

# GERMAN SCIENTIFIC PERSONALITIES SETTLED DOWN IN ROMANIA - WILHELM KARL (WILHELM CAROL) KNECHTEL, FATHER, BOTANIST AND WILHELM KARL W. KNECHTEL, SON, ZOOLOGIST

SANDA MAICAN\*, MARIAN-TRAIAN GOMOIU\*\*

The paper presents aspects of the life and scientific work of two German biological scientists established in Romania, along with other local people of German origin, thanks to Prince Carol de Hohenzollern-Sigmaringen, brought to lead the country, first as Prince and then King (May 10, 1866) of Romanian Principalities. It also approaches the dynasty of biologists WILHELM KARL (WILHELM CAROL) KNECHTEL, a botanist, specialist in designing and arranging gardens and parks, who had an extensive international experience in the field, but also as an entomologist, as well as his son, WILHELM KARL W. KNECHTEL, born in Romania, the founder of the Romanian school of agricultural entomology. He mainly researched Thysanoptera insects, was a professor of entomology in Bucharest and Chişinău and member of the Romanian Academy.

The thought of venerating prominent people of Romanian biology first led us to a remarkable zoological personality – the entomologist Wilhelm Knechtel. The history of the German origin of this scientist takes us back in time to the story of his father, an equally remarkable biologist of his time, which we are trying to synthesize today from the tangles of information that have emerged over the years.

## **Preamble**

At the end of the 19<sup>th</sup> century, Romania was a poor, undeveloped and divided country, mainly agricultural, with a rudimentary agriculture, of subsistence and at the will of nature. With the bringing of Prince Carol of Hohenzollern-Sigmaringen (1839–1914) as leader of the country, first as Prince of the Romanian Principalities and then King (May 10, 1866), a number of specialists and businessmen of German origin also came in the Romanian Principalities in order to modernize the different areas of Romania.

The King brought a number of German families into the country [Physician C.F. Witting, who founded vascular surgery in Romania, the great manufacturer Erhard Luther, who built the Romanian Steam Brewery (later the Griviţa Brewery), in 1869], all Protestants, who had commercial interests, but were also in the King's entourage and they came as friends. Among them there was the young botanist Wilhelm Karl (Wilhelm Carol) Knechtel, Austrian-German, who was a passionate

lover of natural sciences, specialist in designing and arranging gardens and parks, with a vast international experience in the field (Fig. 1). As he said, “*no pleasure is more lasting than the pleasure that nature gives us; because it is above all*” (“*Landscaping Gardens*”, 1899).

He was born on August 13<sup>th</sup>, 1837, from Austrian parents, in a village in Bohemia (Czech Republic), in Burgstein commune, which now belongs to the town of Novy Bor, located between the Lužické Mountains (Horní Lužické) and the Central Bohemian Plateau (České středohoří), a region with a generous nature and a rich biodiversity. He attended courses at the Carolina University in Prague, where he was Professor Kosteletzki’s favorite student, a well-known botanist of the time. At first, Knechtel was hired as part of the maintenance team of the park of Schönbrunn Palace in Vienna.

### **At the court of Emperor Maximilian**

Between 1859 and 1860, Archduke Ferdinand Maximilian, a member of the Habsburg-Lorraine Imperial House, hired for the first time the botanist Wilhelm Knechtel as a gardener for his small palace in Lokrum Island (Lacroma) in the Adriatic Sea. Later, for about five years, Knechtel worked at Castle Miramar (in Italian = *sea view*), the main residence of Maximilian from Trieste.

When the Archduke was crowned Emperor of Mexico (1864), Wilhelm Knechtel accompanied him to the American continent, being appointed the “gardener of the court”. An interesting detail is that, from the expeditionary team that accompanied Maximilian to Mexico, there were also two Romanians: Ilarie Mitrea, military physician in the Austrian army and Prince George Bibescu, the son of the former Prince of Wallachia (Gheorghe Bibescu), an officer in French army.



Fig. 1. Botanist Wilhelm Karl (Wilhelm Carol) KNECHTEL  
(13.08.1837, Pihlerbaustellen – 22.10.1924, Bucharest)  
(photo made at the beginning of 20<sup>th</sup> century, in a Viennese workshop).

In Mexico City, W. Knechtel designed various gardens, including the magnificent garden on the roof of Chapultepec Castle, the imperial residence of Maximilian, located on Chapultepec Hill (in Aztec *chapoltepec* = *locust hill*). This garden is still admired all over the world.

It is not known whether the time spent there was productive in gardening, but the period was certainly beneficial in terms of ... writing! He wrote by hand, in German, the book *Handschriftliche Aufzeichnungen meiner persönlichen Eindrücke und Erlebnisse in Mexiko in den Jahren 1864–1867* / *Personal notes and impressions on the events in Mexico between 1864–1867*, printed in 1905, at the expense of the author, in Karl Bellmann's printhouse from Prague (Fig. 2). This is a unique document, in which the descriptions of nature are intertwined with numerous events of the tumultuous history of Mexico. The volume represents an European testimony of the different aspects of landscape architecture and daily life at the Mexican Court of the 19<sup>th</sup> century.

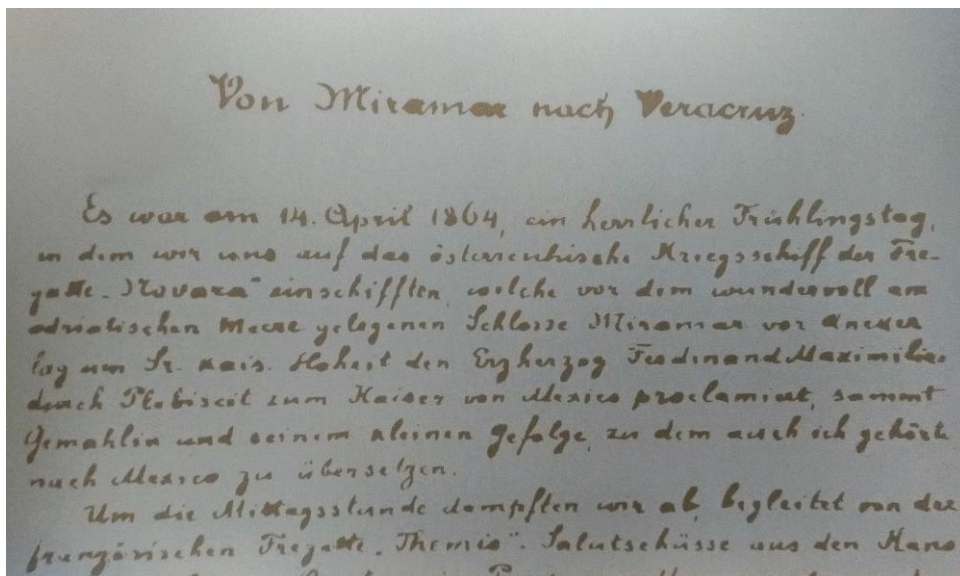


Fig. 2. Excerpt from the original manuscript in the German language of W. Knechtel's book *Handschriftliche Aufzeichnungen meiner persönlichen Eindrücke und Erlebnisse in Mexiko in den Jahren 1864–1867*.

The book was translated into Spanish (*Las memorias del jardinero de Maximiliano. Apuntes manuscritos de mis impresiones y experiencias personales en México entre 1864 y 1867*) and was published in 2012 at the National Institute of Anthropology and History of Mexico (Fig. 3a). The edition also includes a collection of rare photographs, business cards, colour post cards, maps and an extended bibliography.

In 2007 the book was translated into Romanian (Fig. 3b) and published after the copy with a dedication in German, offered by W. Knechtel to Dr. Grigore

Antipa. This precious volume was found thanks to the efforts of Dr. Alexandru Marinescu – historian of biological sciences, who discovered the book among the volumes of Grigore Antipa’s library, which had escaped censorship of the authorities after 1947 directed against the so-called “subversive” literature.

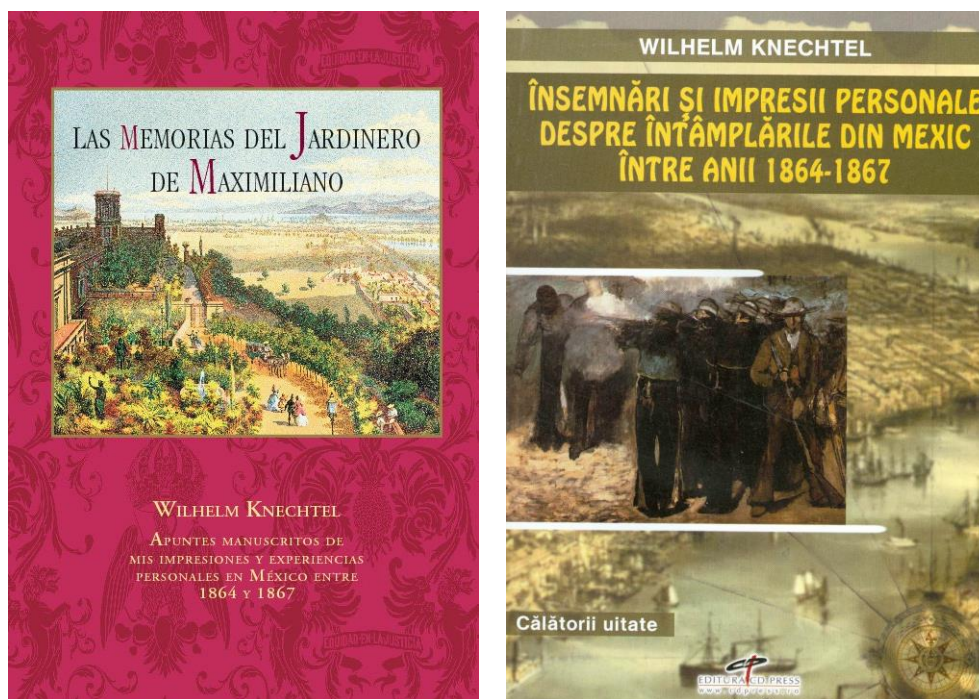


Fig. 3. Cover of Wilhelm Knechtel’s book, published in Spanish (a) and in Romanian (b).

The memoirs of the “royal gardener” include scientific data on plants, vegetation and weather in Mexico and references on plants that the emperor sent from Chapultepec to Miramar and vice versa. During his stay in Mexico, Knechtel discovered new species of plants, conducted speleological research, exploring the Cacahuamilpa cave, located in Sierra Madre del Sur, where he collected insects.

In the pages of the book there are numerous references to curious incidents and anecdotes occurred around the Mexican sovereign, Knechtel witnessing the disintegration of the Mexican Empire. “*This book is the testimony of a brave and honest man, who, in the whirlwind of horrific events, was supported by his great passion for nature*”, as Alexandru Marinescu writes.

The importance of the notes written by the botanist Knechtel lies in the fact that in his pages we discover the taste and passion that the emperor Maximilian has always shown for “beauty”, architecture and gardening.

Knechtel considered the garden as the recreation of Eden and, at the same time, the expression of power. Maximilian himself considered his gardens a public exhibition of elegance, order and education, and in almost all his residences he worked closely with Knechtel.

But the trip to Mexico ended tragically. Emperor Maximilian was imprisoned and executed by the revolutionaries (1867), Knechtel being forced to return to Europe. His return trip, which he describes in his memoirs, included the stops in Havana, Puerto Rico, Thomas Island, unshipping in Southampton, then the visits to the cities of London, Paris and Strasbourg.

Upon his return to Vienna, Knechtel presented himself as “*the one who came back from Mexico*”. After his return, Wilhelm Knechtel is rewarded with a pension and sent to the small island of Lacroma, to take care for the imperial property of Franz Josef I of Austria, for two years (Knechtel, 2012).

### **In the service of King Carol I of Romania**

After the Mexican experience, at the age of 30, the skilful gardener Wilhelm Knechtel was invited to Romania by Carol I de Hohenzollern, in order to work “*in the service of the gardens*” of the King, being named “head” of the Royal Gardens, then of the Public Gardens.

He becomes a lecturer in the disciplines Viticulture, Horticulture and Entomology at the Central School of Agriculture in Herăstrău – Bucharest (the future Faculty of Agronomy).

On January 17<sup>th</sup> 1883, he was appointed *Knight of the Romanian Crown Order* by Carol I of Romania [Pralong (Coord.), 2013] for “*special merits within the Special Commission for the fight against phylloxera*”. In 1884, he received the Silver Cup of Honour from King Carol I as a gift.

In Romania, Wilhelm Knechtel had a significant contribution to the modernization of public spaces, having a remarkable activity in the field of landscaping. His achievements include: the arrangement of the Posada-Comarnic Park (for Prince George Bibescu), in 1898, Princess Maria’s tomb, the Botanical Garden, the Cișmigiu and Kiseleff parks, the garden of the Royal Palace in Calea Victoriei Bucharest, the garden of Peleş Palace in Sinaia, etc. Wilhelm Knechtel is one of the most prolific gardeners in Romania in the 19<sup>th</sup> century, carrying out numerous works (Mexi, 2017, cf. Peleş Museum Archives).

The history of the Peleş Castle garden begins with the construction of the castle in 1873. From the archives it appears that the first gardener of the Royal House of Romania, at the same time the leader of all the arrangements in the royal fields, was Wilhelm Knechtel [(<http://arhivadearhitectura.ro/architects/wilhelm-knechtel/>; cf. Dr. Elisabeta Dobrescu, from the Faculty of Horticulture at the University of Agronomic Sciences and Veterinary Medicine of Bucharest) (Mexi, 2017; Soroș, 2016)]. The history of Peleş Castle’s gardens is almost 150 years old and begins with the gardener of King Carol I - Wilhelm Knechtel (Soroș, 2016).

Wilhelm Knechtel, an excellent botanist and a remarkable organizer, was one of the foreign personalities who contributed substantially to the modernization of public spaces in Bucharest. He has performed a remarkable activity not only in the field of landscaping, but also in the one of education.

On March 15, 1888, the Austrian-German gardener born in Bohemia, Wilhelm Knechtel, who had accumulated a great deal of life experience traveling many places around the world, came to Bucharest and permanently settled in Romania, obtaining Romanian citizenship by royal decree.

In the latter part of his life he devoted himself to numismatic study (being one of the founding members of the Romanian Numismatic Society) and published several specialized courses and works, such as:

- Epidemiile insectelor [Insect epidemics]. Tipografia Voința Națională, București, 1894;
- Grădinile peisajere [Landscaping gardens]. Tipografia Gutemberg Joseph Gobel, București, 1899;
- Trandafirul [The Rose]. Tipografia Ziarului Cronica – Thoma Basilescu, București, 1905;
- Curs de Entomologie și Viticultură [Entomology and Viticulture course]. Școala Superioară de Agricultură, Herăstrău, 1905;
- Insectele vătămătoare din România și mijloacele de combatere a lor [Harmful insects in Romania and means to control them]. Editura Albert Baer, București, 1909 (together with his son).

The life and work of this wizard of floral architecture is beautifully synthesized by the title of Erhard F. Knechtel's paper (2012), Wilhelm Knechtel's great-grandson - *From an apprentice of a Bohemian gardener to the Romanian director of the Royal Garden, Wilhelm Knechtel - a European destiny between the West and East*.

He died at the age of 87. His son, the entomologist Wilhelm Knechtel, succeeded in showing him the monograph on the Thysanoptera in Romania, a few days before his death.

### **Wilhelm Knechtel, the son, zoologist. Biographical incursions**

On October 10, 1884, spouses Wilhelm Knechtel and Helene Dierke's joy was great. Their eldest son, Wilhelm K. Knechtel was born. Here he attended the school. The son could not be less than his father. He was urged by his father to attend the same school – the Higher School of Agriculture in Herăstrău, now the University of Agronomic Sciences of Bucharest.

Ever since his childhood, the young Knechtel loved nature's beauties (Fig. 4). He remembered with emotion the times when he crossed the paths of the Bucegi Mountains with his father, the guidance received from him leading to his increasing love for the environment, learning from him the mountain flora, habitats, plant associations, insects. He confessed: "*My room of my family home was a small museum, on one side the herbarium containing the mountain and*

*alpine flora and from Bucharest surroundings, on the other side stuffed birds and animals, an insectarium, a collection of minerals and a small beginner's library”* (from the speech delivered in the Auditorium of the Romanian Academy, on the 75<sup>th</sup> anniversary).

Since there was no upper agricultural school in the country at that time, in 1904, W.K. Knechtel was sent to Germany, at the Higher Agricultural School at Stuttgart - Hohenheim (Stanciu, 2016) in Wurttemberg, in order to deepen his studies in this field, agriculture, school which he graduated in 1907. Here he had the privilege of attending lectures in the fields of botany, entomology and pathophysiology, being captivated by the courses held by famous professors of that time: Valentin Haecker, Kirchner, Pompetsky, Schule. They had an overwhelming influence on the preparation and later development of young Knechtel, arousing his interest, passion and love for entomology.

Returning to the country, in 1909, W. Knechtel started to work at the Experimental Station for Tobacco Cultivation, the Department of Phytopathology, where he began research on the thrips (Insecta, Thysanoptera), especially on the species *Thrips tabaci*, known as an important pest in the crops of tobacco.



Fig. 4. Entomologist Wilhelm Karl W. KNECHTEL  
(28.09/10.10.1884, Bucharest – 8.03.1967, Bucharest).

Between 1912–1914 he attended a specialization course in the field of plant protection in Italy, at Naples, Scafati, then at the Institute of Biology of Berlin - Dahlem, where he developed his knowledge on experimental methods of pest control. Within the period 1916–1918, he held the position of sub-inspector in the field of tobacco culture (Fărcaș & Soran, 1982).

### **The call of the reunited Bessarabia**

After the First World War and the joining of Bessarabia to the mother country, General Ernest Broșteanu, who ruled Chișinău with authority, called for volunteers to occupy the vacant chairs left by the Russian withdrawal. To his appeal, professors I.C. Teodorescu and Wilhelm Knechtel replied, among many others, who go there to teach temporarily, within the period 1918–1920, being professors of entomology and phytopathology at the Viticulture School of Chișinău. Here, Professor Knechtel was entrusted with the management of the Bioentomology Station where he continued his research on the ecology and systematics of Thysanoptera. Also, here he met Matilda, Lucia's sister, Prof. I.C. Teodorescu's wife, who accompanied them and whom he married; also in Chișinău, their son Ekkerhardt (Hardy) was born.

### **Entomologist of the Ministry of Agriculture and Domains**

He returned to the country in 1921, when he was called to Bucharest, to the Ministry of Agriculture and Domains, as an entomologist, in a time when, in our country, the research and knowledge on pest biology and the application of the control methods was very low. In the neighboring countries (Hungary, Russia) there was already a tradition of agricultural entomology research. During almost the entire period of activity, W. Knechtel was a consultant in this ministry.

Unlike other scientists, Professor Knechtel was not only limited to theoretical concerns, but also a man of action, an excellent organizer and coordinator, a true mentor. In a difficult historical period, after many difficulties that he overcame only through hard work and devotion, W. Knechtel managed to establish the first research center of the Agricultural Entomology Station in Romania. This station, with a single employee and a single manager, Knechtel himself, initially worked in a shed in Libertății Park of Bucharest. Professor Andrei Popovici-Bâznoșanu, who was involved in the beginning of entomological research in Romania (Ciubuc, 2002), was the one who brought Knechtel as an assistant to the Faculty of Natural Sciences in Bucharest. Prof. C. Manolache considered that “*We cannot talk about entomological research at the Faculty of Natural Sciences except with the academic Knechtel [...]*”. In 1924, W. Knechtel was appointed head of the Entomology Department of the University's Descriptive Zoology Laboratory, position which he held until the foundation of the Institute of Agronomic Research.

Professor M. Ionescu wrote in 1959: “*It is not a coincidence that all the staff of assistants of the Laboratory of descriptive zoology went to entomology researches, becoming appreciated entomologists*”. In the Entomology Laboratory, eight entomologists worked, doctoral theses were elaborated here, five fascicles of P.R.R. Fauna Series were published – all being related to the beginnings of agricultural entomology research in Romania and to Wilhelm Knechtel's name.



### Hard work and devotion to science

In 1926, W. Knechtel obtained the title of Full Professor at the School of Horticulture, where he taught entomology, for 14 years, without being paid! After the foundation of the Institute of Agronomic Research, in 1929, his professor, Gheorghe Ionescu-Șișești, a colleague of studies at Hohenheim, appointed him coordinator of the Department of Phytopathology, Entomology and Agricultural Parasitology.

In 1940, he was appointed lecturer in the agricultural entomology discipline at the Faculty of Agronomy in Bucharest, where he remained until 1944, when he retired and moved to Sinaia, temporarily retiring from his activity.

After two years, Academician Traian Săvulescu summoned him to Bucharest to work in the newly established teams of the Academy, becoming senior researcher in the Fauna of the P.R.R. group, dealing with thysanopteran insects. Referring to the activity within the group, in the speech given on the occasion of Professor Knechtel's 75<sup>th</sup> anniversary, Nicolae Botnariuc said: "*Academician Knechtel is a model of discipline and order in zoological work [...]. Through his entire complex activity in Fauna R.P.R. team, the academician Knechtel made an essential contribution to the success of this work of national interest*".

The professional prestige amplified by Professor Knechtel's election as a full member of the Academy, within the Department of Biology and Agricultural Sciences, in 1955, at the proposal of Traian Săvulescu.

Academician Gheorghe Ionescu-Șișești considered him "*one of his colleagues of great scientific value and high moral authority*".

### Highlights of the scientific activity

Professor Knechtel's scientific activity was carried out both in the field of applied entomology and theoretical entomology. The main research directions consisted of:

- Faunal, systematic and zoogeographic studies on some groups of insects: Thysanoptera, Vespidae, Bombinae, Coccidae, Formicidae, Aphididae, Orthoptera;
- Research on the biology, ecology and control of some species of insect pests in cereal crops, technical plants, orchards and greenhouses;
- Activities having a technical character and popularization, with an impact in the agricultural field: involvement in effective actions to combat the locust – *Locusta migratoria* in the Danube Delta; combating orchard pests, mainly turtle lice (Lecanidae); biological control of the woolly louse (*Eriosoma lanigerum*) using the parasite *Aphelinus mali*;
- An important objective of the faunistic and systematic researches developed by Professor Knechtel was represented by the study of thysanopteran insects in Romania.

### Why did Knechtel choose to study Thysanoptera (thrips)?

Initially, Knechtel published together with his father the work “Harmful insects in Romania and means to control them”, continuing the preoccupations already existing in the family with regard to insects that can cause damage. Although he could have chosen a group of insects easier to work with, Knechtel chose Thysanoptera (thrips), a group of insects difficult to study because of their small size and large number of species. Due to their very small size (usually 0.5–5 mm), their identification requires microscope slides preparation, in a sequence of steps, which requires a lot of time, increased attention and careful observations. However, Knechtel preferred Thysanoptera, which are bioeconomically important insects. His research on thrips was not only theoretical, but also especially practical, applied. Under favorable environmental conditions, thysanopterans have a strong mass development, producing significant damage in cereal crops, in greenhouses, orchards, etc. These thrips can cause atrophy of the spike in grasses, destruction of floral organs and leaves, appearance of stains on leaves and flowers, decreased concentration of substances (cellulose, starch). The appearance of stains on different organs of ornamental plants produced by species of thrips leads to a decrease in their commercial value. It also causes vectorization of tospoviruses (the most harmful plant viruses in the world).

The activity of Prof. W. Knechtel in support of agriculture reflects the spirit of the century on ecology, a spirit triggered by the great scholar Ernst Haeckel (1834–1919) - father of ecology, professor of the brilliant Romanian student Grigore Antipa in Jena. In Romania, Dr. Grigore Antipa carried on the teachings received from his master Haeckel, developing some issues (ichthyology applied to fisheries in Romania, hydrobiology applied to the management of the Danube Delta and the Black Sea, etc.). This encyclopedic biologist initiated the research of the economic aspects of biological productivity, thus being in fact the creator of a new science, which he called bioeconomics, at the interference between ecology and economy. Later, in 1971, the illustrious American economist of Romanian origin Georges Georgescu-Roegen (1906–1994) minutely developed the science of bioeconomy on the basis of thermodynamics.

Probably, the ecological paradigm of bioeconomy was taken over by Prof. Knechtel and applied to the study of Thysanoptera, insects harmful to agriculture, which cause great economic losses by destroying crops. Besides direct damage, thysanopterans can create favorable conditions for further colonization with pathogenic microorganisms. For example, alternariosa (the disease of tobacco seedlings) is caused by the action of several factors: different developmental conditions offered to seedlings, *Thrips tabaci*, *Alternaria* fungus and climatic conditions. Necrosis of plant tissues initially produced by *T. tabaci* constitutes a favorable environment for the further development of *Alternaria* fungus (Knechtel, 1951).

### In short, what are thrips

Around 6.000 species of Thysanoptera have been described worldwide, they can be found in all regions, preferably in warm areas. They can reach alpine areas, at the upper limit of the vegetation. In Romania's fauna 215 species, classified into four families, were reported (Vasiliu-Oromulu, 1998).

The body of these insects consists of three distinct regions: head, chest and abdomen. The head carries a pair of antennae, the mouth cone, two compound eyes with large facets, the ocelli being present only at adults with wings. The buccal apparatus is adapted for stinging and sucking, an interesting feature being the absence of the right mandible. The wings are membranous, elongated, but there are also species in which the wings are reduced or completely missing. As a rule, the wings are bordered with fringes of bristles (Figs. 5–6). The color is pale and transparent at immature forms, while adults are variously colored, in all shades of yellow, brown and black.

From the biological point of view, most thysanopterans are phytophagous. About 40% of the species feed exclusively on fungi, mostly with hyphae, and some with spores. A small number of species are obligatory predators on other small arthropods. Thrips are food for a lot of insects (including other thrips), mites, birds, salamanders and lizards.

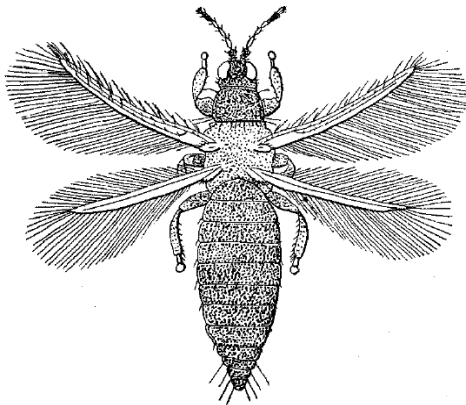


Fig. 5. *Frankliniella intonsa*  
(Knechtel orig.).

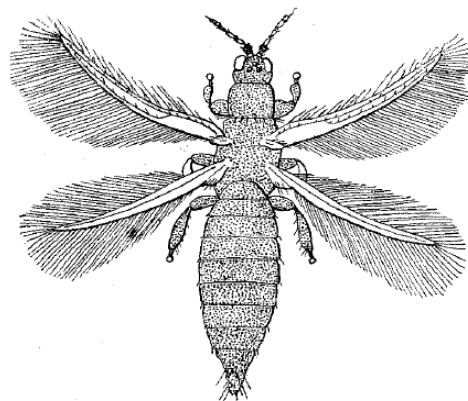


Fig. 6. *Thrips tabaci*  
(Knechtel orig.).

In 1937, Knechtel obtained the title of Doctor of Science with the doctoral thesis entitled *Study on the distribution of Thysanoptera in Romania*. As a result of an intense and meticulous activity, in 1951, Professor Knechtel published the volume *Thysanoptera* in the series Fauna of P.R.R, in which 152 species from the fauna of Romania are described. 18 species are new to science (Table 1). Subsequently, the complex study of these insects from a taxonomic, biological, ecological point of view and methods of control became his basic concern. The

papers published in the thysanopterological field present descriptions of the species, diagnoses, research on the spread of the species according to the vegetation floors, the influence of the environmental factors on their ecology, the relations of interdependence between thrips and plants.

Table 1

New Thysanoptera species described by Wilhelm Knechtel  
(according to Vasiliu-Oromulu, 1998)

<b>Family Aeolothripidae</b>
<i>Aeolothrips priesneri</i> Knechtel, 1922
<i>Aeolothrips verbasci</i> Knechtel, 1955
<b>Family Thripidae</b>
<i>Ereikethrips calcaratus</i> Knechtel, 1960
<i>Eremiothrips manolachei</i> (Knechtel, 1955)
<i>Kakothrips dentatus</i> Knechtel, 1939
<i>Mycterothrips albidicomis</i> (Knechtel, 1923)
<i>Oxythrips cannabensis</i> Knechtel, 1923
<i>Oxythrips dentatus</i> Knechtel, 1923
<i>Oxythrips euxinus</i> Knechtel, 1932
<i>Thrips euphorbiae</i> Knechtel, 1923
<b>Family Phlaeothripidae</b>
<i>Haplothrips floricae</i> Knechtel, 1960
<i>Haplothrips scyticus</i> Knechtel, 1961
<i>Hoplothrips absimilis</i> Knechtel, 1954
<i>Hoplothrips lichenis</i> Knechtel, 1954
<i>Hoplothrips muscicola</i> Knechtel, 1954
<i>Hoplothrips quercinus</i> Knechtel, 1935
<i>Phlaeothrips bacauensis</i> Knechtel, 1948
<i>Priesneriella clavicornis</i> (Knechtel, 1935)

Professor W. Knechtel worked on thysanopterans for almost 50 years, collected rich material from Romania and other corners of the world, the results obtained recommending him as one of the most famous specialists in the world in this group, being appreciated and consulted by many scientists outside the country's borders. The evidence is both the rich material he received from them, to be identified or verified, and the fact that many researchers dedicated a number of species to him, in honour of his name (*Melanthrips knechteli* Priesner 1936, *Haplothrips knechteli* Priesner 1923, *Amphibolothrips knechteli* Priesner, 1936, etc.).

Scientific collection of thysanopterans made by Acad. Knechtel was in the custody of the Institute of Biology Bucharest of the Romanian Academy, in 2010 being transferred, in its original boxes, at "Grigore Antipa" National Museum of Natural History of Bucharest.

This collection of reference for the Romanian entomofauna of Romania was revised by Dr. Liliana Vasiliu-Oromulu, a successor of Prof. Knechtel's thysanopterological studies (Fig. 7). The collection includes blade-lamella scientific

preparations belonging to the suborders Terebrantia (families Aeolothripidae, Fauriellidae and Thripidae – including 128 species) and Tubulifera (family Phlaeothripidae, represented by 66 species). Out of the total of 3.275 specimens, 177 are type-specimens (3 holotypes, 2 paratypes, 164 syntypes, 8 cotypes), of special scientific value (Stan, 2017).

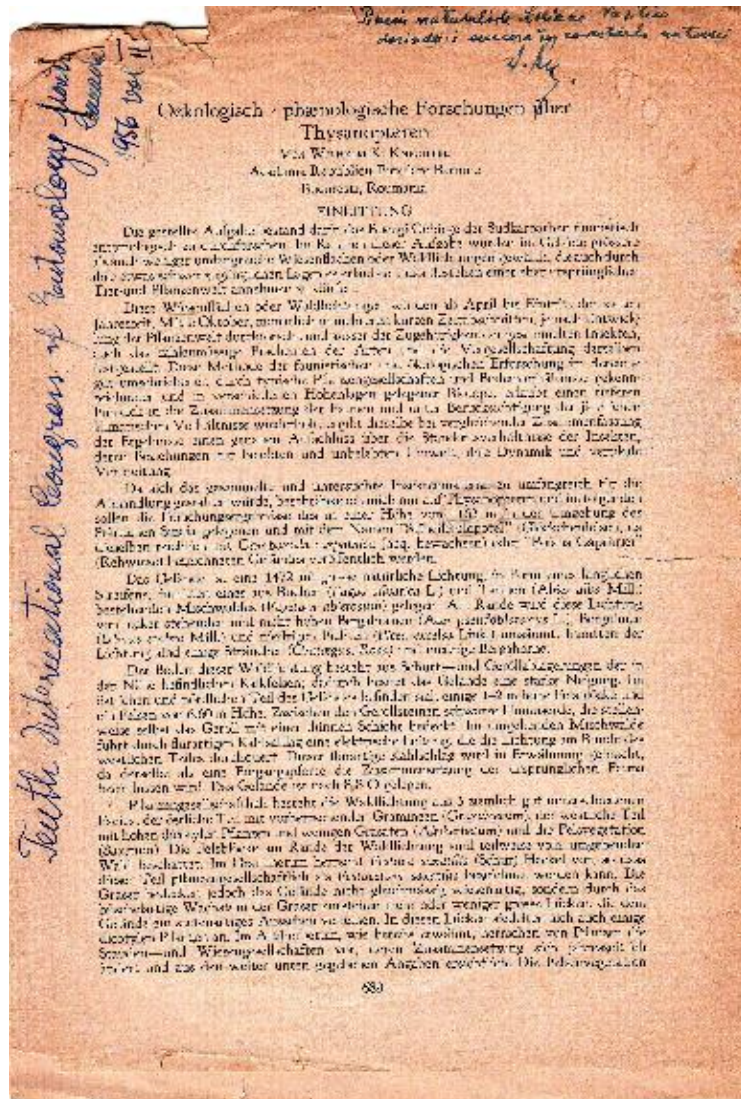


Fig. 7. The first page of the paper *Oekologisch-phaenologische Forschungen Thysanopteren* Von WILHELM K. KNECHTEL, with the Professor's holographic dedication in Romanian for Liliana Vasiliu-Oromulu: *Young naturalist Liliana Vasiliu, wishing her success in nature research.* W. Knechtel.

In addition to Thysanoptera, Prof. Knechtel also dealt with the study of other groups of insects, such as coccids. He highlighted the species present in the Romanian fauna and researched host plants, ecology, biology and control methods.

He also initiated the systematic study of the bumblebee species (Bombinae family) of our fauna, which included research on the intraspecific variability depending on the climatic conditions, the geographical spread influenced by the zonation of the woody vegetation, the results obtained being published in a monograph.

In 1940, in collaboration with Prof. Constantin Manolache, W. Knechtel began the study of aphids, insects with a pronounced polymorphism and which had been researched by Prof. Ioan Borcea. These investigations resulted in the establishment of the systematic position of some species present in the fauna of Romania, the description of new species, information on the ecology and control methods.

Along his long career, W. Knechtel created an impressive collection of formicides (Hymenoptera), and researched chewinglice and orthopterans, on the latter, publishing in collaboration with Prof. A. Popovici-Bâznoșanu a volume in Fauna of P.R.R., in which all the species of Orders Saltatoria, Dermaptera, Blattodea and Mantodea are treated. Professor Knechtel contributed to the taxonomic and systematic knowledge of the species from Vespidae family (*Vespa germanica* and *Vespa vulgaris*).

Prof. Knechtel and his collaborators' (Mihail Ionescu, Ecaterina Dobreanu, Constantin Manolache) second major research direction was represented by the studies on the morphology, biology, ecology and control of some pest species. In this respect he carried out a series of researches on the species *Thrips tabaci*, *Phytodecta fornicata*, *Locusta migratoria*, *L. caudata*, *Phlyctaenodes sticticallis*, *Eulecanium corni*, *Aspidiotus perniciosus*, *Claudius pectinicornis*, *Lema melanopus*, etc. bringing valuable contributions to the knowledge of the development cycle, post-embryo stages and number of generations. These investigations were based on careful microscope observations and experiments performed in laboratory and field conditions.

In the papers on the species *Phytodecta fornicata* (pest of alfalfa crops), published in collaboration with Cornelia Hrisafi, information on the diapause phenomenon is presented. Important contributions are made by Knechtel, along with Prof. Mihail Ionescu, another distinguished Romanian entomologist, on the insect *Pyrausta nubilalis*, a pest species intensively studied between 1929 and 1932, in Europe and America, within the "International Corn Borer Investigation Association".

As a representative of Romania, Acad. W. Knechtel has participated in numerous international conferences, congresses and symposiums, among which we mention: The Entomology Congresses from Ithaca, U.S.A. (1929), Paris (1930), Warsaw (1932), Prague (1958). In the summer of 1956, he participated, together with M. Ionescu, in the International Congress of Entomology in Montreal. On this occasion he met eminent Prof. Soren L. Tuxen, director of the Museum of Zoology in Copenhagen and a member of the Standing Committee of the Entomology

Congresses. At the invitation of the two Romanian entomologists, Prof. Soren Tuxen paid a visit to Romania, delighted by our country where he met many scientists and culture, among whom Prof. Constantin Motaş was present (Oprîş, 2009).

Prof. Knechtel's scientific achievements have been materialized in more than 120 papers, among which there are:

- Insectele vătămătoare din România și mijloacele de combatere a lor [Harmful insects in Romania and means to control them] (together with his father) (1909);
- *Phlyctaenoles strictalis*. Un vătămător al tutunului [*Phlyctaenoles strictalis*. A Tobacco pest] (1915);
- Rolul stațiilor entomologice [The role of entomological stations] (1928);
- Oekologischzoogeographisches Studium an Coleopteren des Rumänischen Faunengebiets (1944);
- Oekologisch-faunistische Untersuchungen an Thysanopteren Rumäniens (1947);
- Thysanoptera, in the Fauna P.R.R. (1951);
- Hymenoptera, Apinae, in the Fauna P.R.R. (1955);
- Orthoptera (Orders Saltatoria, Dermaptera, Blattodea, Mantodea), in the Fauna P.R.R. (in collaboration with Andrei Popovici-Bîznoşanu, 1959).

As a recognition of the value of his scientific activity in the field of entomology, for the contribution made to the development of biological sciences in Romania, in 1951, Prof. W. Knechtel was awarded the "State Prize", being decorated with different Orders.

Wilhelm K. Knechtel lived in Sinaia, in a building built in 1939, located on Calea Codrului street, no. 34. After retirement, he lived in the silence of the woods of Sinaia, continuing his work, according to his own confessions "*in order to finish my work, to leave everything in full order, for the sake of education and discipline in activity received from my parents*". The building was used as a home for his family and as an Entomological Research Laboratory that belonged to the Institute of Biology Bucharest of the Romanian Academy. In 1950, the building was nationalized, but Acad. W. Knechtel continued to live in this building until the end of his life (1967).

He was the first director of the Center for Biological Research in Bucharest, founded in 1957 and transformed into the current Institute of Biology (1960). Even during the three years in which he held the position of Director, Professor Knechtel's working laboratory was in Sinaia's house. After his death, in order to continue and develop the scientific activity initiated by him, the house from Sinaia (Fig. 8) became an Ecological Stationary, here carrying out a series of research activities. Until 2006, it in the custody of the Institute of Biology Bucharest.



Fig. 8. Professor Wilhelm Knechtel's house from Sinaia.  
([www.ibiol.ro/posada/Posada.pdf](http://www.ibiol.ro/posada/Posada.pdf))

In 1944, the Knechtel family was struck by terrible news; they lost their son, Ekkehardt, a lieutenant in the Mountain Troops, a tragedy that marked family members for the rest of their lives. Who knows? If this misfortune had not happened, Ekkehardt might have followed his grandfather's and his father's career and skills, benefiting from the impressive library left by them, inaugurating the third generation of the German biology dynasty in Romania.

W. Knechtel loved very much Romania and Romanians. However, from the testimonies of those who knew him closely, after 1944, he suffered because of his German origin, being fired, having no income for a period of time .... I found out late Professor's sufferings created by the injustices of the communist regime established after the war in Romania by the Soviet winners.

In 1959, one of the authors of this article (Marian - Traian Gomoiu) was freshly employed at the Center for Biological Research of the Romanian Academy, located in Locotenent Ștefan Lemnea street, in some rooms of the former "royal stables", as it was said at that time. In one of the larger rooms on the floor of the building, there were several tables, usually for young researchers ("the colts of the Academy" – as Prof. Theodor Bușniță called them). A table was more isolated, in front of a window. The occupant of the table was a slightly older gentleman, with a normal height, silent, sober, concerned about his work, imperturbable at the hum of



the room. It was Professor Knechtel, about whose life I would find out little by little, and almost conspiratorially over time. The entire outfit of this scholar was imposing, and we, the youngest, addressed him with the name "Mr. Professor" ... and not using the expression, common that time "Comrade Professor".

Besides the scientific activity of recognized value, W. Knechtel was also a great admirer of the Romanian folk art and a passionate bibliophile, over the years collecting a rich literature, not only in the scientific field, but also in the artistic one. A large part was donated to the Library of the Romanian Academy and the Central Library of the Institute of Agronomic Research.

On November 2, 1959, Acad. Wilhelm Knechtel was celebrated at the age of 75, in the Auditorium of the Romanian Academy, on which occasion honored speeches were given by Acad. Gh. Ionescu-Șișești, Prof. C. Manolache, Prof. M. Ionescu and Conf. N. Botnariuc.

In the speech given by Prof. C. Manolache on this occasion, he said: "*You were near the dear microscope and you analyzed diligently and tested tens of thousands of micro and macro-entomofauna preparations from Romania and abroad. You loved a number of other groups of insects with a still mysterious life, the ants and bumblebees once sung so beautifully by Dante in the Divine Comedy*".

In his reply, warmly thanking his colleagues for the words of appreciation addressed to a "*modest worker in the field of natural sciences*", Acad. W. Knechtel confessed: "*I have received a severe education, directed to work, discipline and order. I led a sober life. I created myself a special world - the world of insects - in which I felt thankful and happy and where I found the peace of the soul in times of restraint [...]. I fulfilled my dream from a young age. I created a research institution, I trained the scientific staff, I trained working people*".

In 1967, the year in which Acad. W. Knechtel passed away, after a deep suffering, there were almost 60 years since the appearance of his first synthesis paper in the field of agricultural entomology, "Harmful insects in Romania and means to control them", having as authors W. Knechtel, the father, and W. Knechtel, the son. This paper represented the touchstone for generations of students, pupils, specialists in the field of agricultural entomology.

Over time, detailed appraisals of Professor Knechtel's scientific achievements were made by those entitled to do so, personalities of Romanian science and culture who have expressed their appreciation and acknowledged the value and merits of the beginnings and development of entomology in our country.

For over half a century dedicated to entomological research, Acad. W. K. Knechtel, the founder of the school of agricultural entomology in our country, served with modesty, devotion and high competence the biological

sciences in Romania. His personality and work represent an example of tenacity, hard work, love for science and will remain forever inscribed in the national scientific heritage.

*Acknowledgements:* The authors express kindly thanks to Dr. Liliana Vasiliu-Oromulu for information on the life and scientific work of Professor Wilhelm Karl Knechtel.

### Publications of Wilhelm Karl Knechtel

#### 1909

1. *Insectele vătămătoare din România și mijloacele de combatere a lor*. Editura Albert Baer, București, 124 pag. (in collaboration with Wilhelm Knechtel father) [Harmful insects in Romania and means to control them]

#### 1910

2. *Thrips tabaci* (Lind.) *Thrips communis* (Uzel). *Buletinul culturii tutunului*, An V, nr. 24/25: 51–54.
3. Alte trei specii de Thysanoptere găsite în România pe răsadul de tutun. *Buletinul culturii tutunului*, An V, nr. 28/29: 291–295. [Another three species of Thysanoptera found in Romania on tobacco seedlings]

#### 1911

4. Studiu asupra unor specii din ordinul Thysanoptera. *Viața Agricolă*, An II, nr. 6: 434–442 [Study on some species from order Thysanoptera]
5. Studiu asupra unor specii din ordinul Thysanoptera. *Viața Agricolă*, An II, nr. 7–8: 522–528 [Study on some species from order Thysanoptera]

#### 1914

6. Pythium de Baryanum Hesse, ca provocator al unei boale de răsad de tutun. *Supliment la Buletinul Regiei Monopolurilor Statului*, București, 48 pag. [Pythium de Baryanum Hesse, damage at the tobacco seedling]

#### 1915

7. *Phlyctaenodes stiticalis*, un vătămător al tutunului. *Buletinul Regiei Monopolurilor Statului*, București, pp.: 3–18. [*Phlyctaenodes stiticalis*, a pest of tobacco]

#### 1919

8. Alternariosa, o maladie a răsadului de tutun. *Basarabia Agricolă*, Anul I, nr. 7, Chișinău: 3–21. [Alternariosa, a tobacco disease]
9. Purecele lînos (*Schizoneura lanigera* Hausm.). *Revista de Viticultură, Oenologie și Horticultură*, nr. 3: 71–74; nr. 4: 118–123.

#### 1920

10. Combaterea fluturașului *Conchylis ambiguella*. *Viața Agricolă*, 11, nr. 22: 729–731.
11. Combaterea purecelui lînos (*Schizoneura lanigera*). *Viața Agricolă*, 11, nr. 23–24: 773–775.
12. Notițe asupra fluturașului *Conchylis ambiguella* Hb. *Buletinul stațiunii experimentale viticole și oenologice Chișinău*, An I, nr. 2: 6–9.

#### 1921

13. Contribution á la faune des Coleoptères d'eau douce de Roumanie. *Bulletin de la Section Scientifique de l'Académie Roumaine*, Année VII-ème, nr. 4/6: 106–107 (in collaboration with Constantin Motaș)

#### 1922

14. *Phytodecta fornicata* Brüggm. *Editura Serviciului Publicațiilor și al Statisticii Agricole*, București, nr. 25: 3–32.

#### 1923

15. Einige neue Thysanopteren aus Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, Année VIII-ème, nr. 5–6: 71–76.

16. *Oxythrips dentatus* nov. spec. eine neue Thysanopteren spezie aus Roumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, Année VIII-ème, nr. 7/8: 122–125.
17. Thysanoptere din România. Studiu sistematic și fitopatologic, București. *Buletinul Agriculturii și Domeniilor*, 235 pag., Vol. II, nr. 4–6: 84–127; Vol. III, nr. 7–9: 49–171; Vol. IV, nr. 10–12: 181–216. [Thysanoptera from Romania]
- 1924**
18. Thysanoptere din România. Studiu sistematic și fitopatologic. București, *Buletinul Agriculturii și Domeniilor*, Vol. I, nr. 1–3: 23–63. [Thysanoptera from Romania]
- 1925**
19. Un vrăjmaș de moarte al prunului. Păduchele țestos. *Revista Horticola*, 3 (32): 588–589.
- 1927**
20. Saramuratul grâului. *Viața agricolă. Revista bilunară a Societății Agronomilor*, Extras din nr. 15–16: 1–17. [Salt solution of Corn]
- 1928**
21. Observations on the Corn Borer in Romania. *Scientific Reports*, pp.: 194–200.
22. Rolul stațiilor entomologice. *Societatea Agronomilor, Congresul Agricol*, 6 pag. [The role of entomological stations]
- 1929**
23. Zur Kenntnis der Coccidenfauna Rumäniens. Premier Congres des Naturalistes de Roumanie (Cluj, 1928). 1930 (Pt. 2): 230–237.
24. Neuer Beitrag zur Kenntnis der Thysanopteren Fauna von Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, Tom. XII, nr. 3: 61–63.
- 1931**
25. *Thrips tabaci* Lind. ein Feind der an der Schwertlilie vorkommenden Blattwespe *Rhadinoceraea reitteri* Kon., Sonderabdruck aus der "Zeitschrift für wissenschaftliche Insektenbiologie". *Allgemeine Zeitschrift für Entomologie*, Bd. XXVI, nr. 4/6: 148–151.
- 1932**
26. Beitrag zur Kenntnis der individuellen zeichnungsvariation bei *Vespa germanica*. *Publicația Societății Naturaliștilor din România*, nr. 11, 30 pag.
27. Dritter Beitrag zur Kenntnis der Thysanopterenfauna von Rumänien. *Publicația Societății Naturaliștilor din România*, nr. 10: 1–6.
28. *Oxythrips euxinus* sp. n. Rumania. *Publicația Societății Naturaliștilor din România*, nr. 10, 92 pag.
29. *Phlaeothrips bispinosus*. *Publicația Societății Naturaliștilor din România*, nr. 10, 94 pag.
30. *Thysanoptere din România*. București, 235 pag. [Thysanoptera from Romania]
- 1933**
31. Notizen über das erste Larvenstadium der Wanderheuschrecke *Locusta migratoria* L. *Notationes Biologicae*, Vol. I, nr. 1: 35–36.
32. O mare primejdie pentru pomicultura țării. *Revista horticola*, 11, 130: 184–185.
- 1934**
33. Studiu asupra biologiei Tenthredinidului *Rhadinoceraea reitteri* Kon. *Analele Institutului de Cercetări Agronomice al României*, Vol. VI, Anul V: 3–19.
34. Thysanopterele din Romania. *Studiu monografic, Buletinul Agriculturii*, nr. 24 [Thysanoptera from Romania]
- 1935**
35. Malofage parazite pe păsările din România. *Revista vânătoarei*.
36. Zur Kenntnis der Thysanopterenfauna Rumäniens. *Bulletin de la Section Scientifique de l'Académie Roumaine*, Année XVII-ème, Tom. XVIII, nr. 7: 1–4.
37. Observațiuni asupra biologiei curculionidului *Rhynchites bacchus*. *Revista pomicola*, București.
38. Constatări asupra păduchelui țestos de San José. *Progresul horticol* 1, 2, 24 pag. (in collaboration with C. I. Manolache)
- 1936**
39. Observații biologice asupra gândacului ovăzului (*Lema melanopus* L. în România). *Analele Institutului de Cercetări Agronomice*, vol. VII.

40. Contribuțiuni noi la studiul faunei de pe Insula Șerpilor. *Buletinul Societății Naturaliștilor din România*, nr. 9: 1–7.

**1937**

41. Studiu asupra repartiției Thysanopterenelor din România. *Teza de doctorat*, 87 pag.

**1938**

42. Über die Zeichungsvariabilität bei *Phytodecta fornicata* Brüggen. *Sonderdruck aus der Jubiläumsschrift "Grigore Antipa"*, Monitorul Oficial și Imprimeriile Statului, pp.: 1–12.
43. *Taenithrips dianthi* Pr. un dușman al garoafelor, nou pentru România. *Progresul horticola*, An IV, nr. 7–8: 127–129.
44. Über die Wonderheuschrecke in Rumänien. *Bulletin of Entomological Research*, 29 (2): 175–183.
45. Thripsul grîului. Animale dăunătoare și folositoare agriculturii I.C.A.R., *Biblioteca de Agricultură practică*, Seria III, nr. 4: 3–5.
46. Inamicii porumbului – *Pyrausta nubilalis*. Animale dăunătoare și folositoare agriculturii. I.C.A.R., *Biblioteca de Agricultură practică*, Seria III, nr. 4: 5–13.
47. Beitrag zur Kenntnis der Mollusphen der Vogelwelt Rumänien. București, Imprimeria Națională, Depozitul General, Cartea Românească. *Bulletin de la Section Scientifique de l'Académie Roumaine*, Tom. XIX, nr. 6–7 (in collaboration with Ion I. Cătuneanu)
48. *Păduchii țestoși* (Coccidele). Animale dăunătoare și folositoare agriculturii. I.C.A.R., *Biblioteca de Agricultură practică*, Seria III, nr. 4: 55–66.
49. Viespea neagră a stânjeneului (*Rhadinoceraea reitteri*). Animale dăunătoare și folositoare agriculturii. I.C.A.R., *Biblioteca de Agricultură practică*, Seria III, nr. 4: 52–54.

**1939**

50. *Kakothrips dentatus*. *Comptes rendus des séances de la Institut des Sciences de Roumanie*, Vol. III, 322 pag.
51. Hummelin des Bucegi. București. *Buletinul Societății Naturaliștilor din România*, nr. 14: 56–69.
52. Coccine dăunătoare plantelor horticole. *Progresul horticola*, 5 (2): 29–31.
53. *Emphtus cinctus* L. un dăunător al culturilor de căpșuni. *Horticultura românească*, An 17, nr. 8: 1–3.

**1940**

54. Neue Blattlausarten für Rumänien. Beitrag I-IX. *Bulletin de la Section Scientifique*, Tom. XXII, nr. 3, 5; XXIV, nr. 4, 8; XXV, nr. 5; XXVI, nr. 6, 10; XXVII, nr.7; XXIX, nr. 7 (in collaboration with Constantin Manolache)

**1940**

55. Observațiuni asupra sistematicii unor specii de afide din România. *Analele I.C.A.R.*, 12 (XI): 289–307 (in collaboration with Constantin Manolache)
56. *Pemphigus bursarius* L. *Horticultura Românească*, 18, nr. 9–10: 130–134 (in collaboration with Constantin Manolache)
57. Păduchele negru de frunze (*Doralis fabae*). *Viața Agricolă*, București, 31, nr. 8: 241–247 (in collaboration with Constantin Manolache)
58. Neue Blattläuse für Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 24, nr. 4: 247–254.

**1941**

59. Observații asupra sistematicii unor specii de Aphide din România (a doua contribuție). *Analele I.C.A.R.*, 13 (XII): 217–267.
60. Observații asupra afidului *Doralina pomi* De Geer în România. *Viața Agricolă*, 32, nr. 8, 3 pag. (in collaboration with Constantin Manolache) [*Investigations on aphid Doralina pomi de Geer in Romania*].

**1942**

61. *Heliothrips femoralis*. Reuter eine neue Thysanopteren-Art für Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 24, nr. 8: 559–561.
62. *Thrips lini* Ladureau. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 25, nr. 1: 19–21.

63. Neue Blattläuse für Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 24, 8: 547–558.

64. Afide din sere găsite în România. *Horticultura Română*, 20, nr. 1–2: 1–5

**1943**

65. Neue Blattläuse für Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 25, nr. 5: 261–275.

66. Specii de Thysanoptere dăunătoare plantelor de seră. *Horticultura românească*, An 21, nr. 1–2: 1–2.

67. Observațiuni asupra sistematicii unor specii de afide din România. *Analele I.C.A.R.*, B: 217–267 (in collaboration with Constantin Manolache) [Investigation on the systematic of aphids species from Romania]

68. Observații sistematice, ecologice și de combatere la afidele din sere. *Viața Agricolă*, 34, nr. 5: 136–144.

**1944**

69. Neue Blattläuse für Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 26, nr. 6: 382–392.

70. Neue Blattläuse für Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 26, nr. 10: 690–702.

71. Beitrag zur Kenntnis der individuellen Zeichnungsvariation bei *Vespa vulgaris* L. *Académie Roumaine, Section Scientifique*, Tom. XXVI, nr. 8, 21 pag.

72. Ökologisch - zoogeographisches Studium an Coleopteren des rumänischen Faunengebietes. București, 219 pag. (in collaboration with Sergiu A. Panin)

73. *Dușmanii viței de vie*. Ediția I, București, Editura Universul, 36 pag. (in collaboration with Ioan Martin) [The enemy of vine]

**1945**

74. Neue Blattläuse für Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 27, nr. 7: 475–485.

75. Ökologisch-faunistische Forschungen an Thysanopteren Rumäniens. *Bulletin de la Section Scientifique de l'Académie Roumaine*, Tom. XXVII, nr. 7: 1–22.

76. Beitrag zur Kenntnis der Biologie der Blattwespe *Claudius pectinicornis* Geoffroy. *Bulletin de la Section Scientifique de l'Académie Roumaine*, Tom. XXVII, nr. 8: 539–566. (in collaboration with Hrisafi Cornelia)

**1946**

77. Ökologisch-faunistische Forschungen an Thysanopteren Rumäniens. II. *Bulletin de la Section Scientifique de l'Académie Roumaine*, Tom. XXVIII, nr. 8: 562–584.

**1947**

78. Neue Blattläuse für Rumänien. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 29, nr. 7: 459–470.

79. Ökologisch-faunistische Untersuchungen an Thysanopteren Rumäniens. III. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 29, nr. 6: 392–404.

**1948**

80. Ökologisch-faunistische Forschungen an Thysanopteren Rumäniens. IV. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 30, nr. 6: 377–390.

81. Zur Systematik einiger Thysanopteren Arten. *Bulletin de la Section Scientifique de l'Académie Roumaine*, 30, nr. 8: 480–483.

**1951**

82. Thysanoptera. *Fauna R.P.R., Insecta*, vol. VIII, Fasc. 1, Editura Academiei Române, 260 pag.

**1953**

83. Constatări asupra păduchelui țestos din San José (*Aspidiotus perniciosus* Comst.). *Revista pomicolă* (in collaboration with Constantin I. Manolache)

**1954**

84. Étude zoogéographie et écologique sur les Bombines de la Republique Populaire Roumaine. *Buletinul Științific al Academiei R.P.R., Secțiunea de Științe Biologice, Agronomice, Geologice și Geografice*, 6 (3): 757–775.
85. Specii noi de Thysanoptere, *Hoplothrips muscicola*, *H. lichenis*, *H. absimilis*. *Buletin Științific, Secțiunea de Științe Biologice, Agronomice, Geologice și Geografice*, Tom. VI, nr. 4.

**1955**

86. Trei specii noi de Thysanoptera. *Comunicările Academiei R.P.R.*, Tom. V, nr. 12: 1713–1716.
87. Hymenoptera, Subfam. Apinae. *Fauna R.P.R., Insecta*, vol. IX, fasc. 1, Editura Academiei Române, 111 pag.

**1956**

88. Contribuții la studiul formicidelor din Valea Prahovei. *Buletinul Științific al Academiei R.P.R., Secția de Biologie și Științe Agricole*, Tom. VIII, nr. 4.
89. Neubeschreibung einiger Thysanopterenarten. *Revue Roumaine de Biologie*, Tom. I, nr. 2.
90. Ökologisch-phaenologische Forschungen über Thysanopteren. Tenth International Congress of Entomology, Montreal, Vol. II: 689–695.

**1957**

91. Dritter Beitrag zur Kenntnis der Thysanopterenfauna von Rumänien. *Publicația Societății Naturaliștilor din România*. Bucharest, nr. 10: 90–95.

**1959**

92. Sistematica unor specii de Thysanoptere. *Comunicările Academiei R.P.R.*, Tom. IX, nr. 4: 349–354.
93. O nouă specie de Thysanoptere. *Comunicările Academiei R.P.R.*, Tom IX, nr. 11: 1147–1149. [A new species of Thysanoptera]
94. Variația individuală la unele specii ale genului *Formica*. În: *Omagiu lui Traian Săvulescu, București* [Individual variation of some species of the genus *Formica*]
95. Câteva Coccide noi pentru fauna R.P.R. *Comunicările Academiei R.P.R.*, 9, 2: 115–122.
96. Einige für die Rumänische Volkrepublik neue schildlaunsarten. *Revue Roumaine de Biologie*, 4, 1: 87–93.
97. Orthoptera (Ord. Saltatoria, Dermaptera, Blattodea, Mantodea). *Fauna P.R.R., Insecta*, vol. VII, fasc. 4, Editura Academiei Române, 337 pag. (in collaboration with Andrei Popovici-Biznoșanu).

**1960**

98. Gen și specii noi de Thysanoptere. *Comunicările Academiei R.P.R.*, Tom. X, nr. 11: 985–990.
99. Thysanoptere din stepa dobrogeană. *Probleme actuale de Biologie și Științe agricole*. Editura Academiei R.P.R., pp.: 109–112.
100. Neue Thysanopterengattung und Arten. *Comunicările Academiei Române, Bucharest*, 10: 985–990.
101. Phaenologische Forschungen über Thysanopteren (Die Thysanopteren der Dobrogeasteppe). *XI Internationale Kongress für Entomologie*, Wien, Bd. I: 489–493.
102. Eine neue Thysanopterenart. *Revue Roumaine de Biologie*, Tom V, nr. 1–2: 143–144.

**1961**

103. O nouă specie de Thysanoptere. *Comunicările Academiei R.P.R.*, 9, nr. 11: 1325–1328.

**1962**

104. Zur Kenntnis der Geographischen verbreitung der Ameisen in der Rumänischen Volkrepublik. *Revue Roumaine de Biologie*, Tom. VII, nr. 2: 243–254 (in collaboration with Dinu Paraschivescu)
105. Legături trofice între furnici și plante. *Studii și Cercetări de Biologie, Seria Biologie Animală*, Tom XIV, nr. 3: 315–330.
106. Hummeln aus Singeorz – Băi (r. Năsăud) und ihre Färbungsvariationen. *Comunicările Academiei R.P.R.*, 12 (7): 843–853. (in collaboration with Dinu Paraschivescu)
107. Hummeln der Dobrudscha (Bombini Michener, Ord. Hymenoptera, Fam. Apidae Leach). *Studii și Cercetări de Biologie, Seria Biologie Animală*, 14 (2): 181–195.

**1963**

108. Thysanoptera din regiunea superioară a Văii Teleajănelui. *Comunicările Academiei R.P.R.*, Tom XIII, nr. 12: 1055–1062.

109. Studiu ecologic și fenologic asupra Thysanopterelor din Dobrogea. Thysanoptere din regiunea Babadag. *Studii și Cercetări de Biologie, Seria Biologie Animală*, XV (3): 281–318.
110. Zur Systematik einiger Thysanopteren. *Comunicările Academiei R.P.R.*, 9 (1959): 343–345.
111. Thysanopteren der oberen Gegend des Teleajan-Tales. *Comunicările Academiei R.P.R.*, 13: 1055–1061.
112. Ökologisch-phaenologische Forschungen über Thysanopteren. Zur Kenntnis der Thysanopterenfauna der Karpathen. *Sonderdruck aus Beiträge zur Entomologie*, Band 13, nr. 3/4: 369–377.
113. Hummeln aus der umgebung des Peța-sees (Region Crișana). *Comunicările Academiei R.P.R.*, Tom XIII, 8: 711–715.
- 1964**
114. Contribuții la studiul ecologic al Thysanopterelor. *Studii și Cercetări de Biologie, Seria Zoologie*, 16, nr. 5: 443–451 (in collaboration with Liliana Vasiliu).
115. Contribution à l'étude écologique des Thysanopteres. *Revue Roumaine de Biologie, Série de Zoologie*, 9, nr. 5: 355–363 (in collaboration with Liliana Vasiliu).
116. Eine neue Thrips-art aus Rumänien (Thysanoptera). *Revue Roumaine de Biologie, Série de Zoologie*, 9, nr. 6: 375–376.
117. O nouă specie dobrogeană din genul *Thrips* (Thysanoptera). *Studii și Cercetări de Biologie, Seria Zoologie*, 16, nr. 6: 479–480.
- 1965**
118. Zwei neue Thysanopterenarten. *Revue Roumaine de Biologie, Série de Zoologie*, 10, nr. 3: 133–135.
- 1969**
119. Evoluția sezonală a unor specii de Thysanoptere. *Cercetări de Ecologie animală (Lucrările primei sesiuni științifice de Ecologie animală)*, 23–28 mai 1966), pp.: 395–340.
120. Aspecte ale faunei tisanopterologice dobrogene. *Cercetări de Ecologie animală*, pp.: 401–403.
121. Aspecte asupra faunei tisanopterologice carpatine. *Societatea de Științe Biologice, Comunicări de Zoologie*, pp.: 71–73.
122. Aspecte asupra faunei tisanopterologice carpatine. *Comunicări de Zoologie (prima Consfătuire Națională de Entomologie)*, pp.: 43–46.

## REFERENCES

- CIUBUC C., 2002, *80 years of activity of Sinaia Zoological Research Station (Bucegi Mountains, Romania)*. Travaux du Muséum National d'Histoire Naturelle "Grigore Antipa", **XLIV**: 497–511.
- FĂRCAȘ S., SORAN V., 1982, *Knechtel Wilhelm Karl*. Pp: 207–208. În: *Personalități românești ale științelor naturii și tehnicii. Dicționar. Agricultură, Arhitectură, Astronomie, Biologie, Chimie, Fizică, Geografie, Geologie, Matematică, Medicină, Tehnică*. Editura Științifică și Enciclopedică, București, 420 pag.
- IONESCU M. A., 1959, *Sărbătorirea Acad. Wilhelm Knechtel*. Analele Academiei R.P.R., nr. 9: 205–221.
- IONESCU M. A., 1967, *Wilhelm Karl Knechtel (1884–1967)*. *Revue Roumaine de Biologie, Série de Zoologie*, **12** (4): 211–213.
- KNECHTEL W. (CAROL), 1894, *Epidemiile insectelor* [Insect epidemics]. Tipografia Voința Națională), 12 pp.
- KNECHTEL W. (CAROL), 1899, *Grădinile peisajere* [Landscaping Gardens]. București, Tipografia Gutenberg Joseph Göb, 48 pag.
- KNECHTEL W. (CAROL), 1905, *Handschriftliche Aufzeichnungen meiner persönlichen Eindrücke und Erlebnisse in Mexiko in den Jahren 1864–1867 / Memorias del jardinero de Maximiliano de México (Written notes of my personal impressions and experiences in Mexico in the years between 1864–1867 / Memoires of the gardener to Maximilian of Mexico)*. Translation by Susanne Iglar, Prologue by Amparo Gómez Tepexicuapan, Edition by Jean-Gerard Sidaner. Published in Mexico City by The National Museum of History, Castillo de Chapultepec, Mexico (2012). German original published in approx. 1905 by Karl Bellmann (Prague).

- KNECHTEL W. (CAROL), 1905, *Trandafirul* [The Rose]. Tipografia Ziarului Cronica Thoma Basilescu, 28 pag.
- KNECHTEL W. (CAROL), 1905, *Curs de entomologie și Viticultură* [Entomology and viticulture course]. Școala Superioară de Agricultură, Herăstrău, 123 pag., 40 pag.
- KNECHTEL W. (CAROL), 1909, *Insectele vătămătoare din România și mijloacele de combatere a lor* [Harmful insects in Romania and means to control them]. Editura Albert Baer, București, (together with his son).
- KNECHTEL W. (CAROL), 2007, *Întâmplări și impresii personale despre întâmplările din Mexic între anii 1864–1867*. Colecția “Călătorii uitate”. Traducere de Matilda Pfeiffer și Traian Jacotă Bărgău. Editura CD Press, București, 171 pag.
- KNECHTEL W. (KARL), 1951, *Thysanoptera*. Fauna R.P.R., Insecta, vol. VIII, Fasc. 1, Editura Academiei Române, 260 pag.
- KNECHTEL E. F., 2009, *Wilhelm Knechtel von Nordböhmen über Mexiko nach Rumänien Vom Gärtnerlehrling zum Königlichen Gartendirektor in Bukarest*. Wiesbaden, 133 pag. (in German)
- KNECHTEL E., 2012, *Vom Gärtnerlehrling in Böhmen zum königlich rumänischen Gartendirektor Wilhelm Knechtel – ein europäisches Schicksal zwischen West und Ost*. Deutsch Rumaenische Hefte, an XV, nr. 1, pp.: 9–11 (in German)
- MEXI AL., 2017, *The gardens of Peleş Castle - History, intentions and interventions*. ARA Reports 8, pp.: 205–214.
- OPRIȘ I., 2009, *A danish zoologist and his romanian colleagues*. Travaux du Muséum National d'Histoire Naturelle “Grigore Antipa”, **LII**: 567–572.
- PRALONG S. (Coord.), 2013, *Mai români decât românii? De ce se îndrăgostesc străinii de România*. Editura Polirom, 496 pp.
- ROSETI R., 2009, *Discretul grădinar al Regelui Carol I*. Jurnalul.ro Special (<https://jurnalul.antena3.ro/special-jurnalul/discretul-gradinar-al-regelui-carol-i-530639.html>).
- STAN M., 2017, *The development of „Grigore Antipa” National Museum of Natural History collections by acquisitions and donations within the period 2007-2016*. MARISIA, XXXVII, pp.: 49–58.
- STANCIU M.-D., 2016, *Deutsche Persönlichkeiten aus Rumänien, Mitglieder der Rumänischen Akademie (1882–2014)*. Transylvanian Review, **XXV** (1): 33–41.
- VASILIU-OROMULU L., 1998, *Lista revizuită a speciilor de thysanoptere (Insecta: Thysanoptera) din România*. Studii și Cercetări de Biologie, Seria Biologie Animală, **50** (2): 77–83.
- \*\*\* *Academicianul Wilhelm Karl Knechtel, 1884–1967. Necrolog*. Natura, Revista Societății de Științe Naturale și Geografie din R.S.R., **XIX** (2): 94-95.
- \*\*\* <https://arhivadearhitectura.ro/arhitecti/wilhelm-knechtel/>
- \*\*\* [www.ibiol.ro/posada/Posada.pdf](http://www.ibiol.ro/posada/Posada.pdf)
- \*\*\* <http://decoratiiflorale.blogspot.com/2016/05/ce-putem-admira-in-gradinile-castelului.html> (consemnat de Dana Soroș, 2016)
- \*\*\* <https://thrips.info/wiki/Knechtel>

Received August 21, 2019

\**Institute of Biology Bucharest, Romanian Academy,  
296 Splaiul Independenței, 060031, Bucharest,  
PO-Box 56-53, Romania  
e-mail: sanda.maican@ibiol.ro*

\*\**Romanian Academy,  
Calea Victoriei 125, 010071, Bucharest, Romania  
e-mail: mtgomoiu@gmail.com*