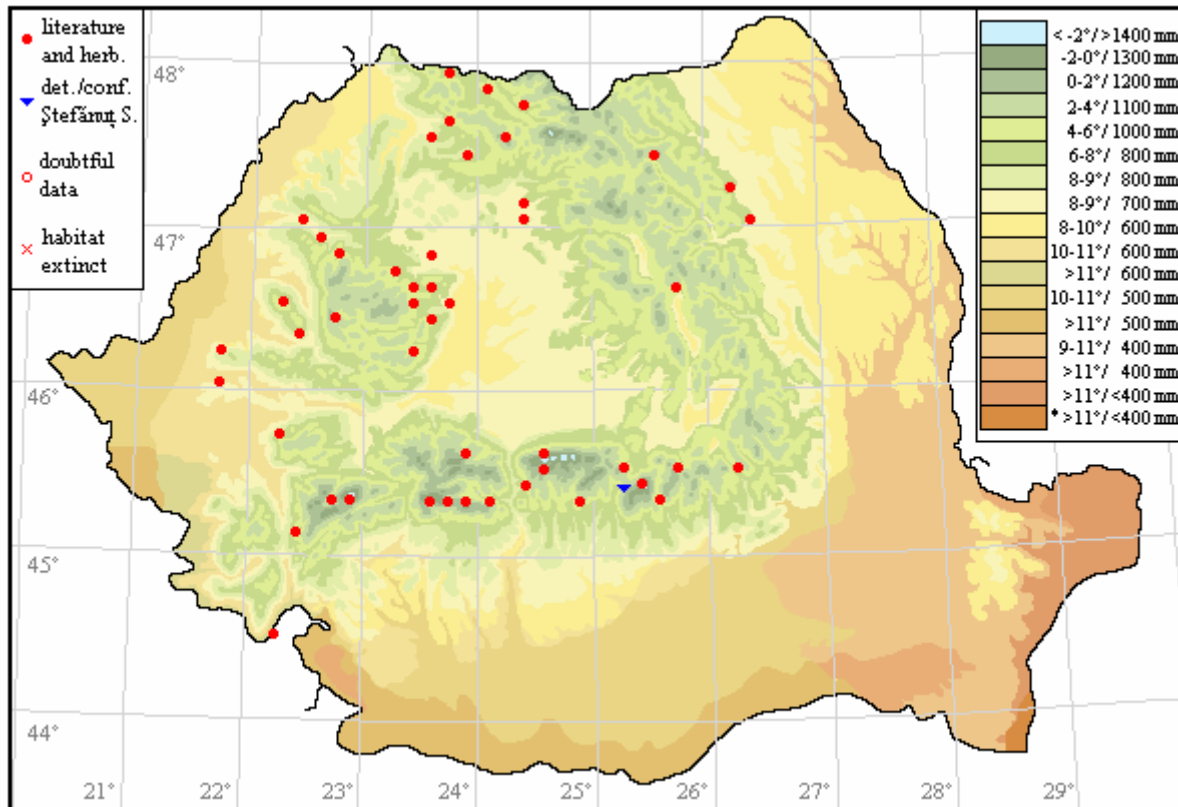


Fig. 161. Distribution of *Porella arboris-vitae* (With.) Grolle in Romania.

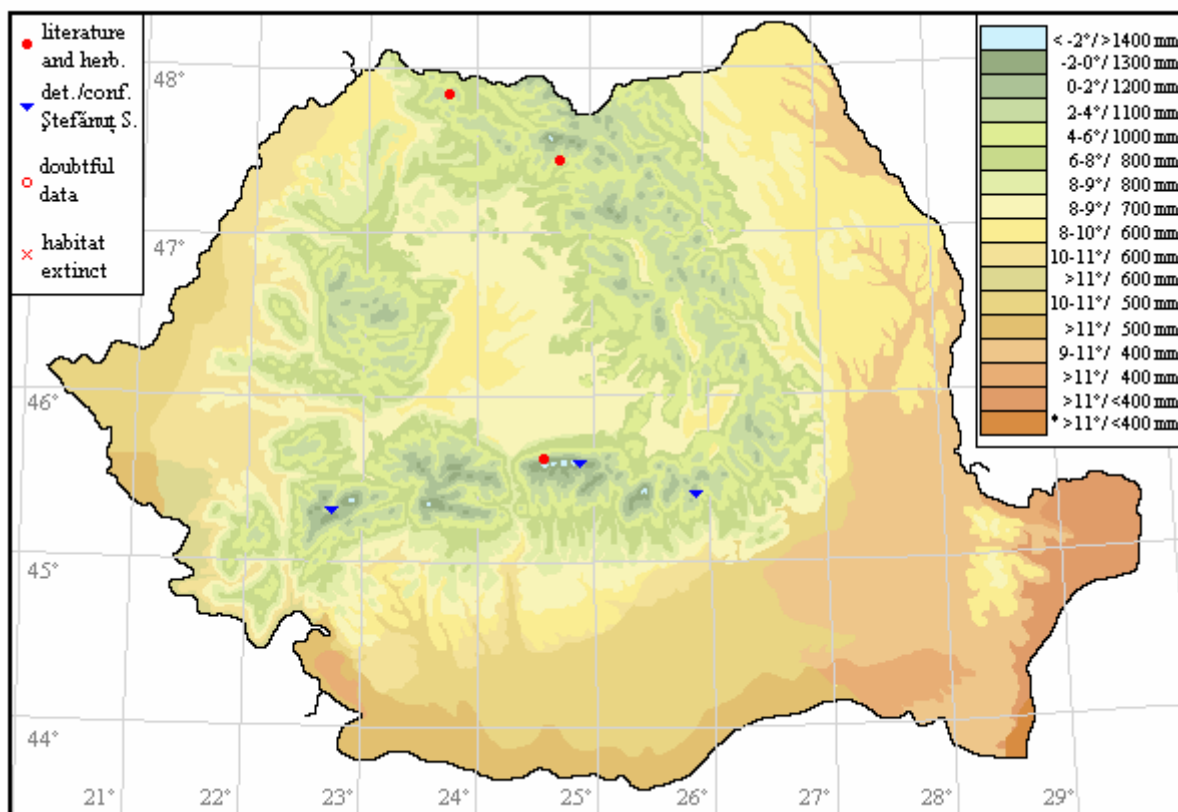


Fig. 162. Distribution of *Porella cordaeana* (Huebener) Moore in Romania.

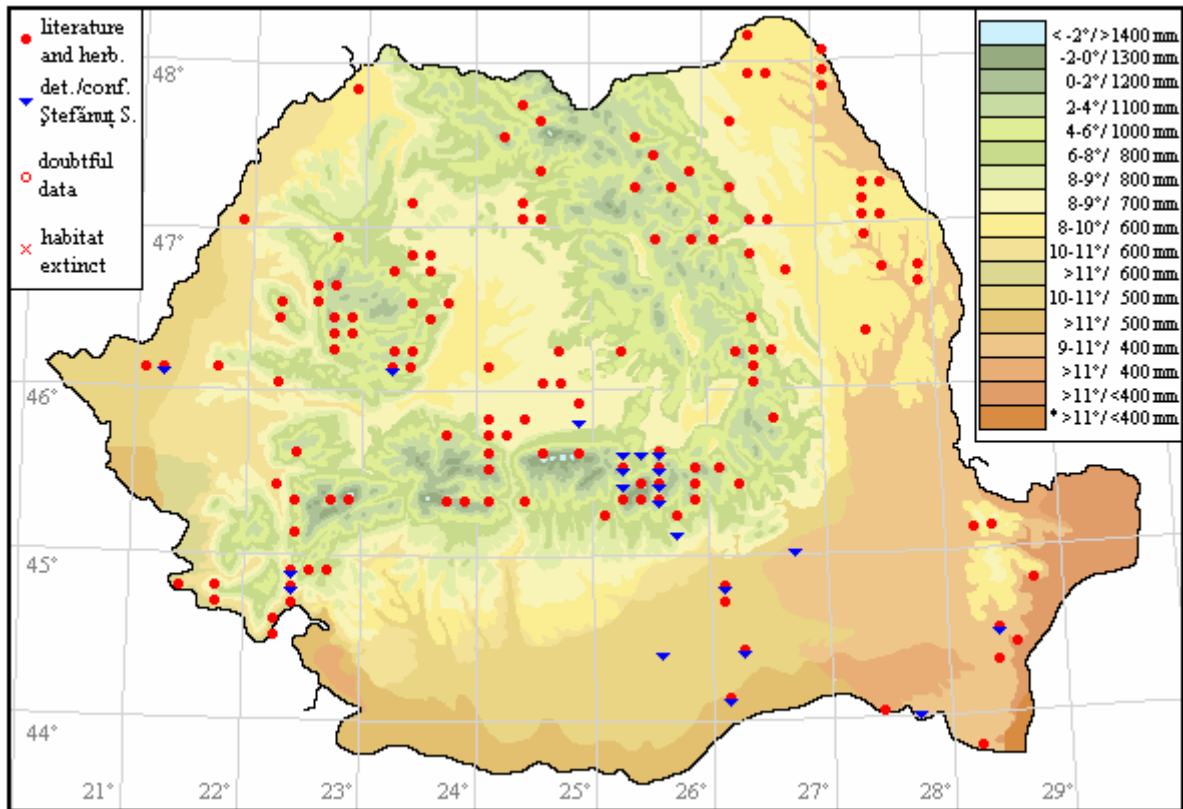


Fig. 163. Distribution of *Porella platyphylla* (L.) Pfeiff. in Romania.

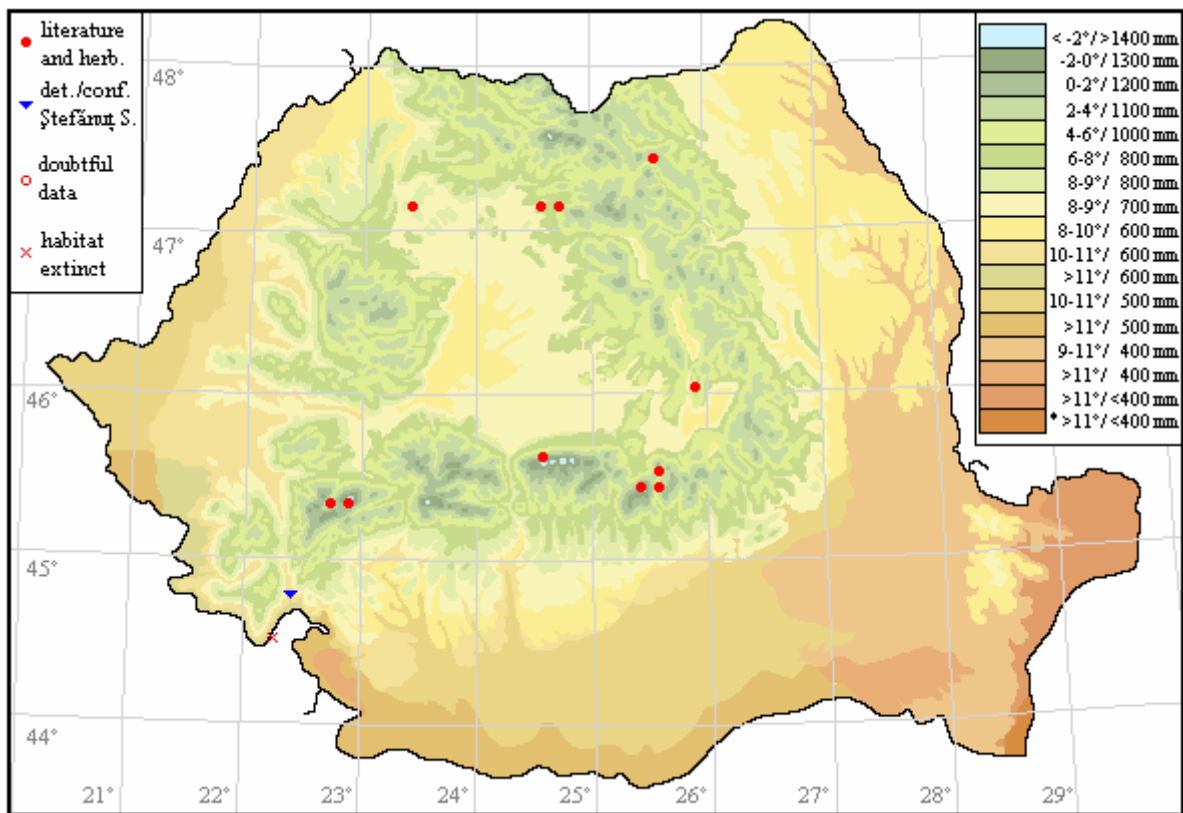


Fig. 164. Distribution of *Porella x baueri* (Schiffn.) C.E.O. Jensen in Romania.

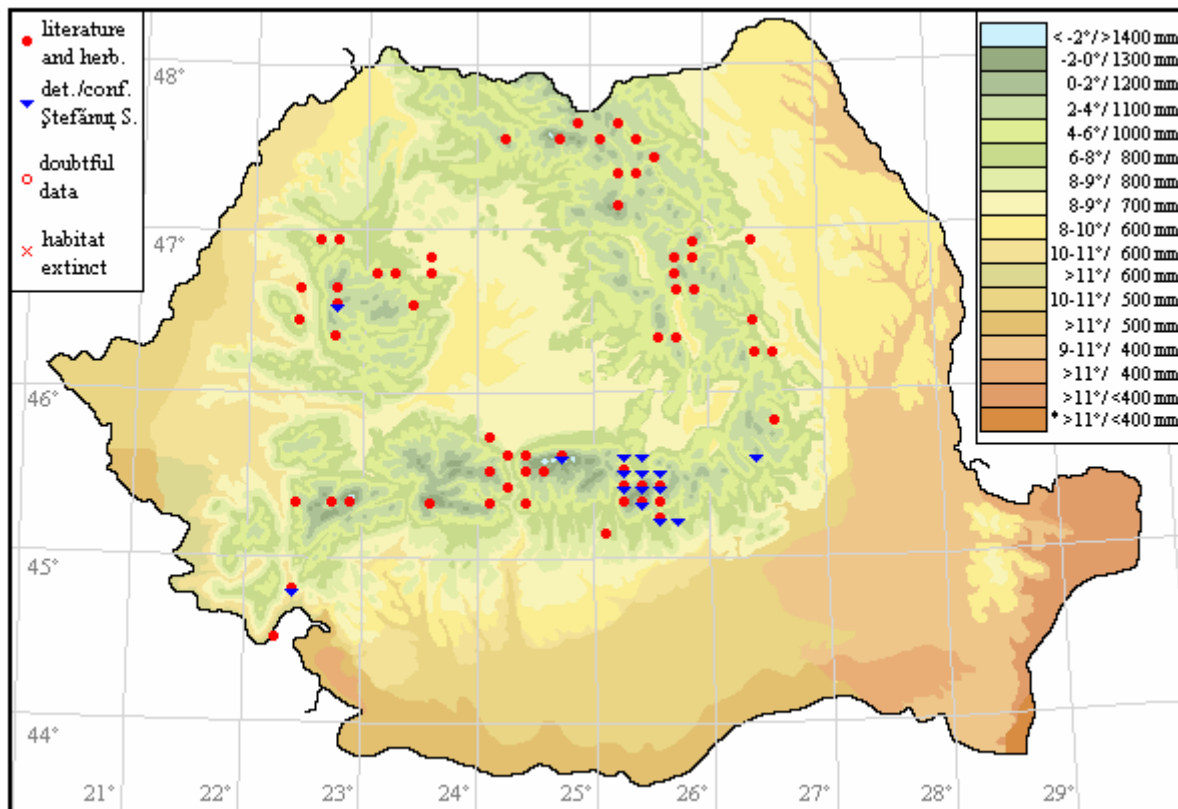


Fig. 165. Distribution of *Preissia quadrata* (Scop.) Nees in Romania.

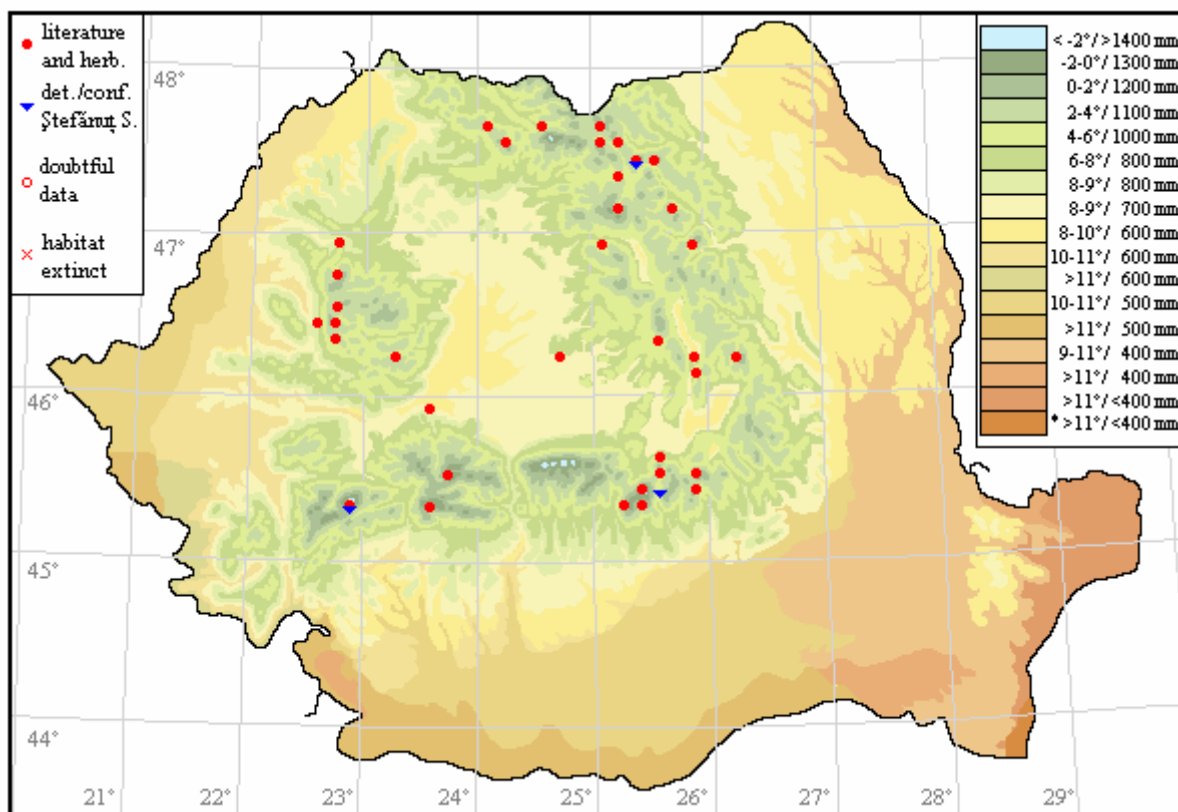


Fig. 166. Distribution of *Ptilidium ciliare* (L.) Hampe in Romania.

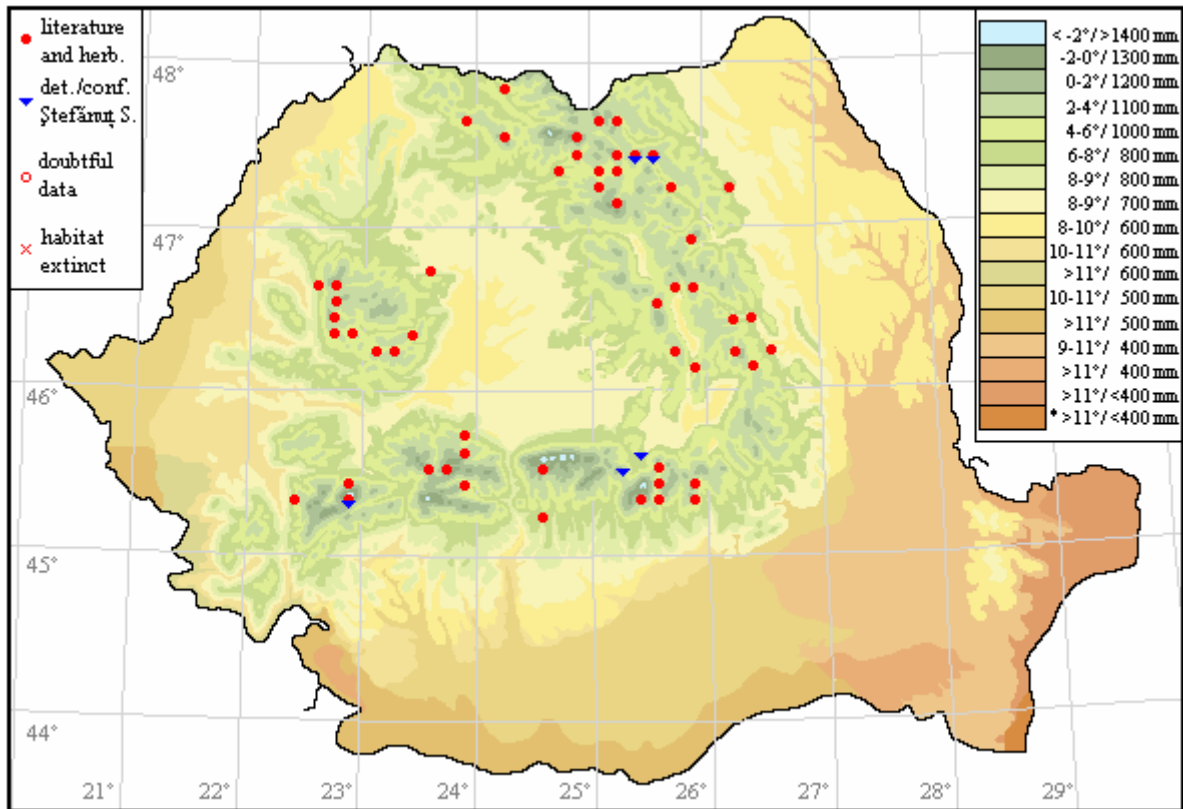


Fig. 167. Distribution of *Ptilidium pulcherrimum* (Weber) Vanio in Romania.

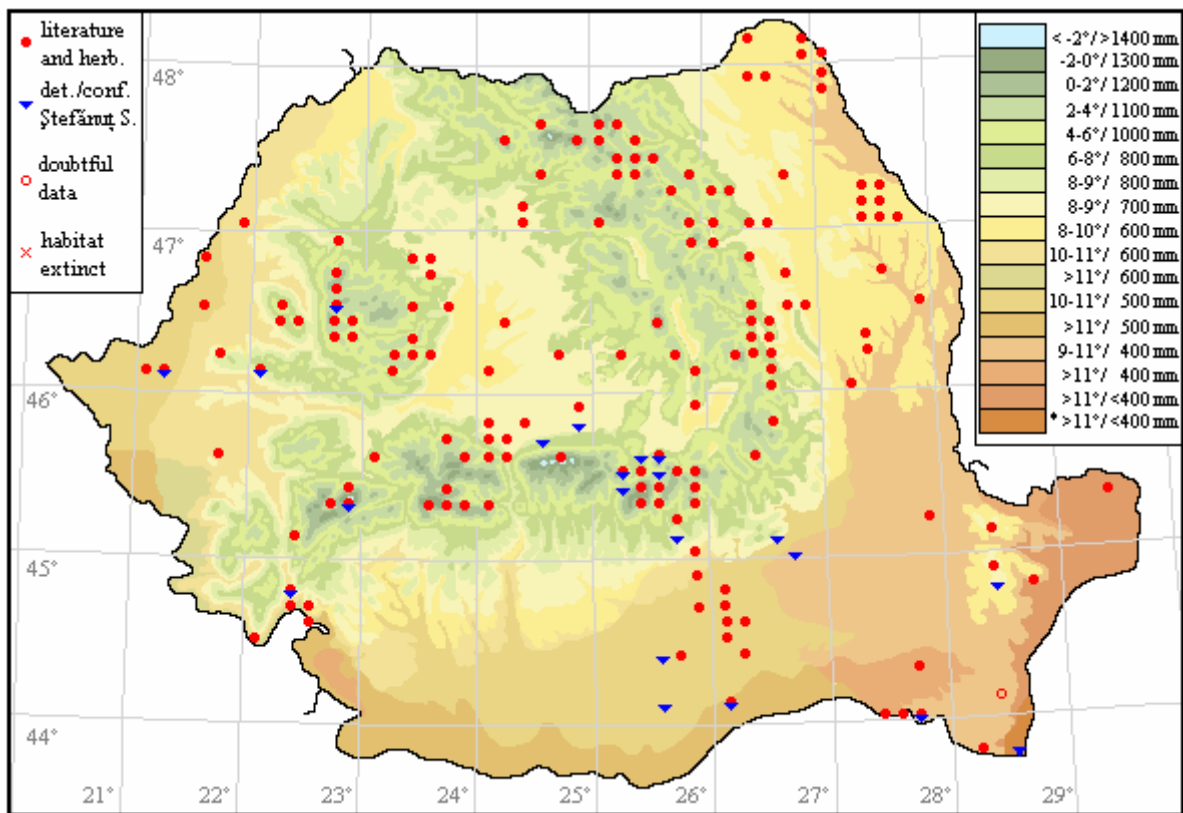


Fig. 168. Distribution of *Radula complanata* (L.) Dumort. in Romania.

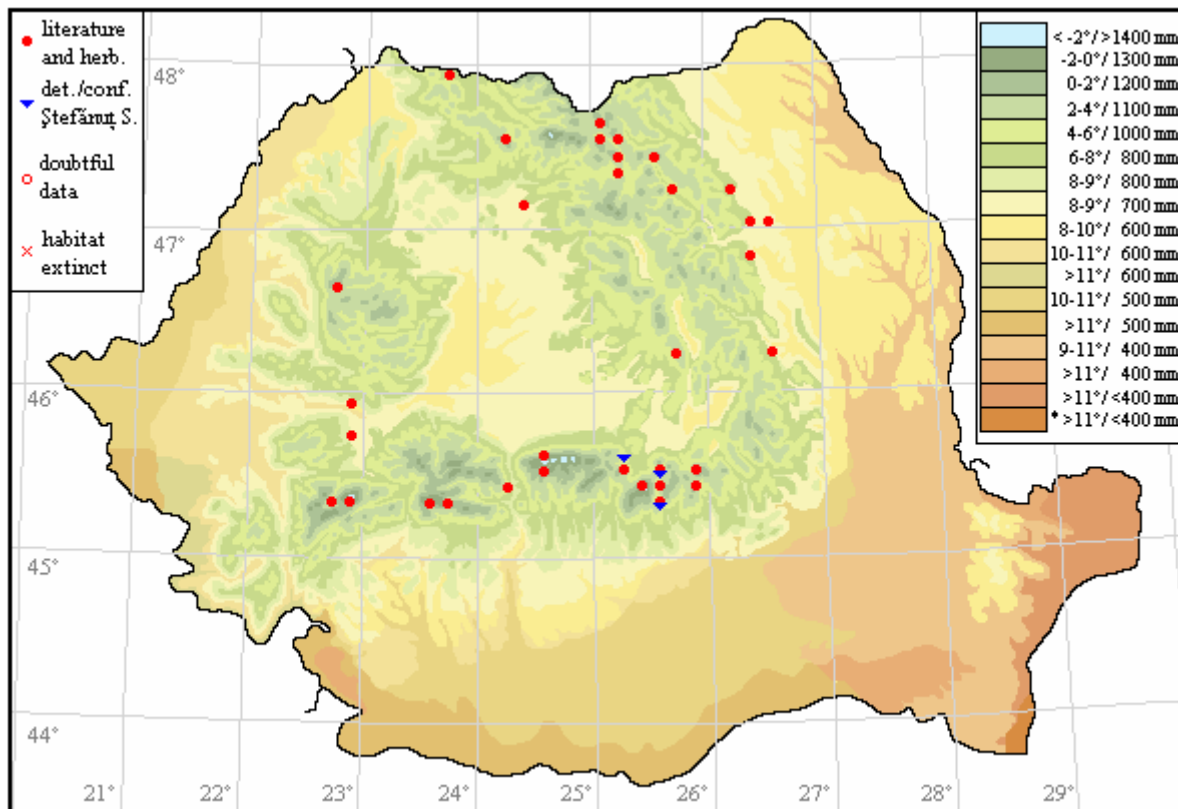


Fig. 169. Distribution of *Radula lindenbergiana* Gottsche et C. Hartm. in Romania.

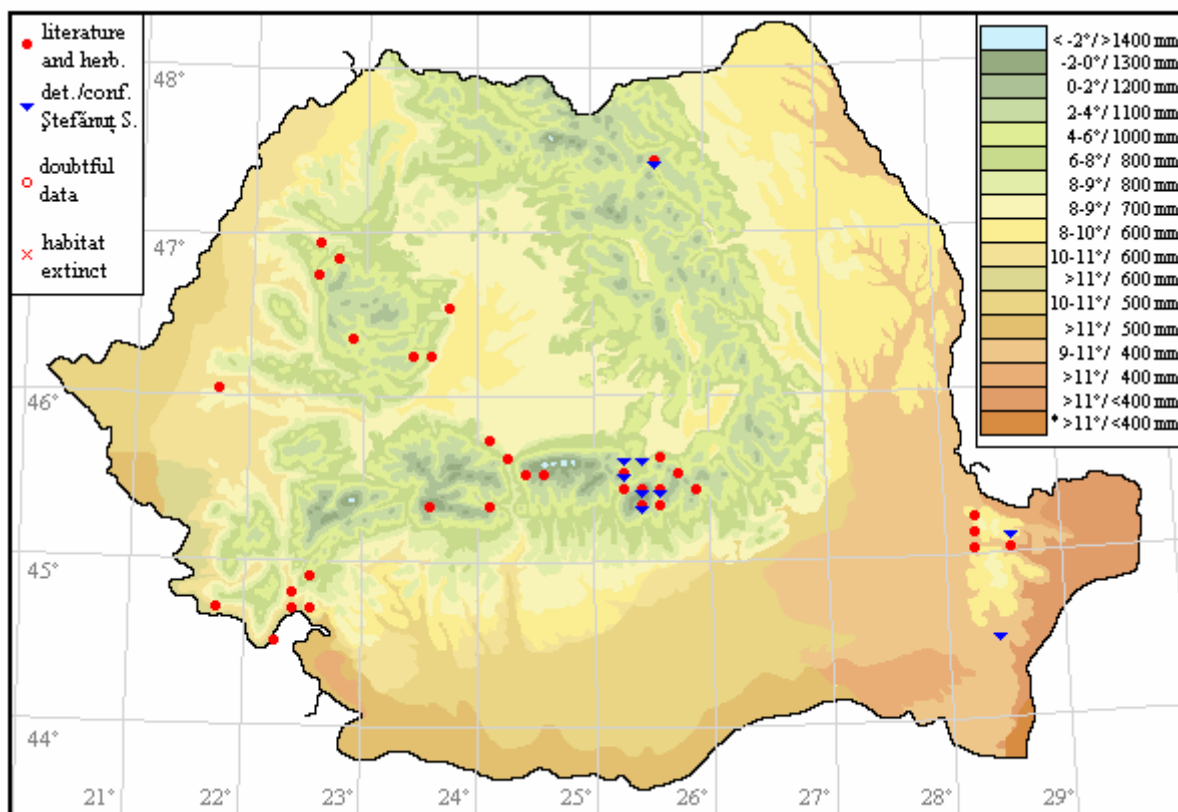


Fig. 170. Distribution of *Reboulia hemisphaerica* (L.) Raddi in Romania.

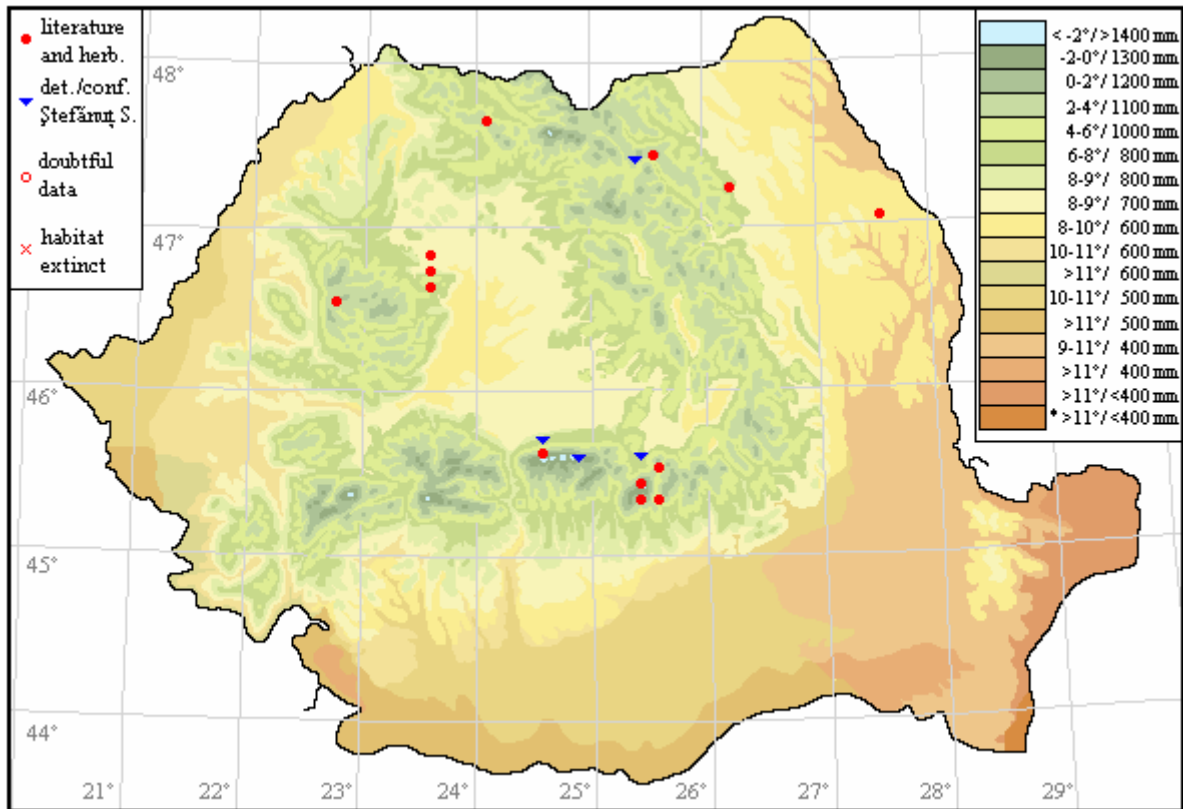


Fig. 171. Distribution of *Riccardia chamaedryfolia* (With.) Grolle in Romania.

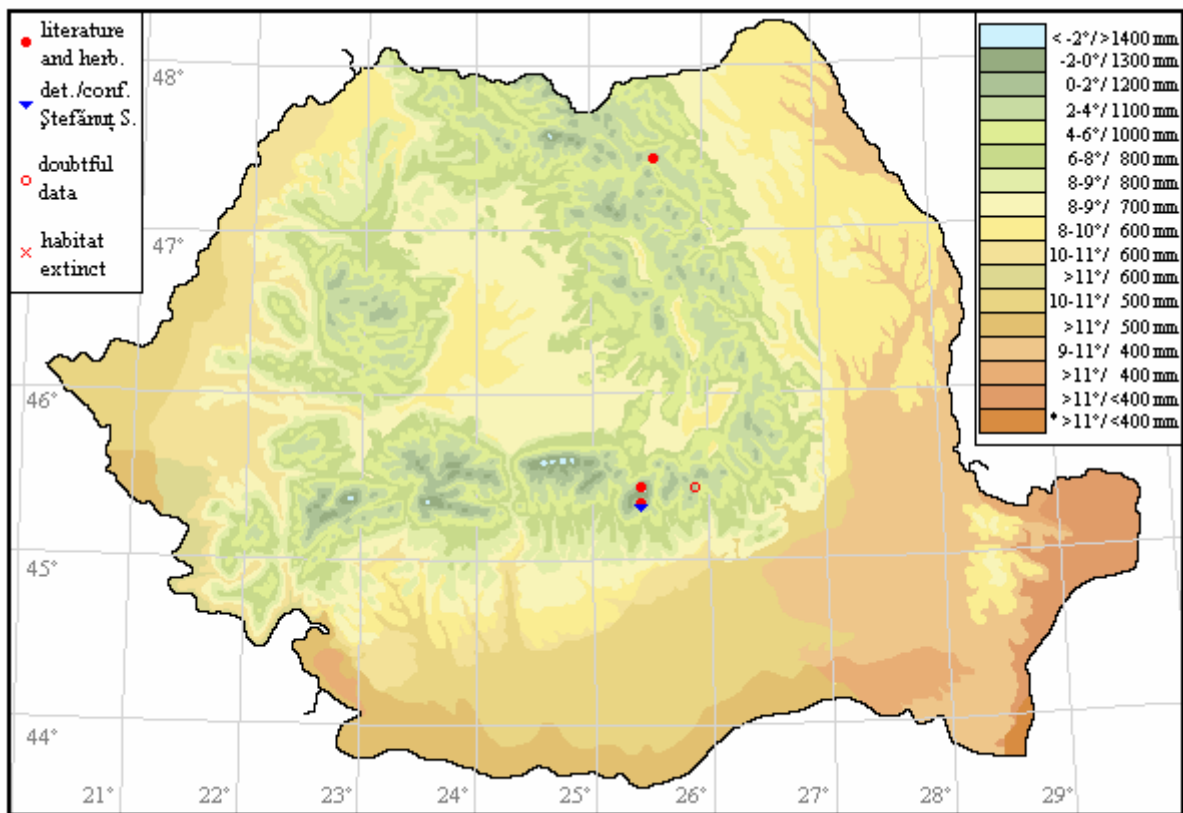


Fig. 172. Distribution of *Riccardia incurvata* Lindb. in Romania.

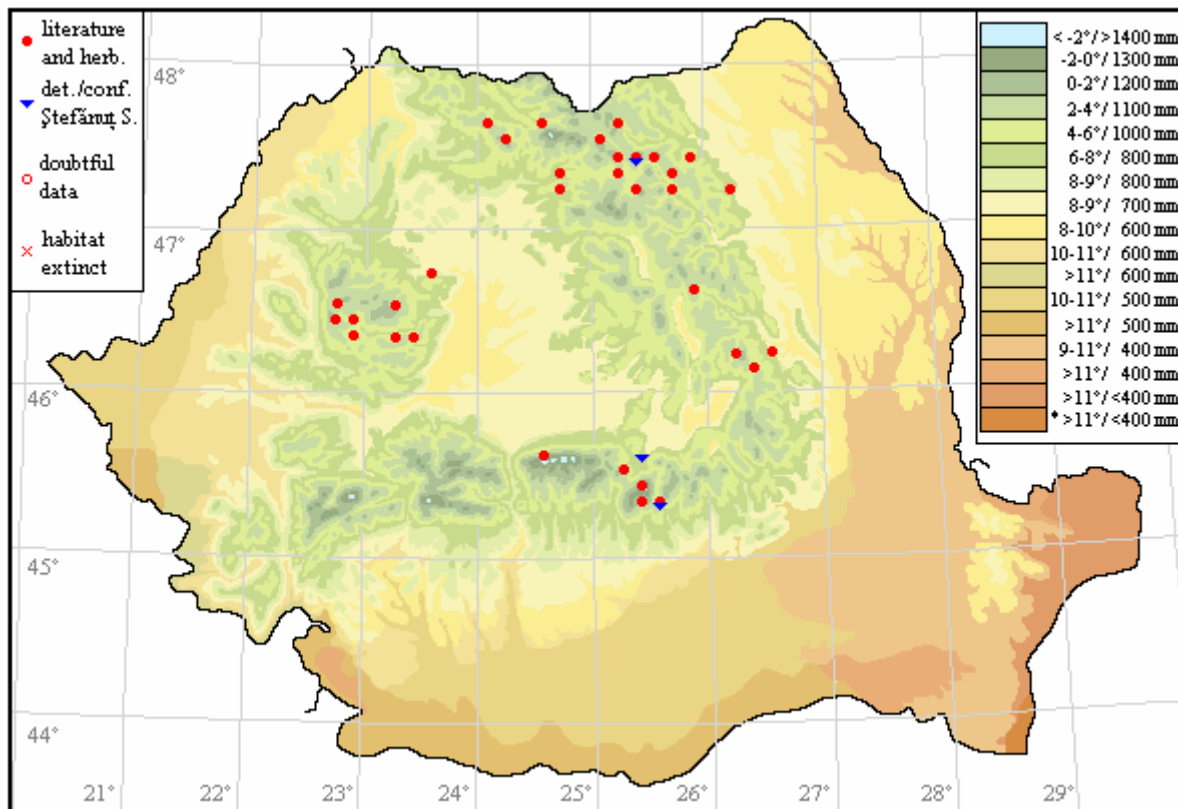


Fig. 173. Distribution of *Riccardia latifrons* (Lindb.) Lindb. in Romania.

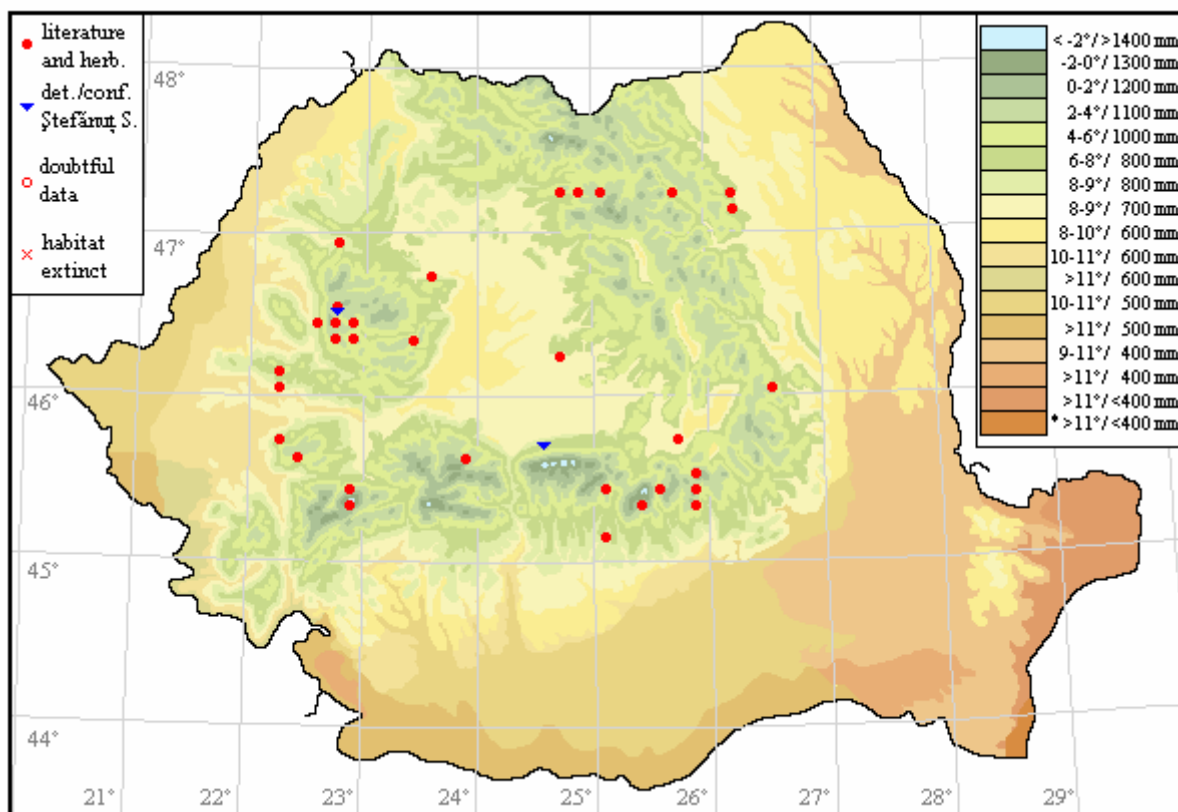


Fig. 174. Distribution of *Riccardia multifida* (L.) Gray in Romania.

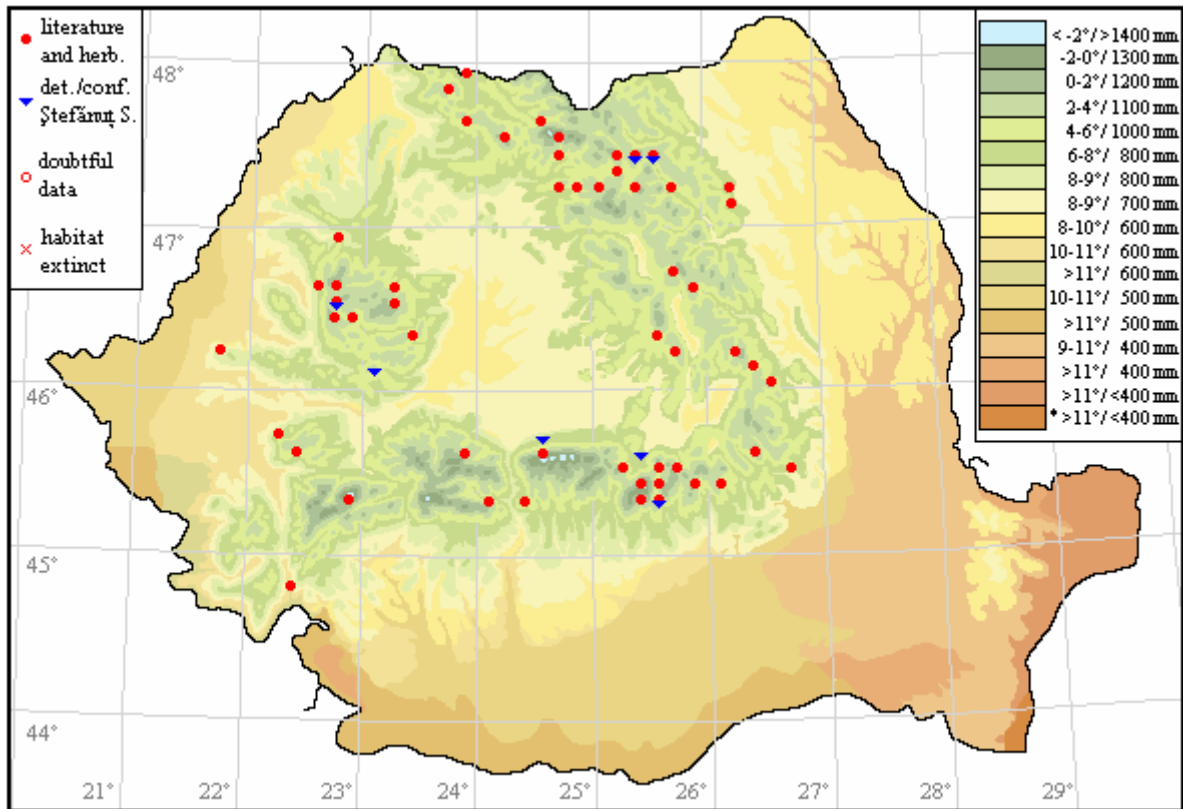


Fig. 175. Distribution of *Riccardia palmata* (Hedw.) Carruth. in Romania.

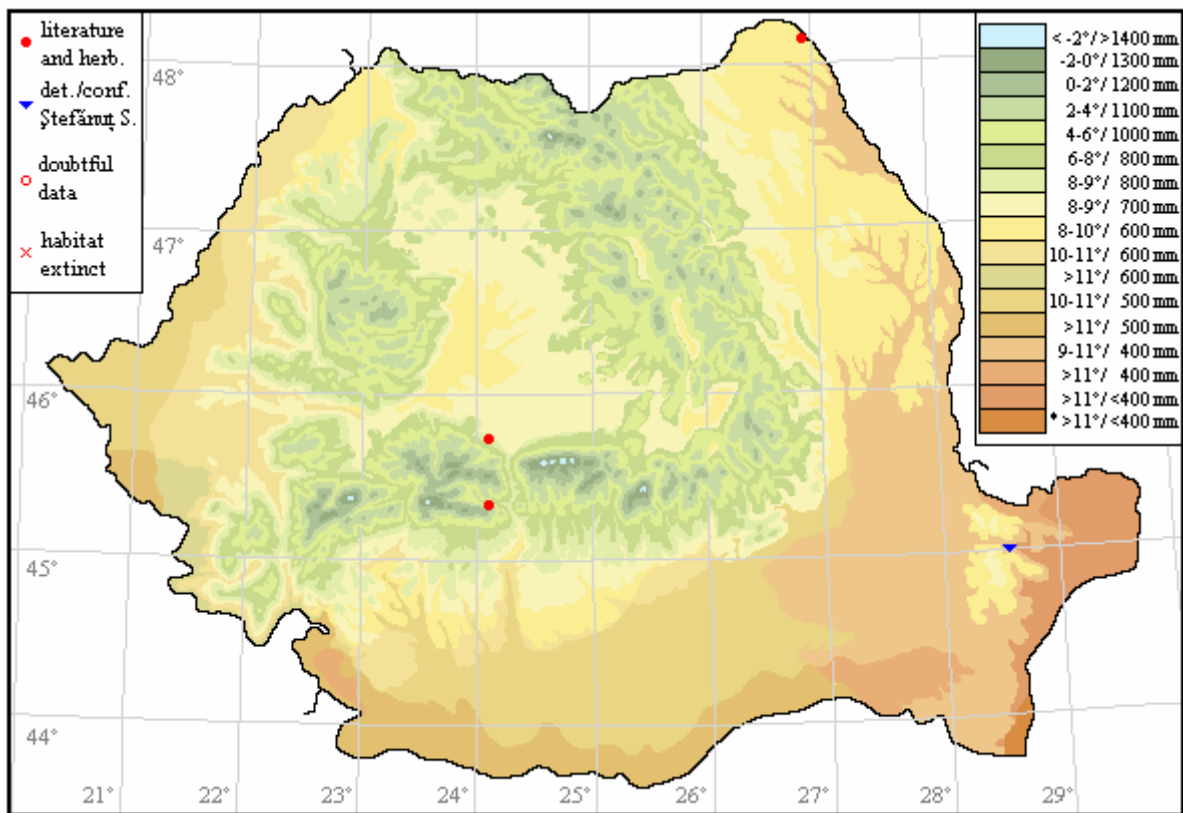


Fig. 176. Distribution of *Riccia bifurca* Hoffm. in Romania.

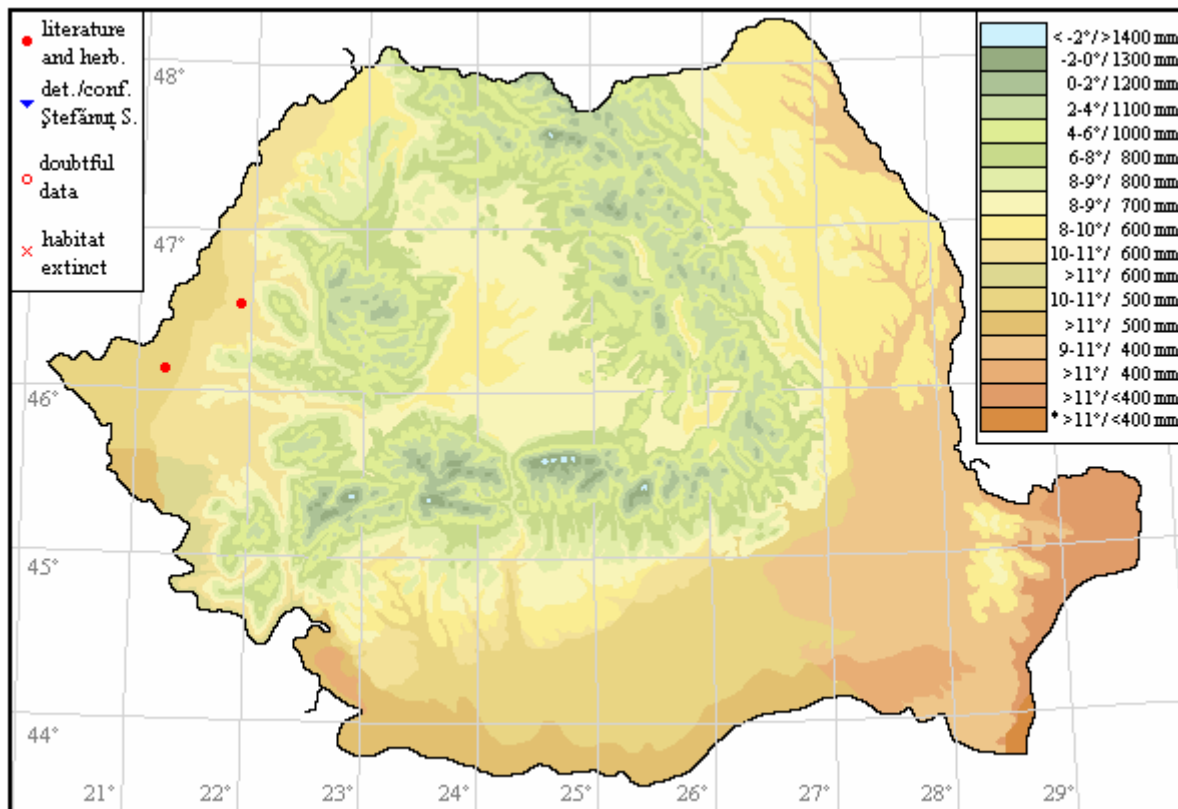


Fig. 177. Distribution of *Riccia canaliculata* Hoffm. in Romania.

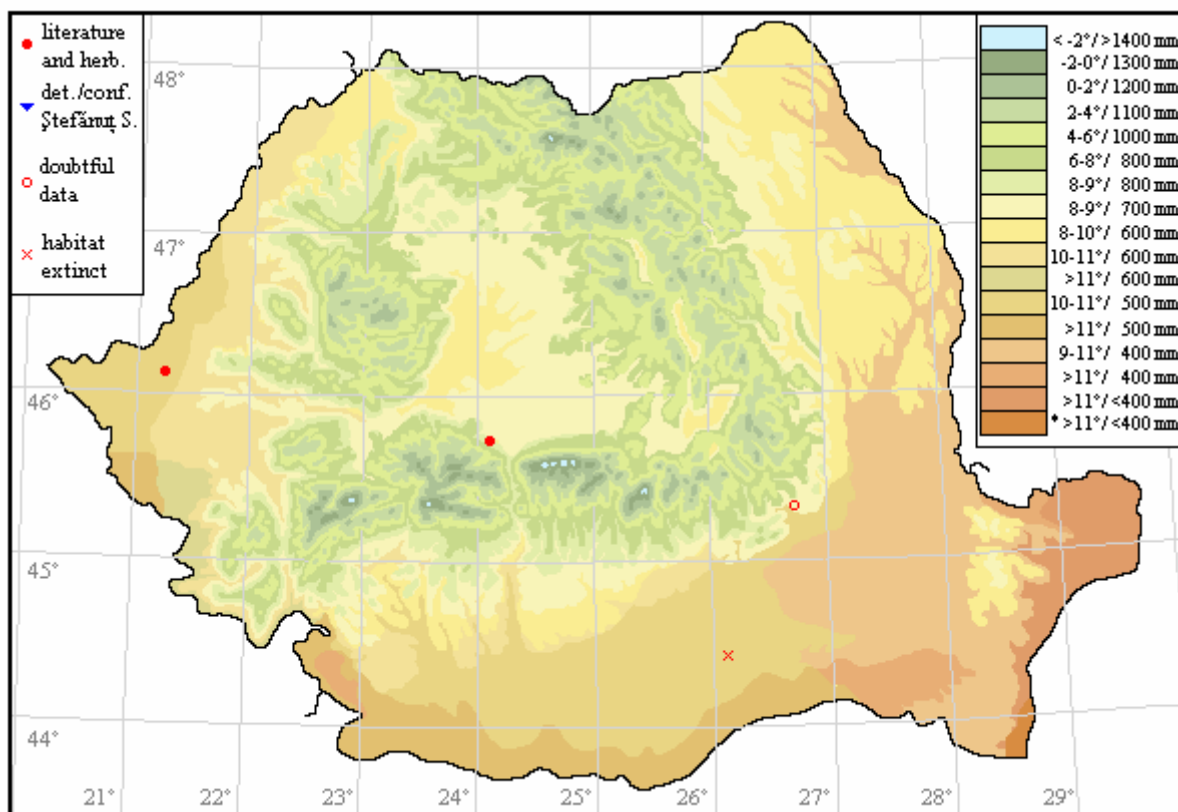


Fig. 178. Distribution of *Riccia cavernosa* Hoffm. in Romania.

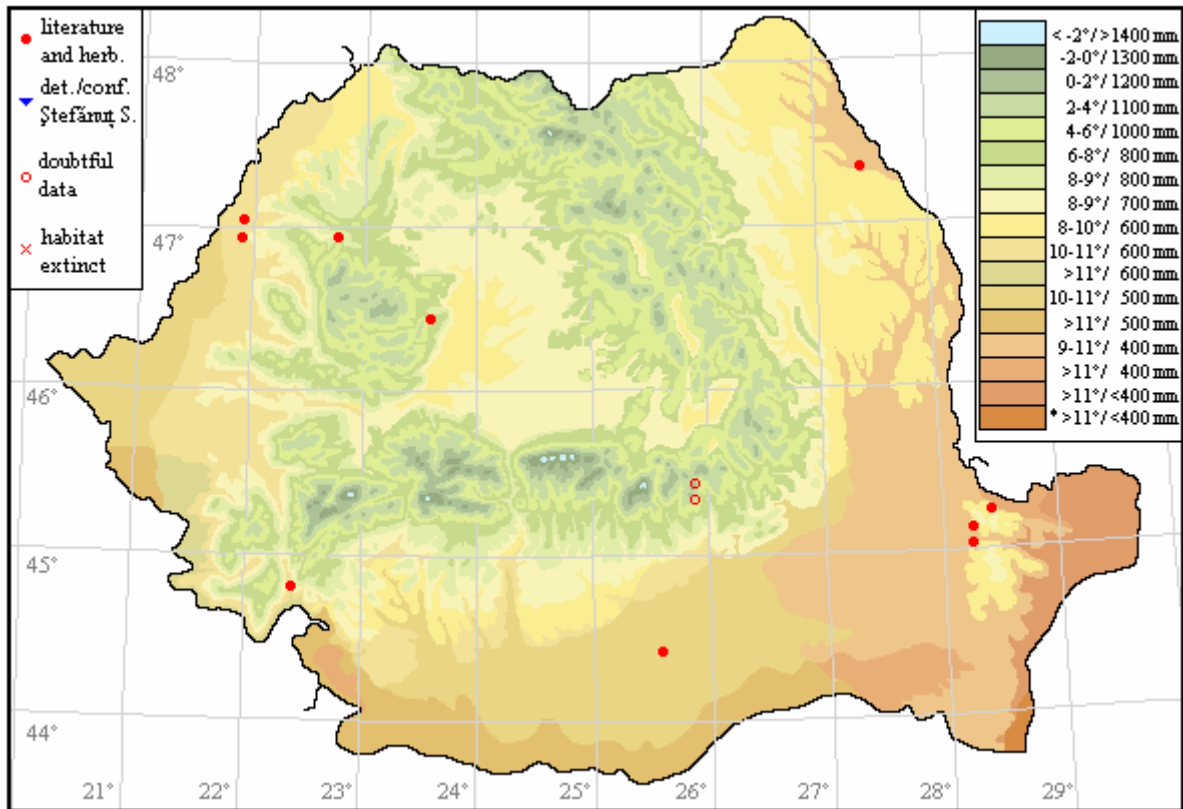


Fig. 179. Distribution of *Riccia ciliata* Hoffm. in Romania.

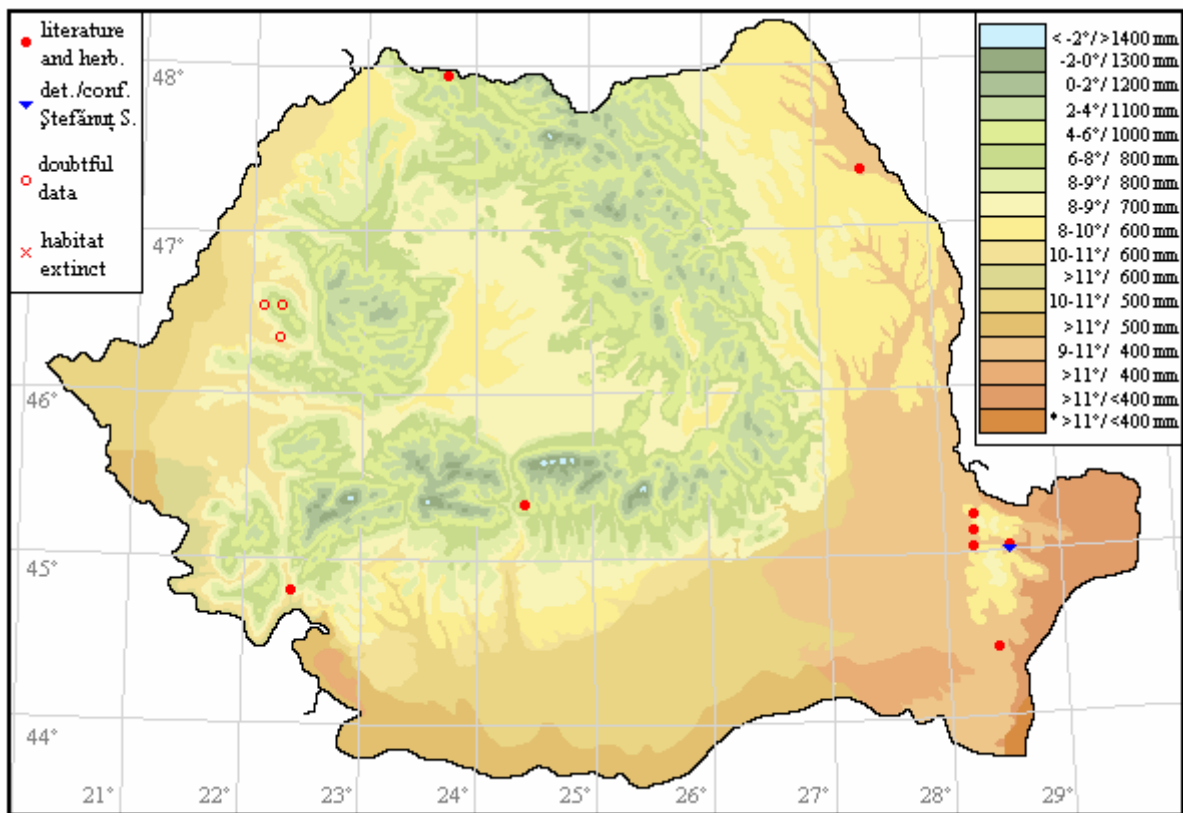


Fig. 180. Distribution of *Riccia ciliifera* Link ex Lindenb. in Romania.

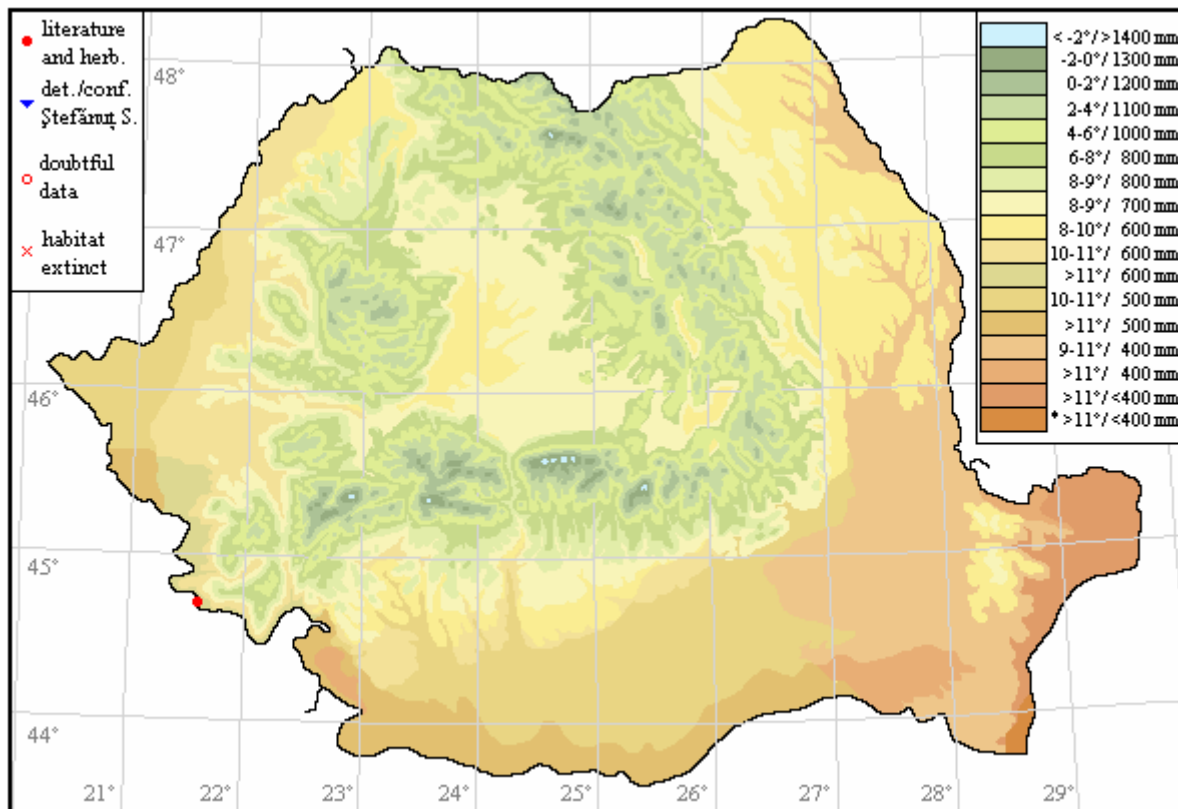


Fig. 181. Distribution of *Riccia crystallina* L. emend. Raddi in Romania.

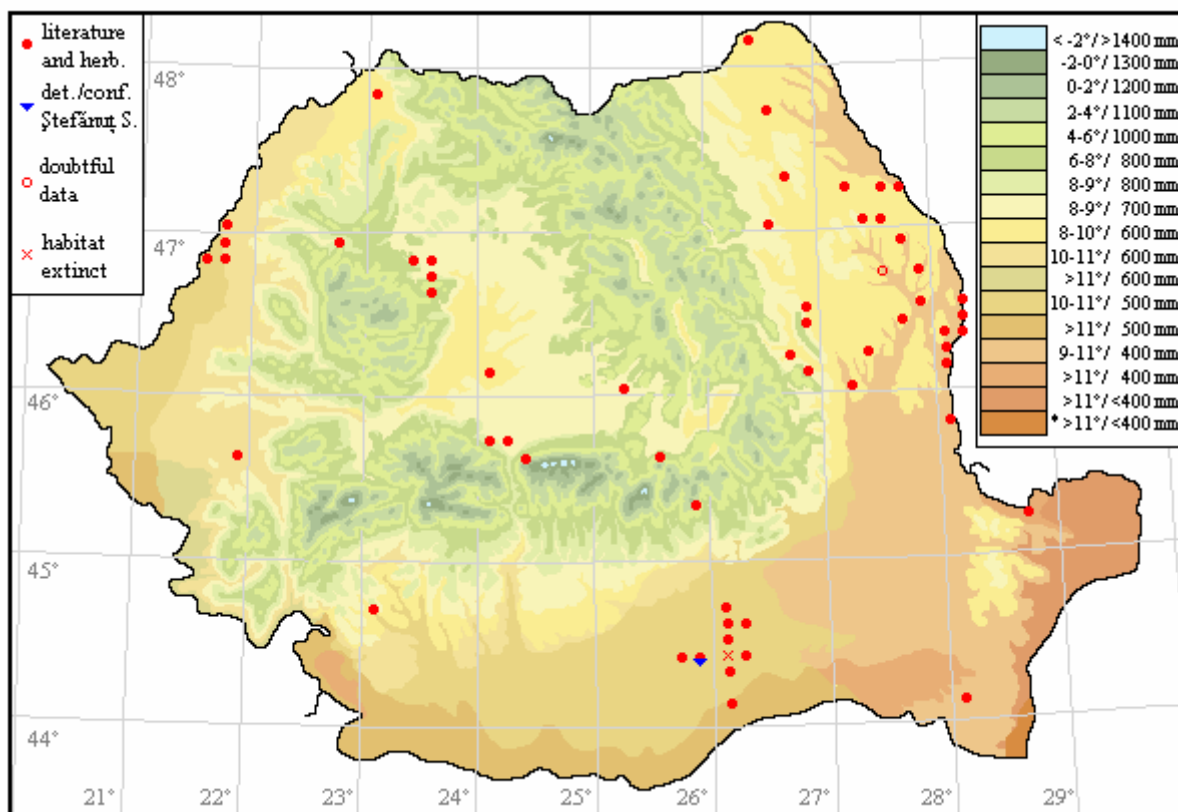


Fig. 182. Distribution of *Riccia fluitans* L. in Romania.

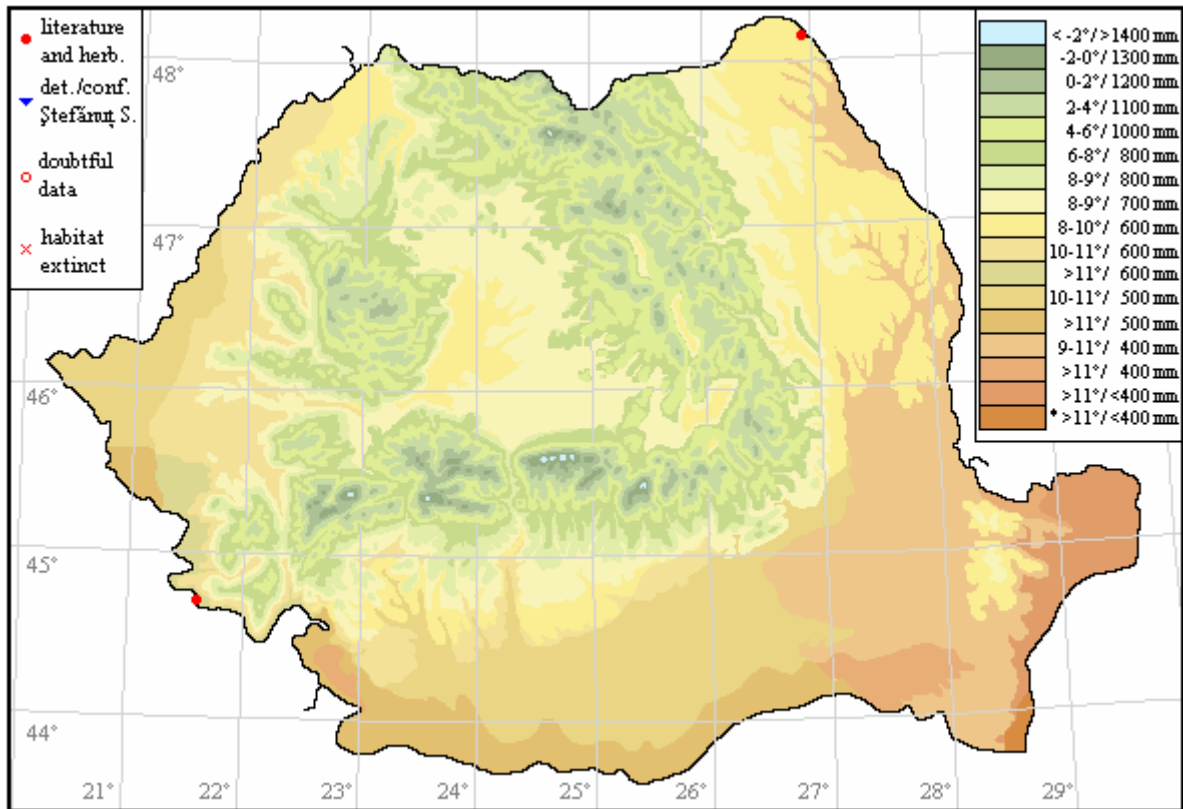


Fig. 183. Distribution of *Riccia frostii* Austin in Romania.

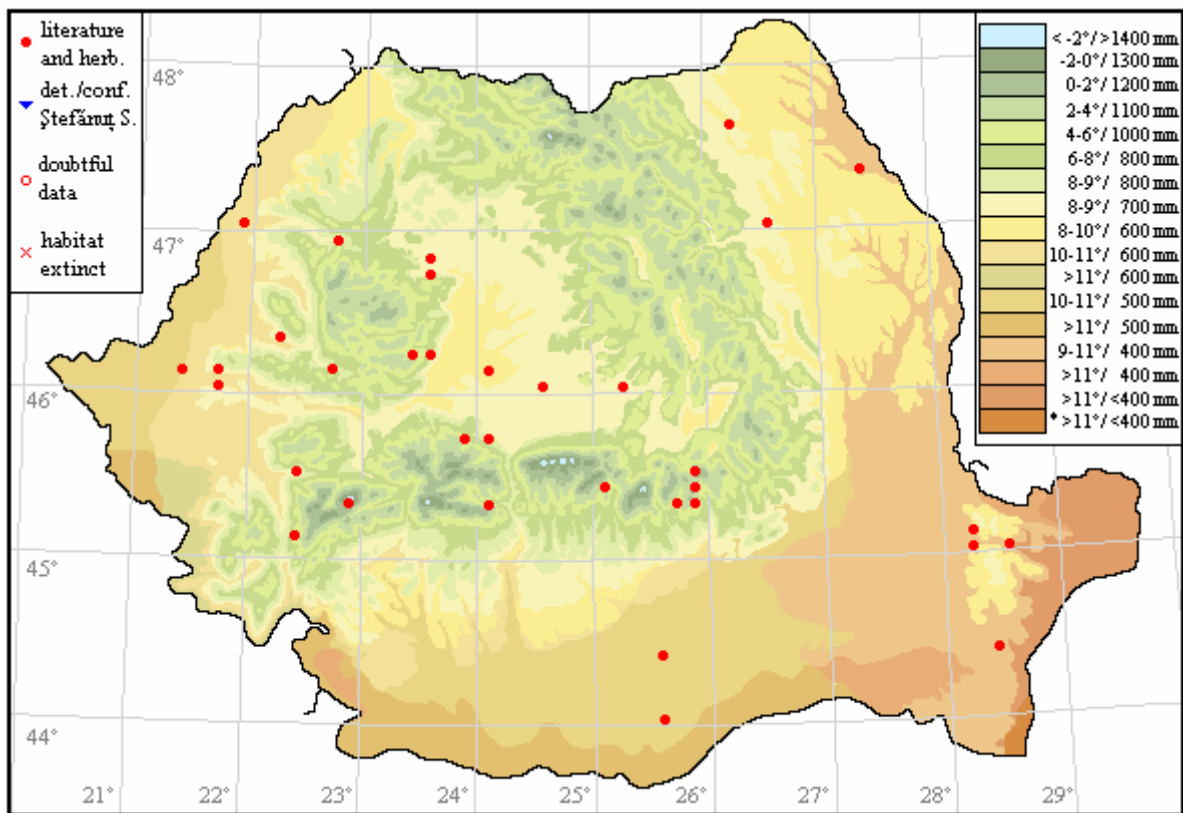


Fig. 184. Distribution of *Riccia glauca* L. in Romania.

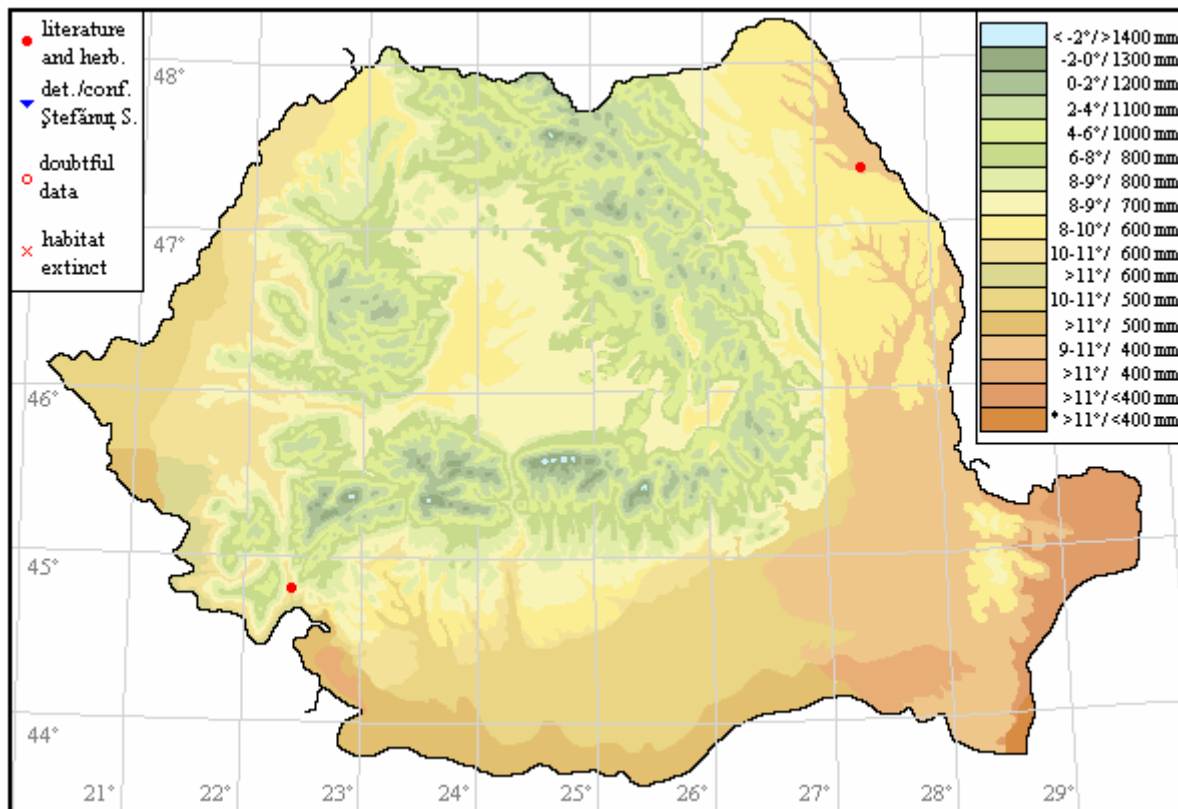


Fig. 185. Distribution of *Riccia gougetiana* Durieu et Mont. in Romania.

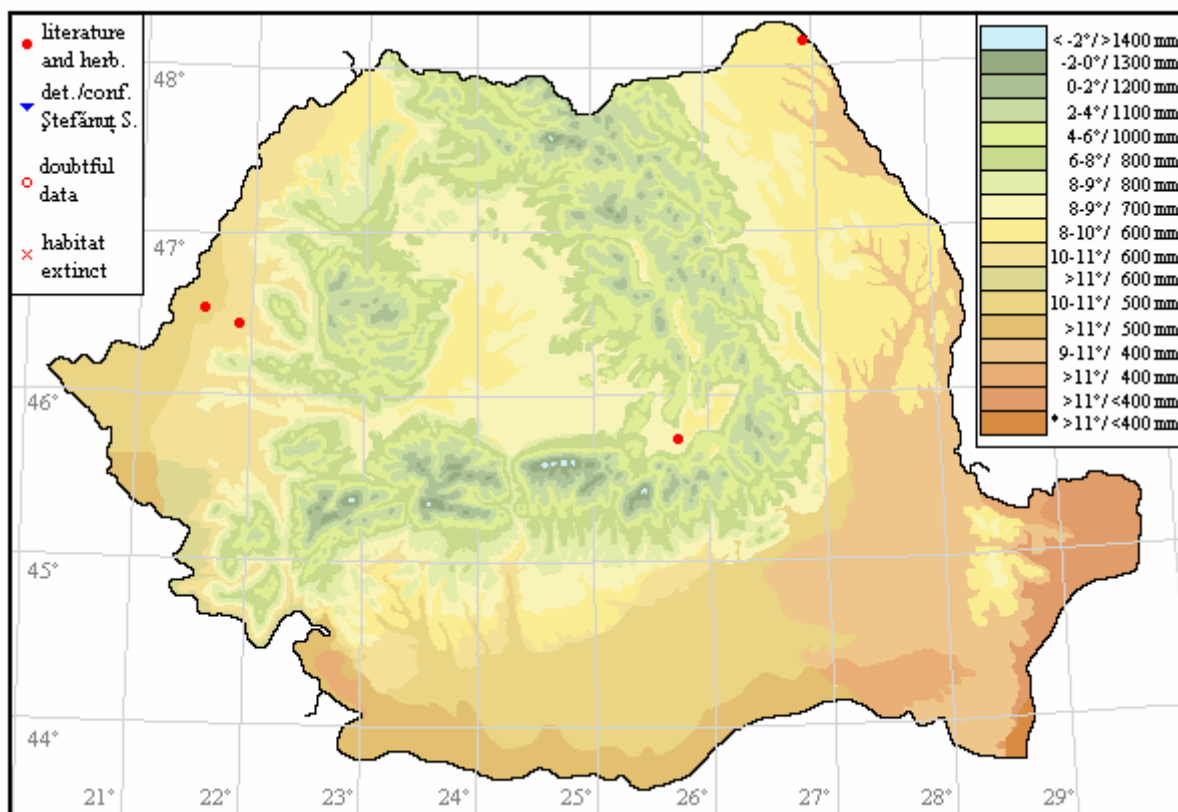


Fig. 186. Distribution of *Riccia papillosa* Moris in Romania.

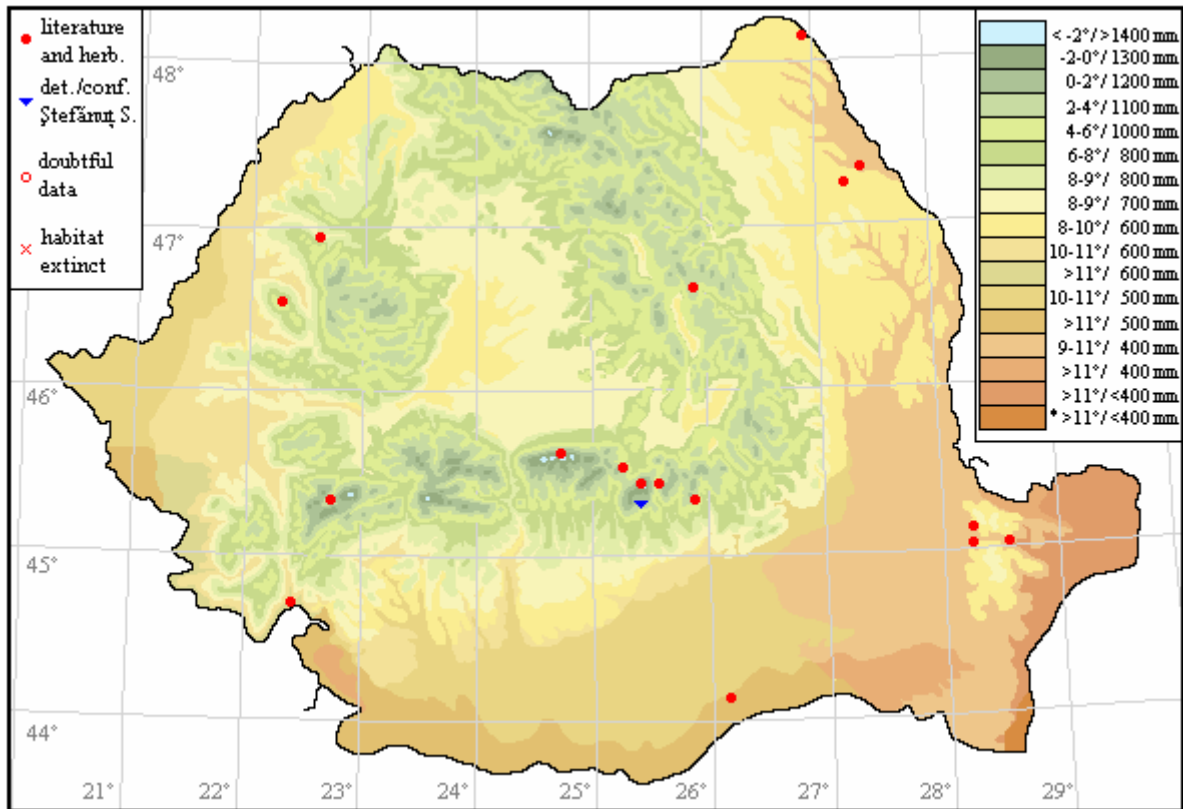


Fig. 187. Distribution of *Riccia sorocarpa* Bisch. in Romania.

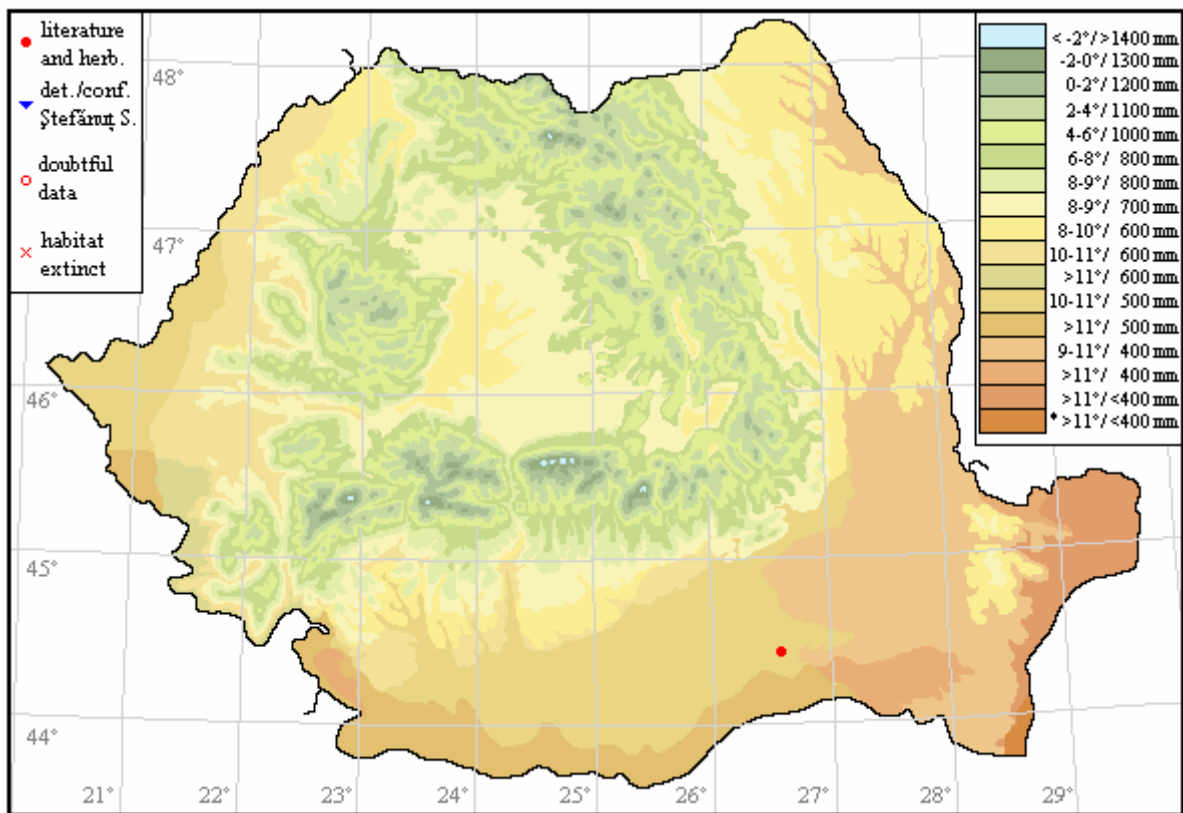


Fig. 188. Distribution of *Riccia warnstorffii* Limpr. ex Warnst. in Romania.

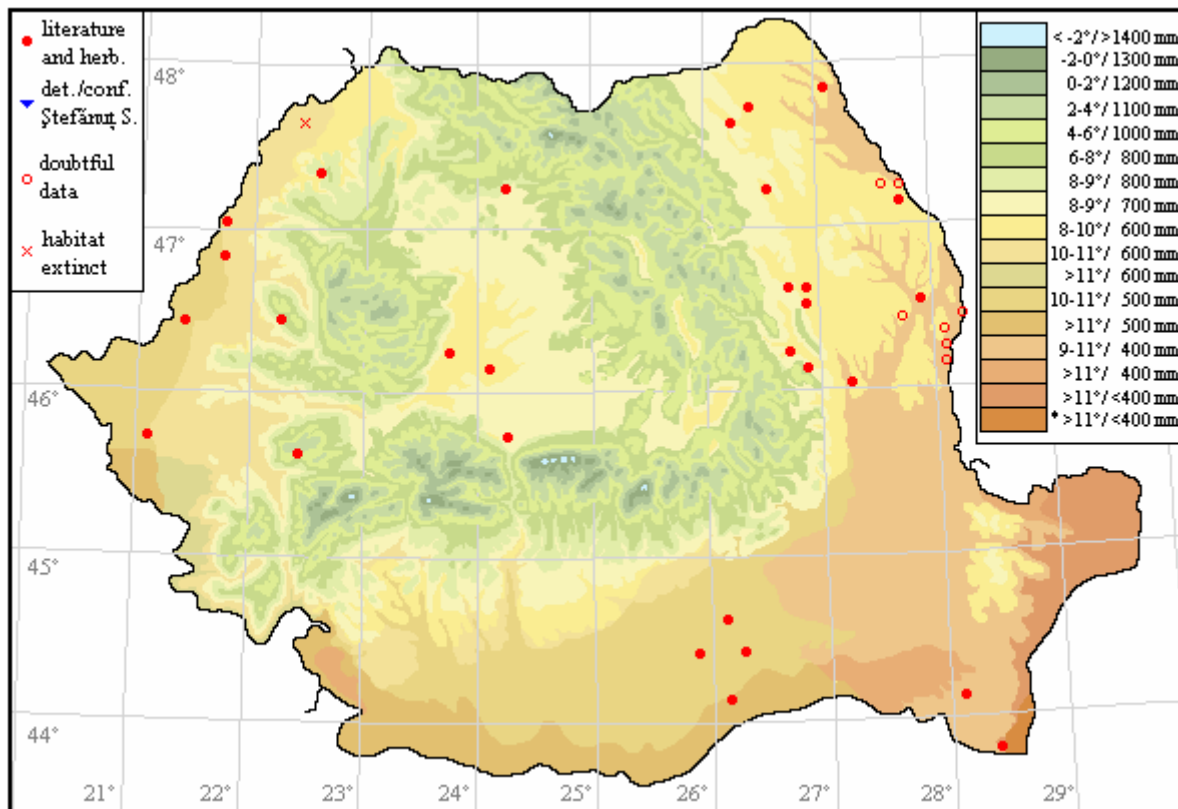


Fig. 189. Distribution of *Ricciocarpus natans* (L.) Corda in Romania.

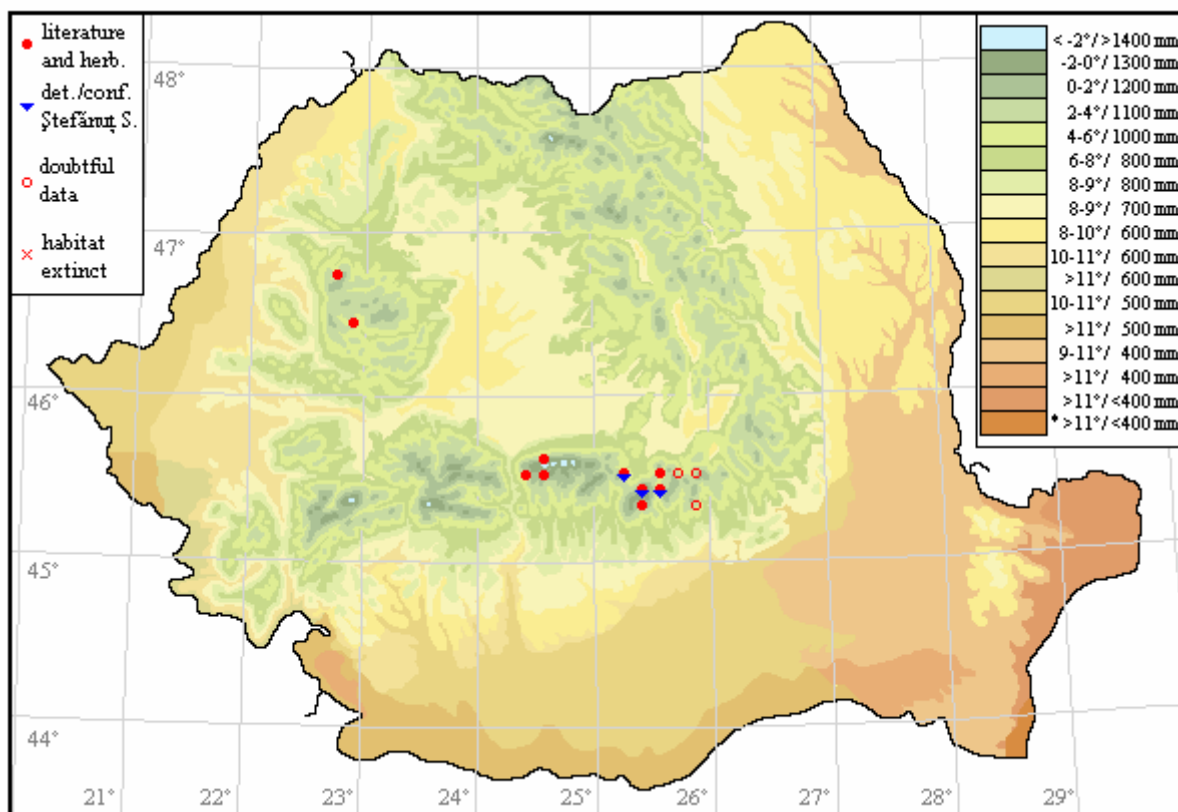


Fig. 190. Distribution of *Sauteria alpina* (Nees) Nees in Romania.

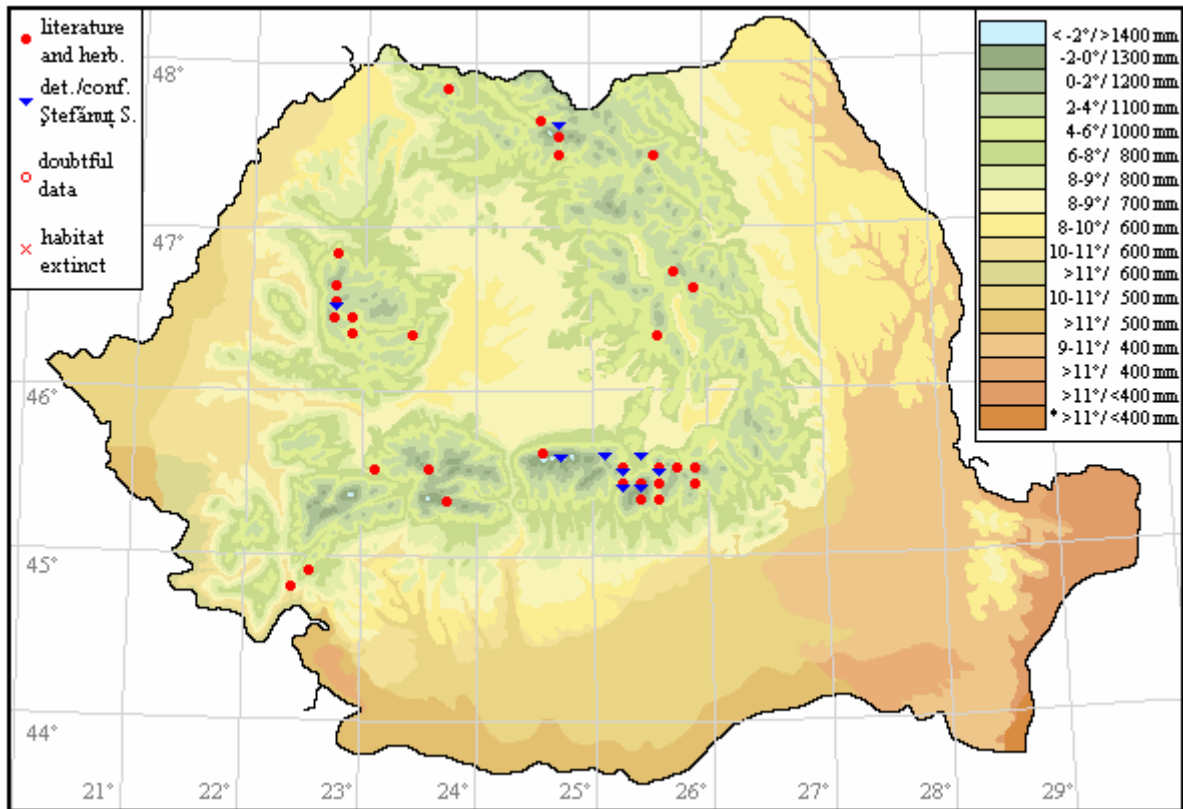


Fig. 191. Distribution of *Scapania aequiloba* (Schwäger.) Dumort. in Romania.

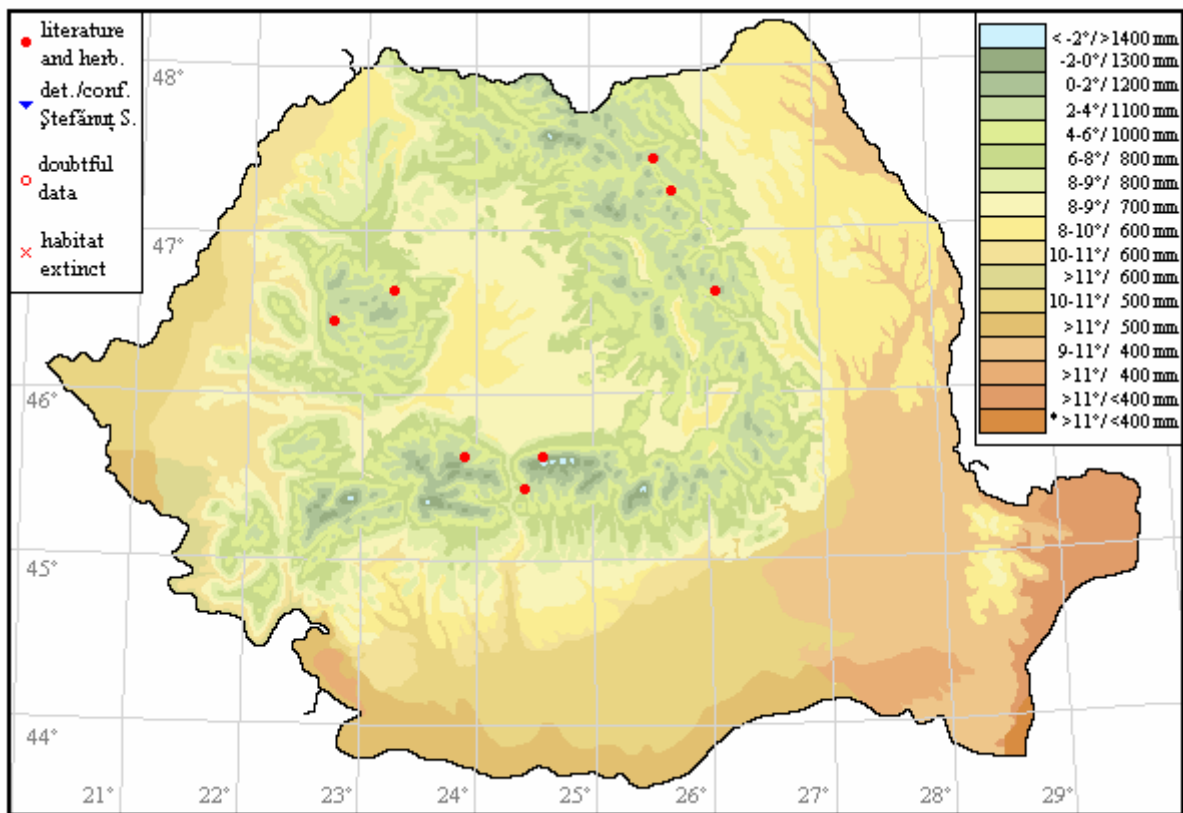


Fig. 192. Distribution of *Scapania apiculata* Spruce in Romania.

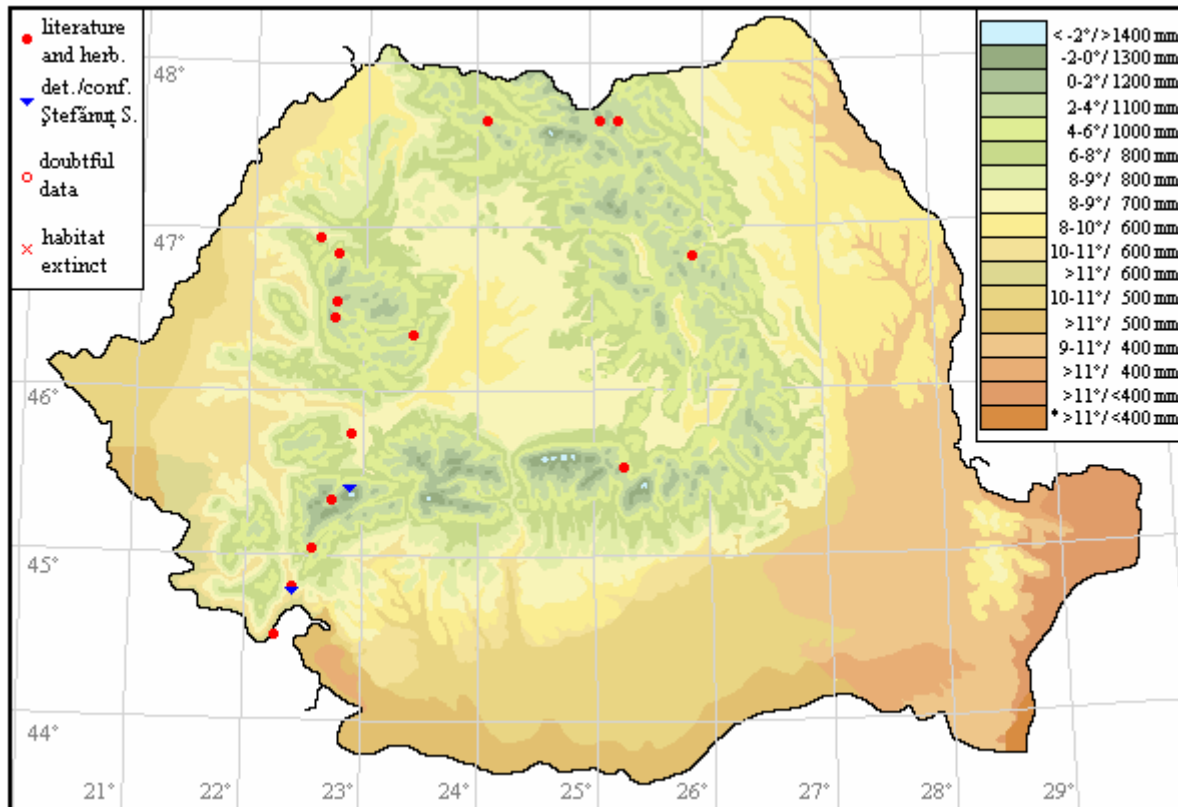


Fig. 193. Distribution of *Scapania aspera* H. Bernet et M. Bernet in Romania.

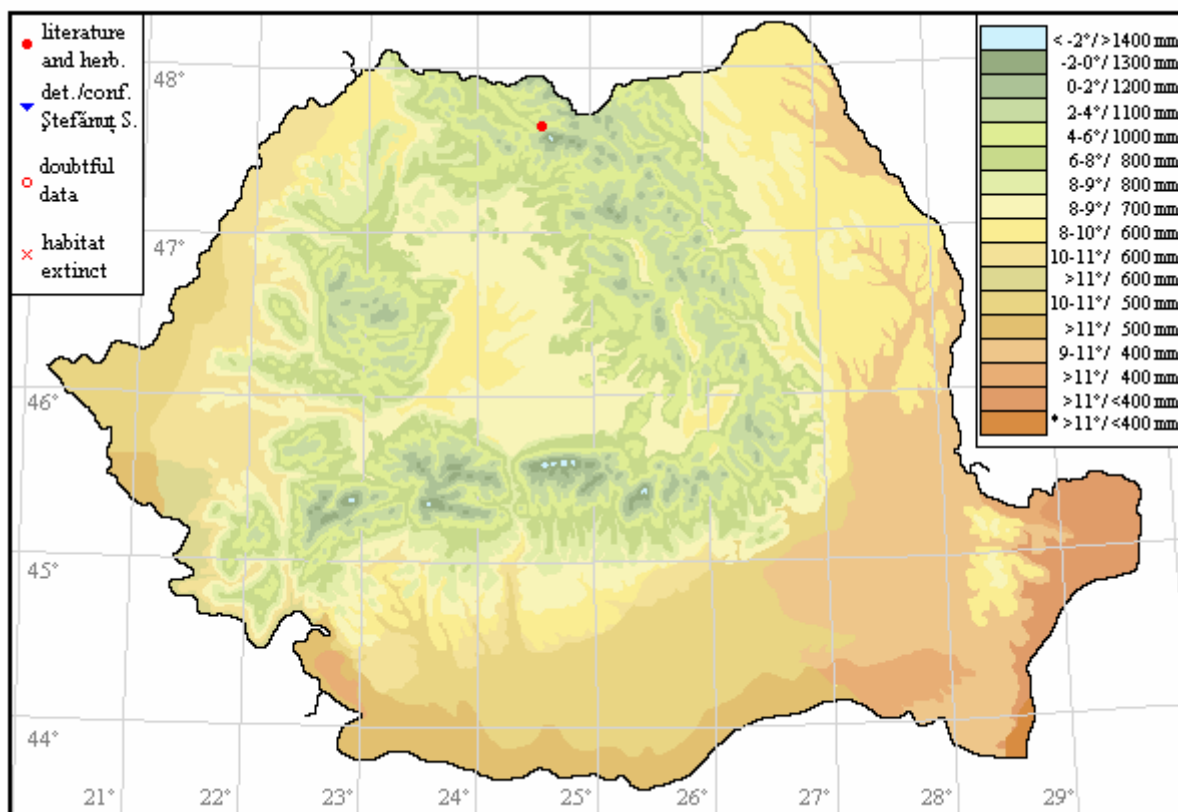


Fig. 194. Distribution of *Scapania brevicaulis* Taylor in Romania.

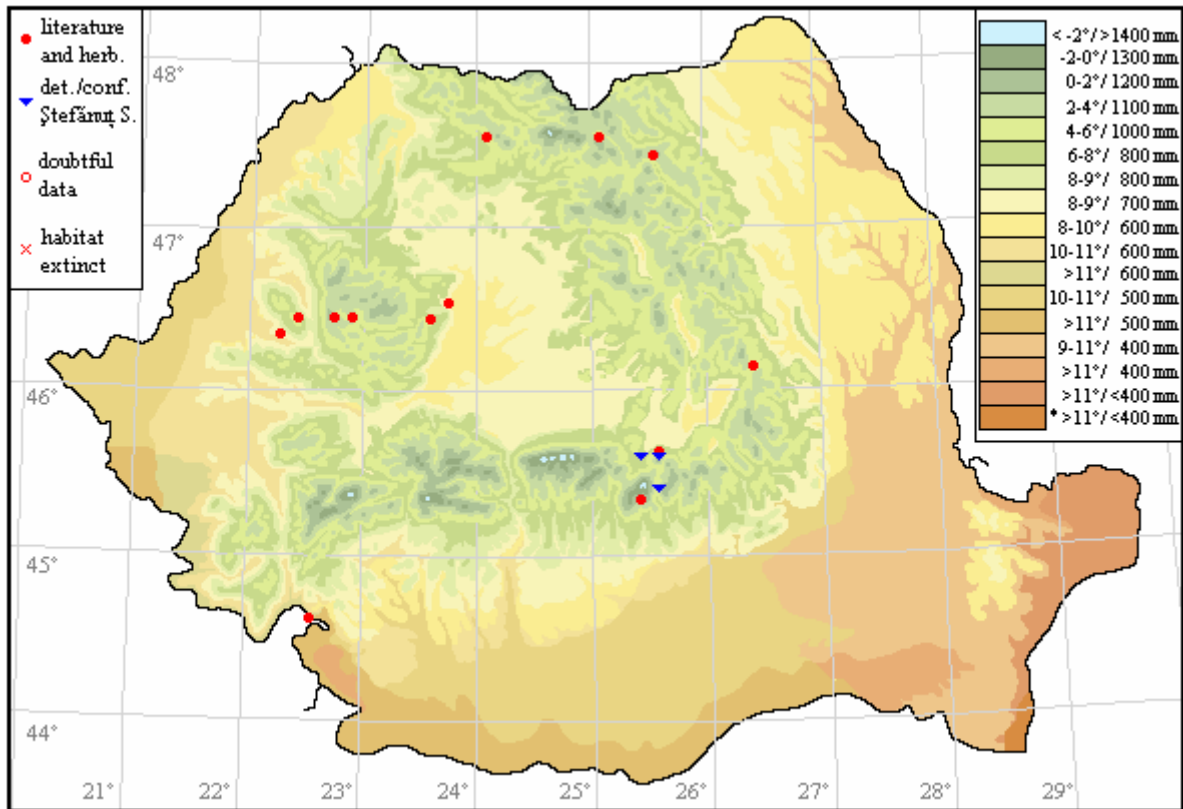


Fig. 195. Distribution of *Scapania calcicola* (Arnell et J. Perss.) Ingham in Romania.

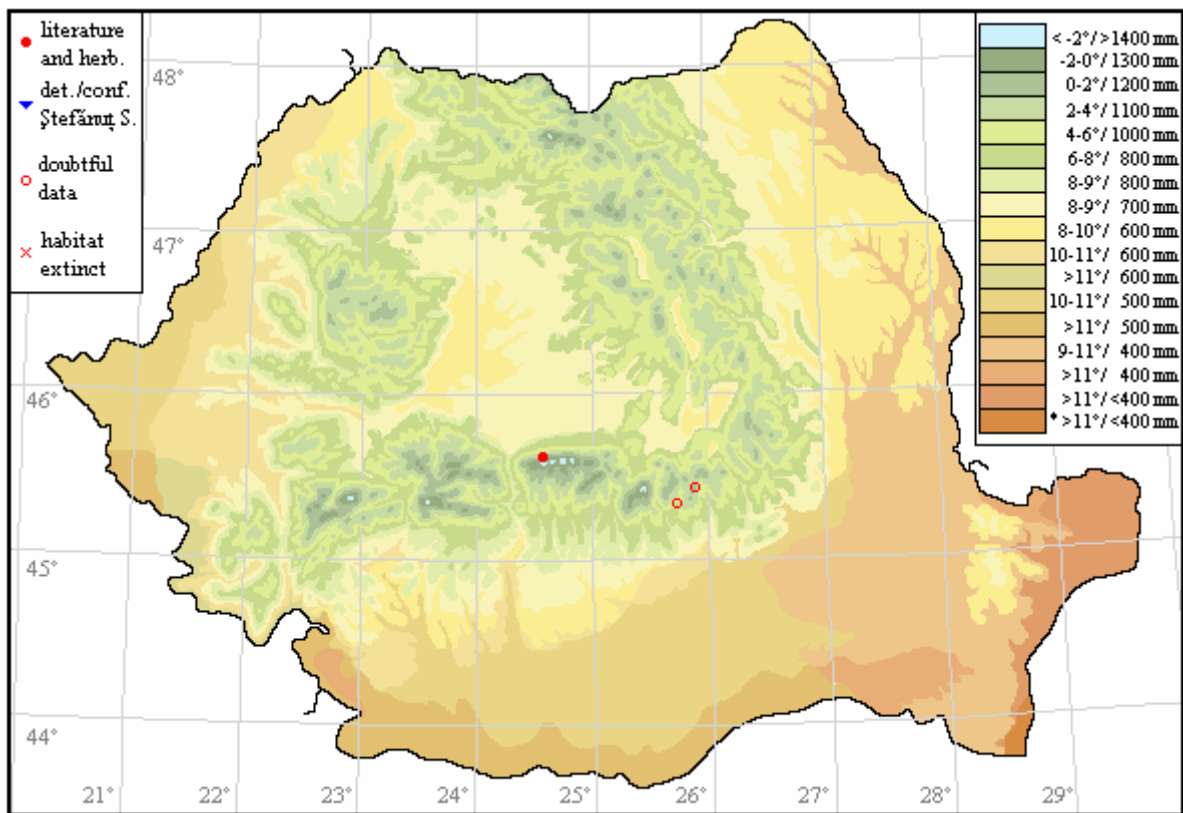


Fig. 196. Distribution of *Scapania compacta* (Roth) Dumort. in Romania.

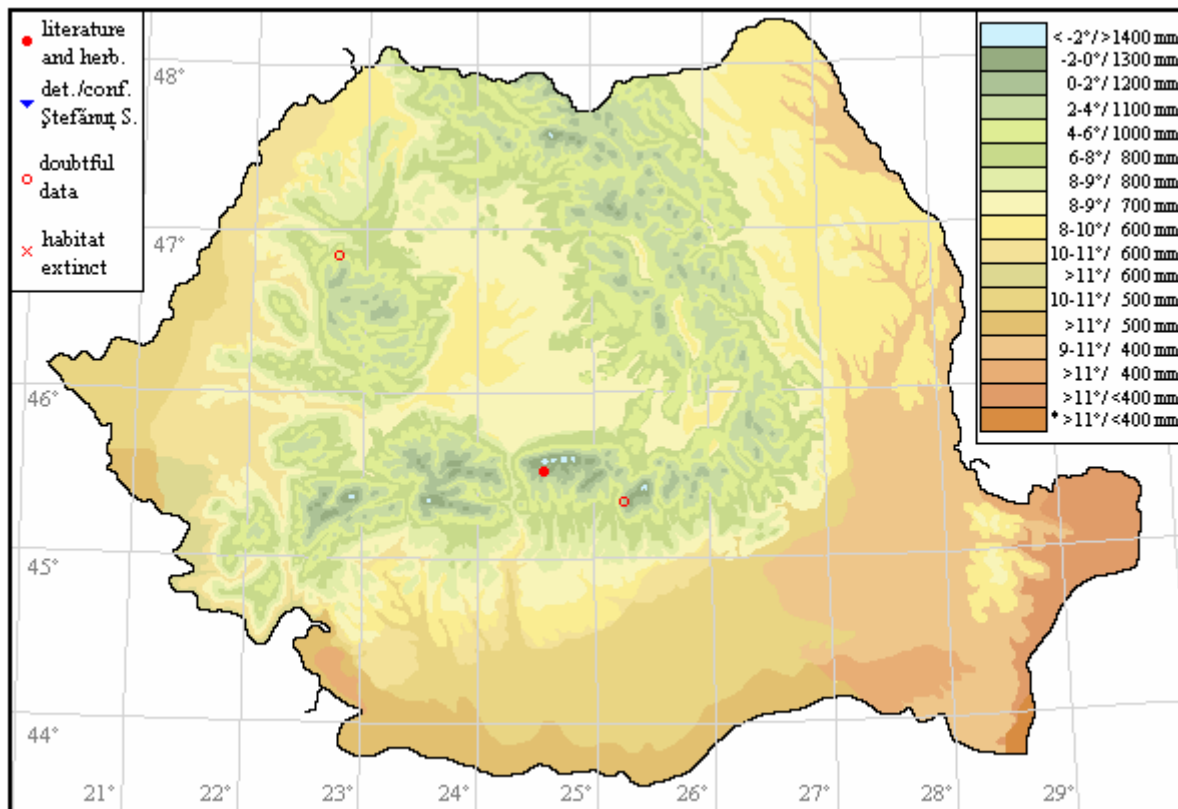


Fig. 197. Distribution of *Scapania crassiretis* Bryhn in Romania.

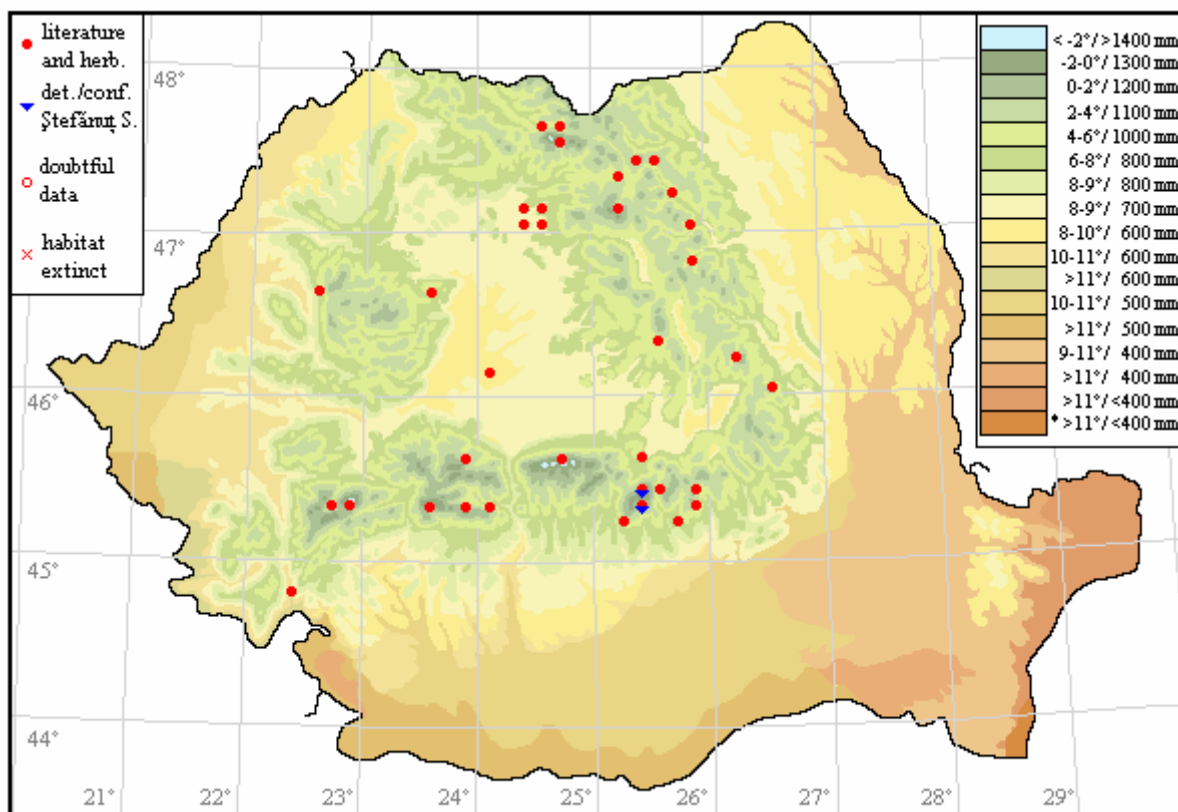


Fig. 198. Distribution of *Scapania curta* (Mart.) Dumort. in Romania.

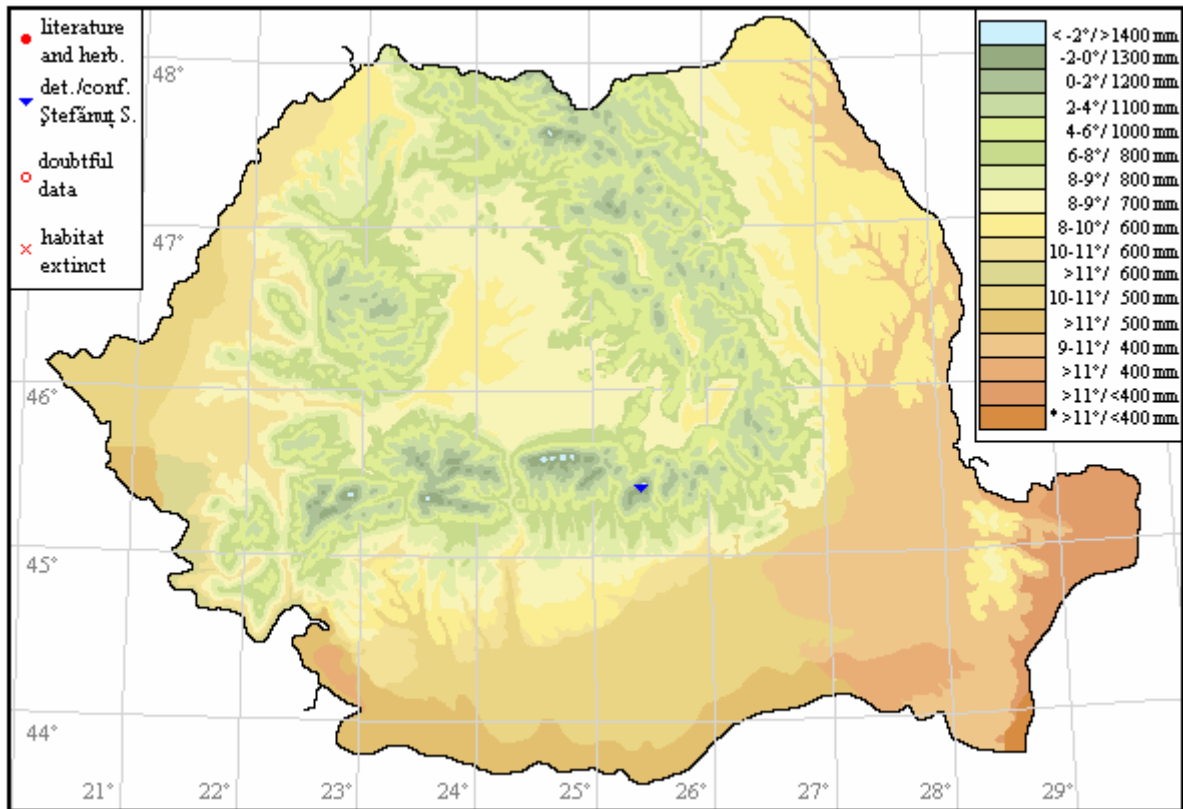


Fig. 199. Distribution of *Scapania cuspiduligera* (Nees) Müll. Frib. in Romania.

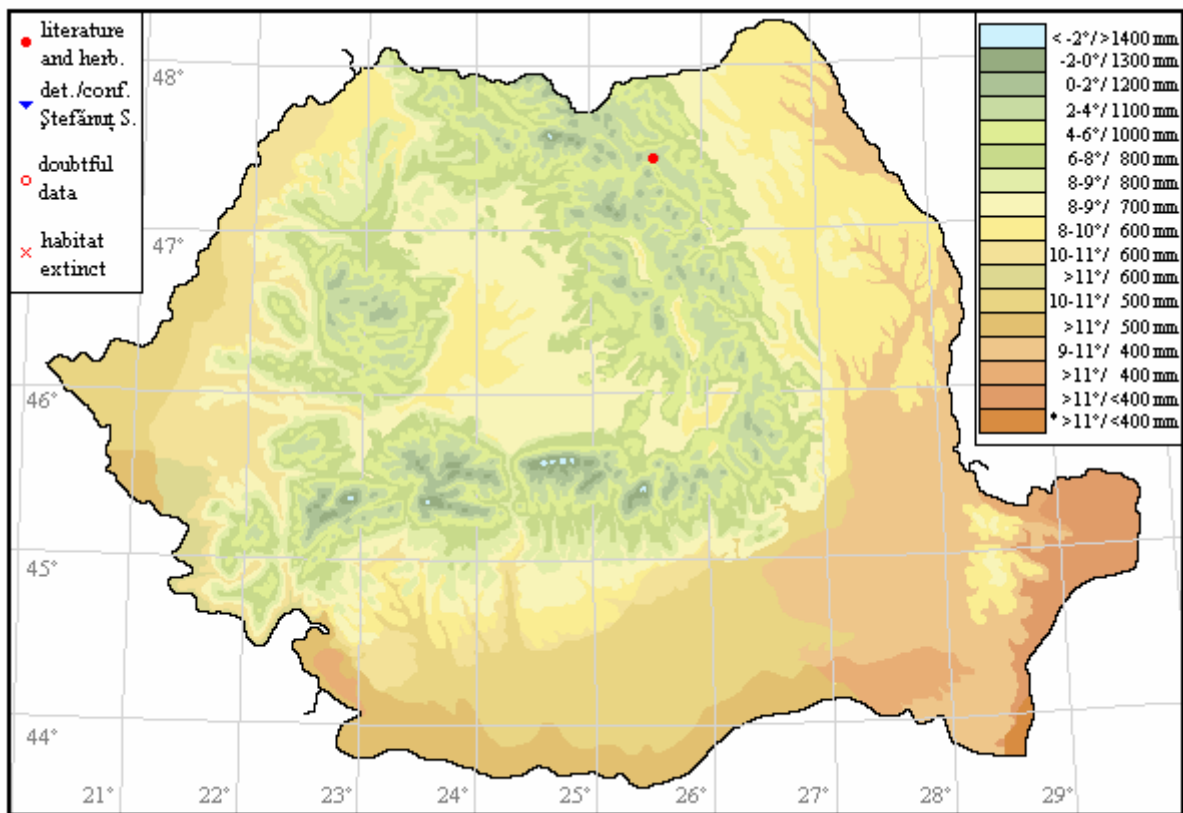


Fig. 200. Distribution of *Scapania gracilis* Lindb. in Romania.

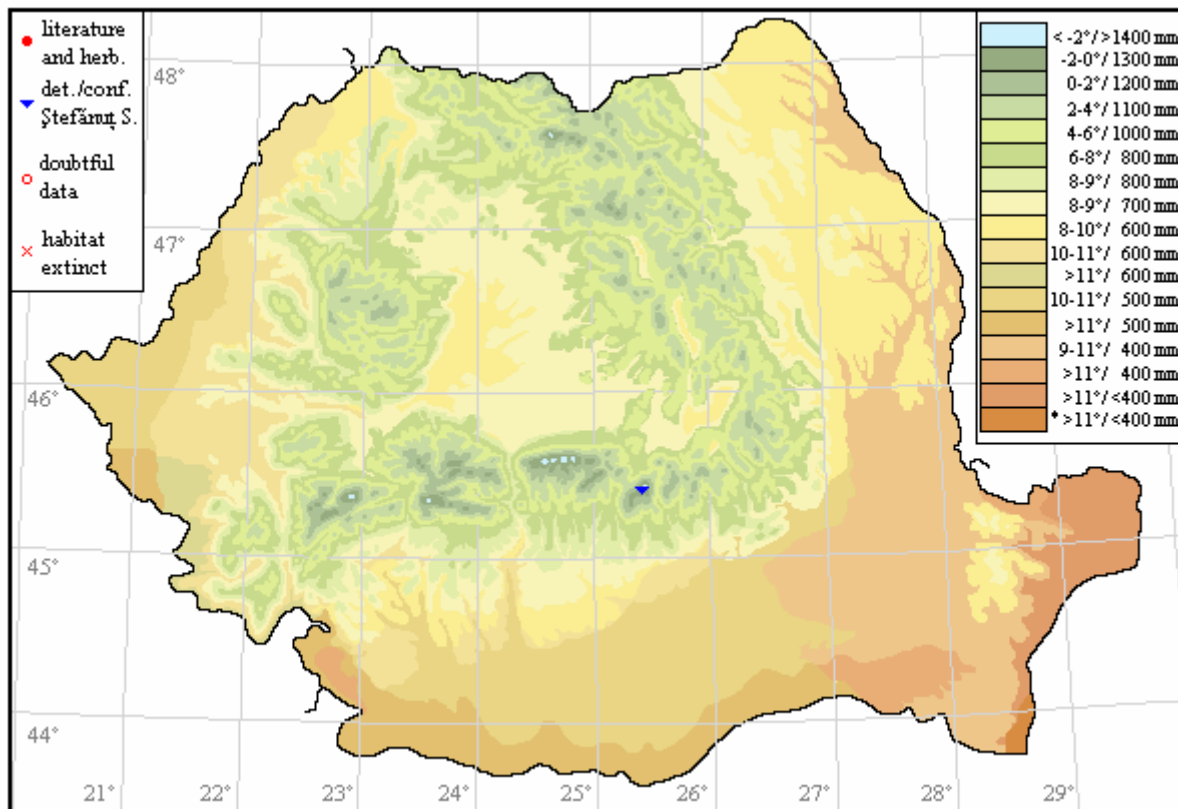


Fig. 201. Distribution of *Scapania gymnostomophila* Kaal. in Romania.

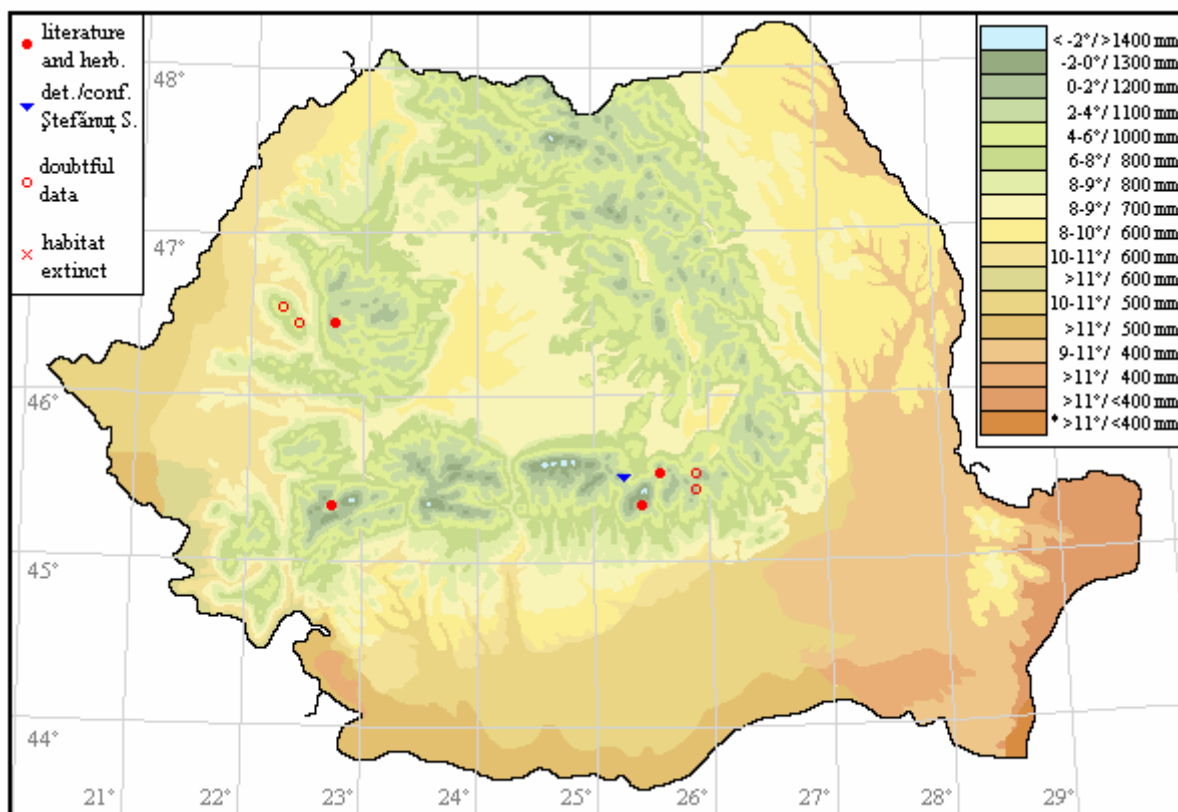


Fig. 202. Distribution of *Scapania helvetica* Gottsche in Romania.

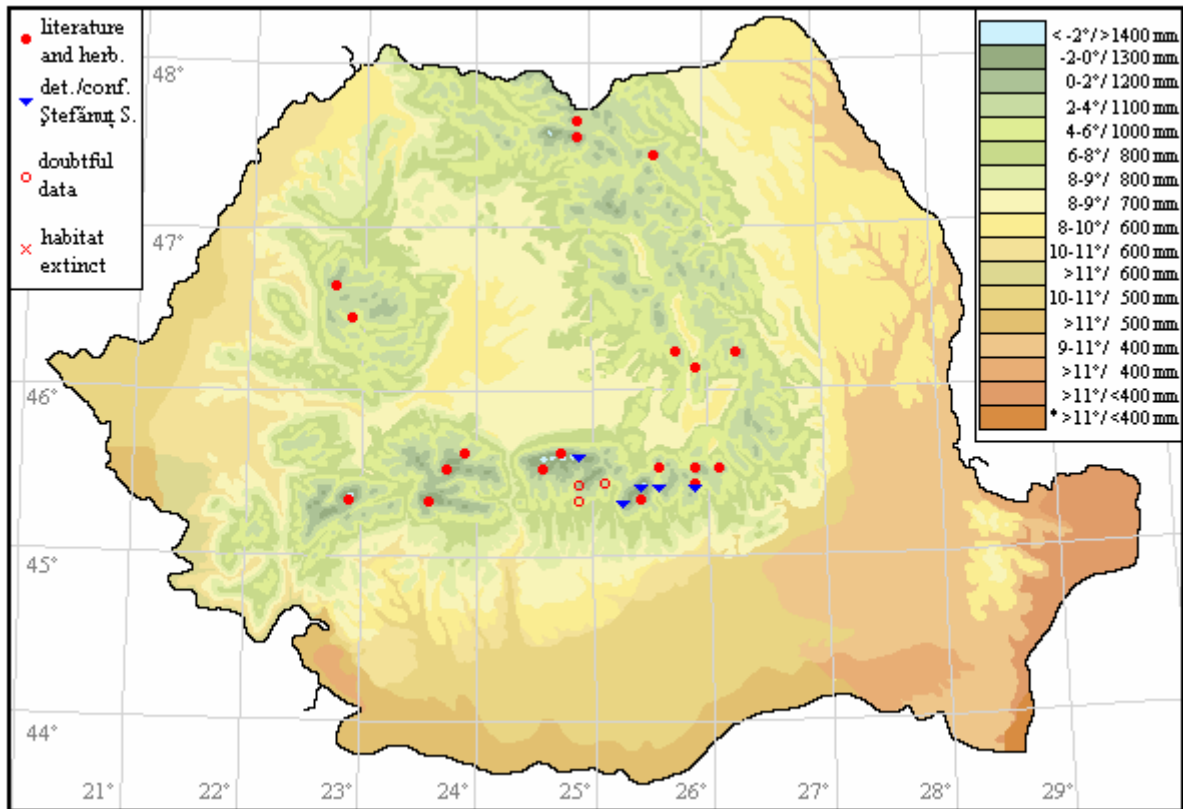


Fig. 203. Distribution of *Scapania irrigua* (Nees) Nees in Romania.

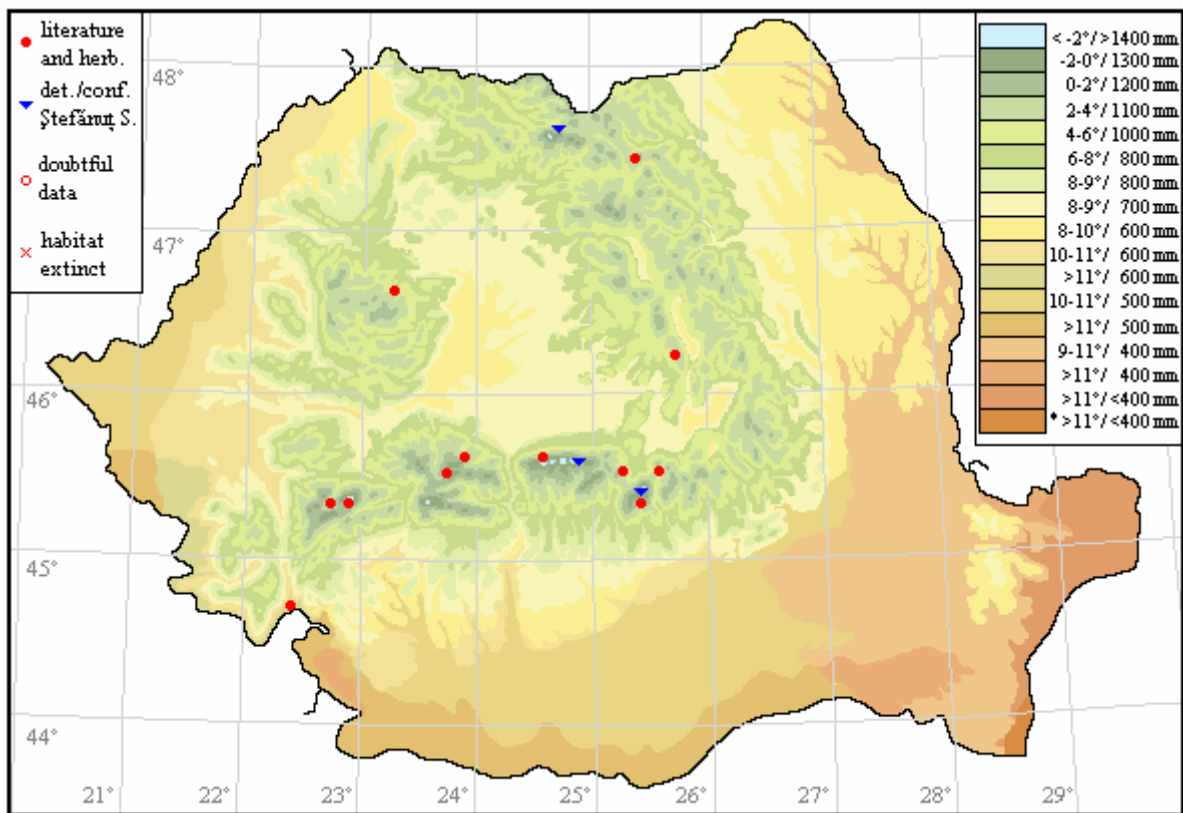


Fig. 204. Distribution of *Scapania mucronata* H. Buch in Romania.

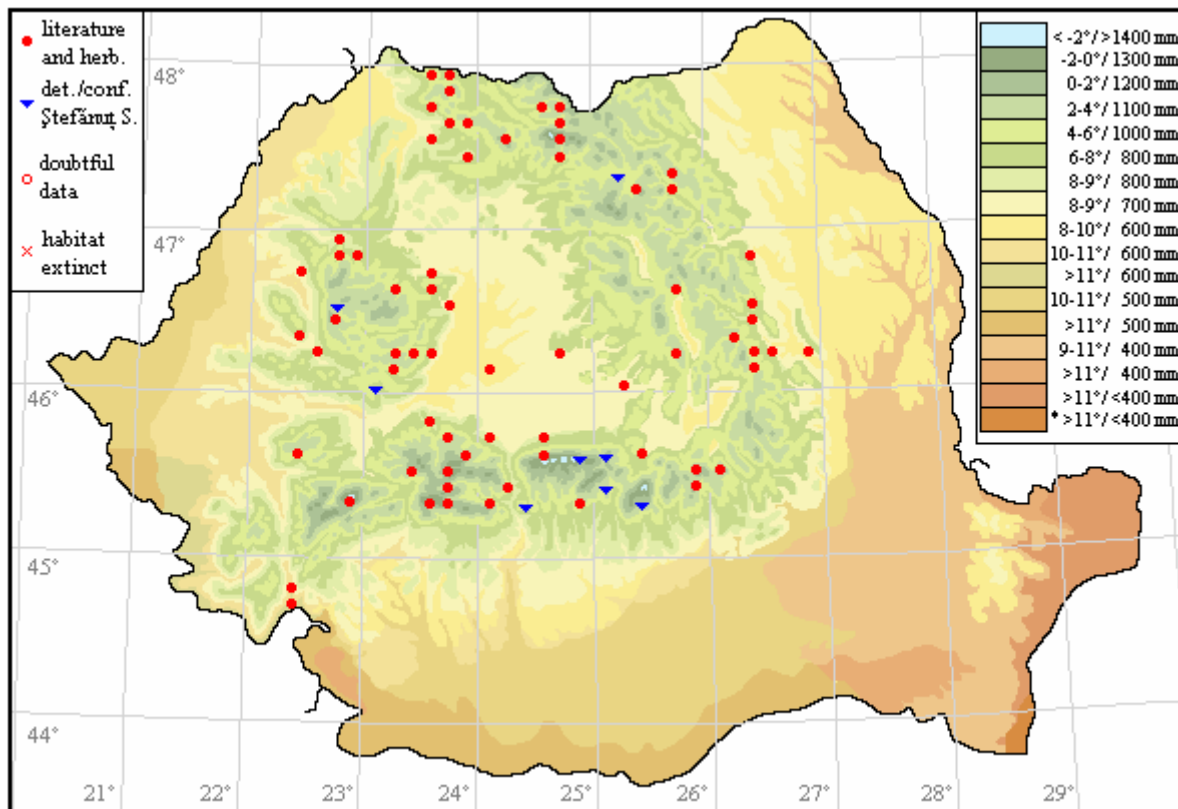


Fig. 205. Distribution of *Scapania nemorea* (L.) Grolle in Romania.

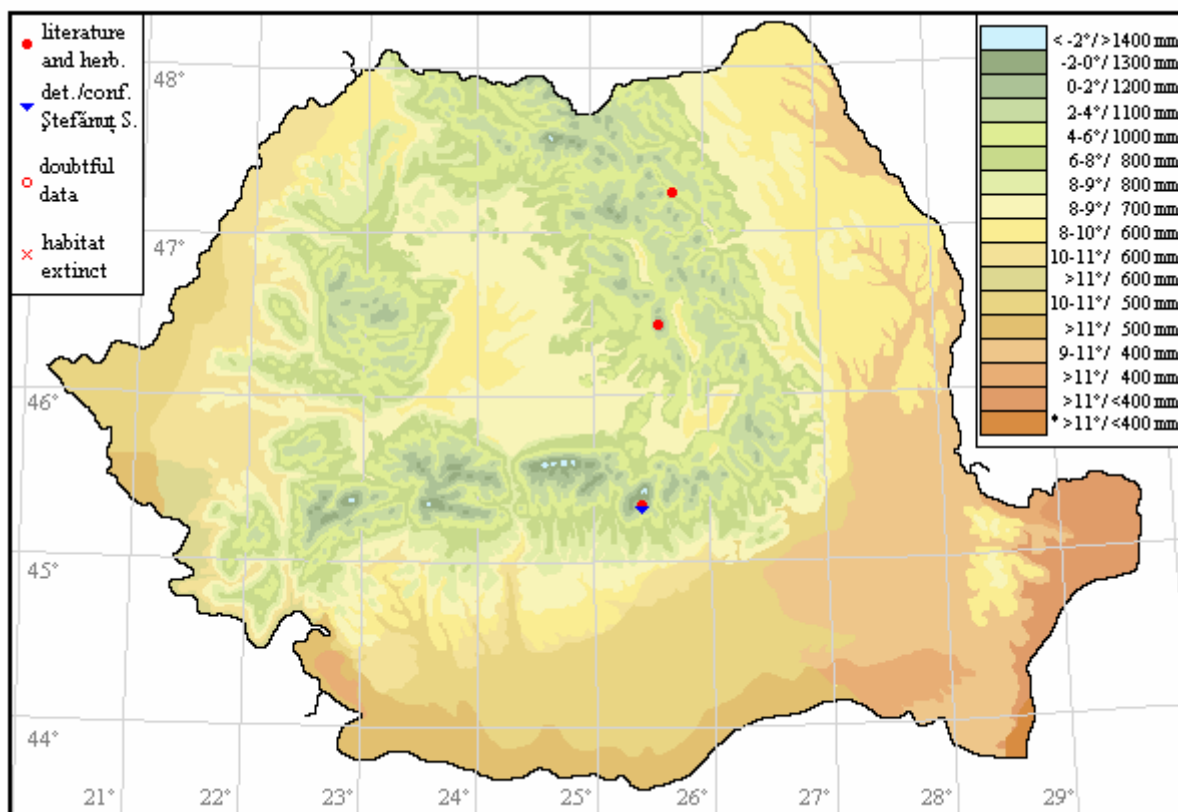


Fig. 206. Distribution of *Scapania paludicola* Loeske et Müll. Frib. in Romania.

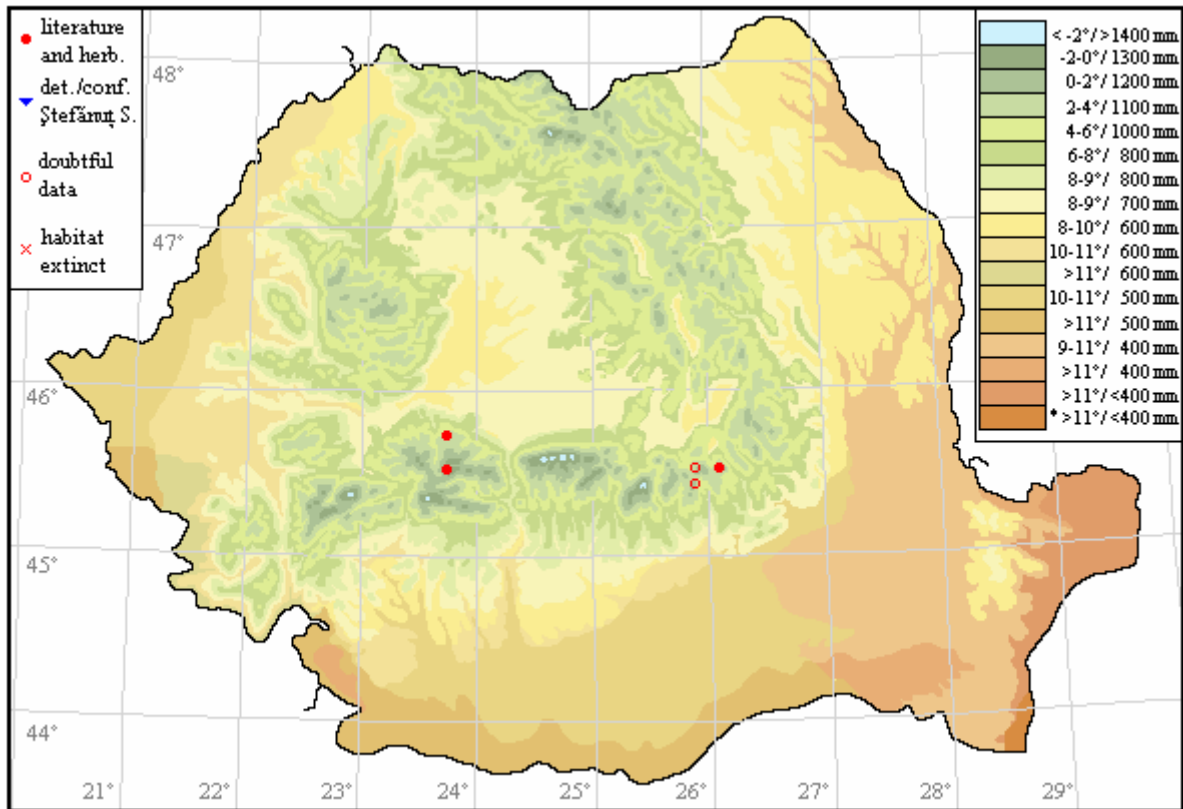


Fig. 207. Distribution of *Scapania paludosa* (Müll. Frib.) Müll. Frib. in Romania.

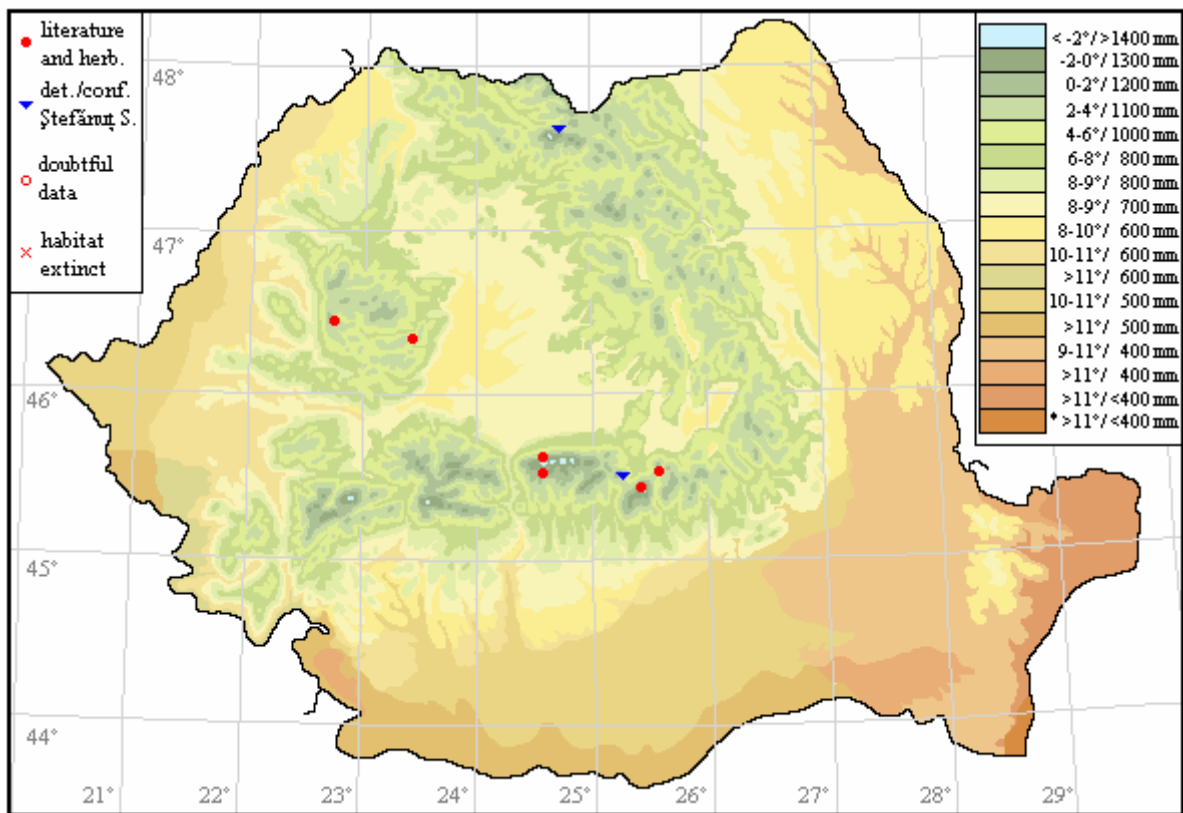


Fig. 208. Distribution of *Scapania scandica* (Arnell et H. Buch) Macvicar in Romania.

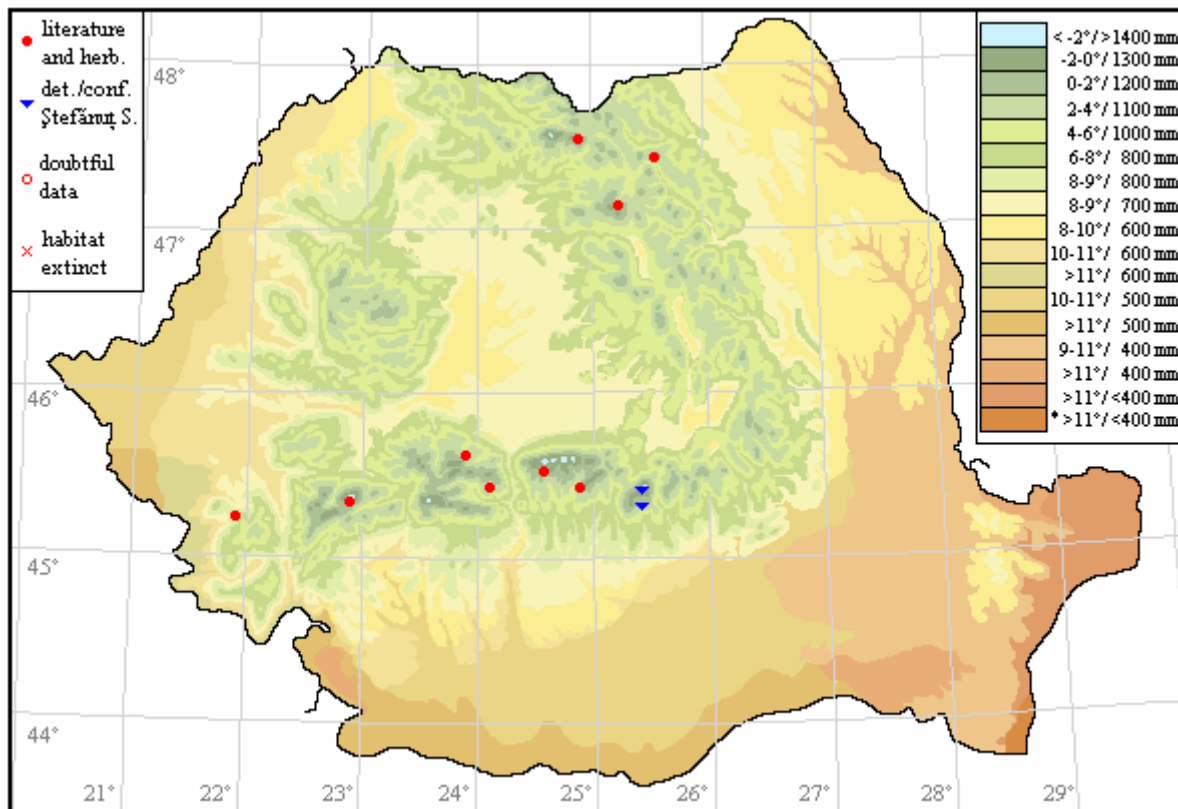


Fig. 209. Distribution of *Scapania subalpina* (Nees ex Lindenb.) Lindb. in Romania.

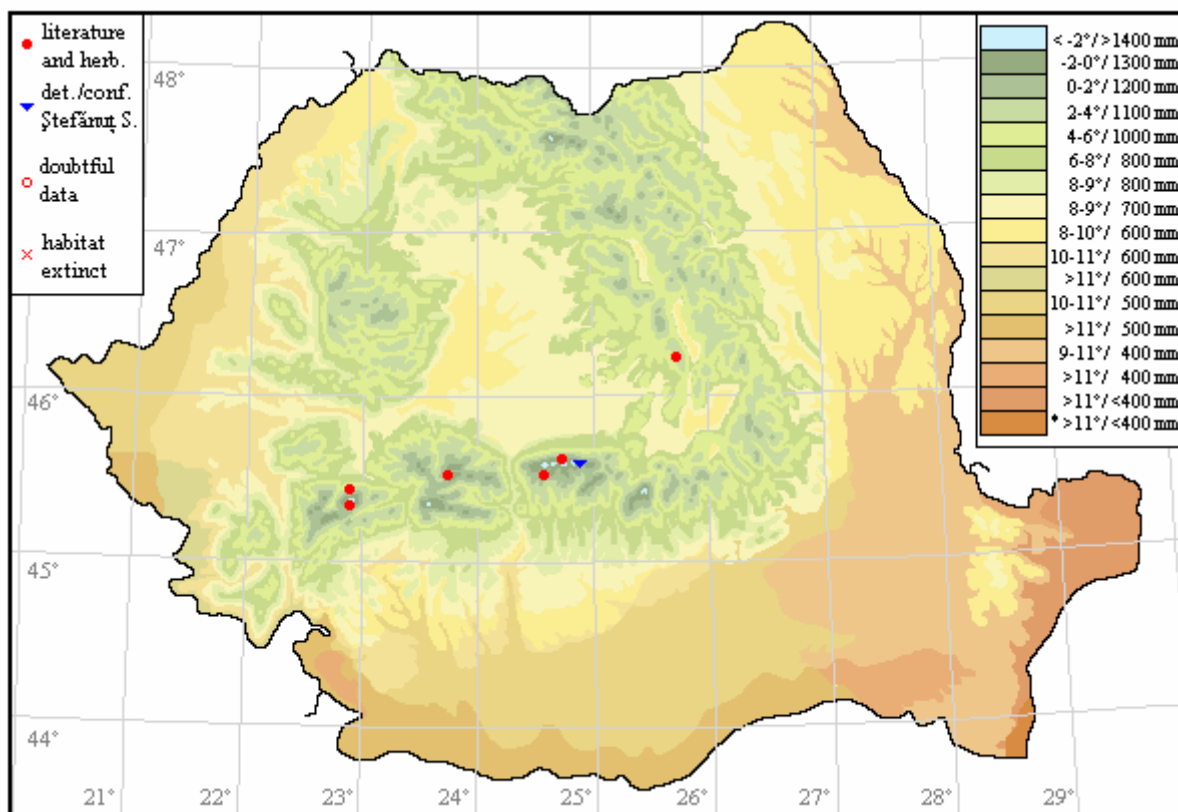


Fig. 210. Distribution of *Scapania uliginosa* (Sw. ex Lindenb.) Dumort. in Romania.

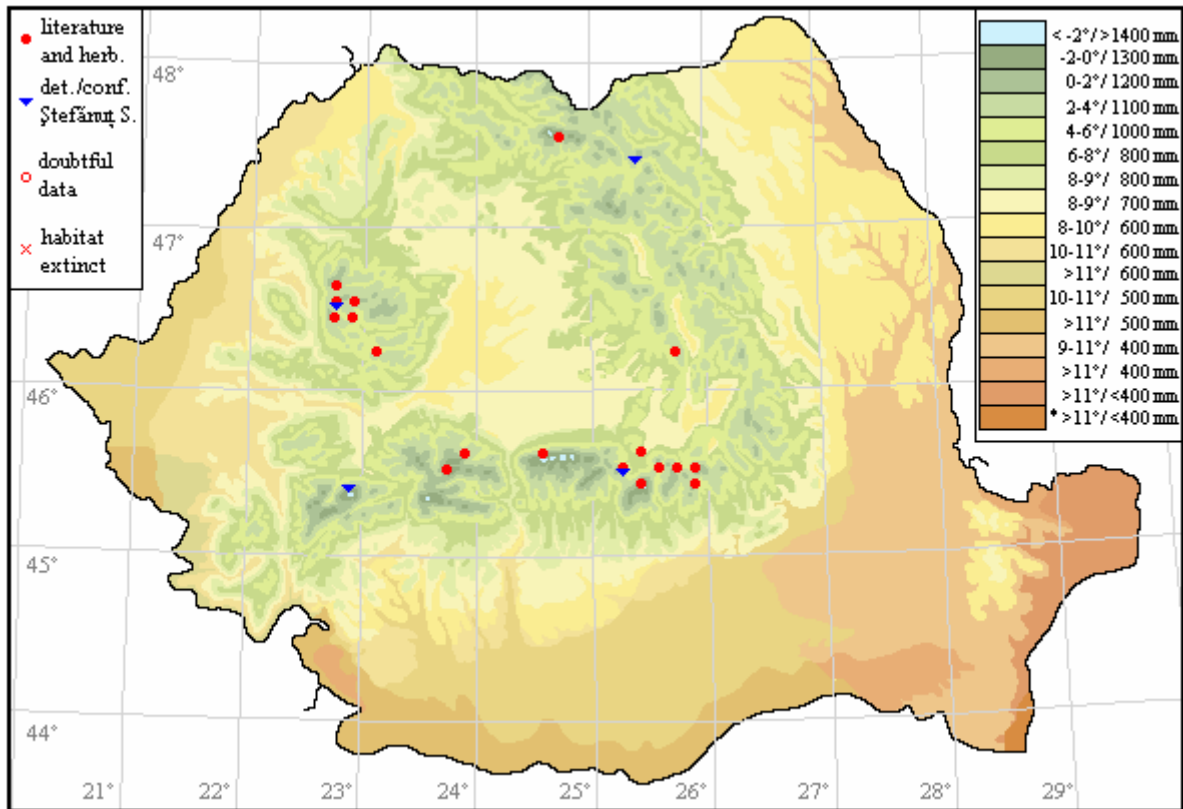


Fig. 211. Distribution of *Scapania umbrosa* (Schrad.) Dumort. in Romania.

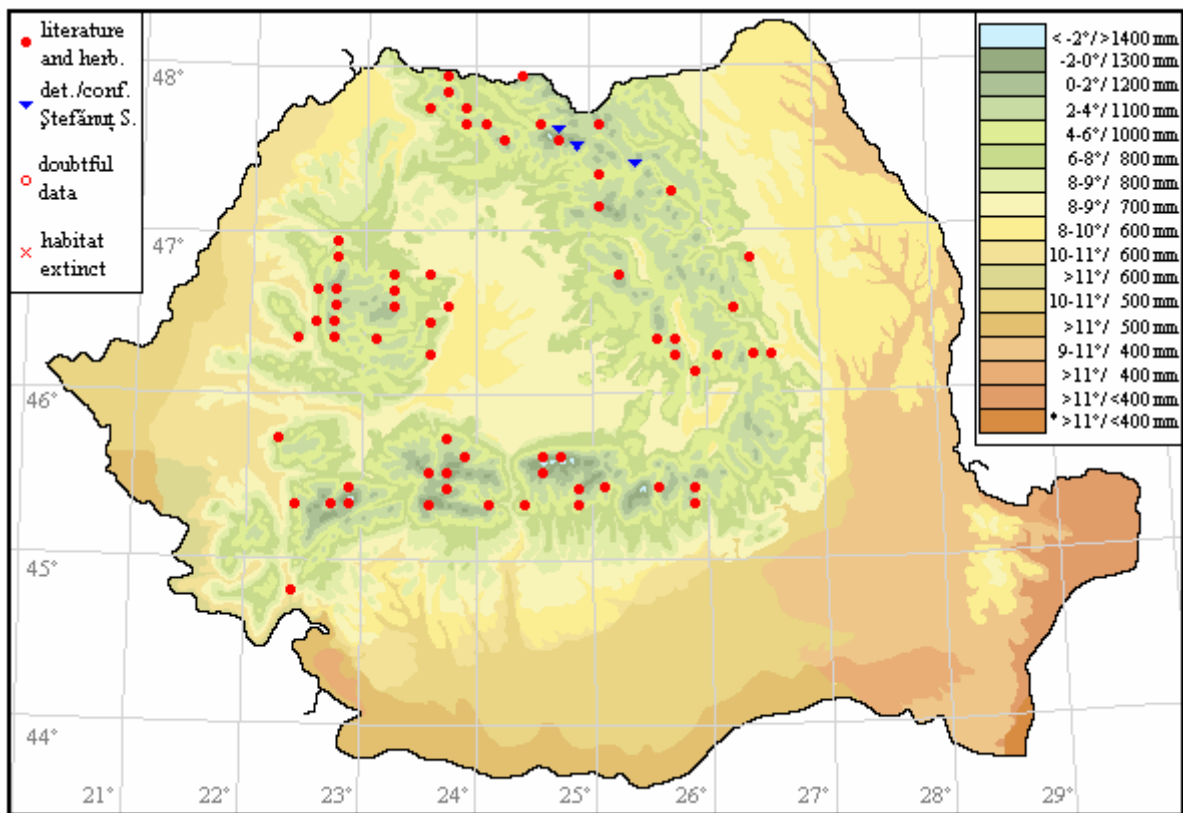


Fig. 212. Distribution of *Scapania undulata* (L.) Dumort. in Romania.

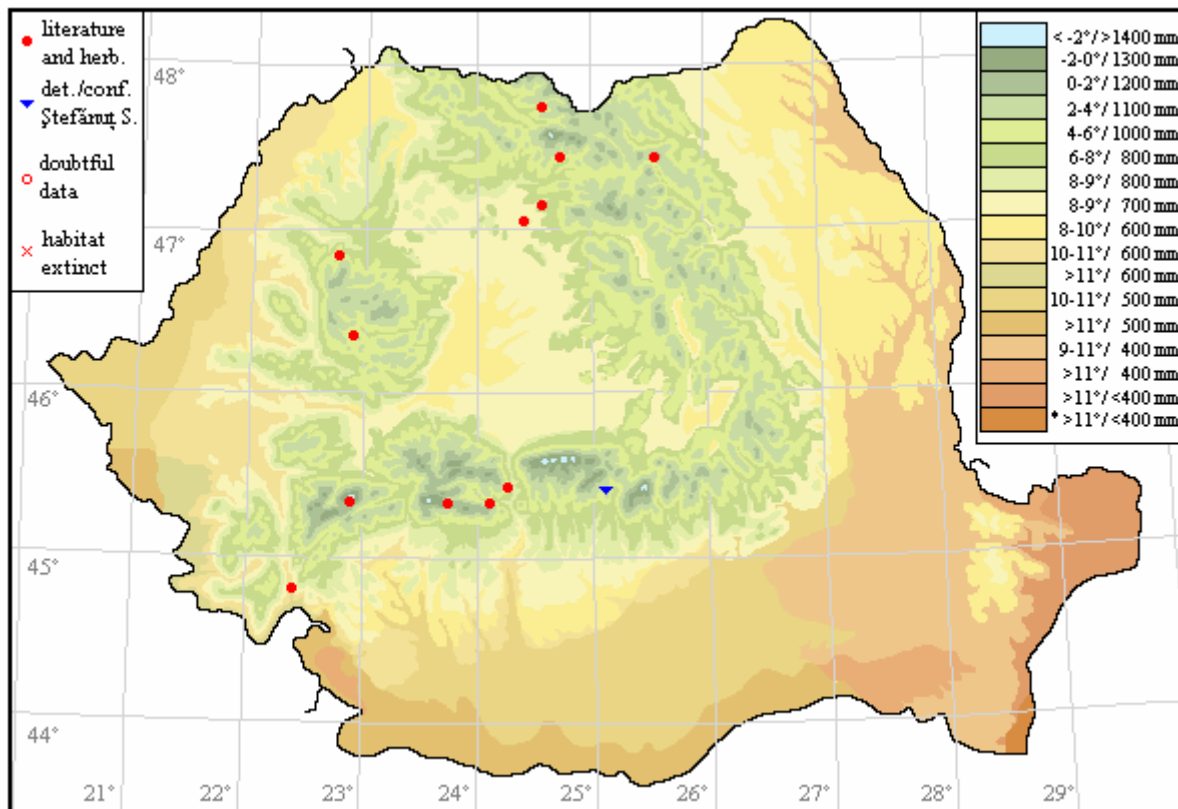


Fig. 213. Distribution of *Scapania verrucosa* Heeg in Romania.

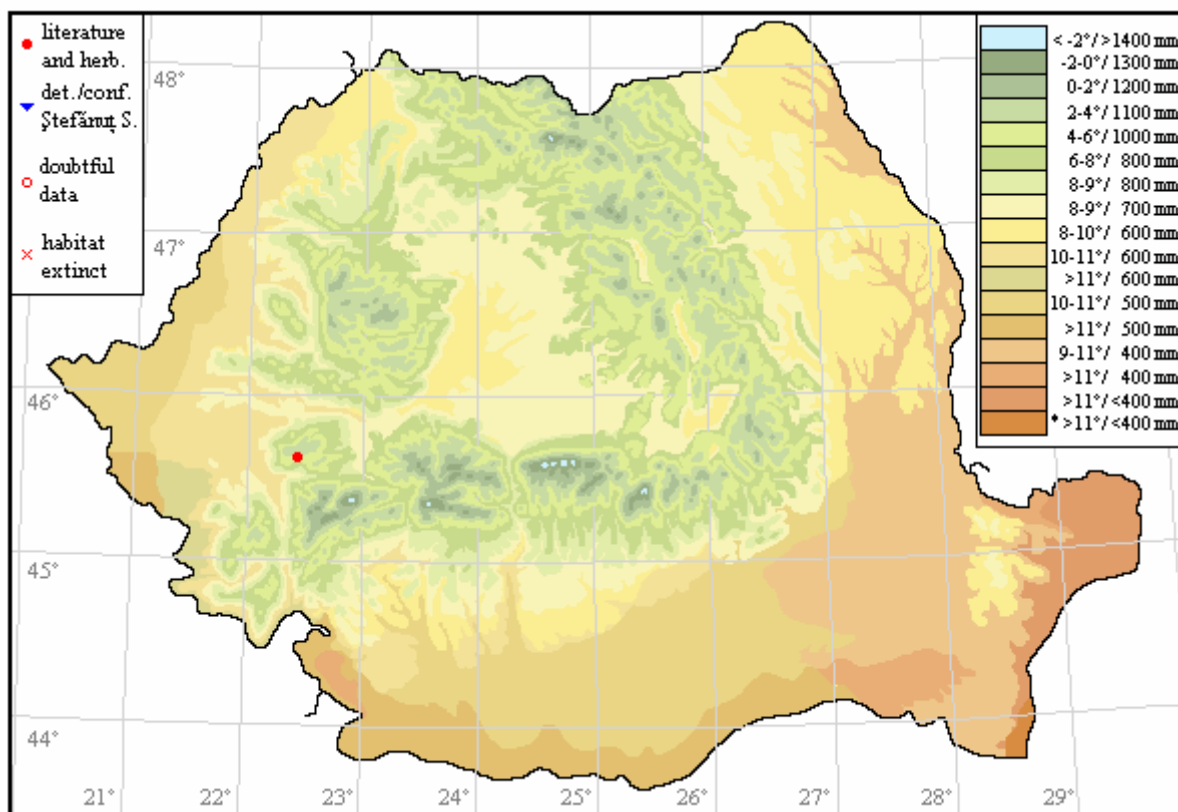


Fig. 214. Distribution of *Targionia hypophylla* L. in Romania.

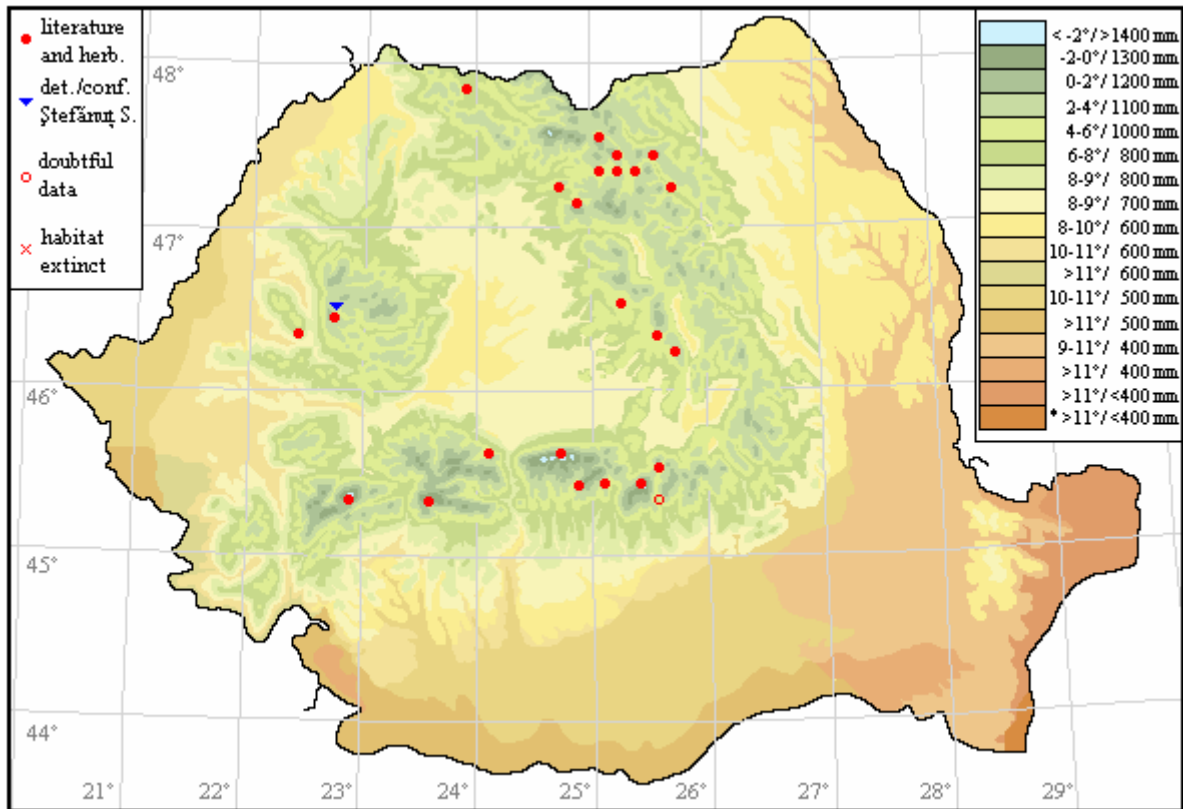


Fig. 215. Distribution of *Trichocolea tomentella* (Ehrh.) Dumort. in Romania.

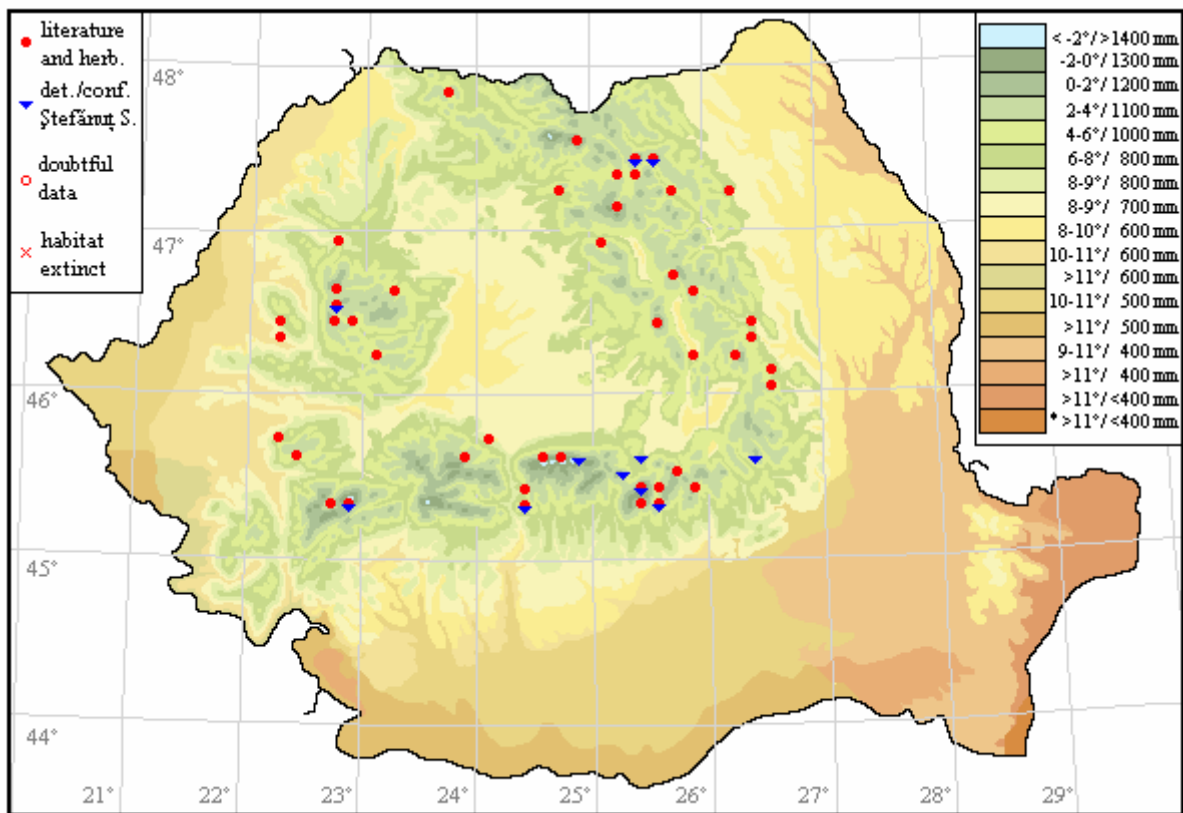


Fig. 216. Distribution of *Tritomaria exsecta* (Schmidel) Schiffn. ex Loeske in Romania.

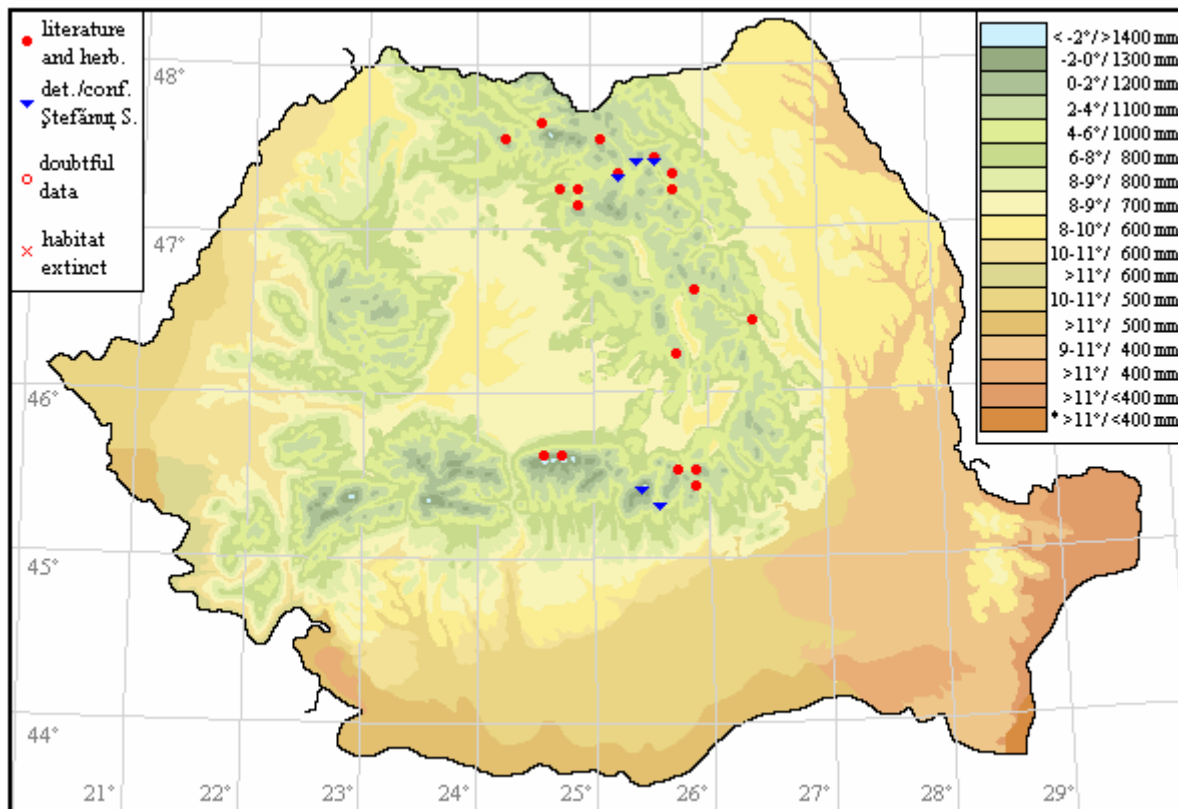


Fig. 217. Distribution of *Tritomaria exsectiformis* (Breidl.) Loeske in Romania.

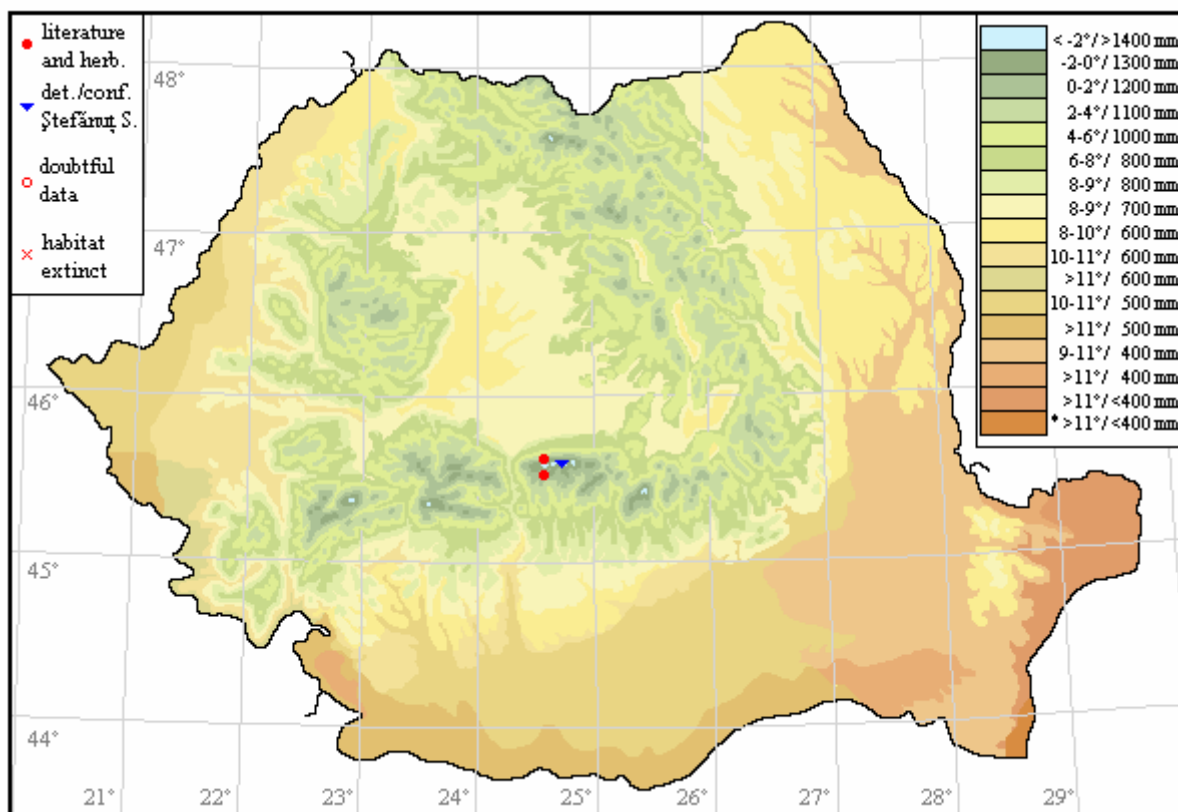


Fig. 218. Distribution of *Tritomaria polita* (Nees) Jörg. in Romania.

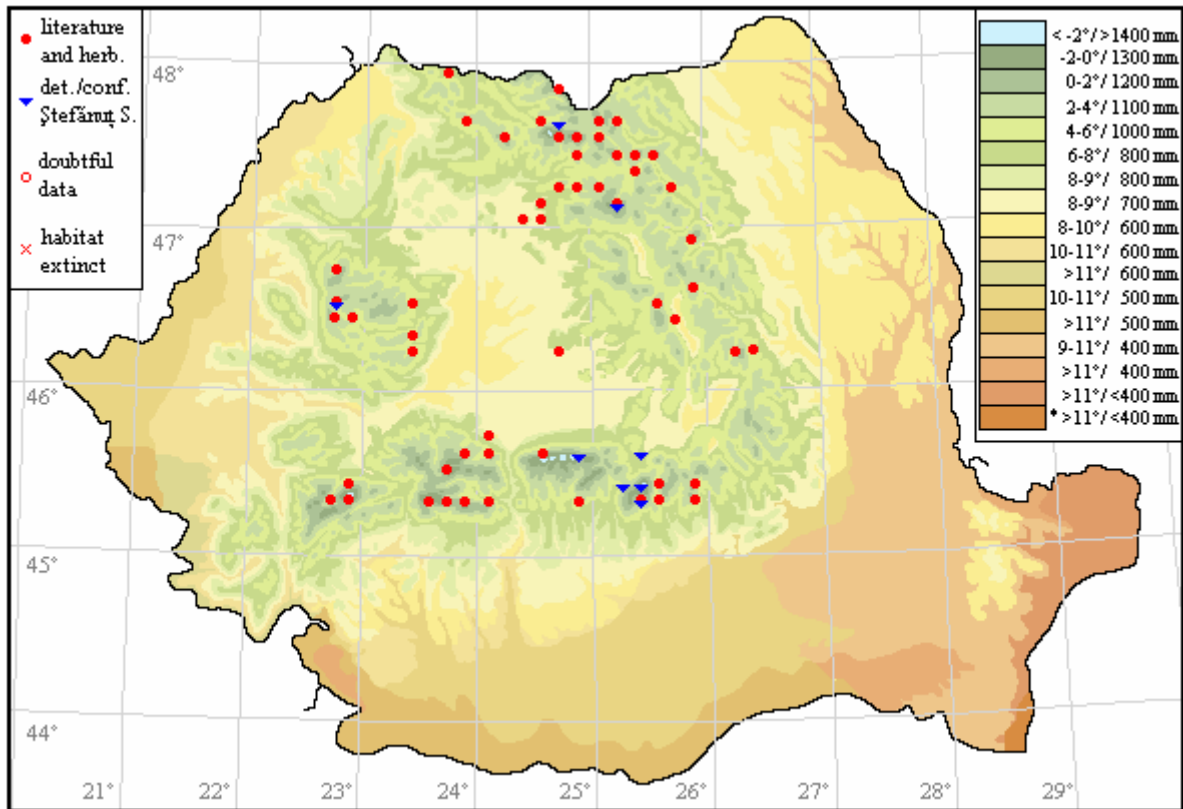


Fig. 219. Distribution of *Tritomaria quinquedentata* (Huds.) H. Buch. in Romania.

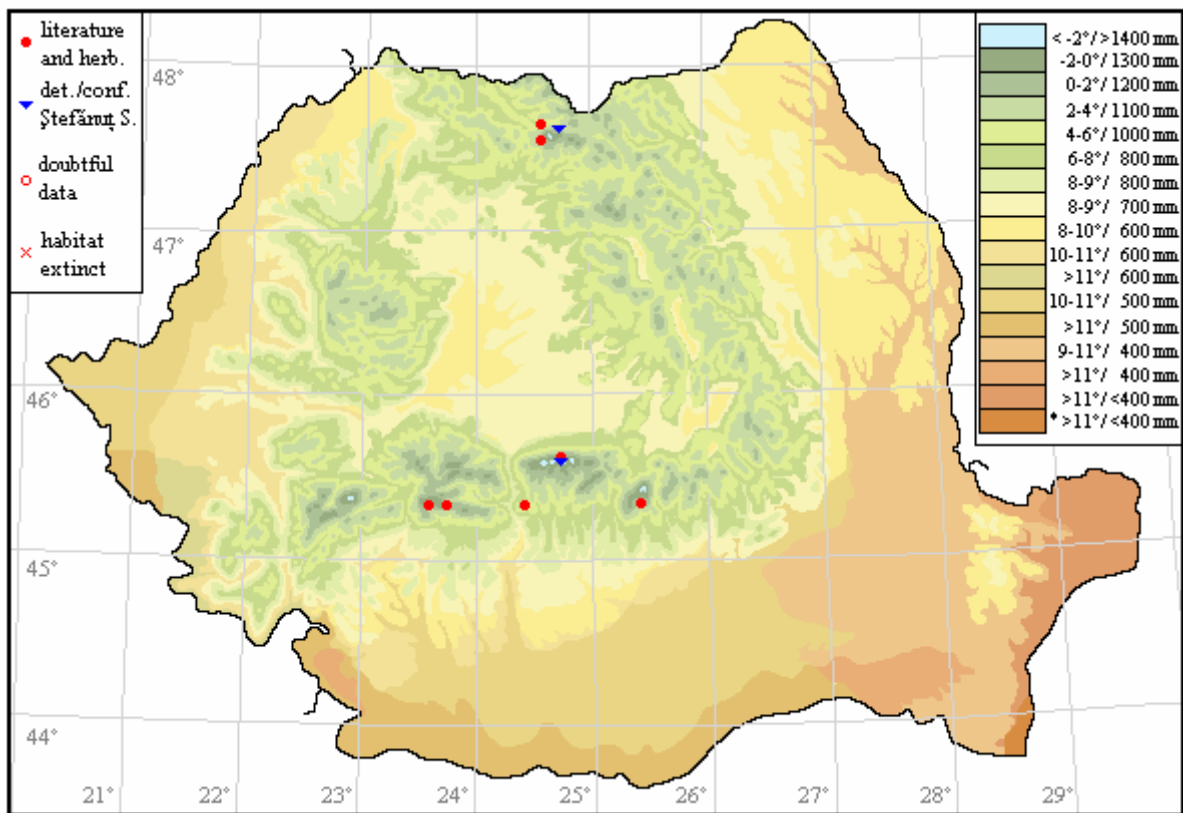


Fig. 220. Distribution of *Tritomaria scitula* (Taylor) Jörg. in Romania.

Evaluating the distribution data

Following over 15 years of field studies and the examination of a large amount of scientific publications, valuable chorological data were obtained that were used in the building of 214 distribution maps. For *Lophozia silvicola* it was not made the distribution map because I did not find any locality, only was mention from Romania.

Based on the literature findings, 12 species were excluded from the list of liverworts of Romania, identifying the sources from which data were mistakenly taken over or were erroneously published.

After determining the collected materials, over 10 000 determinations, 164 species were identified, over 3 000 samples being introduced in the Herbarium of the Institute of Biology from Bucharest - BUCA.

On the administrative map (fig. 221) the distribution of the grid cells from where the hornwort and liverwort species were collected is presented. It can be observed that the most studied areas are the Carpathian Mountains, the southern regions of the country being only slightly investigated. No chorological data were found for Olt and Dolj counties, although at least three species could be identified in these regions (*Frullania dilatata*, *Porella platyphylla* and *Radula complanata*).

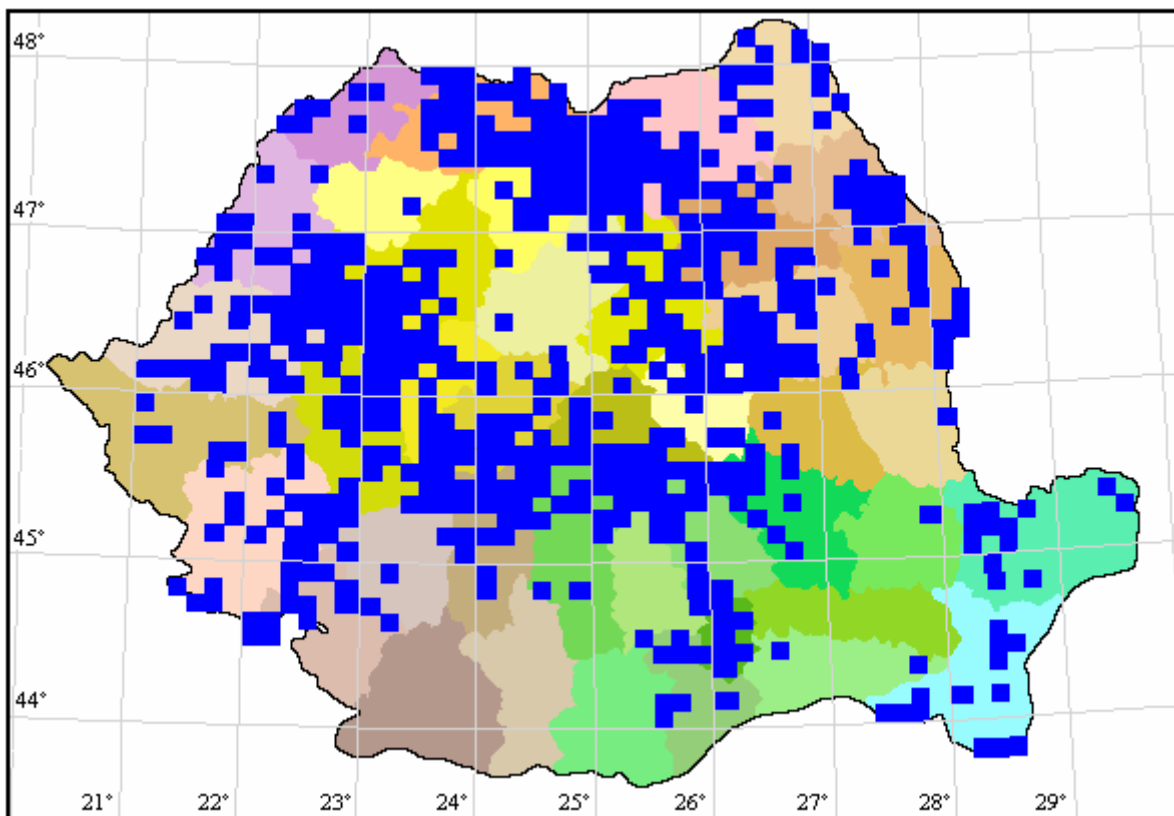


Fig. 221. Distribution of zones with hornworts and liverworts distribution data in Romania.

Based on chorological data for hornworts and liverworts, within the Hornworts and Liverworts Atlas of Romania, it was possible to design a hornworts and liverworts biodiversity map, by overlapping distribution data of the 214 mapped species (4 hornworts and 210 liverworts) grouped into 10 frequency categories (figs. 222-225).

The analysis of these maps shows that the richest areas with hornworts and liverworts in Romania are Bucegi Massif, with over 90 species / area unit (6' latitude × 10' longitude), Rarău Mountain, Ciucaș Mountains and Retezat Mountains, with over 70 species / area unit, Giumalău Mountain, Piatra Craiului Mountains, Făgăraș Mountains, Cindrel Mountains and Apuseni Mountains, with over 60 species / area unit, Rodna Mountains, Țibleș Mountains, Harghita Mountains and Parâng Mountains, with over 50 species / area unit.

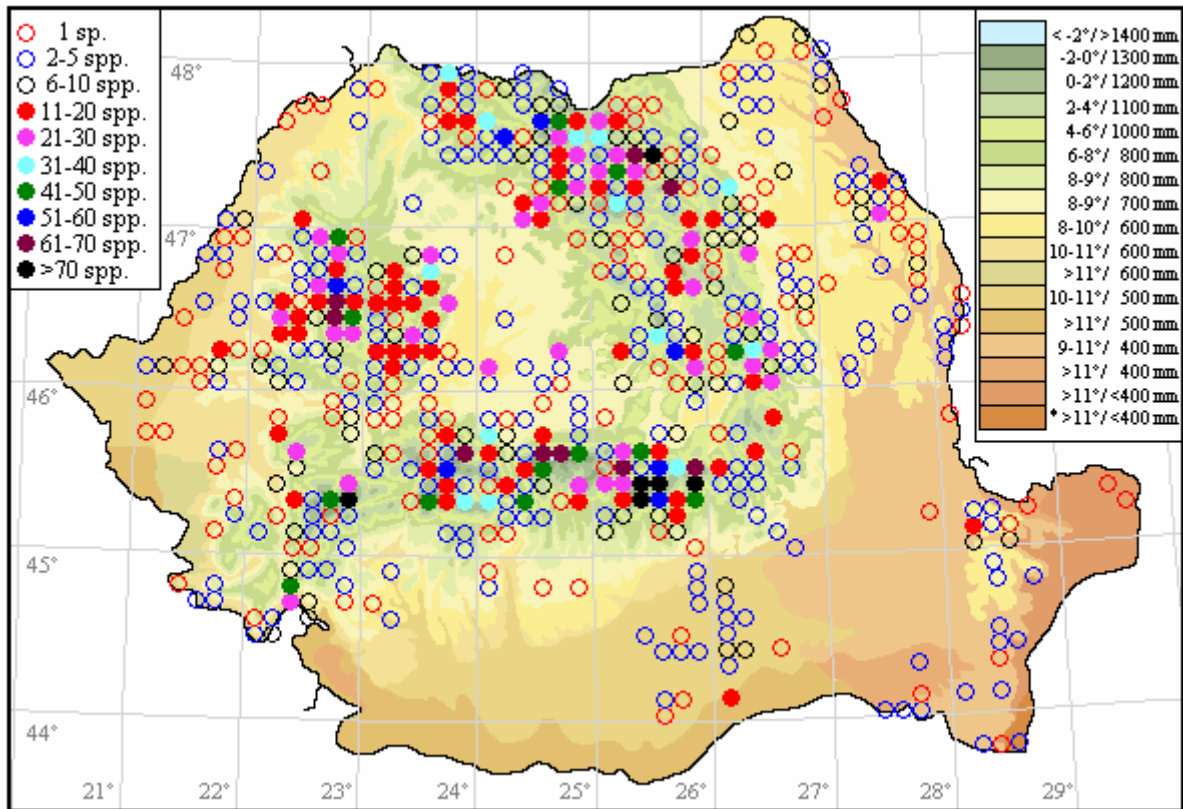


Fig. 222. Hornworts and Liverworts biodiversity map (10 threatened categories).

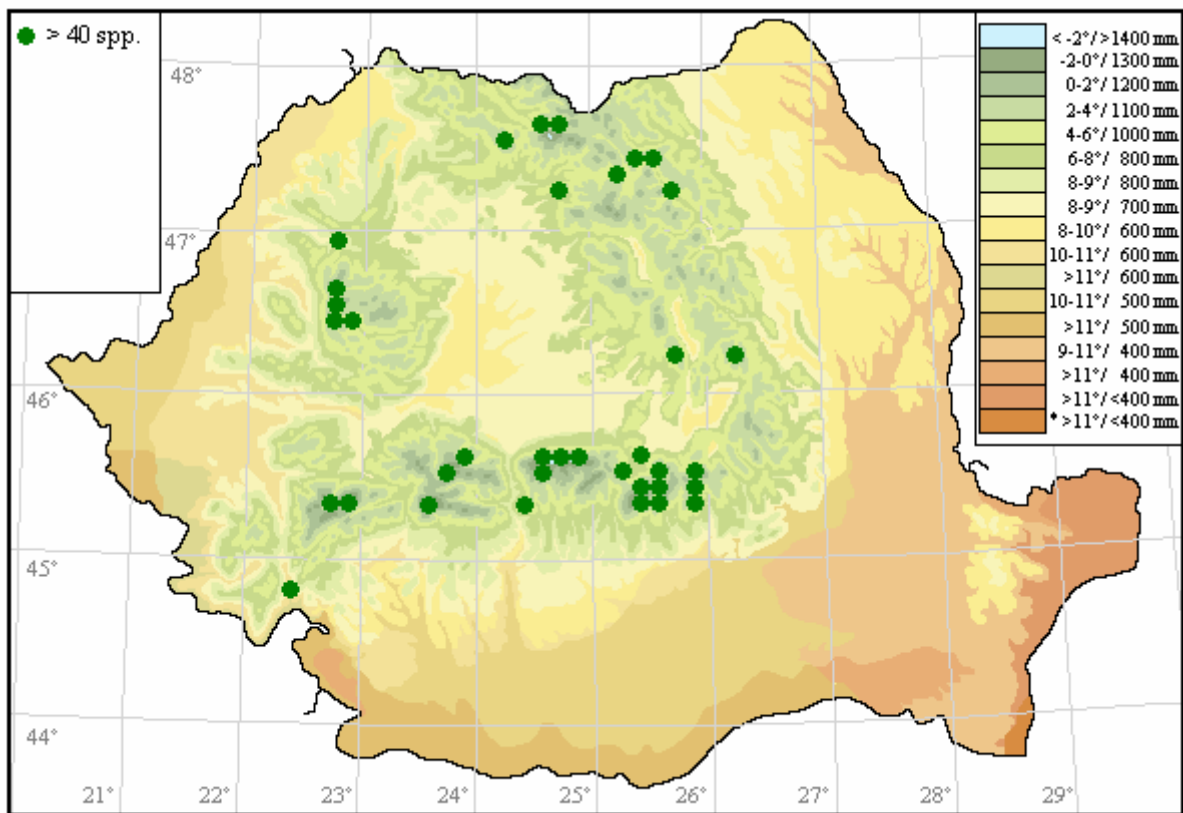


Fig. 223. Hornworts and Liverworts biodiversity map (over 40 species / cell grid).

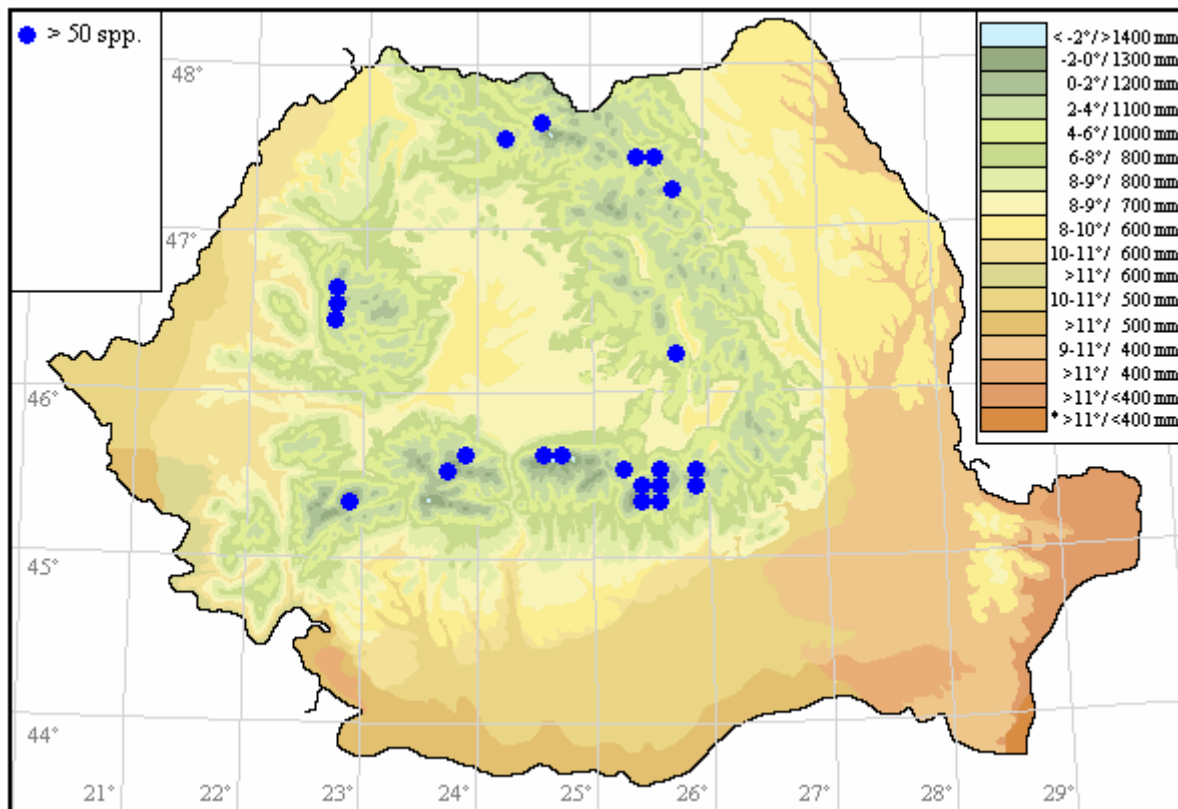


Fig. 224. Hornworts and Liverworts biodiversity map (over 50 species / cell grid).

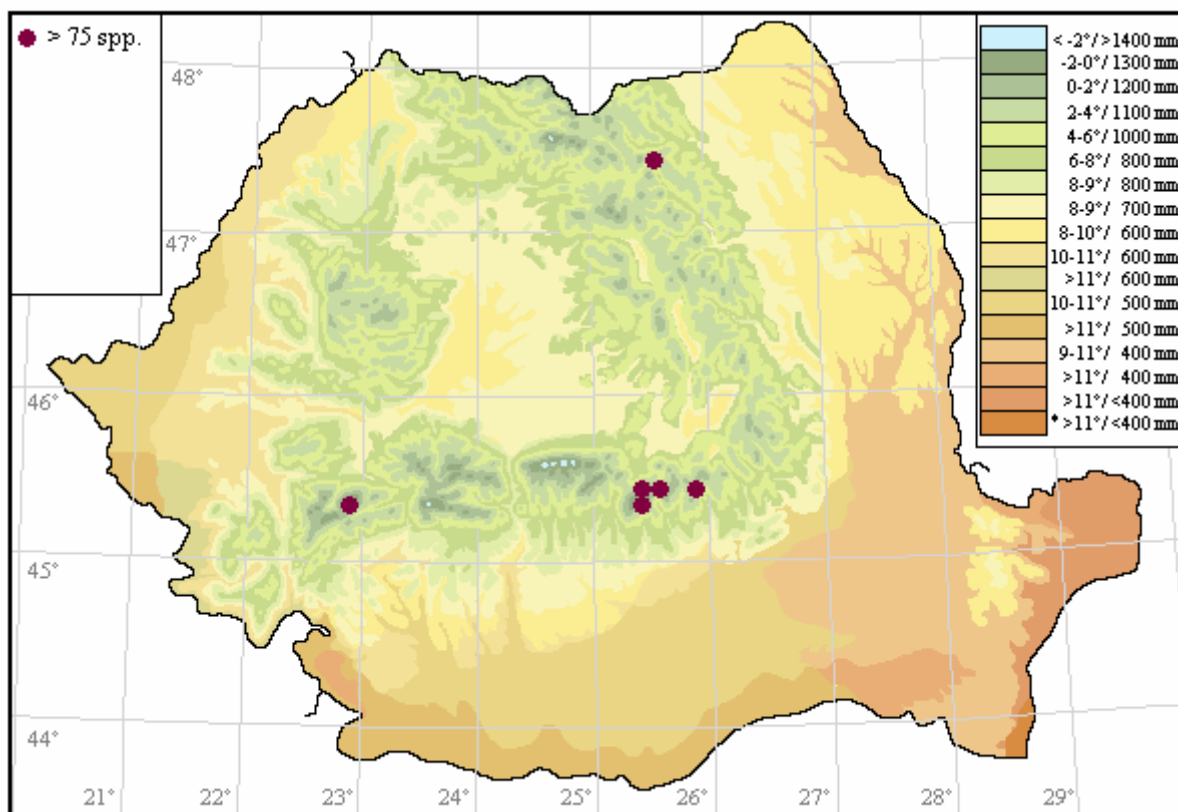


Fig. 225. Hornworts and Liverworts biodiversity map (over 75 species / cell grid).

THE HORNWORTS AND LIVERWORTS THREATENED IN ROMANIA

The history of bryophyte conservation research in Romania

The first scientific work in which the issue of bryophyte conservation is tackled was published in 1953, when Prof. Traian Ștefureac proposed the conservation of some rare bryophyte species (*Sphagnum wulfianum*, *S. balticum*, *Paludella squarrosa*, *Helodium blandowii* etc.) (Ștefureac 1953:46-55; Plămadă 1977b:112). Following the bryogeographical study of the Bucegi Massif, Prof. Traian Ștefureac proposed for conservation a list of 19 bryophytes, out of which five were liverwort species (*Riccia sorocarpa*, *Bucegia romanica*, *Moerckia hibernica*, *Anastrepta orcadensis* and *Barbilophozia hatcheri*) (Ștefureac 1963b:86-90).

In 1977, the Commission for the Nature Monuments Protection accepted the undertaking of an ecological study on the endemic, relic and rare taxa of the Romanian Flora. In the study regarding the conservation of the bryological genetic pool, Plămadă E. proposed four liverworts for protection, *Moerckia hibernica*, *Marsupella brevissima*, *Cephaloziella elegans* and *Odontoschisma sphagni*, mentioning that this list could be completed with four additional liverwort species, *Anastrepta orcadensis*, *Bucegia romanica*, *Harpanthus flotovianus* and *Mylia taylorii* (Plămadă 1977b:113,115; Ștefureac 1986f:189). Out of these, only for *Bucegia romanica* was gathered a complete documentation for its pronouncement as nature monument (Tăuber 1980:121).

A list of 65 rare bryophytes from Romania was drawn up by Mohan (1994), among which 31 are liverworts: *Anastrepta orcadensis*, *Anastrophyllum hellerianum*, *A. michauxii*, *Barbilophozia hatcheri*, *B. kunzeana*, *Bucegia romanica*, *Calypogeia integristipula*, *C. muelleriana*, *C. neesiana*, *Cephalozia catenulata*, *Cololejeunea calcarea*, *C. rossettiana*, *Fossombronina wondraczekii*, *Geocalyx graveolens*, *Harpanthus flotovianus*, *H. scutatus*, *Kurzia pauciflora*, *Lophozia wenzelii*, *Marchantia paleacea*, *Marsupella brevissima*, *Moerckia hibernica*, *Mylia taylorii*, *Odontoschisma sphagni*, *Peltolepis quadrata*, *Tritomaria polita*, *Scapania calcicola*, *S. compacta*, *S. helvetica*, *S. undulata*, *Trichocolea tomentella*. *Marchantia paleacea* was not confirmed as being present in Romania and were therefore excluded from the list of liverworts from Romania (Ștefănuț 2004d:38).

In 2001, 15 liverworts were included in the list of species of European conservation interest, namely: *Asterella saccata* (V), *Bazzania flaccida* (NT), *Bucegia romanica* (R), *Cephalozia lacinulata* (V), *Cephaloziella elachista* (K), *C. elegans* (K), *Frullania fragilifolia* (NT), *Jungermannia subulata* (R), *Lophozia ascendens* (R), *Mannia triandra* (R), *Porella baueri* (T), *Riccia frostii* (R), *Scapania brevicaulis* (R), *Scapania helvetica* (NT) and *Scapania verrucosa* (R) (NT – not threatened species; R – rare species; V – vulnerable species; K – species with unknown protection status; T – not threatened species, but with uncertain taxonomic status) (Sabovljević & al. 2001:77-83).

Priority species

Following the assessment of the bryophytes listed in the Red Data Book of European Bryophytes - ECCB 1995, 15 liverworts that are present in Romania were identified as endangered at European level.

Liverworts species from Romania that are endangered at European level

1. *Asterella saccata* (Wahlenb.) A. Evans - **V**
2. *Bucegia romanica* Radian - **R**
3. *Cephalozia lacinulata* J.B. Jack ex Spruce - **V**
4. *Cephaloziella elachista* (J.B. Jack ex Gottsche & Rabenh.) Schiffn. - **K**
5. *Cephaloziella elegans* (Heeg) Schiffn. – **K**
6. **Cephaloziella massalongi* (Spruce) Müll. Frib. - **R**
7. **Frullania parvistipula* Steph. – **E**
8. **Haplomitrium hookeri* (Sm.) Nees – **R**
9. *Jungermannia subulata* A. Evans - **R**
10. *Lophozia ascendens* (Warnst.) R.M. Schust. - **R**
11. ***Mannia triandra* (Scop.) Grolle - R**
12. **Pallavicinia lyellii* (Hook.) Carruth. – **V**
13. *Riccia frostii* Austin - **R**
14. *Scapania brevicaulis* Taylor - **K**
15. *Scapania verrucosa* Heeg – **R**

Signs used:

Bolded names – species included in the Bern Convention and in the Law 13/1993;

Underlined names – species included in Annex II of the Habitats Directive 92/43/EEC;

* - Identified as new species for Romania in the last 10 years.

Species protected by legislation

The main legal mechanisms for the protection of bryophyte species in Romania are the Law 13/1993 by which Romania joins the Bern Convention on the Conservation of European Wildlife and Natural Habitats, OU 236/2000, OU 57/2007 and OM 1964/2008, which includes two liverworts and eight mosses from Romania: *Frullania parvistipula*, *Mannia triandra*, *Buxbaumia viridis*, *Dichelyma capillaceum*, *Dicranum viride*, *Encalypta mutica*, *Hamatocaulis vernicosus*, *Meesia longiseta*, *Orthotrichum rogeri*, and *Pyramidula tetragona*.

THE RED LIST OF HORNWORTS AND LIVERWORTS TO ROMANIA

Following the field studies and the examination of scientific literature during over 10 years of scientific activity, a large amount of chorological data was gathered, that was used in the assessment of the degree at which Romanian liverworts are endangered, according to Hallingbäck & al. (1998) and the IUCN 2001 - version 3.1. criteria, adapted for Romania.

In the assessment of the degree at which Romanian hornworts and liverworts are endangered, several factors were taken into account, namely:

- a. the distribution of the species,
- b. the degree of occupation in the distribution area,
- c. fragmentation of the distribution area,
- d. number of localities,
- e. the degree of degradation of the occupied habitats by:
 - i. desiccation,
 - ii. land clearing,
 - iii. pollution,
 - iv. other anthropic modifications,
- f. the dependence of habitats with reduced distribution (bogs).
- g. conservation status in Europe

Following this evaluation two hornwort species (2 CR – critically endangered) and 69 liverwort species (35 CR – critically endangered, 20 EN – endangered, 14 VU – vulnerable) were identified as threatened.

ANTHOCEROTOPHYTA

Anthocerotaceae

1. **CR** – *Anthoceros agrestis* Paton
2. **CR** – *Phaeoceros carolinianus* (Michx.) Prosk.

MARCHANTIOPHYTA

Aneuraceae

3. **EN** – *Riccardia incurvata* Lindb.

Aytoniaceae

4. **CR** – *Asterella gracilis* (F. Weber) Underw.
5. **VU** – *Asterella lindenbergiana* (Corda ex Nees) Arnell
6. **CR** – *Asterella saccata* (Wahlenb.) A. Evans
7. **CR** – *Mannia pilosa* (Hornem.) Frye & L. Clark
8. **CR** – *Mannia triandra* (Scop.) Grolle

Calypogeiaceae

9. **EN** – *Calypogeia integristipula* Steph.
10. **VU** – *Calypogeia sphagnicola* (Arnell et J. Perss.) Warnst. et Loeske

Cephaloziaceae

11. **EN** – *Cephalozia loitlesbergeri* Schiffner
12. **EN** – *Cladopodiella fluitans* (Nees) H. Buch
13. **CR** – *Odontoschisma denudatum* (Mart.) Dumort.
14. **CR** – *Odontoschisma sphagni* (Dicks.) Dumort.
15. **EN** – *Pleurocladula albescens* (Hook.) Grolle

Cephaloziellaceae

16. **CR** – *Cephaloziella baumgartneri* Schiffner
17. **CR** – *Cephaloziella elachista* (J.B. Jack ex Gottsche & Rabenh.) Schiffn.
18. **CR** – *Cephaloziella elegans* (Heeg) Schiffn.
19. **CR** – *Cephaloziella integerrima* (Lindb.) Warnst.
20. **CR** – *Cephaloziella massalongi* (Spruce) Müll. Frib.

Cleveaceae

21. **VU** – *Athalamia hyalina* (Sommerf.) S. Hatt.
22. **EN** – *Peltolepis quadrata* (Saut.) Müll. Frib.
23. **CR** – *Sauteria alpina* (Nees) Nees

Codoniaceae

24. **EN** – *Fossombronia wondraczekii* (Corda) Dumort.

Frullaniaceae

25. **VU** – *Frullania jackii* Gottsche
26. **CR** – *Frullania parvistipula* Steph.

Geocalyceae

27. **EN** – *Geocalyx graveolens* (Schrad.) Nees
28. **CR** – *Harpanthus flotovianus* (Nees) Nees

Gymnomitriaceae

29. **CR** – *Marsupella boeckii* (Austin) Kaal.
30. **EN** – *Marsupella brevissima* (Dumort.) Grolle
31. **CR** – *Marsupella commutata* (Limpr.) Bernet
32. **CR** – *Marsupella ramosa* Müll. Frib.
33. **VU** – *Marsupella sphacelata* (Gieseke ex Lindenb.) Dumort.
34. **VU** – *Marsupella sprucei* (Limpr.) Bernet.

Haplomitriaceae

35. **CR** – *Haplomitrium hookeri* (Sm.) Nees

Jungermanniaceae

36. **CR** – *Jungermannia exsertifolia* Steph. subsp. *cordifolia* (Dumort.) Váňa
37. **EN** – *Jungermannia polaris* Lindb.
38. **EN** – *Jungermannia subelliptica* (Lindb. ex Kaal.) Levier
39. **CR** – *Jungermannia subulata* A. Evans
40. **CR** – *Nardia insecta* Lindb.

Lophoziaceae

41. **EN** – *Anastrophyllum hellerianum* (Nees ex Lindenb.) R.M. Schust.
42. **CR** – *Anastrophyllum saxicola* (Schreb.) R.M. Schust.
43. **VU** – *Barbilophozia attenuata* (Mart.) Loeske
44. **CR** – *Barbilophozia kunzeana* (Huebener) Müll. Frib.
45. **VU** – *Barbilophozia quadriloba* (Lindb.) Loeske
46. **VU** – *Lophozia ascendens* (Warnst.) R.M. Schust.
47. **CR** – *Lophozia opacifolia* Culm. ex Meyl.
48. **CR** – *Tritomaria polita* (Nees) Jörg.

Lunulariaceae

49. **CR** – *Lunularia cruciata* (L.) Lindb.

50. **VU** – *Bucegia romanica* Radian Marchantiaceae
51. **EN** – *Metzgeria violacea* (Ach.) Dumort. Metzgeriaceae
52. **CR** – *Oxymitra incrassata* (Brot.) Sérgio et Sim-Sim Oxymitraceae
53. **EN** – *Moerckia blyttii* (Moerch) Brockm. Pallaviciniaceae
54. **CR** – *Moerckia hibernica* (Hook.) Gottsche
55. **CR** – *Pallavicinia lyellii* (Hook.) Carruth. Ricciaceae
56. **CR** – *Riccia bifurca* Hoffm.
57. **VU** – *Riccia ciliata* Hoffm.
58. **VU** – *Riccia ciliifera* Link ex Lindenb.
59. **EN** – *Riccia frostii* Austin
60. **CR** – *Riccia gougetiana* Durieu et Mont.
61. **EN** – *Riccia papillosa* Moris Scapaniaceae
62. **EN** – *Scapania apiculata* Spruce
63. **CR** – *Scapania brevicaulis* Taylor
64. **CR** – *Scapania crassiretis* Bryhn
65. **CR** – *Scapania gymnostomophila* Kaal.
66. **VU** – *Scapania helvetica* Gottsche
67. **CR** – *Scapania paludicola* Loeske et Müll. Frib.
68. **EN** – *Scapania paludosa* (Müll. Frib.) Müll. Frib.
69. **EN** – *Scapania scandica* (Arnell et H. Buch) Macvicar
70. **EN** – *Scapania uliginosa* (Sw. ex Lindenb.) Dumort.
71. **VU** – *Scapania verrucosa* Heeg

The distribution data of hornworts and liverworts, correlated with the Red List for Romanian Hornworts and Liverworts was represented on maps of the number of endangered species / area unit (6' latitude × 10' longitude), in threat categories (Figs. 226-229).

Based on maps analysis it was possible to identify the most important areas for hornworts and liverworts conservation in Romania:

- Rodna Mountains
- Rarău Mountain
- Giumalău Mountain
- Călimani Mountains
- Ciucaș Mountains
- Bucegi Massif
- Piatra Craiului Mountains
- Făgăraș Mountains
- Cindrel Mountains
- Parâng Mountains
- Retezat Mountains
- Apuseni Mountains

Selection and proposal of **Important Bryophyte Areas** will be the objective of a future project.

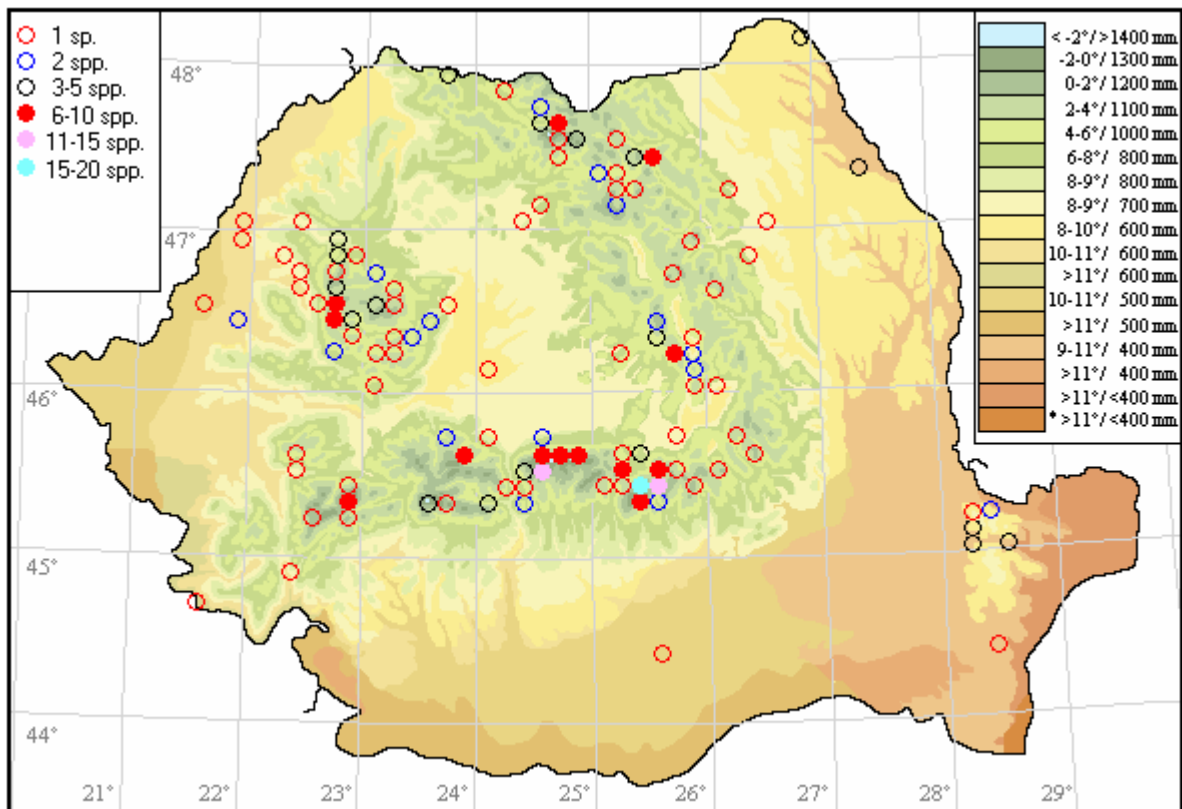


Fig. 226. The distribution of zones with threatened hornworts and liverworts in Romania.

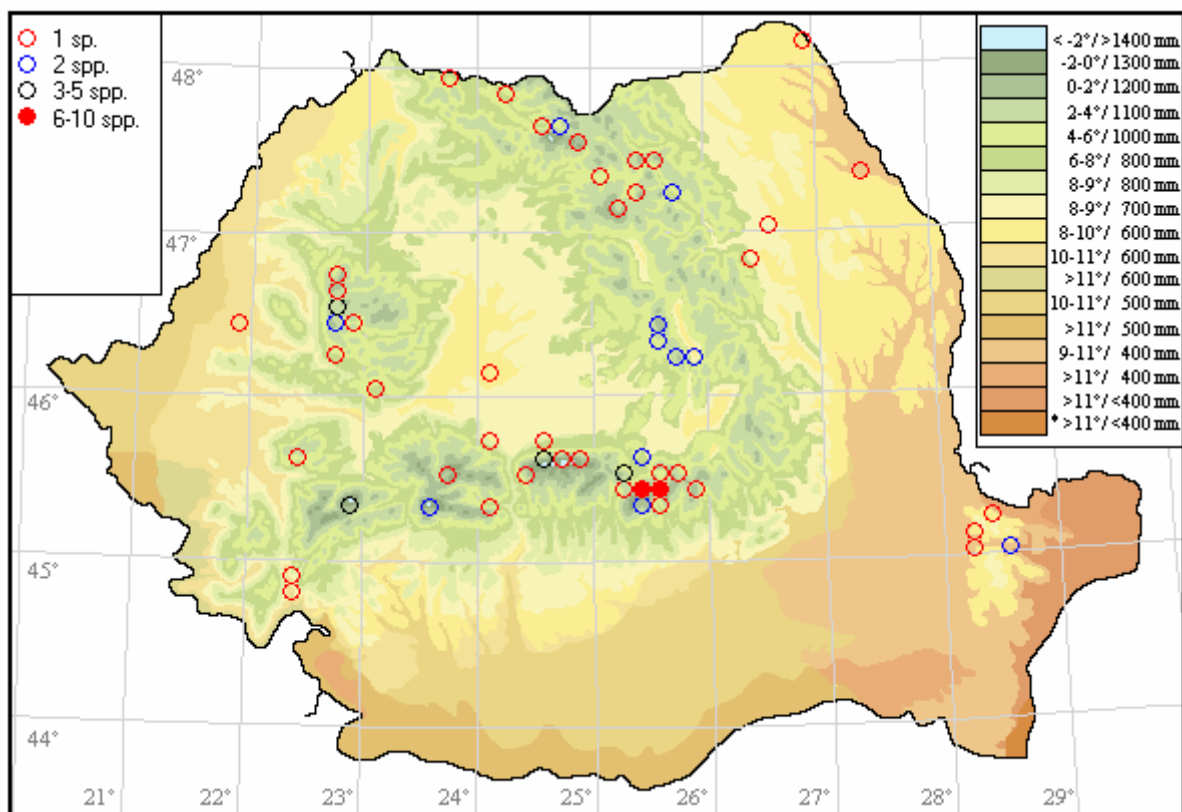


Fig. 227. The distribution of zones with CR- critically endangered hornworts and liverworts in Romania.

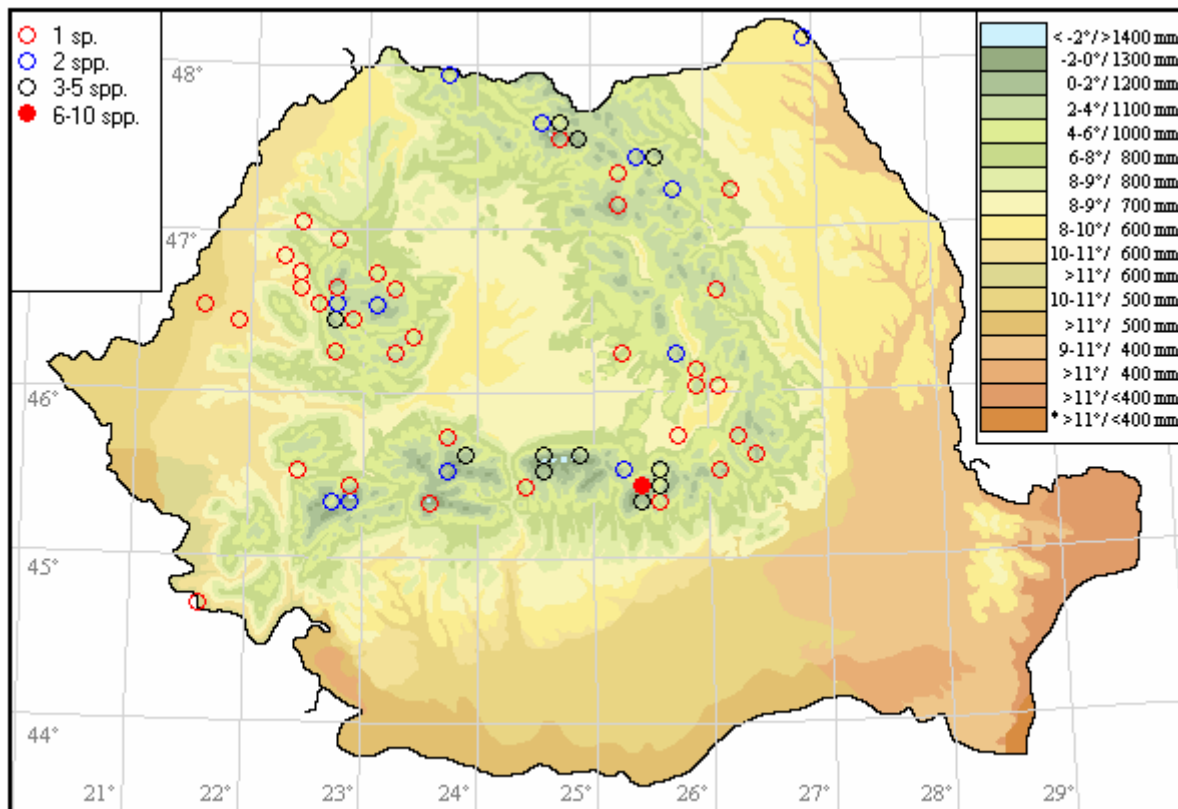


Fig. 228. The distribution of zones with EN - endangered hornworts and liverworts in Romania.

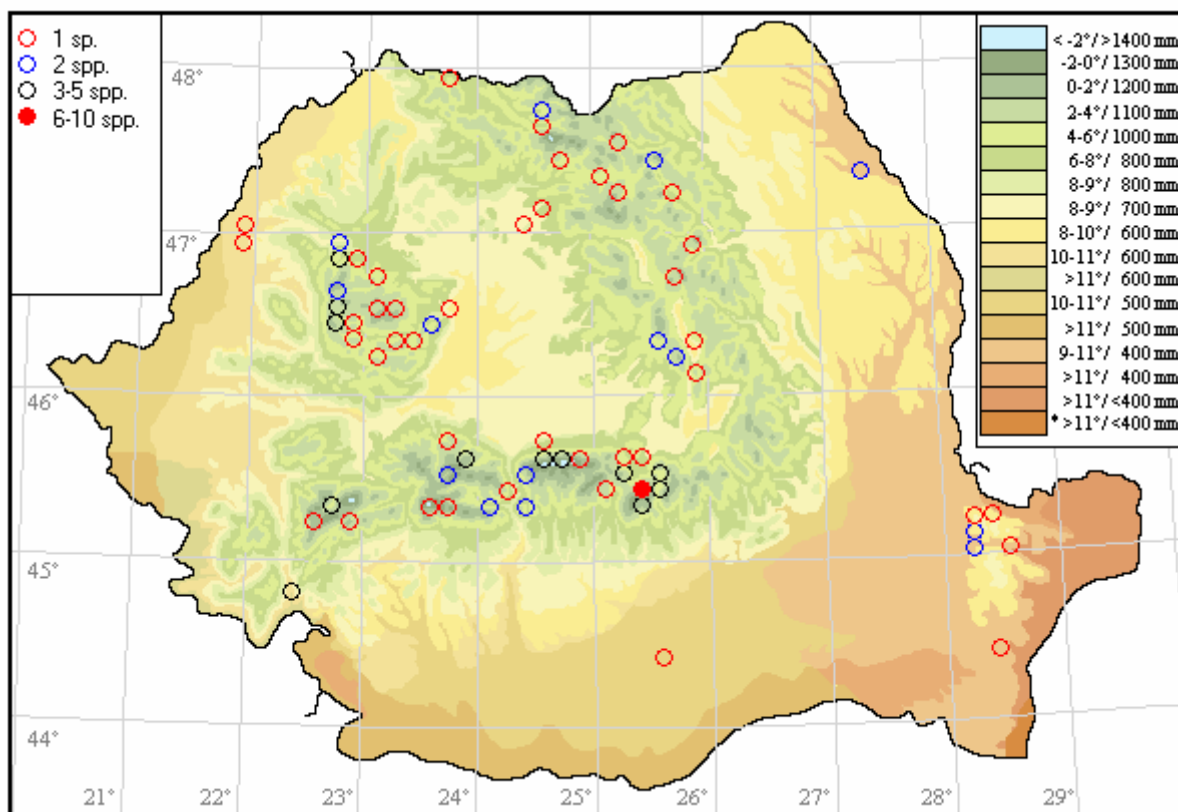


Fig. 229. The distribution of zones with VU - vulnerable hornworts and liverworts in Romania.

LIST OF ACCEPTED NAMES AND SYNONIMS
(including rejected taxon with ←)

- Acolea breviloba* Steph. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Acolea brevissima Dumort. 1874 = ***Marsupella brevissima*** (Dumort.) Grolle
Acolea cochlearis (Lindb.) Steph. = ***Marsupella brevissima*** (Dumort.) Grolle
Acolea concinnata (Lightf.) Dumort. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Acolea conferta (Limpr.) C. Massal. & Carestia = ***Marsupella brevissima*** (Dumort.) Grolle
Acolea corallioides (Nees) Dumort. = ***Gymnomitrium corallioides*** Nees
Acolea crassifolia (Carrington) Steph. = ***Marsupella brevissima*** (Dumort.) Grolle
Acolea fauriana Steph. = ***Gymnomitrium corallioides*** Nees
Acolea varians (Lindb.) Steph. = ***Marsupella brevissima*** (Dumort.) Grolle
← *Alicularia breidleri* Limpr. 1880 = ***Nardia breidleri*** (Limpr.) Lindb.
Alicularia crassula Lorb., nom. nud. = ***Nardia insecta*** Lindb.
Alicularia geoscypha var. *insecta* (Lindb.) Macvicar = ***Nardia insecta*** Lindb.
Alicularia geoscyphus De Not. 1859 = ***Nardia geoscyphus*** (De Not.) Lindb.
Alicularia geoscyphus De Not. fo. *insecta* (Lindb.) Müll. Frib. = ***Nardia insecta*** Lindb.
Alicularia haematosticta (Nees.) Warnst. = ***Nardia geoscyphus*** (De Not.) Lindb.
Alicularia insecta (Lindb.) Levier = ***Nardia insecta*** Lindb.
Alicularia levieri (Steph.) Steph. = ***Jungermannia confertissima*** Nees
Alicularia minor (Nees) Limpr. = ***Nardia geoscyphus*** (De Not.) Lindb.
Alicularia muelleriana (Schiffn.) Müll. Frib. = ***Jungermannia hyalina*** Lyell
Alicularia rotaeana De Not. = ***Nardia scalaris*** Gray
Alicularia scalaris var. *minor* (Nees) Nees = ***Nardia geoscyphus*** (De Not.) Lindb.
Alicularia scalaris (Gray) Corda = ***Nardia scalaris*** Gray
Anastrepta orcadensis (Hook.) Schiffn.
Anastrepta orcadensis fo. *attenuata* Nees = ***Anastrepta orcadensis*** (Hook.) Schiffn.
Anastrepta orcadensis var. *elongata* Schiffn. = ***Anastrepta orcadensis*** (Hook.) Schiffn.
Anastrophyllum hellerianum (Nees ex Lindenb.) R.M. Schust.
Anastrophyllum michauxii (F. Web.) H. Buch
Anastrophyllum minutum (Schreb.) R.M. Schust.
Anastrophyllum minutum var. *grandis* (Gottsche ex Lindb.) R.M. Schust. = ***Anastrophyllum minutum*** (Schreb.) R.M. Schust.
Anastrophyllum saxicola (Schrad.) R.M. Schust.
Anastrophyllum tamurae Steph. = ***Anastrophyllum michauxii*** (F. Web.) H. Buch
Aneura incurvata (Lindb.) Steph. = ***Riccardia incurvata*** Lindb.
Aneura latifrons Lindb. 1873 = ***Riccardia latifrons*** (Lindb.) Lindb.
Aneura latissima Spruce = ***Aneura pinguis*** (L.) Dumort.
Aneura multifida var. *rivularis* Rabenh. = ***Riccardia chamaedryfolia*** (With.) Grolle
Aneura multifida (L.) Dumort. = ***Riccardia multifida*** (L.) Gray
Aneura multifida var. *ambrosioides* Nees = ***Riccardia multifida*** (L.) Gray
Aneura multifida var. *major* Nees = ***Riccardia chamaedryfolia*** (With.) Grolle
Aneura palmata (Hedw.) Dumort. = ***Riccardia palmata*** (Hedw.) Carruth.
Aneura palmata var. *major* Nees = ***Riccardia latifrons*** (Lindb.) Lindb.
Aneura pinguis (L.) Dumort.
Aneura pinnatifida Nees = ***Riccardia chamaedryfolia*** (With.) Grolle
Aneura sinuata (Hook.) Dumort. = ***Riccardia chamaedryfolia*** (With.) Grolle
Anthelia andina Herzog = ***Anthelia juratzkana*** (Limpr.) Trevis.
Anthelia julacea (L.) Dumort.
Anthelia julacea subsp. *juratzkana* (Limpr.) Meyl. = ***Anthelia juratzkana*** (Limpr.) Trevis.
Anthelia julacea var. *gracilis* (Hook.) Nees = ***Anthelia julacea*** (L.) Dumort.
Anthelia juratzkana (Limpr.) Trevis.
Anthelia juratzkana var. *elata* Schiffn. = ***Anthelia juratzkana*** (Limpr.) Trevis.
Anthelia nivalis Sw. ex Lindb. = ***Anthelia juratzkana*** (Limpr.) Trevis.
Anthoceros agrestis Paton
Anthoceros beltrani Casares-Gil = ***Phaeoceros laevis*** (L.) Prosk.
Anthoceros carolinianus Michx. = ***Phaeoceros carolinianus*** (Michx.) Prosk.

Anthoceros communis Steph. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros constans Lindb. = ***Anthoceros punctatus*** L.
Anthoceros crispulus auct. = ***Anthoceros agrestis*** Paton
Anthoceros curnowii Steph. = ***Phaeoceros laevis*** (L.) Prosk.
Anthoceros husnotii Steph. = ***Anthoceros punctatus*** L.
Anthoceros incrassatus Schiffn. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros japonicus Steph. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros koreanus Steph. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros laevis fo. *tenuis* Nees = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros laevis L. = ***Phaeoceros laevis*** (L.) Prosk.
Anthoceros laevis L. subsp. *laevis* L. = ***Phaeoceros laevis*** (L.) Prosk.
Anthoceros laevis subsp. *carolinianus* (L.) R.M. Schust. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros laevis subsp. *carolinianus* (Michx.) Prosk. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros laevis var. *carolinianus* (Michx.) Lindb. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros laevis var. *major* Aust. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros longicapsulus Steph. = ***Anthoceros punctatus*** L.
Anthoceros miyoschianus Steph. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros moldavicus Tarnav. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros multifidus auct. = ***Anthoceros agrestis*** Paton
Anthoceros multilobulus Lindb. = ***Anthoceros punctatus*** L.
Anthoceros punctatus auct., non L. = ***Anthoceros agrestis*** Paton
Anthoceros punctatus auct., p.p. = ***Anthoceros punctatus*** L.
Anthoceros punctatus L.
Anthoceros punctatus var. *cavernosus* Gottsche & al. = ***Anthoceros agrestis*** Paton
Anthoceros punctatus var. *husnotii* (Steph.) Zodda = ***Anthoceros punctatus*** L.
Anthoceros reticulatus Steph. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Anthoceros stableri Steph. = ***Anthoceros punctatus*** L.
Anthoceros subcostatus Steph. = ***Phaeoceros carolinianus*** (Michx.) Prosk.
Antoiria vulgaris Raddi = ***Porella platyphylla*** (L.) Pfeiff.
Aplozia amplexicaulis (Dumort.) Dumort. = ***Jungermannia sphaerocarpa*** Hook.
Aplozia anomala (Hook.) Warnst. = ***Mylia anomala*** (Hook.) Gray
Aplozia atrovirens (Dumort.) Dumort. = ***Jungermannia atrovirens*** Dumort.
Aplozia atrovirens var. *arnellii* Schiffn. = ***Jungermannia pumila*** Dicks.
Aplozia autumnalis (DC.) Heeg = ***Jamesoniella autumnalis*** (DC.) Steph.
Aplozia caespiticia (Lindenb.) Dumort. = ***Jungermannia caespiticia*** Lindenb.
Aplozia confertissima (Nees) Dumort. = ***Jungermannia confertissima*** Nees
Aplozia cordifolia Dumort. 1874 = ***Jungermannia exsertifolia*** subsp. *cordifolia* (Dumort.) Vána
Aplozia cordifolia var. *turfosa* Warnst. = ***Jungermannia gracillima*** Sm.
Aplozia crenulata (Mitt.) Lindb. = ***Jungermannia gracillima*** Sm.
Aplozia crenulata var. *gracillima* (Sm.) Heeg = ***Jungermannia gracillima*** Sm.
Aplozia cristulata Dumort. = ***Jungermannia gracillima*** Sm.
Aplozia gracillima (Sm.) Dumort. = ***Jungermannia gracillima*** Sm.
Aplozia hyalina (Lyell) Dumort. = ***Jungermannia hyalina*** Lyell
Aplozia lanceolata L. = ***Jungermannia atrovirens*** Dumort.
Aplozia lanceolata sensu Dumort. = ***Jungermannia leiantha*** Grolle
Aplozia lanceolata var. *gemmaipara* Heeg = ***Jungermannia subulata*** A. Evans
Aplozia lanceolata var. *prolifera* Breidl. = ***Jungermannia subulata*** A. Evans
Aplozia lurida (Dumort.) Dumort. = ***Jungermannia sphaerocarpa*** Hook.
Aplozia nana (Nees) Breidl. = ***Jungermannia sphaerocarpa*** Hook.
Aplozia nana var. *confertissima* (Nees) Breidl. = ***Jungermannia confertissima*** Nees
Aplozia oblongifolia (Müll. Frib.) Jörg. = ***Jungermannia pumila*** Dicks.
Aplozia obovata (Nees) Loeske = ***Jungermannia obovata*** Nees
Aplozia polaris (Lindb.) Bryhn = ***Jungermannia polaris*** Lindb.
Aplozia pumila (With.) Dumort. = ***Jungermannia pumila*** Dicks.
Aplozia pumila var. *sphaerocarpoidea* (De Not.) C. Massal. = ***Jungermannia atrovirens*** Dumort.
Aplozia punctata (Gottsche) Dumort. = ***Jungermannia caespiticia*** Lindenb.
Aplozia riparia (Taylor) Dumort. = ***Jungermannia atrovirens*** Dumort.
Aplozia rivularis (Schiffn.) Schiffn. = ***Jungermannia pumila*** Dicks.
Aplozia rostellata (Huebener) Dumort. = ***Jungermannia pumila*** Dicks.
Aplozia scalariformis (Nees) Dumort. = ***Jungermannia confertissima*** Nees

Aplozia schiffneri Loitl. = ***Jungermannia polaris*** Lindb.
Aplozia schraderi (Mart.) Dumort. = ***Jamesoniella autumnalis*** (DC.) Steph.
Aplozia sphaerocarpa (Hook.) Dumort. = ***Jungermannia sphaerocarpa*** Hook.
Aplozia sphaerocarpa var. *confertissima* (Nees) Heeg = ***Jungermannia confertissima*** Nees
Aplozia sphaerocarpoidea (De Not.) Dumort. = ***Jungermannia atrovirens*** Dumort.
Aplozia subapicalis (Nees) Dumort. = ***Jamesoniella autumnalis*** (DC.) Steph.
Aplozia taylorii (Hook.) Dumort. = ***Mylia taylorii*** (Hook.) Gray
Aplozia tersa (Nees) Bernet = ***Jungermannia sphaerocarpa*** Hook.
Aplozia towadensis S. Okamura = ***Jungermannia atrovirens*** Dumort.
Aplozia zeyheri (Huebener) Dumort. = ***Jungermannia pumila*** Dicks.
Apometzgeria pubescens (Schrank) Kuwah.
Aspiromitus punctatus Steph. emend. Rink subsp. *agrestis* (Paton) R.M. Schust. = ***Anthoceros agrestis*** Paton
Aspiromitus punctatus Steph. emend. Rink subsp. *punctatus* (L.) Schljakov = ***Anthoceros punctatus*** L.
Asterella bonjeanii Trevis. = ***Asterella lindenbergiana*** (Corda ex Nees) Arnell
Asterella fragrans (Nees) Trevis. = ***Asterella saccata*** (Wahlenb.) A. Evans
Asterella gracilis (F. Web.) Underw.
Asterella hemisphaerica (L.) P. Beauv. = ***Reboulia hemisphaerica*** (L.) Raddi
Asterella hemisphaerica var. *fasciata* (Myrin ex Hartm.) Lindb. = ***Reboulia hemisphaerica*** (L.) Raddi
Asterella kiaerii Kaal. = ***Conocephalum conicum*** (L.) Underw.
Asterella lindenbergiana (Corda ex Nees) Arnell
Asterella lindenbergiana (Corda ex Nees) Lindb. = ***Asterella lindenbergiana*** (Corda ex Nees) Arnell
Asterella ludwigii auct. = ***Asterella gracilis*** (F. Web.) Underw.
Asterella nana (Lindb.) C. Massal. = ***Asterella gracilis*** (F. Web.) Underw.
Asterella pilosa (Wahlenb.) Trevis. = ***Asterella gracilis*** (F. Web.) Underw.
Asterella saccata (Wahlenb.) A. Evans
Athalamia hyalina (Sommerf.) S. Hatt.
Athalamia hyalina var. *suecica* (Lindb.) S. Hatt. = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Aytonia erythrosperma (Sull.) Underw. = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Barbilophozia attenuata (Mart.) Loeske
Barbilophozia barbata (Schmidel ex Schreb.) Loeske
Barbilophozia barbata var. *amphigastrata* Müll. Frib. = ***Barbilophozia barbata*** (Schmidel ex Schreb.) Loeske
Barbilophozia baueriana (Schiffn.) Loeske = ***Barbilophozia hatcheri*** (A. Evans) Loeske
Barbilophozia floerkei (F. Web. & D. Mohr) Loeske
Barbilophozia gracilis (Schleich. ex DC.) Müll. Frib. = ***Barbilophozia attenuata*** (Mart.) Loeske
Barbilophozia hatcheri (A. Evans) Loeske
Barbilophozia kunzeana (Huebener) Müll. Frib.
Barbilophozia lycopodioides (Wallr.) Loeske
Barbilophozia lycopodioides var. *hatcheri* (A. Evans) Schljakov = ***Barbilophozia hatcheri*** (A. Evans) Loeske
Barbilophozia obtusa (Lindb.) H. Buch = ***Lophozia obtusa*** (Lindb.) A. Evans
Barbilophozia quadriloba (Lindb.) Loeske
Barbilophozia quadriloba var. *glareosa* (Jörg.) Lammes = ***Barbilophozia quadriloba*** (Lindb.) Loeske
Barbilophozia quinquedentata (Huds.) Loeske = ***Tritomaria quinquedentata*** (Huds.) H. Buch
Bazzania deflexa (Mart.) Steph. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Bazzania deflexa (Mart.) Trevis. = ***Bazzania flaccida*** (Dumort.) Grolle
Bazzania denudata auct., non (Torrey) Grev. = ***Bazzania flaccida*** (Dumort.) Grolle
Bazzania flaccida (Dumort.) Grolle
Bazzania implexa (Nees) Müll. Frib. = ***Bazzania flaccida*** (Dumort.) Grolle
Bazzania triangularis (Schleich. ex Steud.) Loeske = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Bazzania triangularis var. *implexa* (Nees) Zahlbr. = ***Bazzania flaccida*** (Dumort.) Grolle
Bazzania tricrenata (Wahlenb.) Lindb.
Bazzania tricrenata var. *deflexa* (Mart.) C. Massal. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Bazzania tricrenata var. *intercedens* (Schiffn.) Jörg. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Bazzania tricrenata var. *minima* (Hook.) Jörg. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Bazzania tricrenata var. *pygmaea* (Nees) Arnell = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Bazzania tridenticulata (Michx.) Trevis. = ***Bazzania trilobata*** (L.) Gray
Bazzania trilobata (L.) Gray
Bazzania trilobata var. *depauperata* (Müll. Frib.) Grolle = ***Bazzania trilobata*** (L.) Gray
Bellincinia montana Raddi = ***Porella arboris-vitae*** (Dicks.) Grolle
Bellincinia platyphylla (L.) Kunze = ***Porella x baueri*** (Schiffn.) C.E.O. Jensen
Blasia epiphylla Fr. = ***Pellia epiphylla*** (L.) Corda subsp. *epiphylla*

Blasia funckii Corda = *Blasia pusilla* L.
***Blasia pusilla* L.**
Blepharostoma connivens (Dicks.) Dumort. = *Cephalozia connivens* (Dicks.) Lindb.
Blepharostoma setaceum Dumort. = *Kurzia pauciflora* (Dicks.) Grolle
***Blepharostoma trichophyllum* (L.) Dumort.**
Blepharostoma trichophyllum subsp. *brevirete* (Bryhn et Kaal.) R.M. Schust.
Blepharostoma trichophyllum var. *brevirete* Bryhn & Kaal. = *Blepharostoma trichophyllum* (L.) Dumort. subsp. *brevirete* (Bryhn et Kaal.) R.M. Schust.
Blepharozia ciliaris (L.) Dumort. = *Ptilidium ciliare* (L.) Hampe
Blepharozia ciliaris var. *pulcherrimum* Warnst. = *Ptilidium pulcherrimum* (Weber) Vain.
Blepharozia ciliaris var. *wallrothianum* Nees = *Ptilidium pulcherrimum* (Weber) Vain.
Blepharozia pulcherrima (Weber) Lindb. = *Ptilidium pulcherrimum* (Weber) Vain.
Blepharozia pulcherrima fo. *corticola* Müll. Frib. = *Ptilidium pulcherrimum* (Weber) Vain.
Blyttia lyellii (Hook.) Lindeb., Gottsche & Nees = *Pallavicinia lyellii* (Hook.) Carruth.
Blyttia lyellii var. *flotoviana* Nees = *Moerckia hibernica* (Hook.) Gottsche
Blyttia lyellii var. *hibernica* (Hook.) Nees = *Moerckia hibernica* (Hook.) Gottsche
Blyttia moerkii Nees = *Moerckia blyttii* (Moerch) Brockm.
Brissocarpus riccioides Bisch. = *Corsinia coriandrina* (Spreng.) Lindb.
***Bucegia romanica* Radian**
Bucsecsia romanica (Radian) Györfy = *Bucegia romanica* Radian
Calycularia blyttii (Moerch) Steph. = *Moerckia blyttii* (Moerch) Brockm.
Calycularia hibernica (Hook.) Steph. = *Moerckia hibernica* (Hook.) Gottsche
Calypogeia acuta Steph. = *Calypogeia azurea* Stotler & Crotz
Calypogeia adscendens (Nees) Warnst. = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
← *Calypogeia arguta* Nees et Mont.
***Calypogeia azurea* Stotler & Crotz**
***Calypogeia fissa* (L.) Raddi**
Calypogeia fissa var. *integrifolia* Raddi = *Calypogeia fissa* (L.) Raddi
Calypogeia fissa var. *intermedia* (C.E.O. Jensen) Jörg. = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
***Calypogeia integristipula* Steph.**
Calypogeia macrostipula Warnst. = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
Calypogeia meylanii H. Buch = *Calypogeia integristipula* Steph.
***Calypogeia muelleriana* (Schiffn.) Müll. Frib.**
Calypogeia muelleriana fo. *sphagnicola* (Arnell & J. Perss.) Schljakov = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
***Calypogeia neesiana* (C. Massal. & Carestia) Müll. Frib.**
Calypogeia neesiana var. *hygrophila* Müll. Frib. = *Calypogeia neesiana* (C. Massal. & Carestia) Müll. Frib.
Calypogeia neesiana var. *latifolia* Jörg. = *Calypogeia neesiana* (C. Massal. & Carestia) Müll. Frib.
Calypogeia neesiana var. *laxa* Meyl. ex Müll. Frib. = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
Calypogeia neesiana var. *meylanii* (H. Buch) R.M. Schust. = *Calypogeia integristipula* Steph.
Calypogeia neesiana var. *repanda* (Müll. Frib.) Meyl. = *Calypogeia neesiana* (C. Massal. & Carestia) Müll. Frib.
Calypogeia neesiana var. *rotundifolia* Müll. Frib. = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
Calypogeia neesiana var. *subdivisa* Schiffn. = *Calypogeia integristipula* Steph.
Calypogeia paludosa Warnst. = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
***Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske**
Calypogeia sphagnicola var. *submersa* (Arnell) Müll. Frib. = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
Calypogeia submersa (Arnell) Warnst. = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
***Calypogeia suecica* (Arnell & J. Perss.) Müll. Frib.**
Calypogeia suecica fo. *erecta* (Meyl.) Meyl. = *Calypogeia suecica* (Arnell & J. Perss.) Müll. Frib.
Calypogeia suecica subsp. *germanica* Schiffn. = *Calypogeia suecica* (Arnell & J. Perss.) Müll. Frib.
Calypogeia suecica var. *erecta* Meyl. = *Calypogeia suecica* (Arnell & J. Perss.) Müll. Frib.
Calypogeia suecica var. *laxiretis* Jörg. = *Calypogeia suecica* (Arnell & J. Perss.) Müll. Frib.
Calypogeia suecica var. *repanda* Müll. Frib. = *Calypogeia neesiana* (C. Massal. & Carestia) Müll. Frib.
Calypogeia tenuis (Aust.) A. Evans = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
Calypogeia tenuis var. *minuta* Warnst. = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
Calypogeia tenuis var. *sphagnicola* (Arnell & J. Perss.) Warnst. = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
Calypogeia tenuis var. *submersa* (Arnell) Warnst. = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
Calypogeia trichomanis (L.) Corda = *Calypogeia fissa* (L.) Raddi

Calypogeia trichomanis auct., p.p. = *Calypogeia azurea* Stotler & Crotz
Calypogeia trichomanis fo. *fissa* (L.) Bernet = *Calypogeia fissa* (L.) Raddi
Calypogeia trichomanis var. *adscendens* Nees = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
Calypogeia trichomanis var. *aquatica* Ingham = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
Calypogeia trichomanis var. *communis* Nees = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
Calypogeia trichomanis var. *erecta* Müll. Frib. = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
Calypogeia trichomanis var. *fissa* (L.) De Not. = *Calypogeia fissa* (L.) Raddi
Calypogeia trichomanis var. *neesiana* (C. Massal. & Carestia) Müll. Frib. = *Calypogeia neesiana* (C. Massal. & Carestia) Müll. Frib.
Calypogeia trichomanis var. *sphagnicola* (Arnell & J. Perss.) Meyl. = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
Calypogeia trichomanis var. *submersa* (Warnst.) Meyl. = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
Calypogeia trichomanis var. *suecica* (Arnell & J. Perss.) Meyl. = *Calypogeia suecica* (Arnell & J. Perss.) Müll. Frib.
Calypogeia trichomanis var. *tenuis* Aust. = *Calypogeia sphagnicola* (Arnell & J. Perss.) Warnst. & Loeske
Calypogeia trichomanoides Warnst. = *Calypogeia azurea* Stotler & Crotz
Calypogeia trichomanoides Warnst. = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
Calypogeia variabilis Warnst. = *Calypogeia azurea* Stotler & Crotz
Calypogeia variabilis Warnst. = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.
Candollea asplenioides Raddi = *Plagiochila asplenioides* (L. emend. Taylor) Dumort.
Carpoceros carolinianus Dumort. = *Phaeoceros carolinianus* (Michx.) Prosk.
Carpoceros laevis Dumort. = *Phaeoceros laevis* (L.) Prosk.
Cavendishia platyphylla (L.) Gray = *Porella platyphylla* (L.) Pfeiff.
Cephalozia aeraria Pearson ex Spruce = *Cephaloziella massalongi* (Spruce) Müll. Frib.
Cephalozia affinis Lindb. ex Steph. = *Cephalozia lunulifolia* (Dumort.) Dumort.
Cephalozia albescens (Hook.) Dumort. = *Pleurocladula albescens* (Hook.) Grolle var. *albescens*
Cephalozia albescens var. *islandica* (Nees) Kaal. = *Pleurocladula albescens* var. *islandica* (Nees) L. Söderstr. et Våña
Cephalozia alpicola C. Massal. = *Cephalozia bicuspidata* (L.) Dumort.
Cephalozia ambigua C. Massal.
Cephalozia ambigua var. *paludosa* Jörg. = *Cephalozia ambigua* C. Massal.
Cephalozia aquatica (Limpr.) Steph. = *Cladopodiella fluitans* (Nees) H. Buch
Cephalozia asperifolia C.E.O. Jensen, non Taylor = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephalozia asprella Steph. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephalozia baueri (Mart.) C. Massal. = *Nowellia curvifolia* (Dicks.) Mitt.
Cephalozia bicuspidata (L.) Dumort.
Cephalozia bicuspidata subsp. *ambigua* (C. Massal.) R.M. Schust. = *Cephalozia ambigua* C. Massal.
Cephalozia bicuspidata subsp. *lammersiana* (Huebener) R.M. Schust. = *Cephalozia bicuspidata* var. *lammersiana* (Huebener) Breidl.
Cephalozia bicuspidata var. *alpicola* (C. Massal.) C. Massal. & Carestia = *Cephalozia bicuspidata* (L.) Dumort.
Cephalozia bicuspidata var. *aquatica* Limpr. = *Cladopodiella fluitans* (Nees) H. Buch
Cephalozia bicuspidata var. *arctica* Bryhn & Kaal. = *Cephalozia ambigua* C. Massal.
Cephalozia bicuspidata var. *atra* Arnell = *Cephalozia ambigua* C. Massal.
Cephalozia bicuspidata var. *capitata* Ekstr. = *Cephalozia pleniceps* (Aust.) Lindb.
Cephalozia bicuspidata var. *cavifolia* Arnell = *Cephalozia ambigua* C. Massal.
Cephalozia bicuspidata var. *conferta* (Nees) Jaap = *Cephalozia bicuspidata* (L.) Dumort.
Cephalozia bicuspidata var. *lammersiana* (Huebener) Breidl.
Cephalozia bicuspidata var. *setulosa* Spruce = *Cephalozia bicuspidata* (L.) Dumort.
Cephalozia biloba Lindb. = *Cephaloziella rubella* (Nees) Warnst.
Cephalozia bryhnii Kaal. = *Cephaloziella rubella* (Nees) Warnst.
Cephalozia bryhnii var. *elongata* Bryhn = *Cephaloziella hampeana* (Nees) Schiffn.
Cephalozia byssacea (Roth) Dumort. = *Cephaloziella hampeana* (Nees) Schiffn.
Cephalozia byssacea auct. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephalozia catenulata (Huebener) Lindb.
Cephalozia catenulata var. *pallida* Spruce = *Cephalozia lunulifolia* (Dumort.) Dumort.
Cephalozia colombae F.A. Camus = *Cephaloziella massalongi* (Spruce) Müll. Frib.
Cephalozia compacta Warnst. = *Cephalozia connivens* (Dicks.) Lindb.
Cephalozia connivens (Dicks.) Lindb.
Cephalozia connivens var. *compacta* (Warnst.) W.E. Nicholson = *Cephalozia connivens* (Dicks.) Lindb.

Cephalozia crassiflora Spruce = ***Cephalozia pleniceps*** (Aust.) Lindb.
Cephalozia curvifolia (Dicks.) Dumort. = ***Nowellia curvifolia*** (Dicks.) Mitt.
Cephalozia denudata (Mart.) Spruce = ***Odontoschisma denudatum*** (Mart.) Dumort.
Cephalozia divaricata (Sm.) Dumort. = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Cephalozia divaricata var. *latifolia* (Lindb.) Müll. Frib. = ***Marsupella boeckii*** (Aust.) Kaal.
Cephalozia divaricata var. *rupestris* C.E.O. Jensen ex Arnell = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Cephalozia ekstrandii Limpr. = ***Cephalozia pleniceps*** (Aust.) Lindb.
Cephalozia elachista (J.B. Jack) Lindb. = ***Cephaloziella elachista*** (J.B. Jack ex Gottsche & Rabenh.) Schiffn.
Cephalozia elegans Heeg 1895 = ***Cephaloziella elegans*** (Heeg) Schiffn.
Cephalozia erosa (Limpr. ex Warnst.) C. Massal. = ***Cephaloziella hampeana*** (Nees) Schiffn.
Cephalozia fluitans (Nees) Spruce = ***Cladopodiella fluitans*** (Nees) H. Buch
Cephalozia francisci var. *fluitans* (Nees) Aust. = ***Cladopodiella fluitans*** (Nees) H. Buch
Cephalozia hagenii Bryhn = ***Cephaloziella hampeana*** (Nees) Schiffn.
Cephalozia hampeana (Nees) Douin & Schiffn. ex Arnell = ***Cephaloziella hampeana*** (Nees) Schiffn.
Cephalozia helleri Lindb. = ***Anastrophyllum hellerianum*** (Nees ex Lindenb.) R.M. Schust.
Cephalozia heterostipa Carrington & Spruce = ***Gymnocolea inflata*** (Huds.) Dumort.
Cephalozia integerrima Lindb. 1875 = ***Cephaloziella integerrima*** (Lindb.) Warnst.
Cephalozia islandica (Nees) Lindb. = ***Pleurocladula albescens*** var. *islandica* (Nees) L. Söderstr. et Váňa
Cephalozia islandica var. *albescens* (Hook.) Lindb. = ***Pleurocladula albescens*** (Hook.) Grolle var. *albescens*
Cephalozia jackii Limpr. ex Spruce = ***Cephaloziella rubella*** (Nees) Warnst.
Cephalozia lacinulata J.B. Jack ex Spruce
Cephalozia lammersiana (Huebener) Carrington = ***Cephalozia bicuspidata*** var. *lammersiana* (Huebener) Breidl.
Cephalozia leucantha Spruce
Cephalozia loitlesbergeri Schiffn.
Cephalozia lunulifolia (Dumort.) Dumort.
Cephalozia macrantha Kaal. & W.E. Nicholson = ***Cephalozia pleniceps*** (Aust.) Lindb.
Cephalozia massalongi Spruce = ***Cephaloziella massalongi*** (Spruce) Müll. Frib.
Cephalozia media Lindb. = ***Cephalozia lunulifolia*** (Dumort.) Dumort.
Cephalozia media var. *laxa* Schiffn. = ***Cephalozia lunulifolia*** (Dumort.) Dumort.
Cephalozia media var. *pallida* (Spruce) C. Massal. = ***Cephalozia lunulifolia*** (Dumort.) Dumort.
Cephalozia multiflora Lindb., non Spruce = ***Cephalozia connivens*** (Dicks.) Lindb.
Cephalozia multiflora Spruce, non Lindb. = ***Cephalozia lunulifolia*** (Dumort.) Dumort.
Cephalozia myriantha Lindb. = ***Cephaloziella elegans*** (Heeg) Schiffn.
Cephalozia nevicensis (Carrington) C. Massal. = ***Marsupella boeckii*** (Aust.) Kaal.
Cephalozia nudis Lindb. = ***Cephalozia lunulifolia*** (Dumort.) Dumort.
Cephalozia obtusiloba Lindb. = ***Cladopodiella fluitans*** (Nees) H. Buch
Cephalozia pallida (Spruce) Pearson = ***Cephalozia lunulifolia*** (Dumort.) Dumort.
Cephalozia papillosa Douin = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Cephalozia perssonii C.E.O. Jensen = ***Cephaloziella massalongi*** (Spruce) Müll. Frib.
Cephalozia pleniceps (Aust.) Lindb.
Cephalozia pleniceps var. *capitata* (Ekstr.) Müll. Frib. = ***Cephalozia pleniceps*** (Aust.) Lindb.
Cephalozia pleniceps var. *concinata* Müll. Frib. = ***Cephalozia pleniceps*** (Aust.) Lindb.
Cephalozia pleniceps var. *macrantha* (Kaal. & W.E. Nicholson) Müll. Frib. = ***Cephalozia pleniceps*** (Aust.) Lindb.
Cephalozia pleniceps var. *sphagnorum* (C. Massal.) Jörg. = ***Cephalozia pleniceps*** (Aust.) Lindb.
Cephalozia pulchella C.E.O. Jensen = ***Cephaloziella rubella*** (Nees) Warnst.
Cephalozia raddiana C. Massal. = ***Cephaloziella rubella*** (Nees) Warnst.
Cephalozia reclusa (Taylor) Dumort. = ***Cephalozia catenulata*** (Huebener) Lindb.
Cephalozia rigida Lindb. = ***Anastrophyllum minutum*** (Schreb.) R.M. Schust.
Cephalozia rigida Lindb. = ***Gymnocolea inflata*** (Huds.) Dumort.
Cephalozia rubella (Nees) C. Massal. = ***Cephaloziella rubella*** (Nees) Warnst.
Cephalozia rubriflora (Nees) C.E.O. Jensen = ***Cephaloziella rubella*** (Nees) Warnst.
Cephalozia serriflora Lindb. = ***Cephalozia catenulata*** (Huebener) Lindb.
Cephalozia sphagni (Dicks.) Spruce = ***Odontoschisma sphagni*** (Dicks.) Dumort.
Cephalozia sphagni var. *europaea* (Spruce) Spruce = ***Odontoschisma sphagni*** (Dicks.) Dumort.
Cephalozia spinigera Lindb. = ***Cephaloziella spinigera*** (Lindb.) Warnst.
Cephalozia starkei (Funk) Dumort. ex Cogn. = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Cephalozia subsimplex Lindb. ex Kaal. = ***Cephaloziella rubella*** (Nees) Warnst.
Cephalozia subtilis Velen. = ***Cephaloziella rubella*** (Nees) Warnst.
Cephalozia supina (Taylor) Steph. = ***Lophozia incisa*** (Schrad.) Dumort.

Cephalozia symbolica (Gottsche) Breidl. = *Cephalozia lunulifolia* (Dumort.) Dumort.
Cephalozia symbolica var. *sphagnorum* C. Massal. = *Cephalozia pleniceps* (Aust.) Lindb.
Cephaloziella aeraria (Pearson ex Spruce) Macvicar = *Cephaloziella massalongi* (Spruce) Müll. Frib.
Cephaloziella alpestris Cogn. = *Lophozia sudetica* (Nees ex Huebener) Grolle
Cephaloziella aspericaulis Jörg. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella baumgartneri Schiffn.
Cephaloziella bifida (Schreb.) Schiffn. = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella bifidoides Douin = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella bifidoides var. *dentata* Douin = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella bryhnii (Kaal.) Schiffn. = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella bryhnii var. *elongata* Bryhn = *Cephaloziella hampeana* (Nees) Schiffn.
Cephaloziella byssacea (Roth) Warnst. = *Cephaloziella hampeana* (Nees) Schiffn.
Cephaloziella byssacea auct., non (Roth) Warnst. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella byssacea sensu R.M. Schust. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella byssacea var. *polystratosa* R.M. Schust. & Damsh. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella carnutensis Douin = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella colombae (F.A. Camus) Müll. Frib. = *Cephaloziella massalongi* (Spruce) Müll. Frib.
Cephaloziella compacta (Jörg.) Müll. Frib. = *Cephaloziella massalongi* (Spruce) Müll. Frib.
Cephaloziella curnowii auct. = *Cephaloziella hampeana* (Nees) Schiffn.
Cephaloziella curnowii Macvicar ex Douin = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella divaricata (Sm.) Schiffn.
Cephaloziella divaricata var. *incurva* (Lindb.) C.E.O. Jensen = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella divaricata var. *scabra* M. Howe = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella douinii Schiffn. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella dusenii Steph. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella elachista (J.B. Jack ex Gottsche & Rabenh.) Schiffn.
Cephaloziella elachista (J.B. Jack ex Gottsche & Rabenh.) Schiffn. var. *spinigera* (Lindb.) Müll. Frib. =
Cephaloziella spinigera (Lindb.) Warnst.
Cephaloziella elegans (Heeg) Schiffn.
Cephaloziella erosa Limpr. ex Warnst. = *Cephaloziella hampeana* (Nees) Schiffn.
Cephaloziella gallica Douin = *Cephaloziella hampeana* (Nees) Schiffn.
Cephaloziella hampeana (Nees) Schiffn.
Cephaloziella hampeana var. *curnowii* (Macvicar ex Douin) Jörg. = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella hampeana var. *curnowii* auct. = *Cephaloziella hampeana* (Nees) Schiffn.
Cephaloziella hampeana var. *erosa* (Limpr. ex Warnst.) Müll. Frib. = *Cephaloziella hampeana* (Nees) Schiffn.
Cephaloziella integerrima (Lindb.) Warnst.
Cephaloziella jackii Schiffn. = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella latzeliana Schiffn. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella leucantha (Spruce) Schiffn. = *Cephalozia leucantha* Spruce
Cephaloziella massalongi (Spruce) Müll. Frib.
Cephaloziella minima Douin = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella myriantha (Lindb.) Schiffn. = *Cephaloziella elegans* (Heeg) Schiffn.
Cephaloziella nicholsoni Douin = *Cephaloziella massalongi* (Spruce) Müll. Frib.
Cephaloziella nigrimonasteriensis Douin = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella obtusa Culm. = *Cephaloziella integerrima* (Lindb.) Warnst.
Cephaloziella pappilosa (Douin) Schiffn. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella perssonii (C.E.O. Jensen) Müll. Frib. = *Cephaloziella massalongi* (Spruce) Müll. Frib.
Cephaloziella phyllacantha var. *intermedia* Schade = *Cephaloziella massalongi* (Spruce) Müll. Frib.
Cephaloziella piriflora Douin = *Cephaloziella integerrima* (Lindb.) Warnst.
Cephaloziella polystratosa (R.M. Schust & Damsh.) Konst. = *Cephaloziella divaricata* (Sm.) Schiffn.
Cephaloziella pulchella (C.E.O. Jensen) Douin = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella raddiana (C. Massal.) Schiffn. = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella rubella (Nees) Warnst.
Cephaloziella rubella J. Perss. = *Cephaloziella elegans* (Heeg) Schiffn.
Cephaloziella rubella var. *bryhnii* (Kaal.) Douin = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella rubella var. *elegans* (Heeg) R.M. Schust. = *Cephaloziella elegans* (Heeg) Schiffn.
Cephaloziella rubella var. *luxurians* Douin = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella rubella var. *subtilis* (Velen.) Müll. Frib. = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella rubella var. *sulivantii* (Austin) Müll. Frib. = *Cephaloziella rubella* (Nees) Warnst.
Cephaloziella rupestris C.E.O. Jensen = *Cephaloziella divaricata* (Sm.) Schiffn.

Cephaloziella spinigera (Lindb.) Warnst.
Cephaloziella spinosa Douin = ***Cephaloziella spinigera*** (Lindb.) Warnst.
Cephaloziella starkei (Funck ex Nees) Schiffn. = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Cephaloziella starkei var. *rupestris* (C.E.O. Jensen ex Arnell) Müll. Frib. = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Cephaloziella striatula (C.E.O. Jensen) Douin = ***Cephaloziella spinigera*** (Lindb.) Warnst.
Cephaloziella subdentata Warnst. = ***Cephaloziella spinigera*** (Lindb.) Warnst.
Cephaloziella sullivantii (Austin) A. Evans = ***Cephaloziella rubella*** (Nees) Warnst.
Cephaloziella trivialis Schiffn. = ***Cephaloziella hampeana*** (Nees) Schiffn.
Cephaloziopsis saccatula (Lindb.) Schiffn. = ***Anastrophyllum minutum*** (Schreb.) R.M. Schust.
Cesia cochlearis (Lindb.) Lindb. = ***Marsupella brevissima*** (Dumort.) Grolle
Cesia concinnata (Lightf.) Lindb. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Cesia concinnata var. *argentea* Jörg. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Cesia concinnata var. *bryhnii* Kaal. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Cesia concinnata var. *rufescens* Kaal. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Cesia conferta (Limpr.) Pearson = ***Marsupella brevissima*** (Dumort.) Grolle
Cesia corallioides (Nees) Carruth. = ***Gymnomitrium corallioides*** Nees
Cesia crassifolia (Carrington) Lindb. = ***Marsupella brevissima*** (Dumort.) Grolle
Cesia varians (Limpr.) Lindb. = ***Marsupella brevissima*** (Dumort.) Grolle
Cesia varians var. *cochlearis* (Lindb.) Jörg. = ***Marsupella brevissima*** (Dumort.) Grolle
Cesia varians var. *crassifolia* (Carrington) Jörg. = ***Marsupella brevissima*** (Dumort.) Grolle
Chaetopsis trichophylla (L.) Dumort. = ***Blepharostoma trichophyllum*** (L.) Dumort.
Chiloscyphus adscendens (Hook. & Wilson) Sull. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var.
pallescens
Chiloscyphus coadunatus (Sw.) J.J. Engel & R.M. Schust. = ***Lophocolea bidentata*** (L.) Dumort. var. ***bidentata***
Chiloscyphus coadunatus var. *rivularis* (Raddi) Frisvoll et al. = ***Lophocolea bidentata*** (L.) Dumort. var. ***rivularis***
(Raddi) Schiffn.
Chiloscyphus cuspidatus (Nees) J.J. Engel & R.M. Schust. = ***Lophocolea bidentata*** (L.) Dumort. var. ***bidentata***
Chiloscyphus fragilis (Roth) Schiffn. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var. ***fragilis*** (A. Roth)
Müll. Frib.
Chiloscyphus latifolius (Nees) J.J. Engel & R.M. Schust. = ***Lophocolea bidentata*** (L.) Dumort. var. ***bidentata***
Chiloscyphus latifolius (Nees) J.J. Engel & R.M. Schust. = ***Lophocolea bidentata*** (L.) Dumort. var. ***rivularis***
(Raddi) Schiffn.
Chiloscyphus lophocoleoides Nees = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var. ***pallescens***
Chiloscyphus minor (Nees) J.J. Engel & R.M. Schust. = ***Lophocolea minor*** Nees
Chiloscyphus nordstedtii Schiffn. ex Müll. Frib. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var.
pallescens
Chiloscyphus pallescens (Ehrh. ex Hoffm.) Dumort. var. ***fragilis*** (A. Roth) Müll. Frib.
Chiloscyphus pallescens (Ehrh. ex Hoffm.) Dumort. var. ***pallescens***
Chiloscyphus pallescens fo. *intermedia* Papp = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var. ***pallescens***
Chiloscyphus pallescens var. *erectus* (Boulay) Meyl. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var.
fragilis (A. Roth) Müll. Frib.
Chiloscyphus polyanthos (L.) Corda
Chiloscyphus polyanthos var. *erectus* Boulay = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var. ***fragilis***
(A. Roth) Müll. Frib.
Chiloscyphus polyanthos var. *fragilis* (Roth) Müll. Frib. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var.
fragilis (A. Roth) Müll. Frib.
Chiloscyphus polyanthos var. *grandicalyx* Lindb. & Arnell = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort.
var. ***pallescens***
Chiloscyphus polyanthos var. *heterophylloides* Schiffn. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var.
pallescens
Chiloscyphus polyanthos var. *pallescens* (Ehrh. ex Hoffm.) C.Hartm. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.)
Dumort. var. ***pallescens***
Chiloscyphus polyanthos var. ***rivularis*** (Schrad.) Gottsche et al.
Chiloscyphus polyanthos var. *viticulosus* auct. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var.
pallescens
Chiloscyphus profundus (Nees) J.J. Engel & R.M. Schust. = ***Lophocolea heterophylla*** (Schrad.) Dumort.
Chiloscyphus rivularis (Schrad.) Haszl. = ***Chiloscyphus polyanthos*** var. ***rivularis*** (Schrad.) Gottsche et al.
Chiloscyphus rivularis var. *subteres* Schiffn. = ***Chiloscyphus polyanthos*** var. ***rivularis*** (Schrad.) Gottsche et al.
Chiloscyphus viticulosus auct. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var. ***pallescens***
Chiloscyphus webberianus Steph. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var. ***pallescens***

Chomiocarpus commutatus (Lindenb.) Lindb. = ***Preissia quadrata*** (Scop.) Nees
Chomiocarpus quadratus (Scop.) Lindb. = ***Preissia quadrata*** (Scop.) Nees
Cincinnulus calypogeus (Raddi) Müll. Frib. = ***Calypogeia fissa*** (L.) Raddi
Cincinnulus muellerianus (Schiffn.) Müll. Frib. = ***Calypogeia muelleriana*** (Schiffn.) Müll. Frib.
Cincinnulus neesianus (C. Massal. & Carestia) Fam. = ***Calypogeia neesiana*** (C. Massal. & Carestia) Müll. Frib.
Cincinnulus sprengelii (Nees) Dumort. = ***Calypogeia fissa*** (L.) Raddi
Cincinnulus suecicus (Arnell & J. Perss.) Müll. Frib. = ***Calypogeia suecica*** (Arnell & J. Perss.) Müll. Frib.
Cincinnulus trichomanis (L.) Dumort. = ***Calypogeia fissa*** (L.) Raddi
Cincinnulus trichomanis (L.) Dumort., p.p. = ***Calypogeia azurea*** Stotler & Crotz
Cincinnulus trichomanis var. *muellerianus* (Schiffn.) Meyl. = ***Calypogeia muelleriana*** (Schiffn.) Müll. Frib.
Cincinnulus trichomanis var. *neesianus* (C. Massal. & Carestia) Müll. Frib. = ***Calypogeia neesiana*** (C. Massal. & Carestia) Müll. Frib.
Cincinnulus trichomanis var. *sphagnicolus* (Arnell & J. Perss.) Meyl. = ***Calypogeia sphagnicola*** (Arnell & J. Perss.) Warnst. & Loeske
Cincinnulus trichomanis var. *suecicus* (Arnell & J. Perss.) Meyl. = ***Calypogeia suecica*** (Arnell & J. Perss.) Müll. Frib.
Cladopodiella fluitans (Nees) H. Buch
Cladopodiella fluitans var. *gigantea* (Lindb.) S.W. Arnell = ***Cladopodiella fluitans*** (Nees) H. Buch
Cladopus fluitans (Nees) Meyl. = ***Cladopodiella fluitans*** (Nees) H. Buch
Clevea californica M. Howe = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Clevea hyalina (Sommerf.) Lindb. = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Clevea hyalina (Sommerf.) Lindb. subsp. *suecica* (Lindb.) Meylan = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Clevea hyalina (Sommerf.) Lindb. var. *suecica* (Lindb.) Müll. Frib. = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Clevea suecica (Lindb.) Lindb. = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Codonia wondraczekii (Corda) Dumort. = ***Fossombronina wondraczekii*** (Corda) Lindb.
Coleochila anomala (Hook.) Dumort. = ***Mylia anomala*** (Hook.) Gray
Coleochila taylorii (Hook.) Dumort. = ***Mylia taylorii*** (Hook.) Gray
Cololejeunea calcarea (Lib.) Schiffn.
Cololejeunea calcarea (Lib.) Schiffn. fo. *sublaevis* Meyl. = ***Cololejeunea calcarea*** (Lib.) Schiffn.
Cololejeunea rossettiana (C. Massal.) Schiffn.
Conocephalum conicum (L.) Underw.
Conocephalum hemisphaericum Dumort. = ***Preissia quadrata*** (Scop.) Nees
Conocephalum japonicum (Steph.) Schiffn. = ***Conocephalum conicum*** (L.) Underw.
Conocephalum nemorosum Huebener = ***Conocephalum conicum*** (L.) Underw.
Conocephalum officinale (Raddi) Trevis. = ***Conocephalum conicum*** (L.) Underw.
Conocephalum quadratum (Scop.) Huebener = ***Preissia quadrata*** (Scop.) Nees
Conocephalum salebrosum Szweyk., Buczkowska & Odrzykoski
Conocephalum trioicum F. Weber = ***Conocephalum conicum*** (L.) Underw.
Conocephalum vulgare Bisch. = ***Conocephalum conicum*** (L.) Underw.
Cordaea blyttii (Moerch) Corda = ***Moerckia blyttii*** (Moerch) Brockm.
Cordaea flotoviana Nees = ***Moerckia hibernica*** (Hook.) Gottsche
Corsinia coriandrina (Spreng.) Lindb.
Corsinia marchantioides Raddi = ***Corsinia coriandrina*** (Spreng.) Lindb.
Corsinia reticulata (J.F. Gmel.) Dumort. = ***Corsinia coriandrina*** (Spreng.) Lindb.
Crossocalyx hellerianus (Nees ex Lindenb.) Meyl. = ***Anastrophyllum hellerianum*** (Nees ex Lindenb.) R.M. Schust.
Crossogyna autumnalis (DC.) Schljakov = ***Jamesoniella autumnalis*** (DC.) Steph.
Cyathophora commutata (Lindenb.) Trevis. = ***Preissia quadrata*** (Scop.) Nees
Cyathophora cucullata Kuntze = ***Lunularia cruciata*** (L.) Lindb.
Cyathophora hemisphaerica (Dumort.) Kuntze = ***Preissia quadrata*** (Scop.) Nees
Cyathophora quadrata (Scop.) Trevis. = ***Preissia quadrata*** (Scop.) Nees
Dichiton integerrimum (Lindb.) H. Buch = ***Cephaloziella integerrima*** (Lindb.) Warnst.
Dichominum cruciatum (L.) Trevis. = ***Lunularia cruciata*** (L.) Lindb.
Dichominum vulgare Trevis. = ***Lunularia cruciata*** (L.) Lindb.
Dilaena hibernica (Hook.) Dumort. = ***Moerckia hibernica*** (Hook.) Gottsche
Dilaena lyellii (Hook.) Dumort. = ***Pallavicinia lyellii*** (Hook.) Carruth.
Diplolaena blyttii (Moerch) Nees = ***Moerckia blyttii*** (Moerch) Brockm.
Diplolaena lyellii (Hook.) Dumort. = ***Pallavicinia lyellii*** (Hook.) Carruth.
Diplolaena lyellii var. *hibernica* (Hook.) Nees = ***Moerckia hibernica*** (Hook.) Gottsche
Diplomitrium blyttii (Moerch) Nees = ***Moerckia blyttii*** (Moerch) Brockm.
Diplomitrium hibernicum (Hook.) Corda = ***Moerckia hibernica*** (Hook.) Gottsche

Diplomitrium lyellii (Hook.) Corda = *Pallavicinia lyellii* (Hook.) Carruth.
Diplophyllia albicans (L.) Trevis. = *Diplophyllum albicans* (L.) Dumort.
Diplophyllia albicans var. *elegans* C.E.O. Jensen = *Diplophyllum albicans* (L.) Dumort.
Diplophyllia albicans var. *recurva* C.E.O. Jensen = *Diplophyllum albicans* (L.) Dumort.
Diplophyllia albicans var. *secunda* C.E.O. Jensen = *Diplophyllum albicans* (L.) Dumort.
Diplophyllia exsectiformis (Breidl.) Culm. = *Tritomaria exsectiformis* (Breidl.) Loeske
Diplophyllia exsectiformis var. *aequiloba* Culm. = *Tritomaria scitula* (Taylor) Jörg.
Diplophyllia helleriana (Nees ex Lindenb.) Trevis. = *Anastrophyllum hellerianum* (Nees ex Lindenb.) R.M. Schust.
Diplophyllia minuta (Schreb.) Crantz = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Diplophyllia obtusifolia (Hook.) Trevis. = *Diplophyllum obtusifolium* (Hook.) Dumort.
Diplophyllia taxifolia (Wahlenb.) Trevis. = *Diplophyllum taxifolium* (Wahlenb.) Dumort.
Diplophyllum albicans (L.) Dumort.
Diplophyllum albicans var. *elegans* (C.E.O. Jensen) Müll. Frib. = *Diplophyllum albicans* (L.) Dumort.
Diplophyllum albicans var. *recurvum* (C.E.O. Jensen) Müll. Frib. = *Diplophyllum albicans* (L.) Dumort.
Diplophyllum albicans var. *secundum* (C.E.O. Jensen) Müll. Frib. = *Diplophyllum albicans* (L.) Dumort.
Diplophyllum exsectiforme (Breidl.) Warnst. = *Tritomaria exsectiformis* (Breidl.) Loeske
Diplophyllum exsectum (Schmidel ex Schrad.) Thér. & Mong. = *Tritomaria exsecta* (Schmidel ex Schrad.) Schiffn. ex Loeske
Diplophyllum gymnostomophilum (Kaal.) Kaal. = *Scapania gymnostomophila* Kaal.
Diplophyllum gypsophilum (Wallr.) Loeske = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Diplophyllum hellerianum (Nees ex Lindenb.) Dumort. = *Anastrophyllum hellerianum* (Nees ex Lindenb.) R.M. Schust.
Diplophyllum incurvum Bryhn & Kaal. = *Scapania gymnostomophila* Kaal.
Diplophyllum michauxii (F. Web.) Warnst. = *Anastrophyllum michauxii* (F. Web.) H. Buch
Diplophyllum minutum (Schreb.) Dumort. = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Diplophyllum obtusifolium (Hook.) Dumort.
Diplophyllum obtusifolium var. *purpurascens* Nees = *Diplophyllum obtusifolium* (Hook.) Dumort.
Diplophyllum politum (Nees) Dumort. = *Tritomaria polita* (Nees) Jörg.
Diplophyllum saxicolium (Schrad.) Dumort. = *Anastrophyllum saxicola* (Schrad.) R.M. Schust.
Diplophyllum taxifolium (Wahlenb.) Dumort.
Diplophyllum taxifolium var. *macrosticta* H. Buch = *Diplophyllum taxifolium* (Wahlenb.) Dumort.
Diplophyllum taxifolium var. *microsticta* H. Buch = *Diplophyllum taxifolium* (Wahlenb.) Dumort.
Duvalia fragrans Lindb. = *Mannia fragrans* (Balb.) Frye & L.Clark
Duvalia pilosa (Hornem.) Lindb. = *Mannia pilosa* (Hornem.) Frye & L.Clark
Duvalia rupestris Nees = *Mannia triandra* (Scop.) Grolle
Eremonotus hellerianus (Nees ex Lindenb.) R.M. Schust. = *Anastrophyllum hellerianum* (Nees ex Lindenb.) R.M. Schust.
Eremonotus minutus (Schreb.) R.M. Schust. = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Eucalyx crenulatus (Sm.) Loeske = *Jungermannia gracillima* Sm.
Eucalyx gracillimus (Sm.) Loeske = *Jungermannia gracillima* Sm.
Eucalyx hyalinus (Lyell) Carrington = *Jungermannia hyalina* Lyell
Eucalyx muellerianus (Schiffn.) Müll. Frib. = *Jungermannia hyalina* Lyell
Eucalyx obovatus (Nees) Breidl. = *Jungermannia obovata* Nees
Eucalyx obovatus var. *elongatus* (Nees) Jörg. = *Jungermannia obovata* Nees
Eucalyx obovatus var. *rivularis* (Schiffn.) Macvicar = *Jungermannia obovata* Nees
Eucalyx subellipticus (Lindb. ex Kaal.) Breidl. = *Jungermannia subelliptica* (Lindb. ex Kaal.) Levier
Eucephalozia bicuspidata (L.) Schiffn. = *Cephalozia bicuspidata* (L.) Dumort.
Eucephalozia connivens (Dicks.) Schiffn. = *Cephalozia connivens* (Dicks.) Lindb.
Eucephalozia fluitans (Nees) Schiffn. = *Cladopodiella fluitans* (Nees) H. Buch
Eucephalozia lunulifolia (Dumort.) Delogne = *Cephalozia lunulifolia* (Dumort.) Dumort.
Eucephalozia media (Lindb.) Schiffn. = *Cephalozia lunulifolia* (Dumort.) Dumort.
Eulejeunea cavifolia (Ehrh.) Casares-Gil = *Lejeunea cavifolia* (Ehrh.) Lindb.
Eulejeunea serpyllifolia auct. = *Lejeunea cavifolia* (Ehrh.) Lindb.
Fegatella conica (L.) Corda = *Conocephalum conicum* (L.) Underw.
Fegatella officinalis Raddi = *Conocephalum conicum* (L.) Underw.
Fimbriaria bonjeanii De Not. = *Asterella lindenbergiana* (Corda ex Nees) Arnell
Fimbriaria commutata Steph. = *Asterella lindenbergiana* (Corda ex Nees) Arnell
Fimbriaria fragrans (Balb.) Nees = *Asterella saccata* (Wahlenb.) A. Evans
Fimbriaria gracilis (F. Web.) Lindb. = *Asterella gracilis* (F. Web.) Underw.

Fimbriaria kiaerii (Kaal.) Steph. = ***Conocephalum conicum*** (L.) Underw.
Fimbriaria lindenbergiana Corda ex Nees 1838 = ***Asterella lindenbergiana*** (Corda ex Nees) Arnell
Fimbriaria ludwigii auct. = ***Asterella gracilis*** (F. Web.) Underw.
Fimbriaria macounii Steph. = ***Asterella gracilis*** (F. Web.) Underw.
Fimbriaria nana Schleich. ex Lindenb. = ***Asterella gracilis*** (F. Web.) Underw.
Fimbriaria pilosa (Wahlenb.) Taylor = ***Asterella gracilis*** (F. Web.) Underw.
Fimbriaria saccata (Wahlenb.) Ness = ***Asterella saccata*** (Wahlenb.) A. Evans
Fimbriaria tenella Nees = ***Asterella gracilis*** (F. Web.) Underw.
Fimbriaria umbonata (Wallr.) Wallr. = ***Asterella saccata*** (Wahlenb.) A. Evans
Fossombronia cristata Lindb. = ***Fossombronia wondraczekii*** (Corda) Lindb.
Fossombronia cristata var. *wondraczekii* Lindb. = ***Fossombronia wondraczekii*** (Corda) Lindb.
← ***Fossombronia foveolata*** Lindb.
Fossombronia mittenii Tind. = ***Fossombronia wondraczekii*** (Corda) Lindb.
Fossombronia pusilla (L.) Nees
Fossombronia pusilla var. *capitata* Nees = ***Fossombronia wondraczekii*** (Corda) Lindb.
Fossombronia pusilla var. *decipiens* Corb. = ***Fossombronia pusilla*** (L.) Nees
Fossombronia wondraczekii (Corda) Lindb.
Fossombronia wondraczekii var. *cristata* (Lindb.) S.W. Arnell = ***Fossombronia wondraczekii*** (Corda) Lindb.
Fossombronia wondraczekii var. *rubella* Bryhn = ***Fossombronia wondraczekii*** (Corda) Lindb.
Frullania calcifera Steph. = ***Frullania tamarisci*** (L.) Dumort.
Frullania davurica auct. europ. = ***Frullania jackii*** Gottsche
Frullania davurica subsp. *jackii* (Gottsche) S. Hatt. = ***Frullania jackii*** Gottsche
Frullania dilatata (L.) Dumort.
Frullania dilatata var. *anomala* Corb. = ***Frullania dilatata*** (L.) Dumort.
Frullania dilatata var. *briziana* C. Massal. = ***Frullania dilatata*** (L.) Dumort.
Frullania dilatata var. *microphylla* Nees = ***Frullania dilatata*** (L.) Dumort.
Frullania dilatata var. *subtilissima* Nees = ***Frullania dilatata*** (L.) Dumort.
Frullania eboracensis Gottsche subsp. *caucasica* (Steph.) R.M. Schust. = ***Frullania parvistipula*** Steph.
Frullania eboracensis Gottsche subsp. *parvistipula* (Steph.) R.M. Schust. = ***Frullania parvistipula*** Steph.
Frullania fragilifolia (Taylor) Gottsche et al.
Frullania funchalensis Gottsche = ***Frullania dilatata*** (L.) Dumort.
Frullania hispanica Nees = ***Frullania tamarisci*** (L.) Dumort.
Frullania jackii Gottsche
Frullania major Raddi, nom. illeg. = ***Frullania tamarisci*** (L.) Dumort.
Frullania maritima Steph. = ***Frullania tamarisci*** (L.) Dumort.
Frullania nervosa Montin = ***Frullania tamarisci*** (L.) Dumort.
Frullania nervosa var. *macrocellularis* Müll. Frib. = ***Frullania tamarisci*** (L.) Dumort.
Frullania parvistipula Steph.
Frullania sardoa (De Not.) Schiffn. = ***Frullania tamarisci*** (L.) Dumort.
Frullania tamarisci (L.) Dumort.
Frullania trabutiana Steph. = ***Frullania dilatata*** (L.) Dumort.
Frullania willkommii Steph. = ***Frullania tamarisci*** (L.) Dumort.
Gamochoetum obovatum Trevis. = ***Jungermannia obovata*** Nees
Geocalyx graveolens (Schrad.) Nees
Grimaldia barbifrons Bisch. = ***Mannia fragrans*** (Balb.) Frye & L. Clark
Grimaldia carnica C. Massal. = ***Mannia pilosa*** (Hornem.) Frye & L. Clark
Grimaldia controversa Meyl. = ***Mannia fragrans*** (Balb.) Frye & L. Clark
← *Grimaldia dichotoma* auct. = ***Mannia androgyna*** (L.) A. Evans
Grimaldia fragrans (Balb.) Corda = ***Mannia fragrans*** (Balb.) Frye & L. Clark
Grimaldia fragrans var. *brevipes* Kaal. = ***Mannia fragrans*** (Balb.) Frye & L. Clark
Grimaldia hemisphaerica (L.) Lindenb. = ***Reboulia hemisphaerica*** (L.) Raddi
Grimaldia inodora Wallr. = ***Mannia fragrans*** (Balb.) Frye & L. Clark
Grimaldia pilosa (Hornem.) Lindb. = ***Mannia pilosa*** (Hornem.) Frye & L. Clark
Grimaldia punicea Wallr. = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Grimaldia rupestris (Nees) Lindenb. = ***Mannia triandra*** (Scop.) Grolle
Grimaldia ventricosa Wallr. = ***Reboulia hemisphaerica*** (L.) Raddi
Guentheria graveolens Trevir. = ***Corsinia coriandrina*** (Spreng.) Lindb.
Gymnocolea acutiloba (Schiffn.) Müll. Frib. = ***Gymnocolea inflata*** subsp. *acutiloba* (Schiffn.) R.M. Schust. et
Damsh. ex Söderström et Váňa
Gymnocolea inflata (Huds.) Dumort.

Gymnocola inflata subsp. ***acutiloba*** (Schiffn.) R.M. Schust. et Damsh. ex Söderström et Vána
Gymnocola inflata var. *acutiloba* (Schiffn.) S.W. Arnell = ***Gymnocola inflata*** subsp. ***acutiloba*** (Schiffn.) R.M. Schust. et Damsh. ex Söderström et Vána
Gymnocola inflata var. *compacta* (Nees) Jörg. = ***Gymnocola inflata*** (Huds.) Dumort.
Gymnocola inflata var. *heterostipa* (Carrington & Spruce) Müll. Frib. = ***Gymnocola inflata*** (Huds.) Dumort.
Gymnocola inflata var. *laxa* (Nees) Jörg. = ***Gymnocola inflata*** (Huds.) Dumort.
Gymnocola inflata var. *nigricans* (Nees) Jörg. = ***Gymnocola inflata*** (Huds.) Dumort.
Gymnocola inflata var. *teres* (Lindb.) Jörg. = ***Gymnocola inflata*** (Huds.) Dumort.
Gymnocola soerenzenii Kaal. = ***Gymnocola inflata*** (Huds.) Dumort.
Gymnomitrium ambiguum Limpr. ex C. Massal. & Carestia = ***Marsupella brevissima*** (Dumort.) Grolle
Gymnomitrium breviloba (Steph.) Horik. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Gymnomitrium brevissimum (Dumort.) Warnst. = ***Marsupella brevissima*** (Dumort.) Grolle
Gymnomitrium cochleare (Lindb.) Müll. Frib. = ***Marsupella brevissima*** (Dumort.) Grolle
Gymnomitrium concinnatum (Lightf.) Corda
Gymnomitrium concinnatum var. *ambigua* Kaal. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Gymnomitrium concinnatum var. *argenteum* (Jörg.) Müll. Frib. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Gymnomitrium concinnatum var. *bryhnii* (Kaal.) Müll. Frib. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Gymnomitrium concinnatum var. *intermedium* Limpr. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Gymnomitrium concinnatum var. *rufescens* (Kaal.) Müll. Frib. = ***Gymnomitrium concinnatum*** (Lightf.) Corda
Gymnomitrium confertum (Limpr.) Limpr. = ***Marsupella brevissima*** (Dumort.) Grolle
Gymnomitrium corallioides Nees
Gymnomitrium crassifolium Carrington = ***Marsupella brevissima*** (Dumort.) Grolle
← ***Gymnomitrium crenulatum*** Gottsche ex Carrington
Gymnomitrium epiphyllum Huebener = ***Pellia epiphylla*** (L.) Corda subsp. ***epiphylla***
Gymnomitrium faurianum (Steph.) Herzog = ***Gymnomitrium corallioides*** Nees
Gymnomitrium hookeri (Sm.) Corda = ***Haplomitrium hookeri*** (Sm.) Nees
Gymnomitrium lyellii (Hook.) Huebener = ***Pallavicinia lyellii*** (Hook.) Carruth.
Gymnomitrium varians (Lindb.) Schiffn. = ***Marsupella brevissima*** (Dumort.) Grolle
Gymnomitrium commutatum (Limpr.) Schiffn. = ***Marsupella commutata*** (Limpr.) Bernet
Gymnoscyphus repens Corda = ***Jungermannia pumila*** Dicks.
Haplomitrium cordae Nees = ***Haplomitrium hookeri*** (Sm.) Nees
Haplomitrium hookeri (Sm.) Nees
Haplozia amplexicaulis (Dumort.) Dumort. = ***Jungermannia sphaerocarpa*** Hook.
Haplozia anomala (Hook.) Warnst. = ***Mylia taylorii*** (Hook.) Gray
Haplozia atrovirens (Dumort.) Dumort. = ***Jungermannia atrovirens*** Dumort.
Haplozia atrovirens var. *arnellii* Schiffn. = ***Jungermannia pumila*** Dicks.
Haplozia atrovirens var. *sphaerocarpoidea* (De Not.) Müll. Frib. = ***Jungermannia atrovirens*** Dumort.
Haplozia autumnalis (DC.) Heeg = ***Jamesoniella autumnalis*** (DC.) Steph.
Haplozia breidleri Müll. Frib. = ***Jungermannia confertissima*** Nees
Haplozia caespiticia (Lindenb.) Dumort. = ***Jungermannia caespiticia*** Lindenb.
Haplozia confertissima (Nees) Dumort. = ***Jungermannia confertissima*** Nees
Haplozia cordifolia (Dumort.) Müll. Frib. = ***Jungermannia exsertifolia*** subsp. ***cordifolia*** (Dumort.) Vána
Haplozia cordifolia var. *gracilis* C.E.O. Jensen = ***Jungermannia exsertifolia*** subsp. ***cordifolia*** (Dumort.) Vána
Haplozia cordifolia var. *minor* Schiffn. = ***Jungermannia exsertifolia*** subsp. ***cordifolia*** (Dumort.) Vána
Haplozia cordifolia var. *sibirica* Arnell & C.E.O. Jensen = ***Jungermannia borealis*** Damsh. & Vána
Haplozia crenulata (Mitt.) Dumort. = ***Jungermannia gracillima*** Sm.
Haplozia crenulata var. *crustulata* (Dumort.) C. Massal. = ***Jungermannia gracillima*** Sm.
Haplozia crenulata var. *gracillima* (Sm.) C.E.O. Jensen = ***Jungermannia gracillima*** Sm.
Haplozia crustulata Dumort. = ***Jungermannia gracillima*** Sm.
Haplozia goulardii (Husn.) Boulay = ***Jungermannia sphaerocarpa*** Hook.
Haplozia gracillima (Sm.) Dumort. = ***Jungermannia gracillima*** Sm.
Haplozia hyalina (Lyell) Dumort. = ***Jungermannia hyalina*** Lyell
Haplozia hyalina (Lyell) Warnst. var. *heteromorpha* (Schiffn.) Warnst. = ***Jungermannia gracillima*** Sm.
Haplozia lanceolata (Nees) Müll. Frib. = ***Jungermannia leiantha*** Grolle
Haplozia levieri (Steph.) Müll. Frib. = ***Jungermannia confertissima*** Nees
Haplozia lurida (Dumort.) Dumort. = ***Jungermannia sphaerocarpa*** Hook.
Haplozia lurida Breidl. = ***Jungermannia confertissima*** Nees
Haplozia muelleriana (Schiffn.) Casares-Gil = ***Jungermannia hyalina*** Lyell
Haplozia nana Nees ex Breidl. = ***Jungermannia sphaerocarpa*** Hook.

Haplozia oblongifolia auct. = ***Jungermannia borealis*** Damsh. & Vána
Haplozia oblongifolia Müll. Frib. = ***Jungermannia pumila*** Dicks.
Haplozia polaris (Lindb.) Bryhn & Kaal. = ***Jungermannia polaris*** Lindb.
Haplozia pumila (Dicks.) Dumort. = ***Jungermannia pumila*** Dicks.
Haplozia pumila var. *alpestris* (Lindb.) Jörg. = ***Jungermannia pumila*** Dicks.
Haplozia pumila var. *rivularis* Schiffn. = ***Jungermannia pumila*** Dicks.
Haplozia riparia (Taylor) Dumort. = ***Jungermannia atrovirens*** Dumort.
Haplozia riparia var. *rivularis* Bernet = ***Jungermannia atrovirens*** Dumort.
Haplozia riparia var. *salevensis* Bernet = ***Jungermannia atrovirens*** Dumort.
Haplozia rivularis (Schiffn.) Schiffn. = ***Jungermannia pumila*** Dicks.
Haplozia rostellata (Huebener) Dumort. = ***Jungermannia pumila*** Dicks.
Haplozia scalariformis (Nees) Dumort. = ***Jungermannia confertissima*** Nees
Haplozia scalariformis var. *scandica* C.E.O. Jensen = ***Jungermannia confertissima*** Nees
Haplozia schiffneri (Loitl.) Müll. Frib. = ***Jungermannia polaris*** Lindb.
Haplozia schraderi (Nees) Dumort. = ***Jamesoniella autumnalis*** (DC.) Steph.
Haplozia sphaerocarpa (Hook.) Dumort. = ***Jungermannia sphaerocarpa*** Hook.
Haplozia sphaerocarpa var. *amplexicaulis* (Dumort.) Müll. Frib. = ***Jungermannia sphaerocarpa*** Hook.
Haplozia sphaerocarpa var. *elongata* (Huebener) Jörg. = ***Jungermannia sphaerocarpa*** Hook.
Haplozia sphaerocarpa var. *goulardii* (Husn.) Kaal. ex Jörg. = ***Jungermannia sphaerocarpa*** Hook.
Haplozia sphaerocarpa var. *lurida* (Hook.) Bryhn & Kaal. = ***Jungermannia sphaerocarpa*** Hook.
Haplozia sphaerocarpa var. *nana* (Nees ex Breidl.) Müll. Frib. = ***Jungermannia sphaerocarpa*** Hook.
Haplozia sphaerocarpoidea (De Not.) Dumort. = ***Jungermannia atrovirens*** Dumort.
Haplozia subapicalis (Nees ex Huebener) Dumort. = ***Jamesoniella autumnalis*** (DC.) Steph.
Haplozia subelliptica (Lindb. ex Kaal.) Casares-Gil = ***Jungermannia subelliptica*** (Lindb. ex Kaal.) Levier
Haplozia tristis (Nees) Müll. Frib. = ***Jungermannia atrovirens*** Dumort.
Haplozia tristis var. *rivularis* (Bernet) Jörg. = ***Jungermannia atrovirens*** Dumort.
Haplozia turfosa (Warnst.) Warnst. = ***Jungermannia gracillima*** Sm.
Harpanthus acutiflorus Steph. = ***Harpanthus flotovianus*** (Nees) Nees
Harpanthus flotovianus (Nees) Nees
Harpanthus flotovianus var. *cavifolius* S.W. Arnell = ***Harpanthus flotovianus*** (Nees) Nees
Harpanthus flotovianus var. *chiloscyphoides* C.E.O. Jensen = ***Harpanthus flotovianus*** (Nees) Nees
Harpanthus flotovianus var. *latifolia* Jörg. = ***Harpanthus flotovianus*** (Nees) Nees
Harpanthus flotovianus var. *retusa* Jörg. = ***Harpanthus flotovianus*** (Nees) Nees
Harpanthus flotovianus var. *uliginosus* Schiffn. = ***Harpanthus flotovianus*** (Nees) Nees
Harpanthus scutatus (F. Web. & D. Mohr) Spruce
Harpanthus scutatus var. *laxa* Lindenb. = ***Harpanthus scutatus*** (F. Web. & D. Mohr) Spruce
Hepatica conica (L.) Lindb. = ***Conocephalum conicum*** (L.) Underw.
Herpetium deflexum (Mart.) Nees = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Herpetium deflexum var. *implexum* Nees = ***Bazzania flaccida*** (Dumort.) Grolle
Herpetium reptans (L.) Nees = ***Lepidozia reptans*** (L.) Dumort.
Herpetium trilobatum (L.) Nees = ***Bazzania trilobata*** (L.) Gray
Hollia lyellii (Hook.) Sull. = ***Pallavicinia lyellii*** (Hook.) Carruth.
Hygrobiella nevicensis (Carrington) Spruce = ***Marsupella boeckii*** (Aust.) Kaal.
Hypenantron bonjeanii (De Not.) Trevis. = ***Asterella lindenbergiana*** (Corda ex Nees) Arnell
Hypenantron fragrans Trevis. = ***Asterella saccata*** (Wahlenb.) A. Evans
Hypenantron gracile (F. Weber) Trevis. = ***Asterella gracilis*** (F. Web.) Underw.
Hypenantron lindenbergianum (Corda ex Nees) Kuntze = ***Asterella lindenbergiana*** (Corda ex Nees) Arnell
Hypenantron nanum (Lindenb.) Trevis. = ***Asterella gracilis*** (F. Web.) Underw.
Hypenantron saccatum (Wahlenb.) Trevis. = ***Asterella saccata*** (Wahlenb.) A. Evans
Hypenantron umbonatum (Wallr.) Trevis. = ***Asterella saccata*** (Wahlenb.) A. Evans
Isopaches bicrenatus (Schmidel ex Hoffm.) H. Buch = ***Lophozia bicrenata*** (Schmidel ex Hoffm.) Dumort.
Isopaches hellerianus (Nees ex Lindenb.) H. Buch = ***Anastrophyllum hellerianum*** (Nees ex Lindenb.) R.M. Schust.
Jamesoniella autumnalis (DC.) Steph.
Jamesoniella heterostipa A. Evans = ***Jamesoniella autumnalis*** (DC.) Steph.
Jamesoniella myriocarpa Brinkm. = ***Jamesoniella autumnalis*** (DC.) Steph.
Jamesoniella orizabensis (Gottsche) Steph. = ***Jamesoniella autumnalis*** (DC.) Steph.
Jamesoniella schraderi (Mart.) Schiffn. = ***Jamesoniella autumnalis*** (DC.) Steph.
Jamesoniella subapicalis (Nees ex Huebener) Schiffn. = ***Jamesoniella autumnalis*** (DC.) Steph.
Jamesoniella subulata (A. Evans) Steph. = ***Jungermannia subulata*** A. Evans
Jungermannia acuta Lindenb. = ***Leiocolea collaris*** (Nees) Schljakov

Jungermannia acuta var. *gypsacea* Gottsche et al. = *Leiocolea badensis* (Gottsche) Jörg.
Jungermannia acutiloba Kaal., non Hook. F. & Taylor, nom. illeg. = *Gymnocolea inflata* subsp. *acutiloba* (Schiffn.) R.M. Schust. et Damsh. ex Söderström et Våna
Jungermannia adscendens Hook. & Wilson ex Stephani = *Chiloscyphus pallescens* (Ehrh. ex Hoffm.) Dumort. var. **Pallescens**
Jungermannia aequiloba Schwägr. 1814 = *Scapania aequiloba* (Schwägr.) Dumort.
Jungermannia affinis Huebener = *Scapania curta* (Mart.) Dumort.
Jungermannia albescens Hook. 1816 = *Pleurocladula albescens* (Hook.) Grolle var. *albescens*
Jungermannia albicans L. = *Diplophyllum albicans* (L.) Dumort.
Jungermannia albicans var. *taxifolia* (Wahlenb.) Wallr. = *Diplophyllum taxifolium* (Wahlenb.) Dumort.
Jungermannia allenii Clark = *Jamesoniella autumnalis* (DC.) Steph.
Jungermannia alpestris auct., non Schleich. ex F. Weber = *Lophozia sudetica* (Nees ex Huebener) Grolle
Jungermannia alpestris Schleich. ex F. Web. = *Leiocolea collaris* (Nees) Schljakov
Jungermannia alpestris Schleich. ex F. Web. var. *serpentina* (Nees) Nees = *Leiocolea collaris* (Nees) Schljakov
Jungermannia alpestris var. *amphigastriata* C.E.O. Jensen = *Lophozia sudetica* (Nees ex Huebener) Grolle
Jungermannia alpestris var. *gelida* (Taylor) Cooke = *Lophozia sudetica* (Nees ex Huebener) Grolle
Jungermannia alpestris var. *latior* Nees = *Lophozia excisa* (Dicks.) Dumort.
Jungermannia alpestris var. *major* C.E.O. Jensen = *Lophozia excisa* (Dicks.) Dumort.
Jungermannia amakawana Grolle = *Jungermannia subulata* A. Evans
Jungermannia amplexicaulis Dumort. = *Jungermannia sphaerocarpa* Hook.
Jungermannia anacampta Taylor = *Anastrophyllum michauxii* (F. Web.) H. Buch
Jungermannia anomala Hook. = *Mylia anomala* (Hook.) Gray
Jungermannia anomala var. *vagans* Hartm. = *Mylia anomala* (Hook.) Gray
Jungermannia arboris-vitae Dicks. = *Porella arboris-vitae* (Dicks.) Grolle
Jungermannia arenaria Nees = *Lophozia excisa* (Dicks.) Dumort.
Jungermannia arenaria Nees = *Lophozia excisa* (Dicks.) Dumort.
Jungermannia ascendens Hook. & Wilson. = *Chiloscyphus pallescens* (Ehrh. ex Hoffm.) Dumort. var. *pallescens*
Jungermannia asplenioides L. emend. Taylor = *Plagiochila asplenioides* (L. emend. Taylor) Dumort.
***Jungermannia atrovirens* Dumort.**
Jungermannia atrovirens var. *sphaerocarpoidea* (De Not.) Schljakov = *Jungermannia atrovirens* Dumort.
Jungermannia attenuata (Mart.) Lindenb. = *Barbilophozia attenuata* (Mart.) Loeske
Jungermannia attenuata var. *gracilis* Schleich. ex Lindenb. = *Barbilophozia attenuata* (Mart.) Loeske
Jungermannia autumnalis DC. 1815 = *Jamesoniella autumnalis* (DC.) Steph.
Jungermannia badensis Gottsche 1859 = *Leiocolea badensis* (Gottsche) Jörg.
Jungermannia bantriensis Hook. = *Leiocolea bantriensis* (Hook.) Jörg.
Jungermannia bantriensis var. *acuta* Lindb. = *Leiocolea collaris* (Nees) Schljakov
Jungermannia bantriensis var. *muelleri* (Nees ex Lindenb.) Lindb. = *Leiocolea collaris* (Nees) Schljakov
Jungermannia barbata Schmidel ex Schreb. = *Barbilophozia barbata* (Schmidel ex Schreb.) Loeske
Jungermannia barbata var. *attenuata* (Mart.) Nees = *Barbilophozia attenuata* (Mart.) Loeske
Jungermannia barbata var. *collaris* (Nees) Nees = *Leiocolea collaris* (Nees) Schljakov
Jungermannia barbata var. *floerkei* (F. Web. & D. Mohr) Dumort. = *Barbilophozia floerkei* (F. Web. & D. Mohr) Loeske
Jungermannia barbata var. *gracilis* Schleich. ex DC. = *Barbilophozia attenuata* (Mart.) Loeske
Jungermannia barbata var. *lycopodioides* (Wallr.) Nees = *Barbilophozia lycopodioides* (Wallr.) Loeske
Jungermannia barbata var. *naumanniana* Nees = *Barbilophozia floerkei* (F. Web. & D. Mohr) Loeske
Jungermannia barbata var. *quinquedentata* (Huds.) Nees = *Tritomaria quinquedentata* (Huds.) H. Buch
Jungermannia barbata var. *schreberi* Nees = *Barbilophozia barbata* (Schmidel ex Schreb.) Loeske
Jungermannia bartlingii Hampe & Nees = *Scapania cuspiduligera* (Nees) Müll. Frib.
Jungermannia baueri Mart. = *Nowellia curvifolia* (Dicks.) Mitt.
Jungermannia baueriana (Schiffn.) Arnell & C.E.O. Jensen = *Barbilophozia hatcheri* (A. Evans) Loeske
Jungermannia bicalyculata Raddi = *Cephalozia bicuspidata* (L.) Dumort.
Jungermannia bicornis F. Weber & D. Mohr = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Jungermannia bicrenata Schmidel ex Hoffm. 1796 = *Lophozia bicrenata* (Schmidel ex Hoffm.) Dumort.
Jungermannia bicuspidata L. = *Cephalozia bicuspidata* (L.) Dumort.
Jungermannia bicuspidata var. *capsulifera* Baumgartner = *Cephalozia bicuspidata* (L.) Dumort.
Jungermannia bicuspidata var. *conferta* Nees = *Cephalozia bicuspidata* (L.) Dumort.
Jungermannia bicuspidata var. *ericetorum* Gottsche & al. = *Cephalozia catenulata* (Huebener) Lindb.
Jungermannia bicuspidata var. *globulifera* Schur = *Cephalozia bicuspidata* (L.) Dumort.
Jungermannia bidentata L. = *Lophocolea bidentata* (L.) Dumort. var. *bidentata*
Jungermannia bidentata var. *minor* Raddi = *Lophocolea minor* Nees

Jungermannia bidentata var. *obtusata* Hook. = *Lophocolea bidentata* (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Jungermannia bidentata var. *rivularis* Raddi = *Lophocolea bidentata* (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Jungermannia bifida Schreb., nom. nud. = *Cephaloziella rubella* (Nees) Warnst.
Jungermannia bififormis Aust. = *Jungermannia hyalina* Lyell
Jungermannia bilobata Weber = *Bazzania trilobata* (L.) Gray
Jungermannia blasia Hook. = *Blasia pusilla* L.
Jungermannia blyttii Moerch 1830 = *Moerckia blyttii* (Moerch) Brockm.
Jungermannia bolanderi Gottsche & Underw., non (Austin) Austin = *Jungermannia confertissima* Nees
Jungermannia borealis Damsh. & Vána
Jungermannia breidlereri (Müll. Frib.) Gams = *Jungermannia confertissima* Nees
Jungermannia brunescens Amakawa, nom. nud. = *Jungermannia subulata* A. Evans
Jungermannia byssacea auct. = *Cephaloziella divaricata* (Sm.) Schiffn.
Jungermannia byssacea Roth = *Cephaloziella hampeana* (Nees) Schiffn.
Jungermannia caespiticia Lindenb.
Jungermannia calycina Nees = *Pellia endiviifolia* (Dicks.) Dumort.
Jungermannia calypogea Raddi = *Calypogea fissa* (L.) Raddi
Jungermannia catenulata Huebener 1834 = *Cephalozia catenulata* (Huebener) Lindb.
Jungermannia catenulata var. *laxa* Gottsche = *Cephalozia leucantha* Spruce
Jungermannia cavifolia Ehrh. 1789 = *Lejeunea cavifolia* (Ehrh.) Lindb.
Jungermannia chamaedryfolia With. = *Riccardia chamaedryfolia* (With.) Grolle
Jungermannia ciliaris L. 1753 = *Ptilidium ciliare* (L.) Hampe
Jungermannia ciliaris var. *heteromalla* Dumort. = *Ptilidium ciliare* (L.) Hampe
Jungermannia clavifolia Steph. = *Jungermannia atrovirens* Dumort.
Jungermannia coadunata Sw. = *Lophocolea bidentata* (L.) Dumort. var. *bidentata*
Jungermannia collaris Nees = *Leiocolea collaris* (Nees) Schljakov
Jungermannia colpodes Taylor = *Barbilophozia kunzeana* (Huebener) Müll. Frib.
Jungermannia commutata Huebener = *Lophozia bicrenata* (Schmidel ex Hoffm.) Dumort.
Jungermannia compacta Roth = *Scapania compacta* (Roth) Dumort.
Jungermannia complanata L. 1753 = *Radula complanata* (L.) Dumort.
Jungermannia concinnata Lightf. = *Gymnomitrium concinnatum* (Lightf.) Corda
Jungermannia conferta Huebener, non C.F.W. Meissn. = *Jamesoniella autumnalis* (DC.) Steph.
Jungermannia confertissima Nees
Jungermannia confervoides Raddi = *Cephaloziella divaricata* (Sm.) Schiffn.
Jungermannia connivens Dicks. 1801 = *Cephalozia connivens* (Dicks.) Lindb.
Jungermannia connivens f. *symbolica* Gottsche = *Cephalozia lunulifolia* (Dumort.) Dumort.
Jungermannia conradii Nees = *Scapania curta* (Mart.) Dumort.
Jungermannia convexa Scop. = *Scapania umbrosa* (Schrad.) Dumort.
Jungermannia convoluta Huebener = *Harpanthus flotovianus* (Nees) Nees
Jungermannia corcyraea Nees = *Leiocolea turbinata* (Raddi) H. Buch
Jungermannia cordaeana Huebener 1834 = *Porella cordaeana* (Huebener) Moore
Jungermannia cordifolia Hook., non Brot., nec Ehrh. ex F. Weber = *Jungermannia exsertifolia* subsp. *cordifolia* (Dumort.) Vána
Jungermannia cordifolia var. *nudiflora* Nees = *Jungermannia obovata* Nees
Jungermannia crenulata Sm., nom. illeg., non Schmidel = *Jungermannia gracillima* Sm.
Jungermannia crenulata Lightf. = *Gymnomitrium concinnatum* (Lightf.) Corda
Jungermannia crenulata var. *crisulata* (Dumort.) C. Massal. = *Jungermannia gracillima* Sm.
Jungermannia crenulata var. *gracillima* (Sm.) Hook. = *Jungermannia gracillima* Sm.
Jungermannia crisulata (Dumort.) C. Massal. = *Jungermannia gracillima* Sm.
Jungermannia crocata De Not. = *Lophocolea minor* Nees
Jungermannia curta Mart. 1817 = *Scapania curta* (Mart.) Dumort.
Jungermannia curvifolia Dicks. 1790 = *Nowellia curvifolia* (Dicks.) Mitt.
Jungermannia curvula Nees = *Lophozia sudetica* (Nees ex Huebener) Grolle
Jungermannia cuspiduligera Nees 1833 = *Scapania cuspiduligera* (Nees) Müll. Frib.
Jungermannia cycloseris Huebener = *Jungermannia gracillima* Sm.
Jungermannia cylindracea Dumort. = *Lophozia excisa* (Dicks.) Dumort.
Jungermannia cylindrica (Steph.) S. Hatt., non Wallr. = *Jungermannia subulata* A. Evans
Jungermannia danicola Gottsche ex Underw. = *Jungermannia confertissima* Nees
Jungermannia deflexa Mart. = *Bazzania tricrenata* (Wahlenb.) Lindb.
Jungermannia deflexa var. *flaccida* Lindenb. = *Bazzania flaccida* (Dumort.) Grolle
Jungermannia densa Nees = *Anastrophyllum michauxii* (F. Web.) H. Buch

Jungermannia dentata Raddi = ***Cephaloziella hampeana*** (Nees) Schiffn.
Jungermannia denudata (Mart.) Nees = ***Odontoschisma denudatum*** (Mart.) Dumort.
Jungermannia denudata Huebener, non Mart. = ***Jungermannia gracillima*** Sm.
Jungermannia dilatata L. 1753 = ***Frullania dilatata*** (L.) Dumort.
Jungermannia dillenii Taylor = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.
Jungermannia divaricata fo. *filiformis* Nees = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Jungermannia divaricata Nees = ***Cephaloziella rubella*** (Nees) Warnst.
Jungermannia divaricata Sm. 1800 = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Jungermannia divaricata var. *filiformis* (Nees) Gottsche, Lindenb. & Nees = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Jungermannia divaricata var. *latifolia* Lindb. = ***Marsupella boeckii*** (Aust.) Kaal.
Jungermannia divaricata var. *rubriflora* Nees = ***Cephaloziella rubella*** (Nees) Warnst.
Jungermannia doelaviensis Spreng. = ***Kurzia pauciflora*** (Dicks.) Grolle
Jungermannia donniana Hook. ex Huebener = ***Tritomaria exsecta*** (Schmidel ex Schrad.) Schiffn. ex Loeske
Jungermannia dovrensis Limpr. = ***Nardia geoscyphus*** (De Not.) Lindb.
Jungermannia duthiana Steph. = ***Jungermannia confertissima*** Nees
Jungermannia ehrhartiana F. Weber = ***Lophozia ventricosa*** (Dicks.) Dumort.
Jungermannia elachista J.B. Jack 1873 = ***Cephaloziella elachista*** (J.B. Jack ex Gottsche & Rabenh.) Schiffn.
Jungermannia emarginata Ehrh. = ***Marsupella emarginata*** (Ehrh.) Dumort.
Jungermannia emarginata var. *aquatica* Lindenb. = ***Marsupella emarginata*** subsp. *aquatica* (Lindenb.) Meyl.
Jungermannia endiviifolia Dicks. 1801 = ***Pellia endiviifolia*** (Dicks.) Dumort.
Jungermannia epiphylla L. 1753 = ***Pellia epiphylla*** (L.) Corda subsp. *epiphylla*
Jungermannia epiphylla var. *furcigera* Hook. = ***Pellia endiviifolia*** (Dicks.) Dumort.
Jungermannia eucordifolia Schljakov = ***Jungermannia exsertifolia*** subsp. *cordifolia* (Dumort.) Vána
Jungermannia excisa Dicks. 1793 = ***Lophozia excisa*** (Dicks.) Dumort.
Jungermannia excisa var. *crispata* Hook. = ***Lophozia excisa*** (Dicks.) Dumort.
Jungermannia excisa var. *limprichtii* Lindb. ex C. Massal. & Carestia = ***Lophozia excisa*** (Dicks.) Dumort.
Jungermannia exsecta Schmidel ex Schrad. = ***Tritomaria exsecta*** (Schmidel ex Schrad.) Schiffn. ex Loeske
Jungermannia exsecta var. *scitula* (Taylor) Pearson ex Macvicar = ***Tritomaria scitula*** (Taylor) Jörg.
Jungermannia exsectiformis Breidl. 1785 = ***Tritomaria exsectiformis*** (Breidl.) Loeske
Jungermannia exsertifolia Steph. subsp. *cordifolia* (Dumort.) Vána
Jungermannia falcata Raddi = ***Diplophyllum albicans*** (L.) Dumort.
Jungermannia fallax Huebener = ***Scapania irrigua*** (Nees) Nees
Jungermannia fertilis Lindb. = ***Anastrophyllum michauxii*** (F. Web.) H. Buch
Jungermannia fissa (L.) Scop. = ***Calypogeia fissa*** (L.) Raddi
Jungermannia fissidentoidea Huebener = ***Diplophyllum albicans*** (L.) Dumort.
Jungermannia flaccida Huebener = ***Jungermannia obovata*** Nees
Jungermannia floerkei F. Web. & D. Mohr 1807 = ***Barbilophozia floerkei*** (F. Web. & D. Mohr) Loeske
Jungermannia floerkei var. *aculeata* Loeske = ***Barbilophozia hatcheri*** (A. Evans) Loeske
Jungermannia floerkei var. *baueriana* Schiffn. = ***Barbilophozia hatcheri*** (A. Evans) Loeske
Jungermannia floerkei var. *obtusata* Nees = ***Barbilophozia kunzeana*** (Huebener) Müll. Frib.
Jungermannia flotoviana Nees 1833 = ***Harpanthus flotovianus*** (Nees) Nees
Jungermannia fluitans Nees 1823 = ***Cladopodiella fluitans*** (Nees) H. Buch
Jungermannia fragilifolia Taylor 1843 = ***Frullania fragilifolia*** (Taylor) Gottsche et al.
Jungermannia fragilis Roth = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var. *fragilis* (A. Roth) Müll. Frib.
Jungermannia fruticulosa (Dicks.) Sm. = ***Metzgeria violacea*** (Ach.) Dumort.
Jungermannia funckii F. Web. & D. Mohr 1807 = ***Marsupella funckii*** (F. Web. & D. Mohr) Dumort.
Jungermannia furcata L. 1753 = ***Metzgeria furcata*** (L.) Dumort. var. *furcata*
Jungermannia furcata var. *aeruginosa* Hook. = ***Metzgeria violacea*** (Ach.) Dumort.
Jungermannia furcata var. *elongata* Hook. = ***Metzgeria conjugata*** Lindb.
Jungermannia furcata var. *violacea* (Ach.) Nees = ***Metzgeria violacea*** (Ach.) Dumort.
Jungermannia gelida Taylor = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Jungermannia genthiana Huebener = ***Jungermannia gracillima*** Sm.
Jungermannia gillmanii Aust. 1872 = ***Leiocolea gillmanii*** (Aust.) A. Evans
← *Jungermannia glaucocephala* Taylor = ***Scapania glaucocephala*** (Taylor) Austin
Jungermannia globulifera Roth = ***Lophozia ventricosa*** (Dicks.) Dumort.
Jungermannia goeppertiana Huebener = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Jungermannia goulardii Husn. = ***Jungermannia sphaerocarpa*** Hook.
Jungermannia gracilis Schleich. ex Heeg = ***Barbilophozia attenuata*** (Mart.) Loeske

***Jungermannia gracillima* Sm.**

- Jungermannia gracillima* var. *crustulata* (Dumort.) Düll. = ***Jungermannia gracillima* Sm.**
Jungermannia graveolens Schrad. 1797 = ***Geocalyx graveolens* (Schrad.) Nees**
Jungermannia groenlandica Nees = ***Lophozia wenzelii* (Nees) Steph.**
Jungermannia guttulata Lindb. & Arnell = ***Lophozia longiflora* (Nees) Schiffn.**
Jungermannia gypsophila Wallr. = ***Anastrophyllum minutum* (Schreb.) R.M. Schust.**
Jungermannia haematostica Nees, nom. nud. = ***Nardia geoscyphus* (De Not.) Lindb.**
Jungermannia hamatifolia Hook. = ***Cololejeunea calcarea* (Lib.) Schiffn.**
Jungermannia hamatifolia var. *calcarea* (Lib.) Huebener = ***Cololejeunea calcarea* (Lib.) Schiffn.**
Jungermannia hamatifolia var. *echinata* Hook. = ***Cololejeunea calcarea* (Lib.) Schiffn.**
Jungermannia hampeana Nees 1836 = ***Cephaloziella hampeana* (Nees) Schiffn.**
Jungermannia hartmanii Thed. = ***Harpanthus flotovianus* (Nees) Nees**
Jungermannia hatcheri A. Evans 1898 = ***Barbilophozia hatcheri* (A. Evans) Loeske**
Jungermannia helleriana Nees ex Lindenb. 1829 = ***Anastrophyllum hellerianum* (Nees ex Lindenb.) R.M. Schust.**
Jungermannia hellerianopa Thed. ex C. Hartm. = ***Leiocolea heterocolpos* (Thed. ex C. Hartm.) H. Buch**
Jungermannia heterophylla Schrad. 1803 = ***Lophocolea heterophylla* (Schrad.) Dumort.**
Jungermannia hibernica Hook. = ***Moerckia hibernica* (Hook.) Gottsche**
Jungermannia hoffmannii Wallr. = ***Ptilidium ciliare* (L.) Hampe**
Jungermannia hookeri Sm. = ***Haplomitrium hookeri* (Sm.) Nees**
Jungermannia hornschuchiana Nees = ***Leiocolea bantriensis* (Hook.) Jörg.**
Jungermannia hornschuchiana var. *muelleri* (Nees ex Lindenb.) C. Massal. = ***Leiocolea collaris* (Nees) Schljakov**
***Jungermannia hyalina* Lyell**
Jungermannia hyalina var. *heteromorpha* Gottsche = ***Jungermannia gracillima* Sm.**
Jungermannia immersa Ångstr. = ***Nardia scalaris* Gray**
Jungermannia incisa Schrad. 1797 = ***Lophozia incisa* (Schrad.) Dumort.**
Jungermannia inflata fo. *fluitans* Nees = ***Cladopodiella fluitans* (Nees) H. Buch**
Jungermannia inflata Huds. 1778 = ***Gymnocolea inflata* (Huds.) Dumort.**
Jungermannia inflata var. *compacta* Nees = ***Gymnocolea inflata* (Huds.) Dumort.**
Jungermannia inflata var. *heterostipa* (Carrington & Spruce) Lindb. = ***Gymnocolea inflata* (Huds.) Dumort.**
Jungermannia inflata var. *laxa* Nees = ***Gymnocolea inflata* (Huds.) Dumort.**
Jungermannia inflata var. *nigricans* Nees = ***Gymnocolea inflata* (Huds.) Dumort.**
Jungermannia inflata var. *teres* Lindb. = ***Gymnocolea inflata* (Huds.) Dumort.**
Jungermannia intermedia Lindenb. = ***Lophozia excisa* (Dicks.) Dumort.**
Jungermannia interrupta Nees 1833 = ***Pedinophyllum interruptum* (Nees) Kaal.**
Jungermannia irrigua Nees 1833 = ***Scapania irrigua* (Nees) Nees**
Jungermannia islandica Nees 1836 = ***Pleurocladula albescens* var. *islandica* (Nees) L. Söderstr. et Váňa**
← ***Jungermannia jenseniana* Grolle**
Jungermannia julacea L. = ***Anthelia julacea* (L.) Dumort.**
Jungermannia julacea var. *clavuligera* Nees = ***Anthelia juratzkana* (Limpr.) Trevis.**
Jungermannia julacea var. *gracilis* Hook. = ***Anthelia julacea* (L.) Dumort.**
Jungermannia juratzkana Limpr. 1876 = ***Anthelia juratzkana* (Limpr.) Trevis.**
Jungermannia karl-muelleri auct., non Grolle = ***Jungermannia borealis* Damsh. & Vána**
Jungermannia karl-muelleri Grolle = ***Jungermannia pumila* Dicks.**
Jungermannia kaurinii Limpr. = ***Leiocolea gillmanii* (Aust.) A. Evans**
Jungermannia kunzeana Huebener 1834 = ***Barbilophozia kunzeana* (Huebener) Müll. Frib.**
Jungermannia kunzeana var. *plicata* (Hartm.) Lindb. = ***Barbilophozia kunzeana* (Huebener) Müll. Frib.**
Jungermannia kunzei Lindb. = ***Barbilophozia kunzeana* (Huebener) Müll. Frib.**
Jungermannia kunzei var. *plicata* (Hartm.) Lindb. = ***Barbilophozia kunzeana* (Huebener) Müll. Frib.**
Jungermannia lacinulata J.B. Jack = ***Cephalozia lacinulata* J.B. Jack ex Spruce**
Jungermannia laevifolia Lindb. ex Steph. = ***Jamesoniella autumnalis* (DC.) Steph.**
Jungermannia laevigata Schrad. = ***Porella arboris-vitae* (Dicks.) Grolle**
Jungermannia lammersiana Huebener = ***Cephalozia bicuspidata* var. *lammersiana* (Huebener) Breidl.**
Jungermannia lanceolata (Schrad.) Dumort, non L. = ***Jungermannia leiantha* Grolle**
Jungermannia lanceolata L. = ***Jungermannia atrovirens* Dumort.**
Jungermannia lanceolata subsp. *stephanii* Amakawa = ***Jungermannia subulata* A. Evans**
Jungermannia leersii Roth = ***Ptilidium ciliare* (L.) Hampe**
***Jungermannia leiantha* Grolle**
Jungermannia leiantha subsp. *stephanii* (Amakawa) S. Hatt. = ***Jungermannia subulata* A. Evans**
Jungermannia levieri (Steph.) H. Buch, Evans & Verd. = ***Jungermannia confertissima* Nees**
Jungermannia libertae Huebener = ***Leiocolea collaris* (Nees) Schljakov**

Jungermannia limprichtii Lindb. = ***Lophozia excisa*** (Dicks.) Dumort.
Jungermannia longidens Lindb. 1879 = ***Lophozia longidens*** (Lindb.) Macoun
Jungermannia longiflora Nees 1836 = ***Lophozia longiflora*** (Nees) Schiffn.
Jungermannia lunulifolia Dumort. = ***Cephalozia lunulifolia*** (Dumort.) Dumort.
Jungermannia lurida Dumort. = ***Jungermannia sphaerocarpa*** Hook.
Jungermannia lycopodioides var. *floerkei* (F. Web. & D. Mohr) Lindb. = ***Barbilophozia floerkei*** (F. Web. & D. Mohr) Loeske
Jungermannia lycopodioides Wallr. 1831 = ***Barbilophozia lycopodioides*** (Wallr.) Loeske
Jungermannia lyellii Hook. 1816 = ***Pallavicinia lyellii*** (Hook.) Carruth.
Jungermannia lyonii Taylor = ***Tritomaria quinqueidentata*** (Huds.) H. Buch
Jungermannia macrorrhiza Dicks. = ***Marsupella emarginata*** (Ehrh.) Dumort.
Jungermannia medelpadica Arnell = ***Tritomaria polita*** (Nees) Jörg.
Jungermannia menzelii Corda = ***Cephalozia bicuspidata*** (L.) Dumort.
Jungermannia michauxii F. Web. 1815 = ***Anastrophyllum michauxii*** (F. Web.) H. Buch
Jungermannia minor (Nees) Hartm. = ***Nardia geoscyphus*** (De Not.) Lindb.
Jungermannia minuta Schreb. 1770 = ***Anastrophyllum minutum*** (Schreb.) R.M. Schust.
Jungermannia minuta var. *procera* Nees = ***Anastrophyllum michauxii*** (F. Web.) H. Buch
Jungermannia minuta var. *rigida* (Gottsche ex Lindb.) Kaal. = ***Anastrophyllum minutum*** (Schreb.) R.M. Schust.
Jungermannia montana Nees = ***Scapania curta*** (Mart.) Dumort.
Jungermannia moriokensis Steph. = ***Jamesoniella autumnalis*** (DC.) Steph.
Jungermannia muelleri Nees ex Lindenb. = ***Leiocolea collaris*** (Nees) Schljakov
Jungermannia muelleri var. *bantriensis* (Hook.) Kaal. = ***Leiocolea bantriensis*** (Hook.) Jörg.
Jungermannia muelleri var. *libertae* (Huebener) Schiffn. = ***Leiocolea collaris*** (Nees) Schljakov
Jungermannia multifida L. 1762 = ***Riccardia multifida*** (L.) Gray
Jungermannia multifida var. *palmata* (Hedw.) Gray = ***Riccardia palmata*** (Hedw.) Carruth.
Jungermannia multifida var. *sinuata* Hook. = ***Riccardia chamaedryfolia*** (With.) Grolle
Jungermannia multiflora L., non Huds. = ***Kurzia pauciflora*** (Dicks.) Grolle
Jungermannia nana Nees = ***Jungermannia sphaerocarpa*** Hook.
Jungermannia naumannii (F. Web. & D. Mohr) Nees = ***Barbilophozia floerkei*** (F. Web. & D. Mohr) Loeske
Jungermannia nemorea L. 1759 = ***Scapania nemorea*** (L.) Grolle
Jungermannia nemorosa L. = ***Scapania nemorea*** (L.) Grolle
Jungermannia nemorosa var. *purpurascens* Hook. = ***Scapania undulata*** (L.) Dumort.
Jungermannia neumannii Nees = ***Barbilophozia floerkei*** (F. Web. & D. Mohr) Loeske
Jungermannia nevicensis Carrington = ***Marsupella boeckii*** (Aust.) Kaal.
Jungermannia nigricans Lam. = ***Frullania tamarisci*** (L.) Dumort.
Jungermannia nivalis Sw. ex F. Web. & D. Mohr = ***Anthelia juratzkana*** (Limpr.) Trevis.
Jungermannia oblonga Schwein. = ***Pallavicinia lyellii*** (Hook.) Carruth.
Jungermannia oblongifolia (Müll. Frib.) H. Buch et al. = ***Jungermannia pumila*** Dicks.
Jungermannia oblongifolia auct., non (Müll. Frib.) H. Buch, A. Evans & Verd. = ***Jungermannia borealis*** Damsh. &

Vána

Jungermannia obovata Nees

Jungermannia obovata var. *elongatus* Nees = ***Jungermannia obovata*** Nees
Jungermannia obtusa Lindb. 1879 = ***Lophozia obtusa*** (Lindb.) A. Evans
Jungermannia obtusifolia Hook. 1812 = ***Diplophyllum obtusifolium*** (Hook.) Dumort.
Jungermannia orcadensis Hook. 1816 = ***Anastrepta orcadensis*** (Hook.) Schiffn.
Jungermannia orcadensis var. *attenuata* Nees = ***Anastrepta orcadensis*** (Hook.) Schiffn.
Jungermannia pallescens Ehrh. ex Hoffm. = ***Chiloscyphus pallescens*** (Ehrh. ex Hoffm.) Dumort. var. ***pallescens***
Jungermannia pallescens var. *rivularis* Schrad. = ***Chiloscyphus polyanthos*** var. ***rivularis*** (Schrad.) Gottsche et al.
Jungermannia palmata Hedw. 1784 = ***Riccardia palmata*** (Hedw.) Carruth.
Jungermannia parvula Lindb. = ***Jungermannia caespiticia*** Lindenb.
Jungermannia patens Sillén = ***Scapania curta*** (Mart.) Dumort.
Jungermannia pauciflora Dicks. 1790 = ***Kurzia pauciflora*** (Dicks.) Grolle
Jungermannia pinguis L. 1753 = ***Aneura pinguis*** (L.) Dumort.
Jungermannia platyphylla L. = ***Porella platyphylla*** (L.) Pfeiff.
Jungermannia platyphylla L. 1753 = ***Porella platyphylla*** (L.) Pfeiff.
Jungermannia platyphylla var. *dentata* Hartm. = ***Porella cordaeana*** (Huebener) Moore
Jungermannia platyphylla var. *major* Hook. = ***Porella platyphylla*** (L.) Pfeiff.
Jungermannia platyphylloidea Schwein. = ***Porella platyphylla*** (L.) Pfeiff.
Jungermannia pleniceps Aust. 1869 = ***Cephalozia pleniceps*** (Aust.) Lindb.
Jungermannia plicata Hartm. = ***Barbilophozia kunzeana*** (Huebener) Müll. Frib.

Jungermannia plicata var. *kunzeana* (Huebener) Hartm. = *Barbilophozia kunzeana* (Huebener) Müll. Frib.
Jungermannia polaris Lindb.
Jungermannia polita Nees 1836 = *Tritomaria polita* (Nees) Jörg.
Jungermannia polita var. *acuta* (Lindb. & Arnell) Meyl. = *Tritomaria scitula* (Taylor) Jörg.
Jungermannia polyanthos L. 1753 = *Chiloscyphus polyanthos* (L.) Corda
Jungermannia polyanthos var. *pallescens* (Ehrh. ex Hoffm.) Lindenb. = *Chiloscyphus pallescens* (Ehrh. ex Hoffm.)
Dumort. var. ***pallescens***
Jungermannia polyanthos var. *rivularis* (Schrad.) Lindb. = *Chiloscyphus polyanthos* var. *rivularis* (Schrad.)
Gottsche et al.
Jungermannia porelloides Torr. ex Nees 1833 = *Plagiochila porelloides* (Torr. ex Nees) Lindenb.
Jungermannia porphyroleuca Nees = *Lophozia longiflora* (Nees) Schiffn.
Jungermannia porphyroleuca var. *attenuata* Nees = *Lophozia longidens* (Lindb.) Macoun
Jungermannia porphyroleuca var. *guttulata* (Lindb. & Arnell) Warnst. = *Lophozia longiflora* (Nees) Schiffn.
Jungermannia potamophila Müll. Arg. ex Moug. et al. = *Jungermannia atrovirens* Dumort.
Jungermannia propagulifera Gottsche = *Lophozia excisa* (Dicks.) Dumort.
Jungermannia pubescens Schrank 1792 = *Apometzgeria pubescens* (Schrank) Kuwah.
Jungermannia pulcherrima Weber 1778 = *Ptilidium pulcherrimum* (Weber) Vain.
Jungermannia pulvinata Raddi = *Marsupella emarginata* (Ehrh.) Dumort.
Jungermannia pumila Dicks.
Jungermannia pumila Limpr., non With. = *Jungermannia atrovirens* Dumort.
Jungermannia pumila subsp. *polaris* (Lindb.) Berggr. = *Jungermannia polaris* Lindb.
Jungermannia pumila var. *notha* Gottsche = *Jungermannia atrovirens* Dumort.
Jungermannia pumila var. *alpestris* Lindb. = *Jungermannia pumila* Dicks.
Jungermannia pumila var. *polaris* (Lindb.) Berggr. = *Jungermannia polaris* Lindb.
Jungermannia pumila var. *rivularis* (Schiffn.) Frye & L. Clark = *Jungermannia pumila* Dicks.
Jungermannia pumila var. *sauteriana* Gottsche = *Jungermannia atrovirens* Dumort.
Jungermannia pumila var. *sphaerocarpoidea* (De Not.) C. Massal. = *Jungermannia atrovirens* Dumort.
Jungermannia punctata Gottsche = *Jungermannia caespiticia* Lindenb.
Jungermannia pusilla L., non (C.E.O. Jensen) H. Buch = *Fossombronia pusilla* (L.) Nees
Jungermannia pusilla var. *capitata* Nees = *Fossombronia wondraczekii* (Corda) Lindb.
Jungermannia quadriloba Lindb. 1883 = *Barbilophozia quadriloba* (Lindb.) Loeske
Jungermannia quadriloba var. *glareosa* Jörg. = *Barbilophozia quadriloba* (Lindb.) Loeske
Jungermannia quinquedentata Huds. 1762 = *Tritomaria quinquedentata* (Huds.) H. Buch
Jungermannia quinquedentata var. *attenuata* Mart. = *Barbilophozia attenuata* (Mart.) Loeske
Jungermannia raddiana C. Massal. = *Cephaloziella rubella* (Nees) Warnst.
Jungermannia radicans L. = *Bazzania trilobata* (L.) Gray
Jungermannia rauana Steph. = *Jamesoniella autumnalis* (DC.) Steph.
Jungermannia reclusa Taylor = *Cephalozia catenulata* (Huebener) Lindb.
Jungermannia renifolia Lehm. = *Scapania uliginosa* (Sw. ex Lindenb.) Dumort.
Jungermannia repens Dietrich = *Jungermannia pumila* Dicks.
Jungermannia reptans L. 1753 = *Lepidozia reptans* (L.) Dumort.
Jungermannia resupinata Hook. = *Scapania compacta* (Roth) Dumort.
Jungermannia resupinata L., non Hook. = *Scapania undulata* (L.) Dumort.
Jungermannia rigida (Lindb.) Lindb. = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Jungermannia rigida Wallr. = *Aneura pinguis* (L.) Dumort.
Jungermannia rigidula Huebener = *Cephalozia bicuspidata* (L.) Dumort.
Jungermannia riparia Taylor = *Jungermannia atrovirens* Dumort.
Jungermannia riparia var. *bactrocalyx* C. Massal. = *Jungermannia atrovirens* Dumort.
Jungermannia riparia var. *rivularis* (Bernet) Meyl. = *Jungermannia atrovirens* Dumort.
Jungermannia rosacea Corda = *Scapania curta* (Mart.) Dumort.
Jungermannia rostellata Huebener = *Jungermannia pumila* Dicks.
Jungermannia rotaeana (De Not.) Bertol. = *Nardia scalaris* Gray
Jungermannia rubella Nees 1834 = *Cephaloziella rubella* (Nees) Warnst.
Jungermannia rupestris Schleich. = *Scapania aequiloba* (Schwägr.) Dumort.
Jungermannia saccatula Lindb. = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Jungermannia saxicolus Schrad. 1796 = *Anastrophyllum saxicola* (Schrad.) R.M. Schust.
Jungermannia scalariformis Nees = *Jungermannia confertissima* Nees
Jungermannia scalariformis var. *scandica* C.E.O. Jensen ex S.W. Arnell = *Jungermannia confertissima* Nees
Jungermannia scalaris (Gray) Hook., non Schmidel = *Nardia scalaris* Gray
Jungermannia scalaris var. *colorata* Nees = *Jungermannia gracillima* Sm.

Jungermannia scalaris var. *denudata* Mart. 1817 = ***Odontoschisma denudatum*** (Mart.) Dumort.
Jungermannia scalaris var. *minor* Nees = ***Nardia geoscyphus*** (De Not.) Lindb.
Jungermannia scalaris var. *repanda* Huebener = ***Nardia geoscyphus*** (De Not.) Lindb.
Jungermannia schiffneri (Loitl.) A. Evans, non (Loitl.) Steph. = ***Jungermannia polaris*** Lindb.
Jungermannia schmidelianum Huebener = ***Jungermannia hyalina*** Lyell
Jungermannia schraderi Nees = ***Jamesoniella autumnalis*** (DC.) Steph.
Jungermannia schreberi (Nees) Nees = ***Barbilophozia barbata*** (Schmidel ex Schreb.) Loeske
Jungermannia schultzei Spreng. = ***Kurzia pauciflora*** (Dicks.) Grolle
Jungermannia scitula Taylor 1846 = ***Tritomaria scitula*** (Taylor) Jörg.
Jungermannia scutata F. Web. & D. Mohr = ***Harpanthus scutatus*** (F. Web. & D. Mohr) Spruce
Jungermannia serpentina Nees = ***Leiocolea collaris*** (Nees) Schljakov
Jungermannia setacea auct., non Weber = ***Kurzia pauciflora*** (Dicks.) Grolle
Jungermannia sicca Nees = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Jungermannia sinuata Dicks. = ***Pallavicinia lyellii*** (Hook.) Carruth.
Jungermannia sinuata Dicks. = ***Riccardia chamaedryfolia*** (With.) Grolle
Jungermannia socia Nees = ***Lophozia excisa*** (Dicks.) Dumort.
Jungermannia sphacelata Gieseke ex Lindenb. 1829 = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Jungermannia sphaerocarpa auct., non Hook. = ***Jungermannia confertissima*** Nees
Jungermannia sphaerocarpa Hook.
Jungermannia sphaerocarpa var. *amplexicaulis* (Dumort.) Frye & L. Clark = ***Jungermannia sphaerocarpa*** Hook.
Jungermannia sphaerocarpa var. *elongata* Huebener = ***Jungermannia sphaerocarpa*** Hook.
Jungermannia sphaerocarpa var. *gracilescens* Nees = ***Jungermannia gracillima*** Sm.
Jungermannia sphaerocarpa var. *lurida* Pearson = ***Jungermannia sphaerocarpa*** Hook.
Jungermannia sphaerocarpa var. *nana* (Nees ex Breidl.) Frye & L. Clark = ***Jungermannia sphaerocarpa*** Hook.
Jungermannia sphaerocarpoidea De Not. = ***Jungermannia atrovirens*** Dumort.
Jungermannia sphagni Dicks. = ***Odontoschisma sphagni*** (Dicks.) Dumort.
Jungermannia sphagni var. *vegetior* Nees = ***Odontoschisma sphagni*** (Dicks.) Dumort.
Jungermannia sprengelii Nees = ***Calypogeia fissa*** (L.) Raddi
Jungermannia starkei Funck ex Nees = ***Cephaloziella divaricata*** (Sm.) Schiffn.
Jungermannia stipulacea Hook. = ***Harpanthus scutatus*** (F. Web. & D. Mohr) Spruce
Jungermannia subalpina Nees ex Lindenb. 1829 = ***Scapania subalpina*** (Nees ex Lindenb.) Dumort.
Jungermannia subapicalis Huebener, non Nees = ***Nardia scalaris*** Gray
Jungermannia subapicalis Nees, non Huebener = ***Jamesoniella autumnalis*** (DC.) Steph.
Jungermannia subdichotoma Lindb. = ***Gymnocolea inflata*** (Huds.) Dumort.
Jungermannia subelliptica (Lindb. ex Kaal.) Levier
Jungermannia subulata A. Evans
Jungermannia sudetica Nees ex Huebener 1834 = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Jungermannia sullivantii Austin = ***Cephaloziella rubella*** (Nees) Warnst.
Jungermannia supina Taylor = ***Lophozia incisa*** (Schrad.) Dumort.
Jungermannia tamarisci L. 1753 = ***Frullania tamarisci*** (L.) Dumort.
Jungermannia tamariscifolia L. = ***Frullania tamarisci*** (L.) Dumort.
Jungermannia taxifolia Wahlenb. 1812 = ***Diplophyllum taxifolium*** (Wahlenb.) Dumort.
Jungermannia taylorii Hook. 1816 = ***Mylia taylorii*** (Hook.) Gray
Jungermannia taylorii var. *anomalus* (Hook.) Nees = ***Mylia anomala*** (Hook.) Gray
Jungermannia tenerrima Raddi, non Steph. = ***Jungermannia gracillima*** Sm.
Jungermannia tersa Nees = ***Jungermannia sphaerocarpa*** Hook.
Jungermannia tersa var. *attenuata* Nees = ***Jungermannia obovata*** Nees
Jungermannia tersa var. *densa* Nees = ***Jungermannia obovata*** Nees
Jungermannia tersa var. *explanata* Nees = ***Jungermannia obovata*** Nees
Jungermannia tersa var. *rivularis* Nees = ***Jungermannia obovata*** Nees
Jungermannia tomentella Ehrh. 1785 = ***Trichocolea tomentella*** (Ehrh.) Dumort.
Jungermannia towadensis (S. Okamura) S. Hatt. = ***Jungermannia atrovirens*** Dumort.
Jungermannia treviranii Huebener = ***Anastrophyllum minutum*** (Schreb.) R.M. Schust.
Jungermannia triangularis Schleich. ex Steud. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Jungermannia trichomanis (L.) Dicks. = ***Calypogeia azurea*** Stotler & Crotz
Jungermannia trichomanis (L.) Scop. = ***Calypogeia fissa*** (L.) Raddi
Jungermannia tricophylla L. 1753 = ***Blepharostoma trichophyllum*** (L.) Dumort.
Jungermannia tricrenata Wahlenb. 1814 = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Jungermannia tridenticulata Michx. = ***Bazzania trilobata*** (L.) Gray
Jungermannia trilobata L. 1753 = ***Bazzania trilobata*** (L.) Gray

Jungermannia trilobata var. *minima* Hook. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Jungermannia tristis Nees = ***Jungermannia atrovirens*** Dumort.
Jungermannia tristis Nees var. *rivulare* Bern. = ***Jungermannia atrovirens*** Dumort.
Jungermannia tumidula Nees = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Jungermannia turbinata Raddi 1818 = ***Leiocolea turbinata*** (Raddi) H. Buch
Jungermannia turbinata var. *obtusiloba* Bernet = ***Leiocolea badensis*** (Gottsche) Jörg.
Jungermannia tyrolensis Nees = ***Scapania aequiloba*** (Schwägr.) Dumort.
Jungermannia uliginosa (Sw. ex Lindenb.) Nees = ***Scapania uliginosa*** (Sw. ex Lindenb.) Dumort.
Jungermannia uliginosa Huebener, non Sw. ex Lindenb. = ***Scapania irrigua*** (Nees) Nees
Jungermannia umbrosa Schrad. 1797 = ***Scapania umbrosa*** (Schrad.) Dumort.
Jungermannia undulata L. 1753 = ***Scapania undulata*** (L.) Dumort.
Jungermannia undulata var. *aequata* Nees = ***Scapania undulata*** (L.) Dumort.
Jungermannia undulata var. *purpurascens* Huebener = ***Scapania undulata*** (L.) Dumort.
Jungermannia undulata var. *rivularis* Huebener = ***Scapania undulata*** (L.) Dumort.
Jungermannia undulata var. *uliginosa* Sw. ex Lindenb. 1829 = ***Scapania uliginosa*** (Sw. ex Lindenb.) Dumort.
Jungermannia varia Mart. = ***Gymnocolea inflata*** (Huds.) Dumort.
Jungermannia variabilis Steph. = ***Jamesoniella autumnalis*** (DC.) Steph.
Jungermannia ventricosa Dicks. 1790 = ***Lophozia ventricosa*** (Dicks.) Dumort.
Jungermannia ventricosa var. *laxa* Lindenb. = ***Lophozia ventricosa*** (Dicks.) Dumort.
Jungermannia ventricosa var. *longidens* Lindb. = ***Lophozia longidens*** (Lindb.) Macoun
Jungermannia ventricosa var. *longiflora* (Nees) Macoun = ***Lophozia longiflora*** (Nees) Schiffn.
Jungermannia ventricosa var. *porphyroleuca* C. Hartm. = ***Lophozia longiflora*** (Nees) Schiffn.
Jungermannia verruculosa Lindb. = ***Anastrophyllum hellerianum*** (Nees ex Lindenb.) R.M. Schust.
Jungermannia verruculosa var. *compacta* Lindb. = ***Anastrophyllum hellerianum*** (Nees ex Lindenb.) R.M. Schust.
Jungermannia verruculosa var. *helleri* Lindb. = ***Anastrophyllum hellerianum*** (Nees ex Lindenb.) R.M. Schust.
Jungermannia violacea Ach. 1805 = ***Metzgeria violacea*** (Ach.) Dumort.
Jungermannia viridissima Nees = ***Lophozia incisa*** (Schrad.) Dumort.
Jungermannia vogesiaca Huebener = ***Harpanthus flotovianus*** (Nees) Nees
Jungermannia wallrothiana Huebener = ***Nardia scalaris*** Gray
Jungermannia weberi Mart. = ***Anastrophyllum minutum*** (Schreb.) R.M. Schust.
Jungermannia wenzelii Nees 1836 = ***Lophozia wenzelii*** (Nees) Steph.
Jungermannia wondraczekii Corda 1830 = ***Fossombronina wondraczekii*** (Corda) Lindb.
Jungermannia zeyheri Huebener = ***Jungermannia pumila*** Dicks.
Kantius calypogeus (Raddi) Lindb. = ***Calypogeia fissa*** (L.) Raddi
Kantius fissus (L.) Lindb. = ***Calypogeia fissa*** (L.) Raddi
Kantius muellerianus Schiffn. = ***Calypogeia muelleriana*** (Schiffn.) Müll. Frib.
Kantius muellerianus var. *erectus* (Müll. Frib.) Schiffn. = ***Calypogeia muelleriana*** (Schiffn.) Müll. Frib.
Kantius neesianus (C. Massal. & Carestia) Arnell & C.E.O. Jensen = ***Calypogeia neesiana*** (C. Massal. & Carestia) Müll. Frib.
Kantius sphagnicolus Arnell & J. Perss. = ***Calypogeia sphagnicola*** (Arnell & J. Perss.) Warnst. & Loeske
Kantius sprengelii (Nees) Trevis. = ***Calypogeia fissa*** (L.) Raddi
Kantius submersus Arnell = ***Calypogeia sphagnicola*** (Arnell & J. Perss.) Warnst. & Loeske
Kantius suecicus Arnell & J. Perss. = ***Calypogeia suecica*** (Arnell & J. Perss.) Müll. Frib.
Kantius trichomanis (L.) Gray = ***Calypogeia fissa*** (L.) Raddi
Kantius trichomanis auct., p.p. = ***Calypogeia azurea*** Stotler & Crotz
Kantius trichomanis var. *aquatica* Ingham = ***Calypogeia muelleriana*** (Schiffn.) Müll. Frib.
Kantius trichomanis var. *fissus* (L.) Lindb. = ***Calypogeia fissa*** (L.) Raddi
Kantius trichomanis var. *intermedius* C.E.O. Jensen = ***Calypogeia muelleriana*** (Schiffn.) Müll. Frib.
Kantius trichomanis var. *neesianus* C. Massal. & Carestia = ***Calypogeia neesiana*** (C. Massal. & Carestia) Müll. Frib.
Kantius trichomanis var. *sprengelii* (Nees) M. Howe = ***Calypogeia fissa*** (L.) Raddi
Kantius trichomanis var. *tenuis* (Aust.) Underw. = ***Calypogeia sphagnicola*** (Arnell & J. Perss.) Warnst. & Loeske
Kurzia pauciflora (Dicks.) Grolle
Kurzia setacea auct. = ***Kurzia pauciflora*** (Dicks.) Grolle
Leiocolea alpestris (Schleich. ex F. Weber) Isov. = ***Leiocolea collaris*** (Nees) Schljakov
Leiocolea badensis (Gottsche) Jörg.
Leiocolea badensis var. *obtusiloba* (Bernet) Jörg. = ***Leiocolea badensis*** (Gottsche) Jörg.
Leiocolea bantriensis (Hook.) Jörg.
Leiocolea collaris (Nees) Schljakov
Leiocolea gillmanii (Aust.) A. Evans

Leiocolea heterocolpos (Thed. ex C. Hartm.) H. Buch
Leiocolea kaurinii (Limpr.) Jörg. = *Leiocolea gillmanii* (Aust.) A. Evans
Leiocolea muelleri (Nees ex Lindenb.) Jörg. = *Leiocolea collaris* (Nees) Schljakov
Leiocolea muelleri var. *libertae* (Huebener) Jörg. = *Leiocolea collaris* (Nees) Schljakov
Leiocolea obtusa (Lindb.) H. Buch = *Lophozia obtusa* (Lindb.) A. Evans
Leiocolea turbinata (Raddi) H. Buch
Leioscyphus anomalus (Hook.) Steph. = *Mylia anomala* (Hook.) Gray
Leioscyphus taylorii (Hook.) Steph. = *Mylia taylorii* (Hook.) Gray
Lejeunea calcarea Lib. = *Cololejeunea calcarea* (Lib.) Schiffn.
Lejeunea cavifolia (Ehrh.) Lindb.
Lejeunea cavifolia var. *oblongifolia* Jörg. = *Lejeunea cavifolia* (Ehrh.) Lindb.
Lejeunea cavifolia var. *planiuscula* (Lindb.) Lindb. = *Lejeunea cavifolia* (Ehrh.) Lindb.
Lejeunea echinata (Hook.) Taylor ex Gottsche et al. = *Cololejeunea calcarea* (Lib.) Schiffn.
Lejeunea hamatifolia (Hook.) Spreng. = *Cololejeunea calcarea* (Lib.) Schiffn.
Lejeunea planiuscula (Lindb.) H. Buch = *Lejeunea cavifolia* (Ehrh.) Lindb.
Lejeunea platyphylla (L.) Corda = *Porella platyphylla* (L.) Pfeiff.
Lejeunea rossettiana C. Massal. = *Cololejeunea rossettiana* (C. Massal.) Schiffn.
Lejeunea serpyllifolia auct. = *Lejeunea cavifolia* (Ehrh.) Lindb.
Lejeunea serpyllifolia var. *cavifolia* (Ehrh.) Lindb. = *Lejeunea cavifolia* (Ehrh.) Lindb.
Lepidozia obliqua Steph. = *Lepidozia reptans* (L.) Dumort.
Lepidozia reptans (L.) Dumort.
Lepidozia reptans var. *julacea* (Nees) Gottsche et al. = *Lepidozia reptans* (L.) Dumort.
Lepidozia reptans var. *laxa* Schiffn. = *Lepidozia reptans* (L.) Dumort.
Lepidozia setacea auct. = *Kurzia pauciflora* (Dicks.) Grolle
Lepidozia setacea var. *sertularioides* Carrington = *Kurzia pauciflora* (Dicks.) Grolle
Lepidozia setacea var. *sphagnicola* (A. Evans) Hesselbo = *Kurzia pauciflora* (Dicks.) Grolle
Lepidozia sphagnicola A. Evans = *Kurzia pauciflora* (Dicks.) Grolle
Leptoscyphus anomalus (Hook.) Lindb. = *Mylia anomala* (Hook.) Gray
Leptoscyphus anomalus var. *subremotus* Schiffn. = *Mylia anomala* (Hook.) Gray
Leptoscyphus anomalus var. *turfosus* Schiffn. = *Mylia anomala* (Hook.) Gray
Leptoscyphus taylorii (Hook.) Mitt. = *Mylia taylorii* (Hook.) Gray
Leptoscyphus taylorii var. *demissus* Schiffn. = *Mylia taylorii* (Hook.) Gray
Lioclaena lanceolata Nees = *Jungermannia leiantha* Grolle
Lophocolea alata (Gottsche et al.) Mitt. ex Larter = *Lophocolea bidentata* (L.) Dumort. var. *bidentata*
Lophocolea angustiflora Steph. = *Lophocolea heterophylla* (Schrad.) Dumort.
Lophocolea austinii Lindb. = *Lophocolea heterophylla* (Schrad.) Dumort.
Lophocolea bidentata (L.) Dumort.
Lophocolea bidentata (L.) Dumort. var. *bidentata*
Lophocolea bidentata (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Lophocolea bidentata var. *ciliata* Velen. = *Lophocolea bidentata* (L.) Dumort. var. *bidentata*
Lophocolea bidentata var. *ciliata* Warnst. = *Lophocolea bidentata* (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Lophocolea bidentata var. *cuspidata* (Nees) Gottsche et al. = *Lophocolea bidentata* (L.) Dumort. var. *bidentata*
Lophocolea bidentata var. *gracillima* Kaal. = *Lophocolea bidentata* (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Lophocolea bidentata var. *interrupta* Huebener & Genth ex Schiffn. = *Lophocolea bidentata* (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Lophocolea bidentata var. *minor* (Nees) Moris & De Not. = *Lophocolea minor* Nees
Lophocolea bidentata var. *obtusata* (Hook.) Dumort. = *Lophocolea bidentata* (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Lophocolea bidentata var. *pulverulenta* Jörg. = *Lophocolea bidentata* (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Lophocolea coadunata (Sw.) Montin = *Lophocolea bidentata* (L.) Dumort. var. *bidentata*
Lophocolea crocata (De Not.) Nees = *Lophocolea minor* Nees
Lophocolea cuspidata (Nees) Limpr. = *Lophocolea bidentata* (L.) Dumort. var. *bidentata*
Lophocolea cuspidata (Nees) Limpr. var. *banatica* Ștef. = *Lophocolea bidentata* (L.) Dumort. var. *bidentata*
Lophocolea fauriana Steph. = *Lophocolea minor* Nees
Lophocolea fissicalyx Steph. = *Lophocolea heterophylla* (Schrad.) Dumort.
Lophocolea heterophylla (Schrad.) Dumort.
Lophocolea heterophylla var. *minor* (Nees) Douin = *Lophocolea minor* Nees
Lophocolea heterophylla var. *paludosa* Warnst. = *Chiloscyphus pallescens* (Ehrh. ex Hoffm.) Dumort. var. *pallescens*
Lophocolea hiraefusa Steph. = *Lophocolea minor* Nees

Lophocolea hookeriana Nees = ***Lophocolea bidentata*** (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Lophocolea incisa Lindb. = ***Lophocolea heterophylla*** (Schrad.) Dumort.
Lophocolea lateralis Dumort. = ***Lophocolea bidentata*** (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Lophocolea latifolia Nees = ***Lophocolea bidentata*** (L.) Dumort. var. *rivularis* (Raddi) Schiffn.
Lophocolea minor Nees
Lophocolea minor var. *erosa* (Nees) Gottsche et al. = ***Lophocolea minor*** Nees
Lophocolea profundus Nees = ***Lophocolea heterophylla*** (Schrad.) Dumort.
Lophocolea reflexula Lindb. & Arnell = ***Lophocolea heterophylla*** (Schrad.) Dumort.
Lophocolea setistipa Steph. = ***Lophocolea minor*** Nees
Lophozia acuta Dumort. = ***Leiocolea collaris*** (Nees) Schljakov
Lophozia acutiloba Schiffn. = ***Gymnocolea inflata*** subsp. *acutiloba* (Schiffn.) R.M. Schust. et Damsh. ex Söderström et Våña
Lophozia alpestris (Schleich. ex F. Web.) A. Evans = ***Leiocolea collaris*** (Nees) Schljakov
Lophozia alpestris auct. = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Lophozia alpestris var. *amphigastriata* (C.E.O. Jensen) Kaal. = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Lophozia alpestris var. *gelida* (Taylor) Macvicar = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Lophozia alpestris var. *major* (C.E.O. Jensen) Müll. Frib. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia ascendens (Warnst.) R.M. Schust.
Lophozia attenuata (Mart.) Dumort. = ***Barbilophozia attenuata*** (Mart.) Loeske
Lophozia badensis (Gottsche) Schiffn. = ***Leiocolea badensis*** (Gottsche) Jörg.
Lophozia badensis var. *obtusiloba* (Bernet) Schiffn. = ***Leiocolea badensis*** (Gottsche) Jörg.
Lophozia bantriensis (Hook.) Steph. = ***Leiocolea bantriensis*** (Hook.) Jörg.
Lophozia barbata (Schmidel ex Schreb.) Dumort. = ***Barbilophozia barbata*** (Schmidel ex Schreb.) Loeske
Lophozia baueriana (Schiffn.) Schiffn. = ***Barbilophozia hatcheri*** (A. Evans) Loeske
Lophozia bicrenata (Schmidel ex Hoffm.) Dumort.
Lophozia collaris (Nees) Dumort. = ***Leiocolea collaris*** (Nees) Schljakov
Lophozia confertifolia Schiffn. = ***Lophozia ventricosa*** (Dicks.) Dumort.
Lophozia cylindracea (Dumort.) Dumort. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia ehrhartiana (F. Web.) Inoue & Steere = ***Lophozia ventricosa*** (Dicks.) Dumort.
Lophozia ehrhartiana auct. = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Lophozia ehrhartiana F. Web. = ***Lophozia ventricosa*** (Dicks.) Dumort.
← ***Lophozia elongata*** Steph.
Lophozia excisa (Dicks.) Dumort.
Lophozia excisa var. *arenaria* (Nees) Schiffn. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia excisa var. *cylindracea* (Dumort.) Müll. Frib. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia excisa var. *jurensis* (Meyl. ex Müll. Frib.) Müll. Frib. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia excisa var. *limprichtii* (Lindb. ex C. Massal. & Carestia) Schiffn. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia exsecta (Schmidel ex Schrad.) Dumort. = ***Tritomaria exsecta*** (Schmidel ex Schrad.) Schiffn. ex Loeske
Lophozia exsectiformis (Breidl.) Jaap = ***Tritomaria exsectiformis*** (Breidl.) Loeske
Lophozia fauriana Steph. = ***Lophozia ventricosa*** (Dicks.) Dumort.
Lophozia floerkei (F. Web. & D. Mohr) Schiffn. = ***Barbilophozia floerkei*** (F. Web. & D. Mohr) Loeske
Lophozia floerkei var. *baueriana* Schiffn. = ***Barbilophozia hatcheri*** (A. Evans) Loeske
Lophozia floerkei var. *naumanniana* Schiffn. = ***Barbilophozia floerkei*** (F. Web. & D. Mohr) Loeske
Lophozia fluitans (Nees) Boulay = ***Cladopodiella fluitans*** (Nees) H. Buch
Lophozia gelida (Taylor) Steph. = ***Lophozia sudetica*** (Nees ex Huebener) Grolle
Lophozia gillmanii (Aust.) R.M. Schust. = ***Leiocolea gillmanii*** (Aust.) A. Evans
Lophozia gracilis Schleich. ex Steph. = ***Barbilophozia attenuata*** (Mart.) Loeske
Lophozia gracilis var. *eflagellis* Schiffn. = ***Barbilophozia attenuata*** (Mart.) Loeske
Lophozia gracillima H. Buch = ***Lophozia ascendens*** (Warnst.) R.M. Schust.
Lophozia groenlandica (Nees) Macoun = ***Lophozia wenzelii*** (Nees) Steph.
Lophozia guttulata (Lindb. & Arnell) A. Evans = ***Lophozia longiflora*** (Nees) Schiffn.
Lophozia gypsacea (Gottsche et al.) Schiffn. = ***Leiocolea badensis*** (Gottsche) Jörg.
Lophozia hatcheri (A. Evans) Steph. = ***Barbilophozia hatcheri*** (A. Evans) Loeske
Lophozia hatcheri var. *ciliata* Müll. Frib. = ***Barbilophozia lycopodioides*** (Wallr.) Loeske
Lophozia hatcheri var. *hageni* Kaal. = ***Barbilophozia hatcheri*** (A. Evans) Loeske
Lophozia helleriana (Nees ex Lindenb.) Macoun = ***Anastrophyllum hellerianum*** (Nees ex Lindenb.) R.M. Schust.
Lophozia heterocolpos (Thed. ex C. Hartm.) M. Howe = ***Leiocolea heterocolpos*** (Thed. ex C. Hartm.) H. Buch
Lophozia hornschuchiana (Nees) Dumort. ex Schiffn. = ***Leiocolea bantriensis*** (Hook.) Jörg.
Lophozia incisa (Schrad.) Dumort.
Lophozia incisa subsp. *opacifolia* (Culm. ex Meyl.) R.M. Schust. et Damsh. = ***Lophozia opacifolia*** Culm. ex Meyl.

Lophozia incisa var. *inermis* Müll. Frib. = ***Lophozia incisa*** (Schrad.) Dumort.
Lophozia inflata (Huds.) M. Howe = ***Gymnocolea inflata*** (Huds.) Dumort.
Lophozia inflata var. *acutiloba* Schiffn. = ***Gymnocolea inflata*** subsp. *acutiloba* (Schiffn.) R.M. Schust. et Damsh. ex Söderström et Vána
Lophozia intermedia Dumort. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia jurensis Meyl. ex Müll. Frib. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia kaurinii (Limpr.) Steph. = ***Leiocolea gillmanii*** (Aust.) A. Evans
Lophozia kiaeri Jörg. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia kunzeana (Huebener) A. Evans = ***Barbilophozia kunzeana*** (Huebener) Müll. Frib.
Lophozia kunzeana var. *plicata* (Hartm.) Lindb. = ***Barbilophozia kunzeana*** (Huebener) Müll. Frib.
Lophozia limprichtii (Lindb. ex C. Massal. & Carestia) Steph. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia longidens (Lindb.) Macoun
Lophozia longidens Schiffn. = ***Lophozia ascendens*** (Warnst.) R.M. Schust.
Lophozia longiflora (Nees) Schiffn.
Lophozia longiflora var. *guttulata* (Lindb. & Arnell) Schljakov = ***Lophozia longiflora*** (Nees) Schiffn.
Lophozia lycopodioides (Wallr.) Cogn. = ***Barbilophozia lycopodioides*** (Wallr.) Loeske
Lophozia lycopodioides var. *obliqua* Müll. Frib. = ***Barbilophozia lycopodioides*** (Wallr.) Loeske
Lophozia lycopodioides var. *parvifolia* Schiffn. = ***Barbilophozia lycopodioides*** (Wallr.) Loeske
Lophozia lyonii (Taylor) Steph. = ***Tritomaria quinqueidentata*** (Huds.) H. Buch
Lophozia major (C.E.O. Jensen) Schljakov = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia michauxii (F. Web.) Macoun = ***Anastrophyllum michauxii*** (F. Web.) H. Buch
Lophozia minuta (Schreb.) Schiffn. = ***Anastrophyllum minutum*** (Schreb.) R.M. Schust.
Lophozia muelleri (Nees ex Lindenb.) Dumort. = ***Leiocolea collaris*** (Nees) Schljakov
Lophozia obtusa (Lindb.) A. Evans
Lophozia obtusa var. *acutiloba* Müll. Frib. = ***Lophozia obtusa*** (Lindb.) A. Evans
Lophozia opacifolia Culm. ex Meyl.
Lophozia polita (Nees) Macoun = ***Tritomaria polita*** (Nees) Jörg.
Lophozia porphyroleuca (C. Hartm.) Schiffn. = ***Lophozia longiflora*** (Nees) Schiffn.
Lophozia porphyroleuca Müll. Frib. = ***Lophozia ascendens*** (Warnst.) R.M. Schust.
Lophozia porphyroleuca var. *guttulata* (Lindb. & Arnell) Warnst. = ***Lophozia longiflora*** (Nees) Schiffn.
Lophozia propagulifera (Gottsche) Steph. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia quadriloba (Lindb.) A. Evans = ***Barbilophozia quadriloba*** (Lindb.) Loeske
Lophozia quadriloba var. *glareosa* (Jörg.) Bryhn = ***Barbilophozia quadriloba*** (Lindb.) Loeske
Lophozia quinqueidentata (Huds.) Cogn. = ***Tritomaria quinqueidentata*** (Huds.) H. Buch
Lophozia quinqueidentata var. *tenera* Arnell & C.E.O. Jensen = ***Tritomaria scitula*** (Taylor) Jörg.
Lophozia saxicola (Schrad.) Schiffn. = ***Anastrophyllum saxicola*** (Schrad.) R.M. Schust.
Lophozia scutata (F. Web. & D. Mohr) Dumort. = ***Harpanthus scutatus*** (F. Web. & D. Mohr) Spruce
Lophozia silvicola H. Buch
Lophozia silvicola var. *grandiretis* H. Buch & S.W. Arnell = ***Lophozia silvicola*** H. Buch
Lophozia ventricosa var. *grandiretis* (H. Buch & S.W. Arnell) R.M. Schust. & Damsh. = ***Lophozia silvicola*** H. Buch
Lophozia socia (Nees) Mig. = ***Lophozia excisa*** (Dicks.) Dumort.
Lophozia sudetica (Nees ex Huebener) Grolle
Lophozia turbinata (Raddi) Steph. = ***Leiocolea turbinata*** (Raddi) H. Buch
Lophozia turbinata var. *badensis* (Gottsche ex Rabenh.) Hillier = ***Leiocolea badensis*** (Gottsche) Jörg.
Lophozia ventricosa (Dicks.) Dumort.
Lophozia ventricosa var. *confertifolia* (Schiffn.) Husn. = ***Lophozia ventricosa*** (Dicks.) Dumort.
Lophozia ventricosa var. *laxa* (Lindenb.) Cogn. = ***Lophozia ventricosa*** (Dicks.) Dumort.
Lophozia ventricosa var. *longiflora* (Nees) Macoun = ***Lophozia longiflora*** (Nees) Schiffn.
Lophozia ventricosa var. *longiflora* auct., non (Nees) Macoun = ***Lophozia ventricosa*** (Dicks.) Dumort.
Lophozia ventricosa var. *porphyroleuca* (C. Hartm.) Macoun = ***Lophozia longiflora*** (Nees) Schiffn.
Lophozia ventricosa var. *silvicola* (H. Buch) E.W. Jones ex R.M. Schust. = ***Lophozia silvicola*** H. Buch
Lophozia ventricosa var. *subarctica* Schljakov = ***Lophozia ventricosa*** (Dicks.) Dumort.
Lophozia ventricosa var. *uliginosa* Breidl. ex Schiffn. = ***Lophozia ventricosa*** (Dicks.) Dumort.
Lophozia wenzelii (Nees) Steph.
Lophozia integerrima (Lindb.) Douin = ***Cephaloziella integerrima*** (Lindb.) Warnst.
Lophozia piriflora (Douin) Douin = ***Cephaloziella integerrima*** (Lindb.) Warnst.
Lunularia alpina Nees = ***Sauteria alpina*** (Nees) Nees
Lunularia cruciata (L.) Lindb.
Lunularia dillenii Le Jol. = ***Lunularia cruciata*** (L.) Lindb.

Lunularia michelii Le Jol. = ***Lunularia cruciata*** (L.) Lindb.
Lunularia vulgaris P. Micheli = ***Lunularia cruciata*** (L.) Lindb.
Marchantia cruciata L. = ***Lunularia cruciata*** (L.) Lindb.
Madotheca caucasica (Steph.) Steph. = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca cordaeana (Huebener) Dumort. = ***Porella cordaeana*** (Huebener) Moore
Madotheca cordaeana var. *distans* (Müll. Frib.) Müll. Frib. = ***Porella cordaeana*** (Huebener) Moore
Madotheca cordaeana var. *faeroensis* (C.E.O. Jensen) Müll. Frib. = ***Porella cordaeana*** (Huebener) Moore
Madotheca cordaeana var. *simplicior* (J.E. Zett.) Müll. Frib. = ***Porella cordaeana*** (Huebener) Moore
Madotheca dentata (Hartm.) C. Massal. = ***Porella cordaeana*** (Huebener) Moore
Madotheca laevigata (Schrad.) Dumort. = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca laevigata var. *attenuata* (Nees) Gottsche et al. = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca laevigata var. *caucasica* (Steph.) Müll. Frib. = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca laevigata var. *killarniensis* (Pearson) Macvicar = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca laevigata var. *obscura* Nees = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca laevigata var. *subintegra* (Kaal.) Schiffn. = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca laevigata var. *thuja* (Nees) Gottsche et al. = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca navicularis Lehm. & Lindenb., sensu Heufler = ***Porella x baueri*** (Schiffn.) C.E.O. Jensen
Madotheca navicularis Nees = ***Porella x baueri*** (Schiffn.) C.E.O. Jensen
Madotheca obscura (Nees) Boulay = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca obscura (Nees) Warnst. = ***Porella arboris-vitae*** (Dicks.) Grolle
Madotheca platyphylla (L.) Dumort. = ***Porella platyphylla*** (L.) Pfeiff.
Madotheca platyphylla fo. *convexifolia* Papp = ***Porella platyphylla*** (L.) Pfeiff.
Madotheca platyphylla fo. *distans* Papp = ***Porella platyphylla*** (L.) Pfeiff.
Madotheca platyphylla fo. *platyphylloidea* (Schwein.) Dumort. = ***Porella platyphylla*** (L.) Pfeiff.
Madotheca platyphylla var. *major* (Hook.) Dumort. = ***Porella platyphylla*** (L.) Pfeiff.
Madotheca platyphylla var. *subsquarrosa* Bernet = ***Porella platyphylla*** (L.) Pfeiff.
Madotheca platyphylla var. *subsquarrosa* Schiffn. = ***Porella platyphylla*** (L.) Pfeiff.
Madotheca porella Nees = ***Porella platyphylla*** (L.) Pfeiff.
Madotheca porelloides De Not. ex Lindb. = ***Porella platyphylla*** (L.) Pfeiff.
Madotheca rivularis Nees = ***Porella cordaeana*** (Huebener) Moore
Madotheca rivularis var. *distans* Nees ex Limpr. = ***Porella cordaeana*** (Huebener) Moore
Madotheca rivularis var. *simplicior* (J.E. Zett.) Müll. Frib. = ***Porella cordaeana*** (Huebener) Moore
Madotheca simplicior J.E. Zett. = ***Porella cordaeana*** (Huebener) Moore
← ***Mannia androgyna*** (L.) A. Evans
Mannia fragrans (Balb.) Frye & L. Clark
Mannia fragrans var. *inodora* (Wallr.) S.W. Arnell = ***Mannia fragrans*** (Balb.) Frye & L. Clark
Mannia pilosa (Hornem.) Frye & L. Clark
Mannia rupestris (Nees) Frye & L. Clark = ***Mannia triandra*** (Scop.) Grolle
Mannia triandra (Scop.) Grolle
Marchantia alpestris (Nees) Burgeff = *Marchantia polymorpha* L. subsp. ***montivagans*** Bischl. & Boisselier
Marchantia alpina Myrin ex Hartm. = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Marchantia aquatica (Nees) Burgeff = *Marchantia polymorpha* L. subsp. ***ruderalis*** Bischl. & Boisselier
Marchantia commutata Lindenb. = ***Preissia quadrata*** (Scop.) Nees
Marchantia conica auct. = ***Conocephalum conicum*** (L.) Underw.
Marchantia crinita Michx. = ***Reboulia hemisphaerica*** (L.) Raddi
Marchantia fasciata Myrin ex Hartm. = ***Reboulia hemisphaerica*** (L.) Raddi
Marchantia fragrans Balb. = ***Mannia fragrans*** (Balb.) Frye & L. Clark
Marchantia gracilis F. Web. = ***Asterella gracilis*** (F. Web.) Underw.
Marchantia hemisphaerica L. = ***Reboulia hemisphaerica*** (L.) Raddi
Marchantia hyalina Sommerf. = ***Athalamia hyalina*** (Sommerf.) S. Hatt.
Marchantia ludwigii auct. = ***Asterella gracilis*** (F. Web.) Underw.
← ***Marchantia paleacea*** Bertol.
Marchantia pilosa Hornem. = ***Mannia pilosa*** (Hornem.) Frye & L. Clark
Marchantia pilosa Wahlenb. = ***Asterella gracilis*** (F. Web.) Underw.
Marchantia polymorpha fo. *angustifrons* Péterfi = ***Marchantia polymorpha*** L. subsp. ***polymorpha***
Marchantia polymorpha L. subsp. ***montivagans*** Bischl. & Boisselier
Marchantia polymorpha L. subsp. ***polymorpha***
Marchantia polymorpha L. subsp. ***ruderalis*** Bischl. & Boisselier
Marchantia polymorpha var. *alpestris* Nees = ***Marchantia polymorpha*** L. subsp. ***montivagans*** Bischl. & Boisselier
Marchantia polymorpha var. *aquatica* Nees = ***Marchantia polymorpha*** L. subsp. ***ruderalis*** Bischl. & Boisselier

Marchantia polymorpha var. *dilatata* = ***Marchantia polymorpha*** L. subsp. ***polymorpha***
Marchantia polymorpha var. *mamillata* I. Hagen = ***Marchantia polymorpha*** L. subsp. ***polymorpha***
Marchantia polymorpha var. *minor* = ***Marchantia polymorpha*** L. subsp. ***polymorpha***
Marchantia polymorpha var. *muralis* = ***Marchantia polymorpha*** L. subsp. ***polymorpha***
Marchantia polymorpha var. *stellulata* = ***Marchantia polymorpha*** L. subsp. ***polymorpha***
Marchantia quadrata Scop. = ***Preissia quadrata*** (Scop.) Nees
Marchantia tenella Retz. = ***Asterella gracilis*** (F. Web.) Underw.
Marsilia cucullata Kuntze = ***Lunularia cruciata*** (L.) Lindb.
Marsilia endiviifolia (Dicks.) Lindb. = ***Pellia endiviifolia*** (Dicks.) Dumort.
Marsilia epiphylla (L.) Lindb. = ***Pellia epiphylla*** (L.) Corda subsp. ***epiphylla***
Marsilia neesiana (Gottsche) Lindb. = ***Pellia neesiana*** (Gottsche) Limpr.
Marsilia neesii Lindb. = ***Pellia neesiana*** (Gottsche) Limpr.
Marsupella aquatica (Lindenb.) Schiffn. = ***Marsupella emarginata*** subsp. ***aquatica*** (Lindenb.) Meyl.
Marsupella aquatica var. *gracilis* C.E.O. Jensen = ***Marsupella emarginata*** subsp. ***aquatica*** (Lindenb.) Meyl.
Marsupella aquatica var. *submersa* Arnell ex Schiffn. = ***Marsupella emarginata*** subsp. ***aquatica*** (Lindenb.) Meyl.
Marsupella boeckii (Aust.) Kaal.
Marsupella boeckii var. *incrassata* Arnell & C.E.O. Jensen = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella boeckii var. *intricata* (Lindb.) Arnell & C.E.O. Jensen = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella boeckii var. *latifolia* (Lindb.) Kaal. = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella boeckii var. *nevicensis* (Carrington) Kaal. ex Jörg. = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella brevissima (Dumort.) Grolle
Marsupella capillaris (Limpr.) Bernet = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella cochlearis (Lindb.) Spruce = ***Marsupella brevissima*** (Dumort.) Grolle
Marsupella commutata (Limpr.) Bernet
Marsupella conferta (Limpr.) Spruce = ***Marsupella brevissima*** (Dumort.) Grolle
Marsupella emarginata (Ehrh.) Dumort.
Marsupella emarginata subsp. ***aquatica*** (Lindenb.) Meyl.
Marsupella emarginata var. *aquatica* (Lindenb.) Dumort. = ***Marsupella emarginata*** subsp. ***aquatica*** (Lindenb.) Meyl.
Marsupella emarginata var. *attenuata* Kaal. = ***Marsupella emarginata*** subsp. ***aquatica*** (Lindenb.) Meyl.
Marsupella emarginata var. *densifolia* (Nees) Müll. Frib. = ***Marsupella emarginata*** (Ehrh.) Dumort.
Marsupella emarginata var. *ligurica* (Gottsche) Schiffn. = ***Marsupella emarginata*** (Ehrh.) Dumort.
Marsupella erythrorhiza (Limpr.) Schiffn. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella filiformis (Lindb.) Lindb. ex Kaal. = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella funckii (F. Web. & D. Mohr) Dumort.
Marsupella gracilis (C. Massal. & Carestia) Pearson = ***Marsupella sprucei*** (Limpr.) Bernet
Marsupella hungarica Boros & Vajda = ***Marsupella funckii*** (F. Web. & D. Mohr) Dumort.
Marsupella intricata (Lindb.) Steph. = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella joergensenii Schiffn. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella lapponica Limpr. ex Loitl. = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella latifolia Lindb. = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella media (Gottsche & Rabenh.) Schiffn. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella neglecta (Limpr.) Lindb. = ***Marsupella sprucei*** (Limpr.) Bernet
Marsupella nevicensis (Carrington) Pearson = ***Marsupella boeckii*** (Aust.) Kaal.
Marsupella polyanthos (L.) Dumort. = ***Chiloscyphus polyanthos*** (L.) Corda
Marsupella pygmaea (Limpr.) Steph. = ***Marsupella funckii*** (F. Web. & D. Mohr) Dumort.
Marsupella ramosa Müll. Frib.
Marsupella robusta (De Not.) A. Evans = ***Marsupella emarginata*** (Ehrh.) Dumort.
Marsupella silvretiae Gottsche ex Dumort. = ***Nardia geoscyphus*** (De Not.) Lindb.
Marsupella sphacelata (Gieseke ex Lindenb.) Dumort.
Marsupella sphacelata fo. *media* (Gottsche) R.M. Schust. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella sphacelata var. *erythrorhiza* (Limpr.) Loitl. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella sphacelata var. *eusphacelata* Schiffn. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella sphacelata var. *inundata* Müll. Frib. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella sphacelata var. *joergensenii* (Schiffn.) Schiffn. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella sphacelata var. *media* (Gottsche & Rabenh.) Trevis. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella sphacelata var. *rosea* Kaal. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Marsupella sphacelata var. *saccata* (Nees) Jörg. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.

Marsupella sphaelata var. *sullivantii* (De Not.) C. Massal. = *Marsupella sphaelata* (Gieseke ex Lindenb.) Dumort.

Marsupella sprucei (Limpr.) Bernet

Marsupella sprucei fo. *ustulata* (Spruce) Schljakov = *Marsupella sprucei* (Limpr.) Bernet

Marsupella sullivantii (De Not.) A. Evans = *Marsupella sphaelata* (Gieseke ex Lindenb.) Dumort.

Marsupella ustulata (Huebener) Spruce ex Pearson = *Marsupella emarginata* (Ehrh.) Dumort.

Marsupella ustulata Spruce = *Marsupella sprucei* (Limpr.) Bernet

Marsupella ustulata subsp. *sprucei* (Limpr.) Meyl. = *Marsupella sprucei* (Limpr.) Bernet

Marsupella ustulata var. *neglecta* (Limpr.) Müll. Frib. = *Marsupella sprucei* (Limpr.) Bernet

Marsupella ustulata var. *sprucei* (Limpr.) R.M. Schust. = *Marsupella sprucei* (Limpr.) Bernet

Marsupella varians (Lindb.) Müll. Frib. = *Marsupella brevissima* (Dumort.) Grolle

Marsupella varians var. *crassifolia* (Carrington) Jörg. ex S.W. Arnell = *Marsupella brevissima* (Dumort.) Grolle

Martinellia aequiloba (Schwägr.) Lindb. = *Scapania aequiloba* (Schwägr.) Dumort.

Martinellia apiculata (Spruce) Lindb. = *Scapania apiculata* Spruce

Martinellia aspera (M. Bernet & Bernet) Broth. = *Scapania aspera* Bernet & M. Bernet

Martinellia bartlingii Trevis. = *Scapania cuspiduligera* (Nees) Müll. Frib.

Martinellia calcicola Arnell & J. Perss. = *Scapania calcicola* (Arnell & J. Perss.) Ingham

Martinellia carestiae (De Not.) Trevis. = *Scapania cuspiduligera* (Nees) Müll. Frib.

Martinellia convexa (Scop.) Lindb. = *Scapania umbrosa* (Schrad.) Dumort.

Martinellia crassiretis Arnell = *Scapania crassiretis* Bryhn

Martinellia curta (Mart.) Lindb. = *Scapania curta* (Mart.) Dumort.

Martinellia curta var. *rosacea* (Corda) Arnell = *Scapania curta* (Mart.) Dumort.

Martinellia cuspiduligera (Nees) Arnell = *Scapania cuspiduligera* (Nees) Müll. Frib.

Martinellia dentata (Dumort.) Arnell = *Scapania undulata* (L.) Dumort.

Martinellia gracilis Lindb. = *Scapania gracilis* Lindb.

Martinellia gracilis var. *laxifolia* (Dumort.) H. Möller = *Scapania gracilis* Lindb.

Martinellia gymnostomophila (Kaal.) Arnell & C.E.O. Jensen = *Scapania gymnostomophila* Kaal.

Martinellia helvetica Arnell = *Scapania helvetica* Gottsche

Martinellia irrigua (Nees) Lindb. = *Scapania irrigua* (Nees) Nees

Martinellia irrigua var. *picea* C.E.O. Jensen = *Scapania paludicola* Loeske & Müll. Frib.

Martinellia irrigua var. *subconvexa* C.E.O. Jensen = *Scapania paludicola* Loeske & Müll. Frib.

Martinellia joergensenii (Schiffn. ex Müll. Frib.) H. Möller = *Scapania nemorea* (L.) Grolle

Martinellia mucronata (H. Buch) Arnell & C.E.O. Jensen = *Scapania mucronata* H. Buch

Martinellia nemorosa Lindb. = *Scapania nemorea* (L.) Grolle

Martinellia obliqua Arnell = *Scapania uliginosa* (Sw. ex Lindenb.) Dumort.

Martinellia paludicola (Loeske ex Müll. Frib.) C.E.O. Jensen = *Scapania paludicola* Loeske & Müll. Frib.

Martinellia paludosa (Müll. Frib.) Arnell = *Scapania paludosa* (Müll. Frib.) Müll. Frib.

Martinellia purpurascens (Hook.) Arnell ex C.E.O. Jensen = *Scapania undulata* (L.) Dumort.

Martinellia purpurascens var. *ambigua* (De Not.) C.E.O. Jensen = *Scapania undulata* (L.) Dumort.

Martinellia resupinata (Hook.) Lindb. = *Scapania compacta* (Roth) Dumort.

Martinellia rigida Lindb. = *Scapania mucronata* H. Buch

Martinellia rosacea (Corda) Lindb. = *Scapania curta* (Mart.) Dumort.

Martinellia rupestris (Dumort.) Trevis. = *Scapania aequiloba* (Schwägr.) Dumort.

Martinellia scandica Arnell & H. Buch = *Scapania scandica* (Arnell & H. Buch) Macvicar

Martinellia subalpina (Nees ex Lindenb.) Trevis. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.

Martinellia subalpina var. *subrotunda* Lindb. & Arnell = *Scapania subalpina* (Nees ex Lindenb.) Dumort.

Martinellia subalpina var. *undulifolia* (Nees) Lindb. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.

Martinellia tyrolensis (Nees) Trevis. = *Scapania aequiloba* (Schwägr.) Dumort.

Martinellia uliginosa (Sw. ex Lindenb.) Trevis. = *Scapania uliginosa* (Sw. ex Lindenb.) Dumort.

Martinellia umbrosa (Schrad.) Lindb. = *Scapania umbrosa* (Schrad.) Dumort.

Martinellia undulata (L.) Lindb. = *Scapania undulata* (L.) Dumort.

Martinellia undulata var. *aequatiformis* (De Not.) C.E.O. Jensen = *Scapania undulata* (L.) Dumort.

Martinellia undulata var. *dentata* (Dumort.) Lindb. = *Scapania undulata* (L.) Dumort.

Martinellia undulata var. *integrifolia* Lindb. = *Scapania undulata* (L.) Dumort.

Martinellia undulata var. *purpurascens* Arnell = *Scapania undulata* (L.) Dumort.

Martinellia undulata var. *purpurea* Lindb. = *Scapania undulata* (L.) Dumort.

Martinellia undulata var. *rivularis* (Huebener) H. Möller = *Scapania undulata* (L.) Dumort.

Martinellia complanatus Gray = *Radula complanata* (L.) Dumort.

Massula incisa (Schrad.) Schljakov = *Lophozia incisa* (Schrad.) Dumort.

Massula opacifolia (Culm. ex Meyl.) Schljakov = *Lophozia opacifolia* Culm. ex Meyl.

Mastigobryum deflexum (Mart.) Ångstr. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Mastigobryum deflexum Mart. var. *tricrenatum* Nees = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Mastigobryum deflexum Nees = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Mastigobryum deflexum var. *pygmaeum* (Nees) Gottsche et al. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Mastigobryum triangulare (Schleich. ex Steud.) Steph. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Mastigobryum tricrenatum (Wahlenb.) C. Massal. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.
Mastigobryum tricrenatum var. *implexum* (Nees) Nees = ***Bazzania flaccida*** (Dumort.) Grolle
Mastigobryum tridenticulatum (Michx.) Lindenb. = ***Bazzania trilobata*** (L.) Gray
Mastigobryum trilobatum (L.) Nees = ***Bazzania trilobata*** (L.) Gray
← *Mesophylla breidleri* (Limpr.) Corb. = ***Nardia breidleri*** (Limpr.) Lindb.
Mesophylla minor (Nees) Corb. ex Bouvet = ***Nardia geoscyphus*** (De Not.) Lindb.
Mesophylla orcadensis (Hook.) Dumort. = ***Anastrepta orcadensis*** (Hook.) Schiffn.
Mesophylla rotaeana (De Not.) Dumort. = ***Nardia scalaris*** Gray
Mesophylla scalaris (Gray) Dumort. = ***Nardia scalaris*** Gray
Metzgeria conjugata Lindb.
← *Metzgeria conjugata* subsp. *simplex* (Lorb. ex Müll. Frib.) R.M. Schust. = ***Metzgeria lindbergii*** Schiffn.
Metzgeria conjugata var. *alipila* Kaal. = ***Metzgeria conjugata*** Lindb.
Metzgeria conjugata var. *elongata* Hook. = ***Metzgeria conjugata*** Lindb.
Metzgeria conjugata var. *macvicari* Kaal. = ***Metzgeria conjugata*** Lindb.
Metzgeria conjugata var. *opuntia* Nees = ***Metzgeria conjugata*** Lindb.
Metzgeria fruticulosa (Dicks.) A.W. Evans = ***Metzgeria violacea*** (Ach.) Dumort.
Metzgeria furcata (L.) Dumort. var. ***furcata***
Metzgeria furcata fo. *prolifera* Nees = ***Metzgeria furcata*** var. ***ulvula*** Nees
Metzgeria furcata var. *aeruginosa* (Hook.) Gottsche et al. = ***Metzgeria violacea*** (Ach.) Dumort.
Metzgeria furcata var. *flexipilis* Kaal. = ***Metzgeria furcata*** (L.) Dumort. var. ***furcata***
Metzgeria furcata var. *fruticulosa* (Dicks.) Lindb. = ***Metzgeria violacea*** (Ach.) Dumort.
Metzgeria furcata var. *pinnata* Dumort. = ***Metzgeria furcata*** var. ***ulvula*** Nees
Metzgeria furcata var. *prolifera* (Nees) = ***Metzgeria furcata*** var. ***ulvula*** Nees
Metzgeria furcata var. *ulvula* fo. *pinnata* Dumort. = ***Metzgeria furcata*** var. ***ulvula*** Nees
Metzgeria furcata var. ***ulvula*** Nees
← ***Metzgeria lindbergii*** Schiffn.
Metzgeria pubescens (Schrank) Raddi = ***Apometzgeria pubescens*** (Schrank) Kuwah.
← *Metzgeria simplex* Lorb. ex Müll. Frib. = ***Metzgeria lindbergii*** Schiffn.
← ***Metzgeria temperata*** Kuwah.
Metzgeria violacea (Ach.) Dumort.
Microlepidozia setacea auct. = ***Kurzia pauciflora*** (Dicks.) Grolle
Mnium fissus L. = ***Calypogeia fissum*** (L.) Raddi
Mnium trichomanis L. = ***Calypogeia azurea*** Stotler & Crotz
Moerckia blyttii (Moerch) Brockm.
Moerckia flotoviana (Nees) Schiffn. = ***Moerckia hibernica*** (Hook.) Gottsche
Moerckia hibernica var. *flotoviana* (Nees) Hartm. = ***Moerckia hibernica*** (Hook.) Gottsche
Moerckia hibernica var. *wilsoniana* Gottsche = ***Moerckia hibernica*** (Hook.) Gottsche
Moerckia hibernica (Hook.) Gottsche
Moerckia norvegica Gottsche = ***Moerckia blyttii*** (Moerch) Brockm.
Mylia anomala (Hook.) Gray
Mylia anomala var. *laxa* (Nees) Jörg. = ***Mylia anomala*** (Hook.) Gray
Mylia anomala var. *subremota* (Schiffn.) Jörg. = ***Mylia anomala*** (Hook.) Gray
Mylia anomala var. *turfosa* (Schiffn.) Jörg. = ***Mylia anomala*** (Hook.) Gray
Mylia anomala var. *vagans* (Hartm.) Kaal. = ***Mylia anomala*** (Hook.) Gray
Mylia taylorii (Hook.) Gray
Mylia taylorii var. *anomala* (Hook.) Bernet = ***Mylia anomala*** (Hook.) Gray
Mylia taylorii var. *demissa* (Schiffn.) Jörg. = ***Mylia taylorii*** (Hook.) Gray
Nardia bififormis (Aust.) Lindb. = ***Jungermannia hyalina*** Lyell
Nardia boeckii (Aust.) Lindb. = ***Marsupella boeckii*** (Aust.) Kaal.
← ***Nardia breidleri*** (Limpr.) Lindb.
← *Nardia breidleri* var. *arctica* Kaal. = ***Nardia breidleri*** (Limpr.) Lindb.
← *Nardia breidleri* var. *suberecta* Schiffn. = ***Nardia breidleri*** (Limpr.) Lindb.
Nardia brevissima (Dumort.) Lindb. = ***Marsupella brevissima*** (Dumort.) Grolle
Nardia capillaris (Limpr.) C. Massal. & Carestia = ***Marsupella boeckii*** (Aust.) Kaal.
Nardia cochlearis Lindb. = ***Marsupella brevissima*** (Dumort.) Grolle

Nardia commutata C. Massal. & Carestia = ***Marsupella commutata*** (Limpr.) Bernet
Nardia crassula Lorbeer ex H. Buch et al. = ***Nardia insecta*** Lindb.
Nardia crenulata (Mitt.) Lindb. = ***Jungermannia gracillima*** Sm.
Nardia crenulata var. *gracillima* (Sm.) Lindb. = ***Jungermannia gracillima*** Sm.
Nardia densifolia (Nees) Trevis. = ***Marsupella emarginata*** (Ehrh.) Dumort.
Nardia emarginata (Ehrh.) Gray = ***Marsupella emarginata*** (Ehrh.) Dumort.
Nardia emarginata var. *aquatica* (Lindenb.) Carrington = ***Marsupella emarginata*** subsp. *aquatica* (Lindenb.) Meyl.
Nardia emarginata var. *picea* Carrington = ***Marsupella emarginata*** (Ehrh.) Dumort.
Nardia emarginata var. *robusta* Carrington = ***Marsupella emarginata*** (Ehrh.) Dumort.
Nardia filiformis Lindb. = ***Marsupella boeckii*** (Aust.) Kaal.
Nardia funckii (F. Web. & D. Mohr) Carrington ex Lindb. = ***Marsupella funckii*** (F. Web. & D. Mohr) Dumort.
Nardia geoscyphus (De Not.) Lindb.
Nardia geoscyphus subsp. *insecta* (Lindb.) Jörg. = ***Nardia insecta*** Lindb.
Nardia geoscyphus var. *dovrensis* (Limpr.) Schiffn. = ***Nardia geoscyphus*** (De Not.) Lindb.
Nardia geoscyphus var. *insecta* (Lindb.) Schiffn. = ***Nardia insecta*** Lindb.
Nardia geoscyphus var. *suberecta* Lindb. ex C. Massal. & Carestia = ***Nardia geoscyphus*** (De Not.) Lindb.
Nardia gracilis C. Massal. & Carestia = ***Marsupella sprucei*** (Limpr.) Bernet
Nardia gracillima (Sm.) Lindb. = ***Jungermannia gracillima*** Sm.
Nardia haematosticta Nees ex Kaal. = ***Nardia geoscyphus*** (De Not.) Lindb.
Nardia haematosticta var. *suberecta* Lindb. ex Kaal. = ***Nardia geoscyphus*** (De Not.) Lindb.
Nardia hyalina (Lyell) Carrington = ***Jungermannia hyalina*** Lyell
Nardia insecta Lindb.
Nardia intricata Lindb. = ***Marsupella boeckii*** (Aust.) Kaal.
Nardia latifolia Lindb. = ***Marsupella boeckii*** (Aust.) Kaal.
Nardia levieri Steph. = ***Jungermannia confertissima*** Nees
Nardia macrostipa Kaal. ex Jörg. = ***Nardia scalaris*** Gray
Nardia minor (Nees) Trevis. = ***Nardia geoscyphus*** (De Not.) Lindb.
Nardia muelleri (Nees) C. Massal. = ***Marsupella funckii*** (F. Web. & D. Mohr) Dumort.
Nardia muelleriana Schiffn. = ***Jungermannia hyalina*** Lyell
Nardia obovata (Nees) Lindb. = ***Jungermannia obovata*** Nees
Nardia obovata var. *elongata* (Nees) Schiffn. = ***Jungermannia obovata*** Nees
Nardia obovata var. *rivularis* Schiffn. = ***Jungermannia obovata*** Nees
Nardia picea (Carrington) Carrington = ***Marsupella emarginata*** (Ehrh.) Dumort.
Nardia repanda (Huebener) Lindb. = ***Nardia geoscyphus*** (De Not.) Lindb.
Nardia robusta (De Not.) Lindb. ex Carrington = ***Marsupella emarginata*** (Ehrh.) Dumort.
Nardia scalaris Gray
Nardia scalaris var. *distans* Carrington = ***Nardia scalaris*** Gray
Nardia scalaris var. *gracilis* Kaal. = ***Nardia scalaris*** Gray
Nardia scalaris var. *procerior* Schiffn. = ***Nardia scalaris*** Gray
Nardia scalaris var. *tenera* Jörg. = ***Nardia scalaris*** Gray
Nardia silvrettae (Gottsche ex Dumort.) Trevis. = ***Nardia geoscyphus*** (De Not.) Lindb.
Nardia sphacelata (Gieseke ex Lindenb.) Carrington = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Nardia sprucei (Limpr.) C. Massal. & Carestia = ***Marsupella sprucei*** (Limpr.) Bernet
Nardia subelliptica Lindb. ex Kaal. = ***Jungermannia subelliptica*** (Lindb. ex Kaal.) Levier
Nardia sullivantii (De Not.) Trevis. = ***Marsupella sphacelata*** (Gieseke ex Lindenb.) Dumort.
Nardia ustulata (Spruce) Lindb. = ***Marsupella sprucei*** (Limpr.) Bernet
Nardia varians Lindb. = ***Marsupella brevissima*** (Dumort.) Grolle
Neesiella pilosa (Hornem.) Schiffn. = ***Mannia pilosa*** (Hornem.) Frye & L. Clark
Neesiella rupestris (Nees) Schiffn. = ***Mannia triandra*** (Scop.) Grolle
Nowellia curvifolia (Dicks.) Mitt.
Obtusifolium obtusum (Lindb.) S.W. Arnell = ***Lophozia obtusa*** (Lindb.) A. Evans
Odontoschisma cavifolium Steph. = ***Odontoschisma denudatum*** (Mart.) Dumort.
Odontoschisma denudatum (Mart.) Dumort.
Odontoschisma excipulatum Steph. = ***Odontoschisma denudatum*** (Mart.) Dumort.
Odontoschisma guadelupense Steph. = ***Odontoschisma denudatum*** (Mart.) Dumort.
Odontoschisma huebneriana (Rabenh.) Aust. = ***Odontoschisma denudatum*** (Mart.) Dumort.
Odontoschisma remotifolium Warnst. = ***Odontoschisma sphagni*** (Dicks.) Dumort.
Odontoschisma scutata Aust. = ***Harpanthus scutatus*** (F. Web. & D. Mohr) Spruce
Odontoschisma sphagni (Dicks.) Dumort.

Odontoschisma sphagni var. *denudatum* (Mart.) C. Massal. & Carestia = ***Odontoschisma denudatum*** (Mart.) Dumort.

Odontoschisma sphagni var. *europaeum* Spruce = ***Odontoschisma sphagni*** (Dicks.) Dumort.

Odontoschisma sphagni var. *macrior* Bernet = ***Odontoschisma denudatum*** (Mart.) Dumort.

Odontoschisma subrotundifolium Steph. = ***Odontoschisma denudatum*** (Mart.) Dumort.

Orthocaulis attenuata (Mart.) A. Evans = ***Barbilophozia attenuata*** (Mart.) Loeske

Orthocaulis floerkei (F. Web. & D. Mohr) H. Buch = ***Barbilophozia floerkei*** (F. Web. & D. Mohr) Loeske

Orthocaulis gracilis (Schleich. ex DC.) H. Buch = ***Barbilophozia attenuata*** (Mart.) Loeske

Orthocaulis kunzeanus (Huebener) H. Buch = ***Barbilophozia kunzeana*** (Huebener) Müll. Frib.

Orthocaulis quadriloba (Lindb.) H. Buch = ***Barbilophozia quadriloba*** (Lindb.) Loeske

Otione crinita (Michx.) Corda = ***Reboulia hemisphaerica*** (L.) Raddi

Oxymitra androgyna M. Howe = ***Oxymitra incrassata*** (Brot.) Sérgio et Sim-Sim

Oxymitra incrassata (Brot.) Sérgio et Sim-Sim

Oxymitra paleacea Bisch. = ***Oxymitra incrassata*** (Brot.) Sérgio et Sim-Sim

Oxymitra pyramidata Huebener = ***Oxymitra incrassata*** (Brot.) Sérgio et Sim-Sim

Pallavicinia blyttii (Moerch) Lindb. = ***Moerckia blyttii*** (Moerch) Brockm.

Pallavicinia cylindrica (Austin) A. Evans = ***Pallavicinia lyellii*** (Hook.) Carruth.

Pallavicinia flotoviana (Nees) Lindb. = ***Moerckia hibernica*** (Hook.) Gottsche

Pallavicinia flotoviana var. *hibernica* (Hook.) Lindb. = ***Moerckia hibernica*** (Hook.) Gottsche

Pallavicinia flotowii Lindb. = ***Moerckia hibernica*** (Hook.) Gottsche

Pallavicinia hibernica (Hook.) Gray = ***Moerckia hibernica*** (Hook.) Gottsche

Pallavicinia husnotii Steph. = ***Pallavicinia lyellii*** (Hook.) Carruth.

Pallavicinia lyellii (Hook.) Carruth.

Pallavicinia pilifera Steph. = ***Pallavicinia lyellii*** (Hook.) Carruth.

Pallavicinia simplex Steph. = ***Pallavicinia lyellii*** (Hook.) Carruth.

Pedinophyllum interruptum (Nees) Kaal.

Pedinophyllum interruptum var. *pyrenaicum* (Spruce) Kaal. = ***Pedinophyllum interruptum*** (Nees) Kaal.

Pellia calycina (Taylor) Nees = ***Pellia endiviifolia*** (Dicks.) Dumort.

Pellia calycina var. *furcigera* (Hook.) Nees = ***Pellia endiviifolia*** (Dicks.) Dumort.

Pellia endiviifolia (Dicks.) Dumort.

Pellia endiviifolia var. *furcigera* (Hook.) Heeg = ***Pellia endiviifolia*** (Dicks.) Dumort.

Pellia epiphylla (L.) Corda subsp. *epiphylla*

Pellia epiphylla var. *neesiana* (Gottsche) H. Bernet = ***Pellia neesiana*** (Gottsche) Limpr.

Pellia epiphylla var. *undulata* (Nees) Gottsche et al. = ***Pellia epiphylla*** (L.) Corda subsp. *epiphylla*

Pellia fabbroniana Raddi = ***Pellia endiviifolia*** (Dicks.) Dumort.

Pellia fabbroniana fo. *furcigera* (Hook.) C. Massal. = ***Pellia endiviifolia*** (Dicks.) Dumort.

Pellia fabbroniana var. *lorea* Nees = ***Pellia endiviifolia*** (Dicks.) Dumort.

Pellia fabbroniana var. *undulata* Nees = ***Pellia endiviifolia*** (Dicks.) Dumort.

Pellia furcigera Hook. = ***Pellia endiviifolia*** (Dicks.) Dumort.

Pellia neesiana (Gottsche) Limpr.

Pellia neesiana var. *undulata* J.B. Jack = ***Pellia neesiana*** (Gottsche) Limpr.

Pellia neesii Lindb. = ***Pellia neesiana*** (Gottsche) Limpr.

Peltolepis grandis (Lindb.) Lindb. = ***Peltolepis quadrata*** (Saut.) Müll. Frib.

Peltolepis grandis var. *angustifrons* Lindb. = ***Peltolepis quadrata*** (Saut.) Müll. Frib.

Peltolepis quadrata (Saut.) Müll. Frib.

Phaeoceros carolinianus (Michx.) Prosk.

Phaeoceros laevis (L.) Prosk.

Phaeoceros laevis (L.) Prosk. fo. *carolinianus* (Michx.) R.M. Schust. = ***Phaeoceros carolinianus*** (Michx.) Prosk.

Phaeoceros laevis (L.) Prosk. subsp. *carolinianus* (Michx.) Prosk. = ***Phaeoceros carolinianus*** (Michx.) Prosk.

Physocolea rosettiana Steph. = ***Cololejeunea rosettiana*** (C. Massal.) Schiffr.

Plagiochila asplenioides (L. emend. Taylor) Dumort.

Plagiochila asplenioides auct., (L. emend. Taylor) Dumort. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides fo. *cinerea* Papp = ***Plagiochila asplenioides*** (L. emend. Taylor) Dumort.

Plagiochila asplenioides fo. *compacta* Jur. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides fo. *dentata* Ştef. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides fo. *feschii* Papp = ***Plagiochila asplenioides*** (L. emend. Taylor) Dumort.

Plagiochila asplenioides fo. *subintegerrima* Schiffr. = ***Plagiochila asplenioides*** (L. emend. Taylor) Dumort.

Plagiochila asplenioides fo. *subintegrum* Müll. Frib. = ***Plagiochila asplenioides*** (L. emend. Taylor) Dumort.

Plagiochila asplenioides fo. *vulgare* Lindb. = ***Plagiochila asplenioides*** (L. emend. Taylor) Dumort.

Plagiochila asplenioides subsp. *porelloides* (Torr. ex Nees) R.M. Schust. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides var. *arenaria* Kaal. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides var. *devexa* Carrington = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides var. *heterophylla* (Mart.) Lindenb. = ***Plagiochila asplenioides*** (L. emend. Taylor) Dumort.

Plagiochila asplenioides var. *humilis* (Nees) Lindenb. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides var. *major* Lindenb. = ***Plagiochila asplenioides*** (L. emend. Taylor) Dumort.

Plagiochila asplenioides var. *minor* Lindenb. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides var. *porelliformis* (Tomm.) Schiffn. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides var. *porelloides* (Torr.) Schiffn. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila asplenioides var. *riparia* Breidl. = ***Plagiochila asplenioides*** (L. emend. Taylor) Dumort.

Plagiochila corniculata Dumort. = ***Bazzania trilobata*** (L.) Gray

Plagiochila dillenii (Taylor) Taylor = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila major S.W. Arnell = ***Plagiochila asplenioides*** (L. emend. Taylor) Dumort.

Plagiochila nodosa Taylor = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila porelloides (Torr. ex Nees) Lindenb.

Plagiochila porelloides var. *devexa* (Carrington) = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila porelloides var. *humilis* (Nees) Lindenb. = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila porelloides var. *minor* (Lindenb.) = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila porelloides var. *nodosa* (Taylor) Pearson = ***Plagiochila porelloides*** (Torr. ex Nees) Lindenb.

Plagiochila tridenticulata (Dumort.) Dumort. = ***Bazzania trilobata*** (L.) Gray

Plectocolea cordifolia (Dumort.) Mitt. = ***Jungermannia exsertifolia*** subsp. *cordifolia* (Dumort.) Vána

Plectocolea crenulata Mitt. = ***Jungermannia gracillima*** Sm.

Plectocolea hyalina (Lyell) Mitt. = ***Jungermannia hyalina*** Lyell

Plectocolea obovata (Nees) Lindb. = ***Jungermannia obovata*** Nees

Plectocolea subelliptica (Lindb. ex Kaal.) A. Evans = ***Jungermannia subelliptica*** (Lindb. ex Kaal.) Levier

Pleuroclada albescens (Hook.) Spruce = ***Pleurocladula albescens*** (Hook.) Grolle var. *albescens*

Pleuroclada albescens var. *islandica* (Nees) Spruce = ***Pleurocladula albescens*** var. *islandica* (Nees) L. Söderstr. et Vána

Pleuroclada albescens var. *scotica* Spruce = ***Pleurocladula albescens*** (Hook.) Grolle var. *albescens*

Pleuroclada islandica (Nees) Pearson = ***Pleurocladula albescens*** var. *islandica* (Nees) L. Söderstr. et Vána

Pleurocladula albescens (Hook.) Grolle var. *albescens*

Pleurocladula albescens var. *islandica* (Nees) L. Söderstr. et Vána

Pleurocladula islandica (Nees) Grolle = ***Pleurocladula albescens*** var. *islandica* (Nees) L. Söderstr. et Vána

Pleuroschisma denudatum (Mart.) Dumort. = ***Odontoschisma denudatum*** (Mart.) Dumort.

Pleuroschisma reptans (L.) Dumort. = ***Lepidozia reptans*** (L.) Dumort.

Pleuroschisma sphagni (Dicks.) Dumort. = ***Odontoschisma sphagni*** (Dicks.) Dumort.

Pleuroschisma triangulare (Schleich. ex Steud.) Loeske = ***Bazzania tricrenata*** (Wahlenb.) Lindb.

Pleuroschisma tricrenatum (Wahlenb.) Dumort. = ***Bazzania tricrenata*** (Wahlenb.) Lindb.

Pleuroschisma tricrenatum var. *implexum* (Nees) Müll. Frib. = ***Bazzania flaccida*** (Dumort.) Grolle

Pleuroschisma trilobatum (L.) Dumort. = ***Bazzania trilobata*** (L.) Gray

Pleuroschisma trilobatum var. *depauperatum* Müll. Frib. = ***Bazzania trilobata*** (L.) Gray

Podomitrium majus Schiffn. = ***Pallavicinia lyellii*** (Hook.) Carruth.

Porella arboris-vitae (Dicks.) Grolle

Porella arboris-vitae var. *obscura* (Nees) M.F.V. Corley = ***Porella arboris-vitae*** (Dicks.) Grolle

Porella arboris-vitae var. *killarniensis* (Pearson) M.F.V. Corley = ***Porella arboris-vitae*** (Dicks.) Grolle

Porella caucasica Steph. = ***Porella arboris-vitae*** (Dicks.) Grolle

Porella cordaeana (Huebener) Moore

Porella cordaeana var. *distans* (Müll. Frib.) Jelenc = ***Porella cordaeana*** (Huebener) Moore

Porella cordaeana var. *faeroensis* (C.E.O. Jensen) E.W. Jones = ***Porella cordaeana*** (Huebener) Moore

Porella cordaeana var. *simplicior* (J.E. Zett.) Arnell = ***Porella cordaeana*** (Huebener) Moore

Porella dentata (Hartm.) Lindb. = ***Porella cordaeana*** (Huebener) Moore

Porella laevigata (Schr.) Pfeiff. = ***Porella arboris-vitae*** (Dicks.) Grolle

Porella laevigata var. *attenuata* (Nees) Jörg. = ***Porella arboris-vitae*** (Dicks.) Grolle

Porella laevigata var. *killarniensis* Pearson = ***Porella arboris-vitae*** (Dicks.) Grolle

Porella laevigata var. *obscura* (Nees) Arnell = ***Porella arboris-vitae*** (Dicks.) Grolle

Porella laevigata var. *subintegra* Kaal. = ***Porella arboris-vitae*** (Dicks.) Grolle

Porella laevigata var. *thuja* (Nees) Arnell = ***Porella arboris-vitae*** (Dicks.) Grolle

Porella notarisii Trevis. = ***Porella platyphylla*** (L.) Pfeiff.

← ***Porella obtusata*** (Taylor) Trevis.

Porella platyphylla (L.) Pfeiff.
Porella platyphylla var. *subsquarrosa* Arnell = ***Porella platyphylla*** (L.) Pfeiff.
← ***Porella platyphylloidea*** (Schwein.) Lindb.
Porella porelloides De Not. = ***Porella platyphylla*** (L.) Pfeiff.
Porella rivularis (Nees) Pfeiff. = ***Porella cordaeana*** (Huebener) Moore
Porella rivularis var. *faeroensis* C.E.O. Jensen = ***Porella cordaeana*** (Huebener) Moore
Porella rivularis var. *simplicior* (J.E. Zett.) Lindb. = ***Porella cordaeana*** (Huebener) Moore
Porella x baueri (Schiffn.) C.E.O. Jensen
Preissia commutata (Lindenb.) Nees = ***Preissia quadrata*** (Scop.) Nees
Preissia cucullata Mont. & Nees = ***Lunularia cruciata*** (L.) Lindb.
Preissia quadrata (Scop.) Nees
Preissia quadrata var. *commutata* (Lindenb.) Lindb. = ***Preissia quadrata*** (Scop.) Nees
Prionolobus compactus Jörg. = ***Cephaloziella massalongi*** (Spruce) Müll. Frib.
Prionolobus hellerianus (Nees ex Lindenb.) Schiffn. = ***Anastrophyllum hellerianum*** (Nees ex Lindenb.) R.M. Schust.
Prionolobus massalongi (Spruce) Bryhn = ***Cephaloziella massalongi*** (Spruce) Müll. Frib.
Ptilidium ciliare (L.) Hampe
Ptilidium ciliare fo. *rupicola* Müll. Frib. = ***Ptilidium ciliare*** (L.) Hampe
Ptilidium ciliare var. *ericetorum* (Nees) Gottsche et al. = ***Ptilidium ciliare*** (L.) Hampe
Ptilidium ciliare var. *heteromallum* (Dumort.) Gottsche et al. = ***Ptilidium ciliare*** (L.) Hampe
Ptilidium ciliare var. *inundatum* Schiffn. = ***Ptilidium ciliare*** (L.) Hampe
Ptilidium ciliare var. *pulcherrimum* (Weber) Hoffm. ex Pfeiff. = ***Ptilidium pulcherrimum*** (Weber) Vain.
Ptilidium ciliare var. *wallrothianum* (Nees) Gottsche et al. = ***Ptilidium pulcherrimum*** (Weber) Vain.
Ptilidium pulcherrimum (Weber) Vain.
Ptilidium pulcherrimum fo. *rupicola* Schiffn. = ***Ptilidium pulcherrimum*** (Weber) Vain.
Ptilidium pulcherrimum var. *subpinnatum* Jörg. = ***Ptilidium pulcherrimum*** (Weber) Vain.
Ptilidium pulcherrimum var. *wallrothianum* Husn. = ***Ptilidium pulcherrimum*** (Weber) Vain.
Pycnosceus pyramidatus Lindb. = ***Oxymitra incrassata*** (Brot.) Sérgio et Sim-Sim
Radiania rumaenica Schiffn. ex Györfy, nom. illeg. = ***Bucegia romanica*** Radian
Radula alpestris Lindenb. ex Berggr. = ***Radula complanata*** (L.) Dumort.
Radula bornmuelleri Schiffn. = ***Radula lindenbergiana*** Gottsche ex C. Hartm.
Radula commutata Gottsche ex Husn. = ***Radula lindenbergiana*** Gottsche ex C. Hartm.
Radula complanata (L.) Dumort.
Radula complanata subsp. *lindenbergiana* (Gottsche ex C. Hartm.) R.M. Schust. = ***Radula lindenbergiana*** Gottsche ex C. Hartm.
Radula complanata fo. *propagulifera* Hook. = ***Radula complanata*** (L.) Dumort.
Radula complanata var. *alpestris* (Berggr.) Lindb. = ***Radula complanata*** (L.) Dumort.
Radula complanata var. *notarisii* (Steph.) Schiffn. = ***Radula complanata*** (L.) Dumort.
Radula complanata var. *propagulifera* (Nees) Gottsche et al. = ***Radula lindenbergiana*** Gottsche ex C. Hartm.
Radula constricta Steph. = ***Radula lindenbergiana*** Gottsche ex C. Hartm.
Radula corniculata Dumort. = ***Bazzania trilobata*** (L.) Gray
Radula dentata Dumort. = ***Scapania undulata*** (L.) Dumort.
Radula dentata var. *laxifolia* Dumort. = ***Scapania gracilis*** Lindb.
Radula germana J.B. Jack = ***Radula lindenbergiana*** Gottsche ex C. Hartm.
Radula hyalina Steph. = ***Radula complanata*** (L.) Dumort.
Radula krausei Steph. = ***Radula complanata*** (L.) Dumort.
Radula lindenbergiana Gottsche ex J.B. Jack = ***Radula lindenbergiana*** Gottsche ex C. Hartm.
Radula lindenbergiana Gottsche ex C. Hartm.
Radula lindenbergiana var. *germana* (J.B. Jack) C. Massal. = ***Radula lindenbergiana*** Gottsche ex C. Hartm.
Radula notarisii Steph. = ***Radula complanata*** (L.) Dumort.
Radula ovata J.B. Jack ex Steph. = ***Radula lindenbergiana*** Gottsche ex C. Hartm.
Radula rupestris Dumort. = ***Scapania aequiloba*** (Schwägr.) Dumort.
Reboulia fasciata (Myrin ex Hartm.) Angstr. = ***Reboulia hemisphaerica*** (L.) Raddi
Reboulia hemisphaerica (L.) Raddi
Reboulia hemisphaerica (L.) Raddi var. *microspora* Ştefur. = ***Reboulia hemisphaerica*** (L.) Raddi
Rhakiocarpon conspersum Corda = ***Reboulia hemisphaerica*** (L.) Raddi
Riccardia chamaedryfolia (With.) Grolle
Riccardia incurvata Lindb.
Riccardia latifrons (Lindb.) Lindb.
Riccardia latifrons var. *sinuata* (Hook.) Lindb. = ***Riccardia chamaedryfolia*** (With.) Grolle

Riccardia latifrons var. *uliginosa* C.E.O. Jensen = ***Riccardia latifrons*** (Lindb.) Lindb.
Riccardia latissima (Spruce) Schiffn. = ***Aneura pinguis*** (L.) Dumort.
Riccardia multifida (L.) Gray
Riccardia multifida var. *ambrosioides* (Nees) Carrington & Pearson = ***Riccardia multifida*** (L.) Gray
Riccardia palmata (Hedw.) Carruth.
Riccardia pinguis (L.) Gray = ***Aneura pinguis*** (L.) Dumort.
Riccardia sinuata (Hook.) Trevis. = ***Riccardia chamaedryfolia*** (With.) Grolle
Riccardia sinuata var. *stenoclada* Schiffn. = ***Riccardia chamaedryfolia*** (With.) Grolle
Riccardia sinuata var. *submersa* (C.E.O. Jensen ex Müll. Frib.) Arnell = ***Riccardia chamaedryfolia*** (With.) Grolle
Riccia affinis Milde = ***Riccia ciliata*** Hoffm.
Riccia arvensis Aust. = ***Riccia bifurca*** Hoffm.
Riccia bavarica Warnst. = ***Riccia warnstorffii*** Limpr. ex Warnst.
Riccia beckeriana Steph. = ***Riccia frostii*** Austin
Riccia bifurca Hoffm.
Riccia bischoffii Huebener = ***Riccia ciliifera*** Link ex Lindenb.
Riccia bischoffii var. *ciliifera* = ***Riccia ciliifera*** Link ex Lindenb.
Riccia bischoffii var. *maxima* Levier & Jack = ***Riccia gougetiana*** Durieu et Mont.
Riccia bischoffii var. *subtumida* Milde = ***Riccia ciliata*** Hoffm.
Riccia canaliculata Hoffm.
Riccia canaliculata var. *fluitans* (L.) Lindb. = ***Riccia fluitans*** L.
Riccia capillata Schmidel = ***Riccioarpos natans*** (L.) Corda
Riccia cavernosa Hoffm.
Riccia centrifuda Arnell = ***Riccia fluitans*** L.
Riccia ciliata Hoffm.
Riccia ciliata var. *epilosa* Warnst. = ***Riccia ciliata*** Hoffm.
Riccia ciliata var. *intumescens* Bisch. = ***Riccia ciliata*** Hoffm.
Riccia ciliifera Link ex Lindenb.
Riccia ciliifera var. *pedemontana* Steph. = ***Riccia ciliifera*** Link ex Lindenb.
Riccia commutata Jack = ***Riccia warnstorffii*** Limpr. ex Warnst.
Riccia crystallina auct., non L. emend. Raddi = ***Riccia cavernosa*** Hoffm.
Riccia crystallina L. emend. Raddi
Riccia dalslandica S.W. Arnell = ***Riccia ciliata*** Hoffm.
Riccia donellii Austin = ***Riccia gougetiana*** Durieu et Mont.
Riccia epicarpa Wallr. ex Gottsche et al. = ***Riccia sorocarpa*** Bisch.
Riccia eudichotoma Bisch. = ***Riccia canaliculata*** Hoffm.
Riccia fluitans L.
Riccia fluitans var. *canaliculata* (Hoffm.) Roth = ***Riccia canaliculata*** Hoffm.
Riccia fluitans fo. *major* = ***Riccia fluitans*** L.
Riccia fluitans fo. *robusta* Papp = ***Riccia fluitans*** L.
Riccia fluitans var. *terrestris* T. Jensen = ***Riccia fluitans*** L.
Riccia frostii Austin
Riccia frostii fo. *major* Papp, Mihai & Vişalariu = ***Riccia frostii*** Austin
Riccia fruticulosa Dicks. = ***Metzgeria violacea*** (Ach.) Dumort.
Riccia gamsiana Lorb. = ***Riccia canaliculata*** Hoffm.
Riccia glauca L.
Riccia glauca fo. *major* Lindb. = ***Riccia glauca*** L.
Riccia glauca var. *ciliaris* Warnst.
Riccia glauca var. *ciliata* Weber = ***Riccia ciliata*** Hoffm.
Riccia glauca var. *minima* Lindenb. = ***Riccia warnstorffii*** Limpr. ex Warnst.
Riccia glauca var. *subinermis* (Lindb.) Warnst. = ***Riccia glauca*** L. var. *ciliaris* Warnst.
Riccia gougetiana Durieu et Mont.
Riccia gougetiana var. *erinacea* Schiffn. = ***Riccia gougetiana*** Durieu et Mont.
Riccia heegii Schiffn. = ***Riccia sorocarpa*** Bisch. var. *heegii* Schiffn.
Riccia huebeneriana Lindenb. var. *cavernosa* (Hoffm.) Ast = ***Riccia cavernosa*** Hoffm.
Riccia incrassata Brot. = ***Oxymitra incrassata*** (Brot.) Sérgio et Sim-Sim
Riccia intumescens (Bischl.) Underw. = ***Riccia ciliata*** Hoffm.
Riccia latzelii Schiffn. = ***Riccia ciliifera*** Link ex Lindenb.
Riccia levieri Jack = ***Riccia gougetiana*** Durieu et Mont.
Riccia lindenberghiana Saut., p.p. = ***Riccia sorocarpa*** Bisch.
Riccia linkii Lindenb. = ***Oxymitra incrassata*** (Brot.) Sérgio et Sim-Sim

Riccia maior Roth = *Riccia glauca* L.
Riccia microspora Steph. = *Riccia frostii* Austin
Riccia minima L. = *Riccia sorocarpa* Bisch.
Riccia minutissima Steph., p.p. = *Riccia bifurca* Hoffm.
Riccia montagnei Steph. = *Riccia cavernosa* Hoffm.
Riccia natans L. = *Ricciocarpos natans* (L.) Corda
Riccia negrii Gola = *Riccia crystallina* L. emend. Raddi
Riccia palaestina S.W. Arnell = *Riccia frostii* Austin
Riccia papillosa Moris
Riccia papillosa var. *pseudopapillosa* (Levier) Gams = *Riccia papillosa* Moris
Riccia pedemontana Steph. = *Riccia ciliifera* Link ex Lindenb.
Riccia pellucida Hoffm. = *Riccia crystallina* L. emend. Raddi
Riccia perennis Steph. = *Riccia canaliculata* Hoffm.
Riccia plana Taylor = *Riccia crystallina* L. emend. Raddi
Riccia pseudopapillosa Levier = *Riccia papillosa* Moris
Riccia pusilla Warnst. = *Riccia bifurca* Hoffm.
Riccia pyramidata Corda = *Oxymitra incrassata* (Brot.) Sérgio et Sim-Sim
Riccia ruppiensis Warnst. = *Riccia glauca* L.
Riccia setosa F.A. Müll. = *Riccia papillosa* Moris
Riccia sorocarpa Bisch.
Riccia sorocarpa var. *heegii* Schiffn.
Riccia sorocarpa var. *nana* Kern. = *Riccia sorocarpa* Bisch.
Riccia subcrispula Warnst. = *Riccia bifurca* Hoffm.
Riccia subinermis Lindb. = *Riccia glauca* L. var. *ciliaris* Warnst.
Riccia subtumida Milde = *Riccia ciliata* Hoffm.
Riccia tenellii Gola = *Riccia cavernosa* Hoffm.
Riccia terracianoii Gola = *Riccia cavernosa* Hoffm.
Riccia velutina Wilson = *Ricciocarpos natans* (L.) Corda
Riccia venosa Roth = *Riccia glauca* L.
Riccia warnstorffii Limpr. ex Warnst.
Riccia warnstorffii var. *subinermis* Warnst. = *Riccia warnstorffii* Limpr. ex Warnst.
Riccia watsoni Austin = *Riccia frostii* Austin
Riccia zachariae Levier ex. Müll. Frib. = *Riccia gougetiana* Durieu et Mont.
Ricciella crystallina (L.) Warnst. = *Riccia cavernosa* Hoffm.
Ricciella crystallina Warnst. = *Riccia crystallina* L. emend. Raddi
Ricciella fluitans (L.) A. Braun = *Riccia fluitans* L.
Ricciella fluitans var. *canaliculata* (Hoffm.) Lindenb. = *Riccia canaliculata* Hoffm.
Ricciella heyeri Huebener ex Genth = *Riccia canaliculata* Hoffm.
Ricciella rautanenii Steph. = *Riccia cavernosa* Hoffm.
Riccinia perennis Trab. = *Riccia canaliculata* Hoffm.
Ricciocarpos natans (L.) Corda
Ricciocarpos vetutinus (Wilson) Steph. = *Ricciocarpos natans* (L.) Corda
Rupinia pyramidata Corda = *Oxymitra incrassata* (Brot.) Sérgio et Sim-Sim
Saccobasis polita (Nees) H. Buch = *Tritomaria polita* (Nees) Jörg.
Saccogyna graveolens (Schrad.) Lindb. = *Geocalyx graveolens* (Schrad.) Nees
Sarcoscyphus aquaticus (Lindenb.) Breidl. = *Marsupella emarginata* subsp. *aquatica* (Lindenb.) Meyl.
Sarcoscyphus boeckii Aust. = *Marsupella boeckii* (Aust.) Kaal.
Sarcoscyphus capillaris Limpr. = *Marsupella boeckii* (Aust.) Kaal.
Sarcoscyphus commutatus Limpr. = *Marsupella commutata* (Limpr.) Bernet
Sarcoscyphus confertus Limpr. = *Marsupella brevissima* (Dumort.) Grolle
Sarcoscyphus densifolius Nees = *Marsupella emarginata* (Ehrh.) Dumort.
Sarcoscyphus densifolius Nees var. *fascicularis* Gottsche = *Marsupella commutata* (Limpr.) Bernet
Sarcoscyphus ehrhardtii Corda = *Marsupella emarginata* (Ehrh.) Dumort.
Sarcoscyphus ehrhardtii var. *aquaticus* (Nees) Gottsche et al. = *Marsupella emarginata* subsp. *aquatica* (Lindenb.) Meyl.
Sarcoscyphus ehrhardtii var. *erythrorhiza* Limpr. = *Marsupella sphacelata* (Gieseke ex Lindenb.) Dumort.
Sarcoscyphus ehrhardtii var. *robustus* De Not. = *Marsupella emarginata* (Ehrh.) Dumort.
Sarcoscyphus emarginatus (Ehrh.) Spruce = *Marsupella emarginata* (Ehrh.) Dumort.
Sarcoscyphus emarginatus var. *aquaticus* (Nees) Aust. = *Marsupella emarginata* subsp. *aquatica* (Lindenb.) Meyl.
Sarcoscyphus funckii (F. Web. & D. Mohr) Nees = *Marsupella funckii* (F. Web. & D. Mohr) Dumort.

Sarcoscyphus jackii Limpr. = *Marsupella sphacelata* (Gieseke ex Lindenb.) Dumort.
Sarcoscyphus muelleri Nees = *Marsupella funckii* (F. Web. & D. Mohr) Dumort.
Sarcoscyphus neglectus Limpr. = *Marsupella sprucei* (Limpr.) Bernet
Sarcoscyphus piceus De Not. ex Carrington = *Marsupella emarginata* (Ehrh.) Dumort.
Sarcoscyphus pygmaeus Limpr. = *Marsupella funckii* (F. Web. & D. Mohr) Dumort.
Sarcoscyphus silvrettae (Gottsche ex Dumort.) Steph. = *Nardia geoscyphus* (De Not.) Lindb.
Sarcoscyphus sphacelatus (Gieseke ex Lindenb.) Nees = *Marsupella sphacelata* (Gieseke ex Lindenb.) Dumort.
Sarcoscyphus sphacelatus var. *medius* Gottsche & Rabenh. = *Marsupella sphacelata* (Gieseke ex Lindenb.) Dumort.
Sarcoscyphus sprucei Limpr. = *Marsupella sprucei* (Limpr.) Bernet
Sarcoscyphus sprucei var. *decipiens* Limpr. = *Marsupella sprucei* (Limpr.) Bernet
Sarcoscyphus sullivantii De Not. = *Marsupella sphacelata* (Gieseke ex Lindenb.) Dumort.
Sarcoscyphus ustulatus auct. = *Marsupella sprucei* (Limpr.) Bernet
Sarcoscyphus ustulatus (Spruce) Breidl. = *Marsupella sprucei* (Limpr.) Bernet
Sauteria alpina (Nees) Nees
Sauteria grandis Lindb. = *Peltolepis quadrata* (Saut.) Müll. Frib.
Sauteria quadrata Saut. = *Peltolepis quadrata* (Saut.) Müll. Frib.
Sauteria seriata Lindb. = *Athalamia hyalina* (Sommerf.) S. Hatt.
Sauteria suecica Lindb. = *Athalamia hyalina* (Sommerf.) S. Hatt.
Scalius hookeri (Sm.) Gray = *Haplomitrium hookeri* (Sm.) Nees
Scapania aconiensis De Not. = *Scapania nemorea* (L.) Grolle
Scapania aequiloba (Schwägr.) Dumort.
Scapania aequiloba fo. *gracilis* Bernet = *Scapania aequiloba* (Schwägr.) Dumort.
Scapania aequiloba fo. *inermis* Gottsche = *Scapania aequiloba* (Schwägr.) Dumort.
Scapania aequiloba fo. *squarrosa* Bernet = *Scapania aequiloba* (Schwägr.) Dumort.
Scapania aequiloba var. *aspera* (M. Bernet & Bernet) Boulay = *Scapania aspera* Bernet & M. Bernet
Scapania aequiloba var. *major* Gottsche ex Warnst. = *Scapania aspera* Bernet & M. Bernet
Scapania amurensis Warnst. = *Scapania nemorea* (L.) Grolle
Scapania apiculata Spruce
Scapania aspera Bernet & M. Bernet
Scapania atrata Warnst. = *Scapania undulata* (L.) Dumort.
Scapania austinii Warnst. = *Scapania nemorea* (L.) Grolle
Scapania brevicaulis Taylor
Scapania calcicola (Arnell & J. Perss.) Ingham
Scapania carestiae De Not. = *Scapania cuspiduligera* (Nees) Müll. Frib.
Scapania compacta (Roth) Dumort.
Scapania compacta var. *irrigua* (Nees) Aust. = *Scapania irrigua* (Nees) Nees
Scapania convexa (Scop.) Pearson = *Scapania umbrosa* (Schrad.) Dumort.
Scapania cordifolia Müll. Frib. = *Scapania paludosa* (Müll. Frib.) Müll. Frib.
Scapania crassiretis Bryhn
Scapania curta (Mart.) Dumort.
Scapania curta var. *rosea* (Corda) Carrington = *Scapania curta* (Mart.) Dumort.
Scapania curta var. *viridissima* Müll. Frib. = *Scapania irrigua* (Nees) Nees
Scapania cuspiduligera (Nees) Müll. Frib.
Scapania degenii Schiffn. ex Müll. Frib. = *Scapania brevicaulis* Taylor
Scapania dentata (Dumort.) Dumort. = *Scapania undulata* (L.) Dumort.
Scapania dentata var. *ambigua* (De Not.) C. Massal. = *Scapania undulata* (L.) Dumort.
Scapania dentata var. *heterophylla* Müll. Frib. = *Scapania undulata* (L.) Dumort.
Scapania dentata var. *speciosa* (Nees) Cogn. = *Scapania undulata* (L.) Dumort.
Scapania dentata var. *taeniiformis* Müll. Frib. = *Scapania undulata* (L.) Dumort.
Scapania douinii Schiffn. = *Scapania undulata* (L.) Dumort.
Scapania exsecta (Schmidel ex Schrad.) Aust. = *Tritomaria exsecta* (Schmidel ex Schrad.) Schiffn. ex Loeske
Scapania geniculata C. Massal. = *Scapania helvetica* Gottsche
← ***Scapania glaucocephala*** (Taylor) Austin
Scapania gracilis Lindb.
Scapania gracilis var. *laxifolia* (Dumort.) Dumort. = *Scapania gracilis* Lindb.
Scapania gracilis var. *minor* (Pearson) Macvicar = *Scapania gracilis* Lindb.
Scapania gracillima Warnst. = *Scapania crassiretis* Bryhn
Scapania gymnostomophila Kaal.
Scapania helvetica Gottsche

Scapania heterophylla M. Howe = *Scapania undulata* (L.) Dumort.
Scapania integriloba Warnst. = *Scapania irrigua* (Nees) Nees
Scapania intermedia (Husn.) Pearson = *Scapania undulata* (L.) Dumort.
Scapania irrigua (Nees) Nees
Scapania irrigua var. *obtusa* H. Buch = *Scapania irrigua* (Nees) Nees
Scapania irrigua var. *rubescens* H. Buch = *Scapania irrigua* (Nees) Nees
Scapania irrigua var. *sudetica* Velen. = *Scapania paludicola* Loeske & Müll. Frib.
Scapania jackii Warnst. = *Scapania nemorea* (L.) Grolle
Scapania joergensenii Schiffn. ex Müll. Frib. = *Scapania nemorea* (L.) Grolle
Scapania kaalaasii (Müll. Frib.) Schiffn. = *Scapania paludicola* Loeske & Müll. Frib.
Scapania limprichtii Warnst. = *Scapania uliginosa* (Sw. ex Lindenb.) Dumort.
Scapania microscopica Culm. = *Diplophyllum obtusifolium* (Hook.) Dumort.
Scapania minuta Warnst. = *Scapania aequiloba* (Schwägr.) Dumort.
Scapania mucronata H. Buch
Scapania nemorea (L.) Grolle
Scapania nemorosa Dumort. = *Scapania nemorea* (L.) Grolle
Scapania nemorosa var. *alata* Kaal. ex Müll. Frib. = *Scapania nemorea* (L.) Grolle
Scapania nemorosa var. *intermedia* Husn. = *Scapania undulata* (L.) Dumort.
Scapania nemorosa var. *joergensenii* (Schiffn. ex Müll. Frib.) Müll. Frib. = *Scapania nemorea* (L.) Grolle
Scapania nemorosa var. *purpurascens* (Hook.) Gottsche et al. = *Scapania undulata* (L.) Dumort.
Scapania nemorosa var. *uliginosa* (C.E.O. Jensen ex Macvicar) Ingham = *Scapania nemorea* (L.) Grolle
Scapania obliqua (Arnell) Schiffn. = *Scapania uliginosa* (Sw. ex Lindenb.) Dumort.
Scapania oseensis Warnst. = *Scapania undulata* (L.) Dumort.
Scapania paludicola Loeske & Müll. Frib.
Scapania paludicola var. *kaalaasii* Müll. Frib. = *Scapania paludicola* Loeske & Müll. Frib.
Scapania paludosa (Müll. Frib.) Müll. Frib.
Scapania paludosa var. *aquatica* Schiffn. = *Scapania undulata* (L.) Dumort.
Scapania paludosa var. *flaccida* Jörg. = *Scapania paludosa* (Müll. Frib.) Müll. Frib.
Scapania paludosa var. *isoloba* Warnst. = *Scapania paludosa* (Müll. Frib.) Müll. Frib.
Scapania paludosa var. *natans* Schiffn. = *Scapania undulata* (L.) Dumort.
Scapania paludosa var. *papillosa* Müll. Frib. ex L. Clark = *Scapania paludosa* (Müll. Frib.) Müll. Frib.
Scapania paludosa var. *rubiginosa* Müll. Frib. = *Scapania paludosa* (Müll. Frib.) Müll. Frib.
Scapania paludosa var. *submersa* (Jörg.) Müll. Frib. = *Scapania paludosa* (Müll. Frib.) Müll. Frib.
Scapania paludosa var. *vogesiaca* Müll. Frib. = *Scapania paludosa* (Müll. Frib.) Müll. Frib.
Scapania parva Steph. = *Scapania verrucosa* Heeg
Scapania patulifolia Warnst. = *Scapania gracilis* Lindb.
← ***Scapania praetervisa*** Meyl.
Scapania purpurascens (Hook.) Taylor ex Pearson = *Scapania undulata* (L.) Dumort.
Scapania recurva Steph. = *Scapania gracilis* Lindb.
Scapania recurvifolia Warnst. = *Scapania nemorea* (L.) Grolle
Scapania renifolia Warnst. ex H. Buch = *Scapania scandica* (Arnell & H. Buch) Macvicar
Scapania reniformis Warnst. = *Scapania paludosa* (Müll. Frib.) Müll. Frib.
Scapania resupinata var. *minor* Pearson = *Scapania gracilis* Lindb.
Scapania rosacea (Corda) Nees = *Scapania curta* (Mart.) Dumort.
Scapania rotundata Warnst. = *Scapania paludicola* Loeske & Müll. Frib.
Scapania rupestris (Dumort.) Dumort. = *Scapania aequiloba* (Schwägr.) Dumort.
Scapania scandica (Arnell & H. Buch) Macvicar
Scapania scandica var. *argutedentata* H. Buch = *Scapania scandica* (Arnell & H. Buch) Macvicar
Scapania speciosa (Nees) Lett = *Scapania undulata* (L.) Dumort.
Scapania splendens Steph. = *Scapania undulata* (L.) Dumort.
Scapania squarrosula Lindenb. = *Scapania undulata* (L.) Dumort.
Scapania subaequiloba var. *subintegra* Warnst. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.
Scapania subaequiloba Warnst. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.
Scapania subalpina (Nees ex Lindenb.) Dumort.
Scapania subalpina var. *hynesiae* Frye & L. Clark = *Scapania subalpina* (Nees ex Lindenb.) Dumort.
Scapania subalpina var. *purpurascens* Bryhn ex Müll. Frib. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.
Scapania subalpina var. *subintegra* Bryhn ex Schiffn. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.
Scapania subalpina var. *submersa* Jörg. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.
Scapania subalpina var. *subrotunda* (Lindb. & Arnell) Müll. Frib. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.

Scapania subalpina var. *undulifolia* (Nees) Gottsche et al. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.
Scapania subrotundifolia Warnst. = *Scapania subalpina* (Nees ex Lindenb.) Dumort.
Scapania suecica Warnst. = *Scapania undulata* (L.) Dumort.
Scapania tyrolensis (Nees) Gottsche et al. = *Scapania aequiloba* (Schwägr.) Dumort.
Scapania uliginosa (Sw. ex Lindenb.) Dumort.
Scapania uliginosa var. *obliqua* (Arnell) Jörg. = *Scapania uliginosa* (Sw. ex Lindenb.) Dumort.
Scapania umbrosa (Schrad.) Dumort.
Scapania undulata (L.) Dumort.
Scapania undulata fo. *elongata* Müll. Frib. = *Scapania undulata* (L.) Dumort.
Scapania undulata subsp. *dentata* Dumort. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *aequata* (Nees) Gottsche et al. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *aequatiformis* (De Not.) C. Massal. & Carestia = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *alata* Schiffn. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *ambigua* (De Not.) C. Massal. & Carestia = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *densa* Müll. Frib. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *dentata* (Dumort.) McArdle = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *denticulata* Warnst. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *flagellaris* Loeske = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *heterophylla* (M. Howe) Warnst. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *lepida* Warnst. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *paludosa* Müll. Frib. = *Scapania paludosa* (Müll. Frib.) Müll. Frib.
Scapania undulata var. *purpurascens* (Huebener) Cogn. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *purpurea* (Nees) Gottsche et al. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *resupinata* Hook. = *Scapania compacta* (Roth) Dumort.
Scapania undulata var. *rivularis* (Huebener) Rabenh. = *Scapania undulata* (L.) Dumort.
Scapania undulata var. *subglacialis* Schiffn. = *Scapania undulata* (L.) Dumort.
Scapania vahliana Lehm. = *Scapania uliginosa* (Sw. ex Lindenb.) Dumort.
Scapania verrucosa fo. *isoloba* Müll. Frib. = *Scapania verrucosa* Heeg
Scapania verrucosa Heeg
Scapania verrucosa var. *schiffneriana* Müll. Frib. = *Scapania verrucosa* Heeg
Scapania verruffifera C. Massal. = *Scapania verrucosa* Heeg
Schistochilopsis opacifolia (Culm. ex Meyl.) Konstantinova = *Lophozia opacifolia* Culm. ex Meyl.
Sedgwickia hemisphaerica Bowdich = *Lunularia cruciata* (L.) Lindb.
Solenostoma amplexicaule (Dumort.) Steph. = *Jungermannia sphaerocarpa* Hook.
Solenostoma atrovirens (Dumort.) Müll. Frib. = *Jungermannia atrovirens* Dumort.
Solenostoma caespiticium (Lindenb.) Steph. = *Jungermannia caespiticia* Lindenb.
Solenostoma confertissimum (Nees) Schljakov = *Jungermannia confertissima* Nees
Solenostoma cordifolium (Dumort.) Steph. = *Jungermannia exsertifolia* subsp. *cordifolia* (Dumort.) Vána
Solenostoma crenulatum Mitt. = *Jungermannia gracillima* Sm.
Solenostoma gracillimum (Sm.) R.M. Schust. = *Jungermannia gracillima* Sm.
Solenostoma gracillimum var. *cristulatum* (Dumort.) R.M. Schust. = *Jungermannia gracillima* Sm.
Solenostoma hyalinum (Lyell) Mitt. = *Jungermannia hyalina* Lyell
Solenostoma lanceolatum auct. = *Jungermannia leiantha* Grolle
Solenostoma levieri (Steph.) Steph. = *Jungermannia confertissima* Nees
Solenostoma oblongifolium (Müll. Frib.) Müll. Frib. = *Jungermannia pumila* Dicks.
Solenostoma oblongifolium auct. non (Müll. Frib.) Müll. Frib. = *Jungermannia borealis* Damsh. & Vána
Solenostoma polare (Lindb.) R.M. Schust. = *Jungermannia polaris* Lindb.
Solenostoma pumilum (Dicks.) Müll. Frib. = *Jungermannia pumila* Dicks.
Solenostoma pumilum subsp. *polaris* (Lindb.) R.M. Schust. = *Jungermannia polaris* Lindb.
Solenostoma schiffneri (Loitl.) Müll. Frib. = *Jungermannia polaris* Lindb.
Solenostoma sphaerocarpoideum (De Not.) Paton & E.F. Warb. = *Jungermannia atrovirens* Dumort.
Solenostoma sphaerocarpum (Hook.) Steph. = *Jungermannia sphaerocarpa* Hook.
Solenostoma subellipticum (Lindb. ex Kaal.) R.M. Schust. = *Jungermannia subelliptica* (Lindb. ex Kaal.) Levier
Solenostoma triste (Nees) Müll. Frib. = *Jungermannia atrovirens* Dumort.
Southbya biformis (Aust.) Aust. = *Jungermannia hyalina* Lyell
Southbya crenulata (Mitt.) Bernet = *Jungermannia gracillima* Sm.
Southbya hyalina (Lyell) Husn. = *Jungermannia hyalina* Lyell
Southbya obovata (Nees) Lindb. = *Jungermannia obovata* Nees
Southbya subelliptica (Lindb. ex Kaal.) Lett = *Jungermannia subelliptica* (Lindb. ex Kaal.) Levier
Sphagnocetis communis Nees = *Odontoschisma sphagni* (Dicks.) Dumort.

Sphagnocetis communis var. *macrior* Hartm. = *Odontoschisma denudatum* (Mart.) Dumort.
Sphagnocetis communis var. *vegetior* Gottsche et al. = *Odontoschisma sphagni* (Dicks.) Dumort.
Sphagnocetis huebneriana Rabenh. = *Odontoschisma denudatum* (Mart.) Dumort.
Sphagnocetis sphagni (Dicks.) Fr. = *Odontoschisma sphagni* (Dicks.) Dumort.
Sphenolobus ascendens Warnst. = *Lophozia ascendens* (Warnst.) R.M. Schust.
Sphenolobus exsectiformis (Breidl.) Steph. = *Tritomaria exsectiformis* (Breidl.) Loeske
Sphenolobus exsectiformis var. *aequilobus* = *Tritomaria exsectiformis* (Breidl.) Loeske
Sphenolobus exsectus (Schmidel ex Schrad.) Steph. = *Tritomaria exsecta* (Schmidel ex Schrad.) Schiffn. ex Loeske
Sphenolobus groenlandicus (Nees) Steph. = *Lophozia wenzelii* (Nees) Steph.
Sphenolobus gymnostomophilus (Kaal.) Schiffn. = *Scapania gymnostomophila* Kaal.
Sphenolobus hellerianus (Nees ex Lindenb.) Steph. = *Anastrophyllum hellerianum* (Nees ex Lindenb.) R.M. Schust.
Sphenolobus hellerianus var. *compacta* (Lindb.) Schiffn. = *Anastrophyllum hellerianum* (Nees ex Lindenb.) R.M. Schust.
Sphenolobus kunzeanus (Huebener) Steph. = *Barbilophozia kunzeana* (Huebener) Müll. Frib.
Sphenolobus kunzeanus var. *plicatus* (Hartm.) Warnst. = *Barbilophozia kunzeana* (Huebener) Müll. Frib.
Sphenolobus medelpadicus (Arnell) Steph. = *Tritomaria polita* (Nees) Jörg.
Sphenolobus michauxii (F. Web.) H. Buch = *Anastrophyllum michauxii* (F. Web.) H. Buch
Sphenolobus minutus (Schreb.) Berggr. = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Sphenolobus minutus var. *grandis* (Gottsche ex Lindb.) Jörg. = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Sphenolobus politus (Nees) Steph. = *Tritomaria polita* (Nees) Jörg.
Sphenolobus politus var. *acuta* (Kaal. ex Schiffn.) Müll. Frib. = *Tritomaria scitula* (Taylor) Jörg.
Sphenolobus politus var. *medelpadicus* (Arnell) Schiffn. = *Tritomaria polita* (Nees) Jörg.
Sphenolobus politus var. *riparium* Bryhn ex Schiffn. = *Tritomaria polita* (Nees) Jörg.
Sphenolobus quadrilobus (Lindb.) Steph. = *Barbilophozia quadriloba* (Lindb.) Loeske
Sphenolobus rigidus (Lindb.) Müll. Frib. = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Sphenolobus saccatula (Lindb.) Müll. Frib. = *Anastrophyllum minutum* (Schreb.) R.M. Schust.
Sphenolobus saxicola (Schrad.) Steph. = *Anastrophyllum saxicola* (Schrad.) R.M. Schust.
Sphenolobus scitulus (Taylor) Steph. = *Tritomaria scitula* (Taylor) Jörg.
Staurophora pulchella Willd. = *Lunularia cruciata* (L.) Lindb.
Steetzia cylindrica Austin = *Pallavicinia lyellii* (Hook.) Carruth.
Steetzia lyellii (Hook.) Lehm = *Pallavicinia lyellii* (Hook.) Carruth.
Stephaniana alpestris O. Kuntze = *Radula complanata* (L.) Dumort.
Stephaniana complanata O. Kuntze = *Radula complanata* (L.) Dumort.
Strozzius hemisphaericus (L.) Gray = *Reboulia hemisphaerica* (L.) Raddi
Symphogyna oblonga (Schwein.) Gottsche Lindenb. & Nees = *Pallavicinia lyellii* (Hook.) Carruth.
Symphogyna schweinitzii Mont. & Nees. = *Pallavicinia lyellii* (Hook.) Carruth.
***Targionia hypophylla* L.**
Telaranea setacea (Web.) Müll. Frib. = *Kurzia pauciflora* (Dicks.) Grolle
Tessellina pyramidata Müll. Frib. = *Oxymitra incrassata* (Brot.) Sérgio et Sim-Sim
***Trichocolea tomentella* (Ehrh.) Dumort.**
Trigonanthus albescens (Hook.) Lindb. ex C. Hartm. = *Pleurocladula albescens* (Hook.) Grolle var. *albescens*
Trigonanthus bicuspidatus (L.) Mitt. = *Cephalozia bicuspidata* (L.) Dumort.
Trigonanthus bicuspidatus var. *lammersiana* (Huebener) C.Hartm. = *Cephalozia bicuspidata* var. *lammersiana* (Huebener) Breidl.
Trigonanthus catenulatus (Huebener) C. Hartm. = *Cephalozia catenulata* (Huebener) Lindb.
Trigonanthus connivens (Dicks.) Mitt. = *Cephalozia connivens* (Dicks.) Lindb.
Trigonanthus curvifolius (Dicks.) C. Hartm. = *Nowellia curvifolia* (Dicks.) Mitt.
Trigonanthus divaricatus (Sm.) Mitt. = *Cephalozia divaricata* (Sm.) Schiffn.
Trigonanthus islandicus (Nees) C. Hartm. = *Pleurocladula albescens* var. *islandica* (Nees) L. Söderstr. et Váňa
***Tritomaria exsecta* (Schmidel ex Schrad.) Schiffn. ex Loeske**
***Tritomaria exsectiformis* (Breidl.) Loeske**
Tritomaria exsectiformis var. *aequilobus* (Culm.) Müll. Frib. = *Tritomaria scitula* (Taylor) Jörg.
***Tritomaria polita* (Nees) Jörg.**
***Tritomaria quinquedentata* (Huds.) H. Buch**
Tritomaria quinquedentata var. *tenera* (Arnell & C.E.O. Jensen) Weim. = *Tritomaria scitula* (Taylor) Jörg.
Tritomaria quinquedentata var. *alpigena* = *Tritomaria quinquedentata* (Huds.) H. Buch
***Tritomaria scitula* (Taylor) Jörg.**
Tritomaria scitula var. *spinosa* Herzog = *Tritomaria scitula* (Taylor) Jörg.

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