SHORT HISTORY CONCERNING THE RESEARCHES DEVELOPED BY SPECIALISTS FROM INSTITUTE OF BIOLOGY, IN STATIONARY LABORATORIES.

ECOLOGICAL STATIONARY FROM SINAIA

Institute of Biology from street Splaiul Independenței, no. 296, sector 6, Bucharest, had in Sinaia city, on street Calea Codrului, no. 34, an ecological stationary for terrestrial ecology research in general, and especially for forestry studies in Bucegi and Gârbova Massifs (Foto 1).

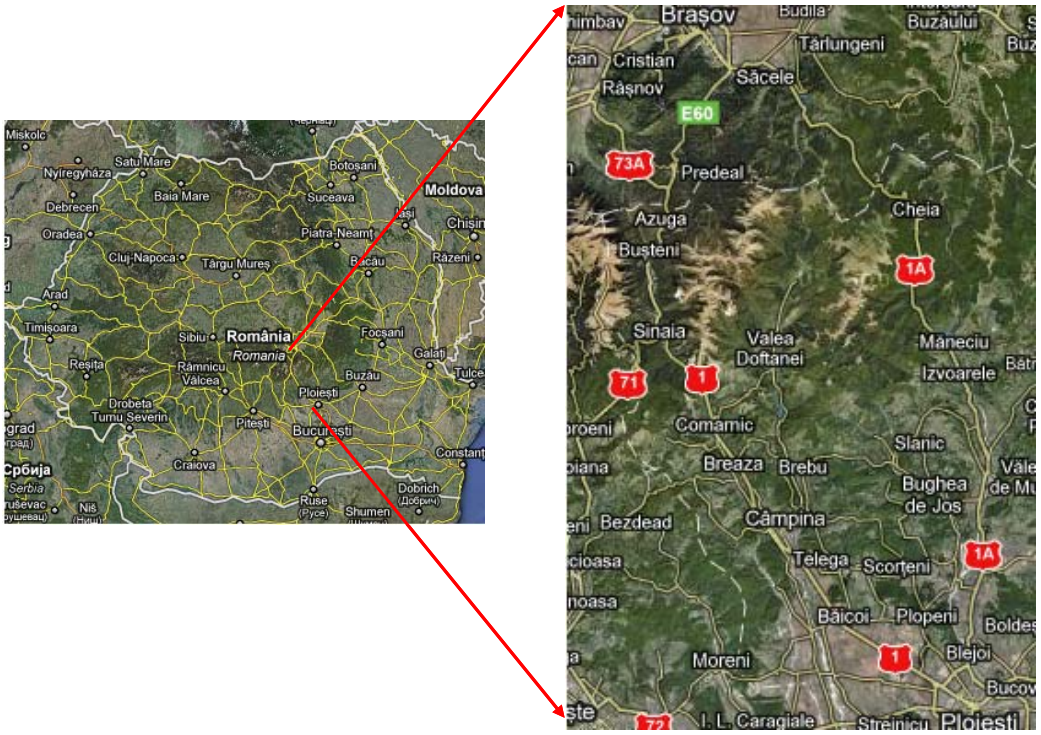

Foto 1: Romania – Ploieşti-Comarnic- Sinaia- Buşteni- Azuga- Predeal- Braşov

Sinaia (population: 14,636) is a town and a mountain resort in Prahova district, Romania. The town was named after Sinaia Monastery, around which it was built; the monastery in turn is named after the Biblical Mount Sinai (in XVII century). King Carol I of Romania built his summer home, Peleş Castle, near the town. Sinaia is about 123 km of Bucharest, 106 km of International Airport Henri Coadă, 60 km northwest of Ploieşti and 50 km south of Braşov, in a mountainous area on the Prahova River valley, just east of the Bucegi Mountains. The altitude varies between 767 m and 860 m and is situated between some forestry peaks: Furnica, Zgarbura, Colţii lui Barbeş and Culmea Izvorului (Foto 2).

Foto 2: Romania – Prahova Valley – Bucegi Mountains - Sinaia

The stationary from Sinaia, situated at street Calea Codrului, no. 34, built in 1939 by academician Wilhelm Knechtel illustrious biolog, represented in the same time his private property and a research base for Institute of Biology, Bucharest. In 1950, the building has been nationalized. The academician Wilhelm Knechtel has been lived in this building till 1967, when he died, organizing and leading an ecological research laboratory. The results of his research were been exploited by Institute of Biology, Bucharest. (Foto 3). The academician Wilhelm Knechtel was the first Director of Biological Research Centre, Bucharest, which has been established in 1957, and in 1960 was been transformed in Institute of Biology. His activity in laboratory and even the leadership as Director (for 3 years long) were made from Sinaia. After the death of academician W. Knechtel, Institute of Biology from Bucharest established an oficial agreement with the City Hall from Sinaia, in order to continue and develop the ecological researches in laboratories, started by academician W. Knechtel.

After 1967, the Ecological Stationary from Sinaia had a very important role in researches concerning the terrestrial ecosystems from Romania, especially those from Bucegi and Gârbova massifs. These researches has been materialized by valorous scientifical contributions, by conservation measures and actions of many scientifical and turistical values for Romania. In Ecological Stationary from Sinaia were worked permanently two zoologists, specialists in soil fauna, and a lab technician. The complex ecological activity from this stationary was enhanced by research teams from Institute of Biology, Bucharest and by other specialists from other universitary centres from Romania (which came in Sinaia at least one time per month). Through it's achivements, the Ecological Stationary from Sinaia became very famous in Europe. Under Romanian Academy guardianship scientifical collaborations were made, with Sweden, England, Germany, Bulgary, Poland, Serbia, Slovakia, Czeck

Republic. These collaborations involved work visits at Sinaia of specialists in plant and animal ecology, accopanied by the romanian specialists. In the end common scientifical papers were ellaborated. Besides the research activity, the Ecological Stationary represented a universitary base for students (Msc and PhD). Were been organised many international and national scientifical events in ecology and montanous natural ecosystems conservation field. On Ecological Stationary from Sinaia have been activated many personalities from biology and forestry fields from Romania as: academicians W. Knechtel, R. Codreanu, Gr. Eliescu, M.A. Ionescu, I.P. Zeletin, C.C. Georgescu, P. Bănărescu, famous researchers Dr. H. Hondru, Dr. N. Doniță, Dr. C. Bîndiu and in the last 25 years a high number of researchers of Ecologycal Laboratory of Institute of Biology, national and international specialists from research institutes of Romanian Academy and from universitary centres. This activity was materialised in scientifical monographies, in 30 doctoral thesis and over 500 papers. As a part of research structure of Institute of Biology, the Ecological Stationary from Sinaia represented one of the needful endowment, whitout which, the Institute could not realised the national research programm and the international collaboration agreements. After retrocession, the research activity continued in the immoble from Sinaia, but with a very high rental price, supported till august 2006.

Foto 3: Ecological Stationary Sinaia

ECOLOGICAL STATIONARY FROM POSADA

After immoble retrocession from Sinaia, was discovered that other important scientifical ecologycal activities were endagered as declaration of Natural Park Bucegi. Taking account of this fact, was obtained a rental agreement with National Agency of Forestry- Romsilva for another location – Posada Complex, Carpathian Cinegetic Museum (Foto 4).

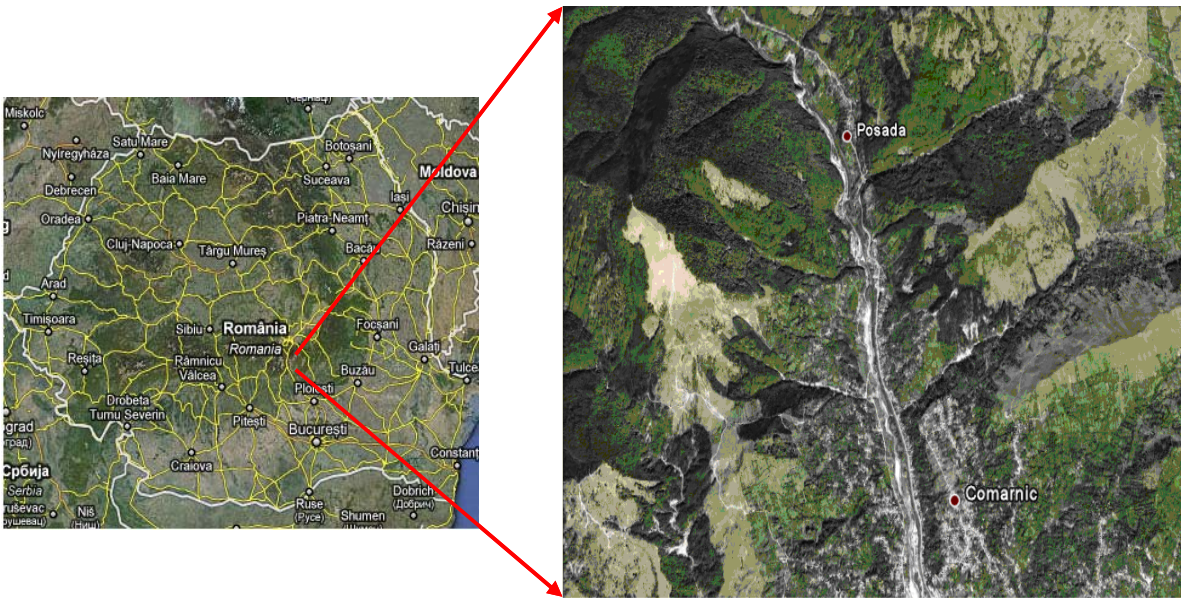

Foto 4: Romania – Prahova Valley – Comarnic - Posada

Posada is a city in Prahova county, Wallachia. It is situated between the town and resort of Sinaia Comarnic. It's basically "gate " of Prahova Valley. Each part of the town is located right on both sides of DN1. The village is bordered on the right side (coming from Ploieşti city) by the Florei and Răzoare mountains and to the left by the Pleasa mountain. The building is more precisely known as Castle Posada, Bibescu family residence. (Foto 5)

Stationary

Foto 5: Posada Complex

Built between 1842-1848, the castle was temporally inhabited by Martha Bibescu princess (born at 1890, at Bucharest). She was a French writer, but by Romanian origin and she sustained the Romanian air navy. After 1976 the annexed buildings were a Korean and Romanian youth camp, and then a storage places for Peleş Castle. After 2004 "Posada Complex" is managed by National Agency of Forest – Romania .

On this location have been continued the researches planned at Ecological Stationary from Sinaia, with participation of the two specialist from stationary (Dr. Viorica Honciuc**,** Dr Minodora Manu) and a lab technician (Simona Plumb) and other researchers from Department of Taxonomy, Ecology and Nature Conservation from Institute of Biology, or from other national or international institutes. On this Ecological Stationary from the Museum Complex of Posada, researchers which make studies concerning forest ecosystems from Bucegi and Gârbova massifs, from hilly area from Prahova district or from other areas from Romania, came periodically. In this building activate the Scientifical Secretary of the Natural Park Bucegi, under coordination of Dr. Viorica Honciuc.

In research program of the Institute of Biology are included different thema. Without the presence of Ecological Stationary from Posada their achievement will be imposible. The research area of this stationary is:

- characteristical shrubs and forests identifications for Doftana Valley,
- pedo-climateric charaterization of specifical shrubs and forests edcosystems, ecosystemical structur of shrubs with *Myricaria germanica* – protected habitats accordind to Natura 2000;
- quantitative study of the beech forests from hilly areas,
- shrubs and forests identifications from the cliff area from Doftana Valley, Prahova Valley, Breaza and Posada;
- quantitative and qualitative study of the soil fauna from shrubs and forest ecosystems from the rocky substrate;
- taxonomy and ecology of the soil fauna (nematodes, springtails, enchytreides, mites, worms, etc) from the forest and shrub ecosystems from cliffs from Doftana and Prahova Valley.

Ecological Stationary from Posada, as a fundamental component of the research structure of Institute of Biology from Romanian Academy, represents one of the indispensable condition for accomplisment of the research projects on national and international level, especially in these difficult financial period.

LIST OF SOME RESEARCH THEMES OF INSTITUTE OF BIOLOGY, BUCHAREST ACCOMPLISHED BY THE RESEARCHERS IN ECOLOGY STATIONARY FROM SINAIA, IN PROJECTS, AGREEMENTS, CONTRACTS AND PHD.

I. RESEARCH THEMES WITH EDUCATION MINISTRY.

I. 1. RESEARCHES IN BUCEGI MASSIF.

1973 – 1974 – Ecological researches in ecosystems with *Fagus sylvatica* from Prahova Valley – coordinator Dr. Hondru Nicolae.

1974 – 1975 – Ecological researches in ecosystems with *Pinus mugo* from Piatra Arsă area - Bucegi Mountains– coordinator Dr. Zamfirescu Anca.

1977 – 1980 – The conservationa and reconstruction of some forest ecosystems from Bucegi Mountains – coordinator C.S. Neculce Dragoş.

1981 – 1985 – Systhemical analyse of some forestry ecosystems from the superior limit of the forest from Bucegi Mountains – coordinator C.S. Falcă Marin.

I. 2. RESEARCHES IN OTHER AREAS FROM ROMANIA.

1976 – 1978 – Biological implications of the pollution on the structure and productivity natural and anthropical ecosystems in the context of socio-economical development in Romania. Complex ecological effect of the air contaminants from Chimical Factory from Năvodari – coordinator C.S. Vasiliu Liliana.

II RESEARCH PROJECTS WITH ROMANIAN ACADEMY.

II. 1. RESEARCHES IN BUCEGI MASSIF.

1990 – 1992 – Ecological researches in transects, in forest ecosystems from Bucegi mountains.

1992 – 1998 – Populational study of floristical and faunistical components from forest ecosystems from Bucegi mountains.

1993 – 1994 – Study of some natural rezervations from Prahova, Dâmbovița and Braşov districts – coordinator Dr. Falcă Marin.

1998 – 2001 – Structural organization of the main biocenotical components and natural abundace of N15 in some forest ecosystems from Bucegi Massif – coordinator Dr. Falcă Marin

1998 – 1999 – Trophical structure and food resources from beech forests from Bucegi Massif – coordinator Dr. Falcă Marin.

2000 – 2001 – Trophical structure and food resources for edaphical fauna in fir-beech forests from superior basin of Prahova river – coordinator Dr. Falcă Marin.

2002 – 2005 – Biodiversity Conservation Management in Romania – coordinator Dr. Falcă Marin

2003 – 2004 – Taxonomical diversity characterization of edaphical mites (Acari: Mesostigmata; Oribatida) from forest ecosystems with *Picea abies* and *Fagus sylvatica from* Bucegi mountains **GAR**., coordinator Dr. Viorica Honciuc.

II. 2. RESEARCHES IN OTHER AREAS FROM ROMANIA.

1993 – 1994 – Secondary mechanisms of the productivity in floodplains ecosystems from Danube Delta – coord., Dr. Paucă – Comănescu Mihaela

1994 – 1998 – Identification of the mechanisms of biological productivity and evaluation of productive capacity of ecosystems from flooded area from Low Danube and Danube Delta - coord., Dr. Paucă– Comănescu Mihaela.

1999 – 2001 – Structure and biological productivity identification of the natural shrubs from the inferior rivers and Danube – coord., Dr. Paucă –Comănescu Mihaela.

2000 – 2001 – Identification of the characteristical ecosystems for the river Prahova and for some danubian sectors from Giurgiu district - coord., Dr. Paucă –Comănescu Mihaela.

III.RESEARCH CONTRACTS WITH DIFFERENT PARTNERS.

III. 1. RESEARCHES IN BUCEGI MASSIF.

1987 – 1989 – Ecological bases of the superior alpine and subalpine meadows valorifications – coord., Dr. Falcă Marin (collaboration with Meadows Research Institute from Măgurele).

III. 2. RESEARCHES IN OTHER AREAS FROM ROMANIA.

1977 – 1980 – Capacity of some ecosystems to concentrate and to **biosolubility** of rare metals-coord., Neculce Dragoş (project with Mines and Geology Ministry)

1977 – 1980 – Study of ecological indices characteristical for forest ecosystems from different geographycal areas – coord., Dr. Paucă – Comănescu Mihaela (project with ASAS, ICAS, MAIA).

1981 – 1985 – Characterization of the main biocenotical components from various types of forest ecosystems – coord., Dr. Paucă – Comănescu Mihaela (project with ASAS, ICAS, MAIA).

1981 – 1985 – Bioconcentration and biosulubilization of the rare metals from waste, through ecological integrated procedures - coord., Neculce Dragoş (project with Mines and Geology Ministry).

1981 – 1983 – Natural bioleaching and bioconcentration with Cu and Mo.

1984 – Natural and industrial ecological bioconcentration of Ni, Co and Mn.

1985 – Natural and induced ecological bioconcentration of some rare metals in pedo-geoclimaterical conditions from Romania.

1981 – 1987 - Bioleaching and bioconcentration of some rare metals, through plants and animals.

1983 – 1984 – Structural and dynamical modifications of some soil invertebrates communities from soils with cultivated plants treated with pesticides – coord., Vasiliu – Oromulu Liliana (project with ICCPTE – Fundulea).

1985 – 1987 – Natural and anthropical ecosystems modification monitoring from Delta Danube, taking account of regenerable resources valorification - coord., Vasiliu – Oromulu Liliana (MAI project – beneficiary ICAS,Tulcea)**.**

1986 – 1989 – Ecological study of the montanous and submontanous forest ecosystems from south and west of Romania, for their valorifications and optimizations– coord., Dr. Pauca – Comănescu Mihaela (project with ASAS-ICAS-MAIA).

1986 – 1990 – Optimization of the integrated bioconcentration and bioleaching ecological processes of the rare metals from poorly rocks and subproducts in natural ecosystems and pilot installations – coord., Neculce Dragoş (project with Mines and Geology Ministry).

1986 – Biocenotical combinations for integrate ecological processes optimization of bioconcentration and bioleaching of Ni, Co, Mn, in lab and pilot installations.

1987 – The organic substrate way destinated to optimized the integrate ecological bioleaching process of Ni, Co, Mn in pilot installations.

1988 – 1989 – Biocenotical combinations used to optimize and to integrate ecological processes optimization of bioconcentration and bioleaching of Ni, Co, Mn, in lab and pilot installations – coord., Arion Constantin (project with Mines and Geology Ministry).

1988 – 1989 – Conservation of the genetic heritage from Zamostea Luncă natural rezervation – coord., Dr. Oltean Mircea (project with ICPCA).

1988 – 1989 – Pitezinul. The study of edaphical fauna from agroecosystems – coord., Vasiliu –Oromulu Liliana (project with ICP – Fundulea).

1989 – 1990 – Ecological study of forming and evolution of human interventions on Argeş river, destinated to saling and other usings (the dig Dunăre – Bucureşti), including the acumulation lakes 5; 4; 3; 2; 1 – coord., Peicea Ilie.

1992 – 1993 – The study of edaphical fauna from artificial protected curtains in Experimental Stationary Bărăganul – coord., cercet., şt., Honciuc Viorica (project with ICAS).
1998 – 1999 – The study concerning the integration in the natural cicle of some temporary and degrated lands by A. H. Răstolița – coord., Arion Constantin (project with Mines and Geology Ministry).
1999 – 2001 – Monitoring of the influence of the spoilt areas on biocenotical components of affected ecosystems from the hydroenergetical human intervation area from Râul Mare river, Retezat – coord., Paucă – Comănescu Mihaela (project with Mines and Geology Ministry).

IV. INTERNATIONAL COLLABORATIONS

2000 – 2005 – The diversity study of edaphical mites (Acari: Mesostigmata; Oribatida) from forest ecosystems from Romaina and Sweden – coord., Dr Viorica Honciuc and Dr. Lars Lundquist**.** Collaboration between Romanian Academy – Institute of Biology and Swedish Agriculture and Forestry Academy – Lund University, Department of Zoology, Systematic Divizion.
2002 - 2003 - Management and biodiversity conservation in Piatra Craiului Natural Park.- coord. Piatra Craiului Natural Parc Administration– financed by World Bank.
2003 – 2005 – Structure and dynamics of edaphical mites (Acari: Mesostigmata; Oribatida) from Romania and Poland – coord., Dr. Viorica Honciuc. Collaboration between Romanian Academy – Institute of Biology and Polish Academy, University „August Cieszkowski" Poznan, Departement of Forestry and Natural Protection.

V. PHD THESIS

2000 – Ecological role of some microarthropods (Acari: Oribatida) from some natural and anthropical forest ecosystems – made by Dr. Viorica Honciuc, coordinator Acad. Prof. Nicolae Botnariuc.

2007- Ecological researches on mite's populations (Acari: Mesostigmata) from soils of some forest ecosystems from Bucegi Massif– made by Dr. Manu (Stănescu) Minodora, coordinator Prof. Dr. Marian Traian Gomoiu, m.c. of Romanian Academy.

LIST OF SOME RESEARCH THEMES OF INSTITUTE OF BIOLOGY, BUCHAREST ACCOMPLISHED BY THE RESEARCHERS IN ECOLOGY STATIONARY FROM POSADA, IN PROJECTS, AGREEMENTS, CONTRACTS AND PHD.

I. RESEARCH PROGRAMMES, PROJECTS WITH ROMANIAN ACADEMY

2005-2007 – Knowing and management of biological diversity in Romania.

- Biodiversity of forests with Querqus sp. and of shrubs from hilly area from Muntenia - coordinator Dr. Mihaela Paucă Comănescu.

- Taxonomical and corological studies concerning Romanian flora- coordinator Dr. Sorin Ştefănuț.
- Inventory and delimitation of the natural habitats from Romania, in order to establish the NATURA 2000 protected areas- coordinator Dr. Simona Mihăilescu.

2007-2008 - The sit Marnele Roşii from Gura Beliei, Prahova district– Researches concerning the development of the protected areas web from Romania, **GAR**- coord., Dr. Viorica Honciuc.

2008-2010 - The present state biodiversity in terrestrial ecosystems differentiated on rocky substrate and the influence of global climate changes on their evolution, 2008-2010., coordinator Dr. Mihaela Paucă Comănescu and Dr. Marilena Onete:

2008 - Compozition, structure and functions of the ecosystems from the cliffs from hilly areas (shrubs, forests).

2009 – Spatio-temporal dynamics of biocenotical and populational structure of biodiversity, in correlations with substrate and microclimate.

2010 – Multianual changes analyse (on long term) of biodiversity at populational and cenotic levels, in correlation with substrate and microclimate evolution.

2008-2010 – Taxonomy and corology of the macromycetes, briophytes, and superior plants from Romania - coordiator Dr. Sorin Ştefănuț:

2008 – Taxonomical and corological studies of Russula genus, Sphagnaceae and Fabaceae families; Ononis, Trigonella, Medicago and Melilotus genera.

2009 -Taxonomical and corological studies of: *Amanita* genus; Andreaeaceae,Tetraphidaceae,Buxbaumiaceae,Diphysciaceae,Schistostegaceae and Polytrichaceae families; Fabaceae family, genus *Trifolium*.

2010 - Taxonomical and corological studies of: genus *Inocybe*; genera *Omphalina Racodium* and *Arthopyrenia*; families Fissidentaceae, Archidiaceae and Seligeriaceae; families Fabaceae, genera *Anthyllis, Dorycnium, Lotus, Tetragonolobus, Bituminaria, Amorpha, Galega and Wistera.*

2008-2010–Identification and knowing of natural habitats and of endemic/rare/endangered national plant species from Romania - coordinator Dr. Simona Mihăilescu:

2008-Identification and knowing of natural habitats and of endemic/rare/endangered national plant species from alpine areas from Romania;

2009-Identification and knowing of natural habitats and of endemic/rare/endangered national plant species from montaine areas from Romania;

2010-Identification and knowing of natural habitats and of endemic/rare/endangered national plant species from montain and hilly areas from Romania.

II. RESEARCH CONTRACTS WITH DIFFERENT PARTNERS

2006 - Impact assessment of the construction of the touristic complex on the biodiversity in National Park Bucegi, in Horoabelor Valley; financed by S.C. PHOENIX SOFTWARE SERVICES SRL - coordinator Dr. Sorin Ştefănuț.

2007 – Impact assesment of the construction of the mobile-car and sky cable in Sun Valley, 2000, on biodiversity from Bucegi National Park; financed by ROMAIR CONSULTING SRL- coordinator Dr. Minodora Manu.

III. INTERNATIONAL PROJECTS AND COLLABORATIONS

EUROPEAN COMMUNITY, 2005-2008 - LIFE AIR-AWARE: AIR Pollution ImpAct Surveillance and WArning System for URban Environment – Utilization of plants and animals as bioindicators to air pollution.

POLONIA, 2007-2012 –Collaboration between Polish Academy of Science, Prof. Hab. Dr. Jerzy Bloszyck, University "Mickiewicz A.", Poznan; Faculty of Biology; Department of Animal Taxonomy and Ecology, and Romanian Academy, Dr. Honciuc Viorica, Dr. Manu Minodora, Institute of Biology, Bucharest, Department of Ecology, Taxonomy and Nature Conservation, in project: "Ecological researches on mites populationa (Acari-Mesostigmata, Oribatida) from terrestrial ecosystems from Romania and Poland".

POLONIA, 2007-2012 - Collaboration between Polish Academy of Science, Prof. Hab. Dr. Jerzy Bloszyck, University "Mickiewicz A.", Poznan; Faculty of Biology; Department of Animal Taxonomy and Ecology, and Romanian Academy, Dr. Honciuc Viorica, Dr. Manu Minodora, Institute of Biology, Bucharest, Department of Ecology, Taxonomy and Nature Conservation, in project: "The study of mites fauna (Acari: Mesostigmata, Oribatida) from Talpa europea nests from Romania and Poland".

POLONIA, 2010 - Collaboration between Polish Academy of Science, Prof. Jan Rybczynski –Scientifical Director of Botanical Garden, Warsow, Centre of Biodiversity Conservation and Romanian Academy, and Institute of Biology, Bucharest, in project: "Ex situ conservation of rare and threatened plant species from Carpathian Flora."

POLONIA, 2010 - Collaboration between Polish Academy of Science, Dr. Maria Sterzyńska, Institute of Zoology, Warsaw and Romanian Academy, Drd. Cristina Fiera, Institute of Biology, Bucharest, Department of Ecology, Taxonomy and Nature Conservation, in project: „Diversity and distribution of soil animals in urban areas of Poland and Romania"

REPUBLICA MOLDOVA, 2010 - PN II- CAPACITIES, III- Bilateral project, financed by Education and Research Ministry –ANCS, Dr. Svetlana Bacal, Dr. Galina Buşmachiu, Institute of Zoology, Science Academy from Moldavia Republic and Drd. Cristina Fiera, Department of Ecology, Taxonomy and Nature Conservation, in project: „Importance of the forestry places in entomofauna biodiversity maintanance of the agrocenosis and their role in usefull insects protection and numerical reglation of unusefull ones. A comparative study between Moldavia Republic and Romania".

INTERNATIONAL WORKSHOP, 30 September – 3 October, **2010**, Heliade Rădulescu Hall, Romanian Academy Library, Posada Field Station." Monitoring of

nature conservation, past and present for managing the future." Organized by: Institute of Biology, Bucharest, Romanian Academy, in collaboration with Nature Conservation Institute, Krakow, Polish Academy of Science.

III. PRESENT RESEARCH ACTIVITY FOR PHD THESIS.

- Ecological integrated knowledge of the springtails communities(Hexapoda: Collembola) from Romania, especially of those from urban and periurban ecosystems - coordinator Prof. Dr. Marian Traian Gomoiu, m.c. of Romanian Academy -PhD student Cristina Fiera**.**
- Populational study os some endemical, rare or endangered plants from the cliff areas from Romania – coordonator Dr. Aurelia Brezeanu - PhD student Roxana Ion.
- Ecological integrated knowledge of chilopods populations from Romania – Study case – The chilopods from Muntenia. – coordinator Prof. Dr. Marian Traian Gomoiu, m.c. of Romanian Academy - PhD student Constanța Mihaela Ion.
- Woodpecker (Ord. Piciformes) from Comana National Park. Implications on species and habitats conservation - coordinator Prof. Dr. Lotus Meşter, University Bucharest, Faculty of Biology - Drd. Ioana Cobzaru.

VI. ENDOWMENTS

Ecological Stationary from Posada has:

2 ECOLOGICAL LABORATORIES (LIBRARY);

2 LABORATORIES FOR EXTRACTION OF SOIL FAUNA

2 ACCOMODATION ROOMS + UTILITIES

1AUTOMATICAL METEOROLOGICAL STATION+ PRO-X USB CONNECTED TO THE COMPUTER

1 MICROSCOPE MC3

2 STEREOMICROSCOPES ZEISS

1 BERLESE –TULLGREN EXTRACTOR FOR SOIL MITES

1 COMPUTER PENTIUM IV

1 COPY, XEROX AND SCANNER

1 FREEZER FOR SOIL SAMPLES

TELEPHONE + INTERNET +TELEVISION.