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REVIEW

A Century of Entomology at the "Alexandru Ioan Cuza" University from Iaşi

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The first beginnings.

Entomology has become quite difficult in Romania as an academic science.

Although the Department of Natural Sciences from the Mihăilean University was personalized within the Faculty of Sciences since the founding of this educational institution, entomological researches began to manifest only at the end of the nineteenth century. The first work of Entomology was published by Professor Leon Cosmovici in 1900, in the first issue of the Annals of the University: "**Contribution à l'étude de la faune entomologique de la Roumanie**". The author presents a list of 332 species of Coleoptera, belonging to 195 genera and 38 families. The determinations were made by Professor Leon Cosmovici, full Professor of the Zoology and Physiology course and his assistant Anton Gorescu.

In parallel with Leon Cosmovici, Nicolae Leon began to focus on entomological researches too. Nicolae Leon, the founder of Romanian Parasitology as science, was a brilliant entomologist, being the founder of Medical Entomology in Romania too. His works – "Blood-sucking Insects from Romania" (1911), "The injurious Insects from Romania" (1912),"The Fauna of Corpses from Romania" (1923) and "Medical Entomology" (1924), remain reference scientific works. The work referring to the fauna of corpses has remained unmatched till nowadays due to its ample data and ecological observations. The succession of insect species rendering the organic matter of corpses to the earth was surprised and rendered masterly.

We often wondered ourselves how it was possible that Professor Ioan Borcea, who had specialized in the fields of the marine biology and who had defended with resounding success, at the Sorbonne, the doctoral dissertation "Recherche sur le système urogénital des Elasmobranches" and then he continued to publish a series of animal morphology works, to launch himself, we could say frontally, in

general entomological researches. Alongside the impulse of studying insects he obviously felt, it also counted the fact that he entered a family where Entomology was valued.

Let us not forget that Ioan Borcea presented his doctoral thesis in 1905 and that in March 1906 he returned to his country, being appointed Reader at the University. In the 1906-1907 period, he managed to publish 5 scientific papers devoted to the study of Elasmobranch fish. And yet, in 1908, he published in the Annals of the University of Iasi, the work of large proportions “Matériaux pour l'étude de faune des Aphides de Roumanie”. It would not be something special that would give us doubts about channelling his efforts to the research of insects, if it were just a published scientific communication. But it is a vast, impressive work, as long as not less than 217 species of aphids were presented, belonging to 34 genera.

In the Publications of “V. Adamachi” Fund, in 1908, professor Ioan Borcea published “Contributions to the Catalog of Aphids in Romania”.

After a while, in 1910, he published the work “Zoocécidies de Roumanie” in the Annals of the University of **Iaşi**. The work represents a surprise if we take into account the fact that no less than 339 taxa identified on 208 species of host plants, were reported. The studies of Aphids and Zoocecids required an enormous work from the professor. When and how could he accumulate so much material and especially when did he study it?

However we should not be surprised about this thing, because Ioan Borcea did many scientific expeditions. Also, few know that at that respective period he was an Inspector of the Ministry of Domains and provided information on the phytosanitary state of Moldova's crops. Doing countless trips in the counties of Botoşani, Iaşi, Vaslui, Suceava, Neamț, Roman and Bacău, the professor did not just comment on the state of crops, but he also collected scientific material, made ecological observations and drew up collections of insects and zoocecids.

For his work about aphids he was proposed for “Năsturel” Prize.However, Arnold Montandon, who was the referent, did not agree with this award, considering that a young man like Ioan Borcea could not be such a great specialist, capable to identify, scientifically process and publish 217 species of aphids in just two years. The eminent entomologist Arnold Montandon did not have the possibility to know the young researcher who abandoned for a while the researches in the fields of comparative anatomy, ichthyology and marine biology and devoted himself to the study of insects. But he dedicated himself to entomological researches as a true titan.

Arnold Montandon's uninspired and unfair gesture seemed to be punished. From Professor Ioan Borcea until nowadays, no Romanian biologist has

investigated this very important group. It left an enormous gap, which was completed by the researchers Jaroslav Holman and Albert Pintera from Czechoslovakia, who did some additions, but not on the measure of the great professor.

The entomological researches of the professor had a wide range. Together with the systematic researches, he also followed some insects harmful to crop plants.

In 1913, he published some information on the harmful insects in "V. Adamachi" Journal, and, in 1915, the paper "Measures for the annihilation of insects" in the same journal. He closely followed with great competence the attack of Bostrichids in the forests of the country. He studied the attack of these insects on the species *Pinus cembra, Pinus silvestris, Larix decidua, Taxus baccata, Juniperus communis,* etc.

Together with his students Mihai Constantineanu and Petru Şuster he approached the study of pest insects along with their natural enemies. The mode of approaching these researches was truly modern for the respective times. It was thus pursued *Loxostege sticticalis* with its entomophagous complex. Professor Borcea was not only a well-formed entomologist, but he was also aware of the new information published in specialized literature and the new research approach. The professor personally knew the renowned Italian entomologists Felippo Silvestri and Guido Grandi from the school of Entomology from Portici. Moreover, in 1912, he presented in "V. Adamachi" Journal "**the School of agriculture from Portici".** And what it really seems remarkable to us is the fact that, in 1914, he wrote the paper "The Need for the Establishment of Entomological Stations" through which he tried to explain, for everyone's understanding, the importance of entomological research resorts as concerns the knowledge of pest insects and their control. This paper was actually written after the publication of another more important and enlightening paper for the understanding of the entomological conception of Professor Ioan Borcea. It is about the paper "**The Role of Predatory and Parasite Insects in Agriculture"** published in 1910 in "V. Adamachi" Journal.

This paper marks not only knowledge and an entomological thinking indeed academic, but also a new openness in entomological researches. Without fear of mistaking, we assert that this work represents the angular stone on which was realized an entomological school channelled to the research of entomophages.

Understanding perfectly the role of entomophages in limiting pest insects, Professor Ioan Borcea had the revelation of orienting the entomological researches towards the knowledge of entomophages and their use in the biological control of pest insects. The professor showed the causes that determined the

exponential development of some pest insects believing that “Fight is in many cases very serious, for man's intelligence and labor is opposed by the number and enormous prolificacy of his enemies.”

The development of agriculture and the practice of monoculture favour a lot the exponential development of some pests.

“*This is even more necessary, as the progress of culture involuntarily favors the multiplication of different pest insects.”*

Analysing the danger represented by pest insects for agriculture and silviculture he understood the necessity to set up entomological resorts to apply the most effective methods of control:

“Therefore, against such enemies of cultures we must fight by all means. To be able to fight, the first condition is to know their biology, mode of developing, living, reproduction, so that we can put obstacles to their development and know in what moment of their lives we can attack them with more ease and with what means.”

First of all, in the states, where agriculture is a major source of national wealth, are set up special committees for this purpose made up of entomologists or parasitologists who inform the farmers about the main enemies that directly attack the plants or cause disease, indicating the most practical means of preventing propagation.

Appreciating the biological control he recommended it and militated for its application in our country. He even followed the organization of entomological services in the US and was interested in the successes obtained in the biological struggle against pests. Following a study journey conducted in the US in 1926 he published in the paper “**The organization of entomological services in USA”** in “V. Adamachi” Journal**.**

If Professor Ioan Borcea had remained in science only with the entomological researches, we consider that he would have been known much more. Few of us know his scientific contributions made in this area. He is known as the founder of the Romanian marine biology and the founder of the Marine Biological Resort of Agigea, which now bears his name and has functioned as the Highest School of the Romanian Hydrobiology.

Professor Ioan Borcea’s collaborators (second generation).

We wish to put him in the light as a great entomologist and as a parent of the largest entomology school in the country. His entomological school was channelled on two directions dominating today's world entomology:

- systematic researches of the groups of entomophagous insects;

- researches concerning the pest insects and the complexes of entomophages that control the populations.

The Entomology School in Iaşi, founded by the Titan Ioan Borcea, has already reached the fourth generation. His students were Professor Mihai Constantineanu and Professor Peter Suster. Both were oriented towards the study of entomophagous insects: Mihai Constantineanu to the study of the huge family of Ichneumonids and Petru Şuster to the Diptera, Tachinidae and Syrphidae.

Thus, they studied the largest and most important groups of entomophagous insects.

The interest of Professor Ioan Borcea for the training of some specialists in this domain is proved by the fact that although his assistant Mihai Constantineanu was at Berlin, in the laboratories of the famous histologist Richard Hesse, to prepare his doctoral thesis, with a theme on the structure of ocelli in the insect larvae, he was called to the country in order to carry out researches and elaborate another PhD thesis "Contributions to the knowledge of Ichneumonids from Romania".

Thus, Mihai Constantineanu achieved two doctoral theses. The work "Der Aufbau der Sehorgane bei den den Süsswasser lebeden Dipterenlarven und bei Puppen und Imagines von Culex" published in Jahrb. Abteil. Anat., Vol. III, Heft 2, p. 253-346 Jena represents the first doctoral thesis, which was not supported. This is a monumental work of histology of the ocelli in the larvae of Diptera, which is cited in all the great treatises of entomology and zoology. It is, in fact, the most brilliant histology work in insects in our country of all times. Only with this work, Professor Mihai Constantineanu remained definitively in the history of the biological sciences.

But besides this, another more impressive opera was to be built - the ichneumonological one, and not only that, but also the most powerful school of ichneumonology in the world, and by expanding the range of researches, the most powerful school for the study of entomophages in Europe.

Beloved reader, you may judge us and accuse us of lack of modesty, the more so as we are part of this school. But watch carefully the structure of this school, and the contribution brought to the study of entomophages, and then you will be gentler.

The second doctoral thesis, "**Contributions to the study of the Ichneumonids from Romania**", is a magnificent work through the number of species studied and through the practical importance. It is the first work of proportion in Romania on some entomophagous insects.

The scientific contribution of Professor Mihai Constantineanu is impressive. Only his icheneumonological work sums up over 6,000 pages in which there are presented over 5,000 species, of which 50 are new to science, over 500 species, 15 genera and two new subfamilies for the country's fauna. Of those over 150 published papers, 80% are dedicated to the study of this group.

The four monographs published in the Romanian Fauna Series, at the Publishing House of the Academy are a scientific treasure not only for Romania but for the whole scientific community.

The world's greatest ichneumonologist, contemporary with professor Constantineanu, Henry Townes, wrote to the professor about his first volume "*Your work, the monograph of Ichneumonids in Romania, is a splendid work, which will serve as a model for a long time in the future" and in what concerns the second volume he appreciated: "It is a magnificent work, a work that will make the determination of the species easier"*.

Professor Constantineanu developed the researches initiated by his master and created the strongest entomology school in the country. Like Aristide Caradja he passionately collected Hymenopters from all the provinces of the country and succeeded in realizing one of the largest private collections in Europe, with more than 300,000 specimens that belong to over 5,000 taxa. He did not just investigate the ichneumonids but continued in Master Mode, the researches initiated by Professor Ioan Borcea, according to the entomological school model of Felippo Silvestre from Portici, the study of harmful insects and their natural enemies.

In 1943, he published the paper "**The damages provoked by the species of Rumex, by Gastroidea (Gastrophysa) viridula Deg. in the surroundings of Iaşi**", and, in 1963, together with his students "**Attaque massive provoquée par Hyponomeuta mahalebella Guenee aux bois - de Saint Lucie (Prunus mahaleb L.) dans le Sud-Ouest de Dobrogea et ses ennemis naturels**", works which practically opens a new direction research into his concerns that he will develop along with some of his PhD students.

The realization of the paper "**Contributions to the Study of Chalcidoids from the Popular Republic of Romania (R.P.R.) (Chalcidoidea Ashmead 1899), parasite in the plum albino (Aporia crataegi L.) from Moldavia",** together with his students, gave him the opportunity to initiate a new direction of researches on the knowledge of Chalcidoids, which will lead to the formation of one of the greatest chalcidologist from our country (Romania) - Professor Ionel Andriescu.

Professor Mihai Constantineanu was not only an outstanding researcher in Entomology, but also a school creator. He initiated an important team in the study of ichneumonids forming the largest nucleus of their ichneumonologists in Europe

and the world. If we nominate Constantin Pisică, Victor Ciochia, Ionel Petcu, Gheorghe Mustață, Raoul Constantineanu, Irinel Constantineanu who published many works in this field and the volumes from the Fauna of Romania, then we can outline the structure and capacity of this team of ichneumonologists; there can be also added Elena Gavrilescu, Liviu Tâțan and Marin Voicu, who researched the ichneumonids from some natural reserves. All of them were Professor Mihai Constantineanu's students and then his PhD students.

Professor Mihai Constantineanu greatly broadened the spectrum of entomological researches. This was accomplished through his PhD students whose steps were guided by the great professor. Professor Ionel Andriescu channelled his researches towards the big group of Chalcidoids. Professor Andriescu, who in turn formed a true entomological school made possible the knowledge of a big number of families from the group of chalcidoids in Romania: Chalcididae, Torymidae, Eurytomidae, Pteromalidae, Eucharidae, Eulophidae, Encyrtidae, Eupelmidae, Aphelinidae, Trichogrammatidae and Mimaridae.

It would be unfair not to mention here that important researches on Chalcidides also carried out Ion Suciu, who published numerous new species for the fauna of Romania.

Klaus Fabritius approached the study of Proctotrupids and Scelionids thus increasing the spectrum of researches in the world of parasitoid insects. A peculiarity for some of the species of these groups is the fact that they parasite the eggs of other insects.

Professor Constantin Filipescu approached the study of the Braconids, a group as important as Ichneumonids.

Karol Nagy specialized himself in the study of Hymenoptera from the group of Heteroginoidea. Another collaborator of Professor Mihai Constantineanu, Ioan Suciu, investigated the Chalcidoids for a certain period, and Professor Gheorghe Mustață expanded the systematic research on the parasitoids in the Charipidae family. If we add to this the fact that Professor Varvara Mircea has approached the study of Carabids from a systematic and ecological point of view, we realize that the pallet of the groups of studied entomophages increased much, being taken under observation groups of predators, too.

Felicia Bulimar, who achieved her doctorate under the coordination of Professor Constantineanu, comducted studies of systematics also on Odonates and Formicides.

We mention the fact that Professor Borcea did not only present the theoretical significance of the biological control, but he looked for to assure the necessary bases for the application of this method also in Romania. And he had a brilliant

success in this direction guiding the steps of his young collaborators, Mihai Constantineanu and Petru Şuster in the research of some very important groups of entomophages. The two specialists brought not only major contributions to the knowledge of Ichneumonids and Tachynids, but they walked in the footsteps of their magistrate militating for the biological control of pest insects.

As we can find from the paper “**Ichneumonids**", published in “V. Adamachi” Journal in 1927, Professor Constantineanu was very cautious about the use of these insects in the biological control.

“*The Ichneumonids must be known in order to protect them, on the one hand, and on the other hand, they must be known and reared in certain farms and in our country too as it is done in advanced countries in culture such as America, France, Italy, Germany, etc. When a pest insect appears in a certain region, specific ichneumonids in a large enough number have to be immediately sent to that place to be able to limit the pests right from the beginning of their evolution curve.*

By doing so, the phytophagous insects would no longer reach their peak of multiplication. Otherwise, the farmer and the country are losing enormously.”

In the same issue of “V. Adamachi” Journal he was going to publish also the paper of professor Petru Şuster “**Tachynids”** in which he magically states his position on the necessity to use the biological method in controlling pests.

During his entire life, Professor Constantineanu militated for the establishment of entomological resorts and for the implementation of the biological control of pest insects.

In a conference held within ASIT Iasi Branch, the professor emphasized among others: “*If there are still today followers of the chemical method against plant pests useful to humans, this is either because of inertia or because of comfort or misunderstanding of complex problems of biology within the variant biocoenoses from nature”*.

But it was not given to Professor Constantineanu to see his dream come true during his time of activity at the Department of Zoology. And yet, in his long existence he managed to live the moments in which his students, Ionel Andriescu and Victor Ciochia, with their collectives managed to make cultures of parasitoid insects in the laboratory and to release them in nature.

In 1970, the first biological control laboratory was established with the help of Entomophages, from the university environment, at the Pangarați Resort, Neamț.

Within the Biological-Geological and Geographical Research Station "Stejarul" in the 1971-1975 period, Ionel Andriescu obtained the necessary funding and promoted the project "**The technology of multiplication of parasitoid wasps (PROSPALTELLA) Encarsia perniciosi Tow and Aphytis proclia Walk, for the integrated control of the tree louse of San José (Quadraspidiotus perniciosus) Const."**, in apple orchards, that he accomplished it with the collaboration of Victor Ciochia, Veronica Saucinițianu-Moglan, Irinel Oancea-Constantineanu and Ion Moglan. Thus, the first farm of *Prospaltella* from Romania was organized and was introduced the parasitoid wasp in apple orchards infested with the lice of San José, the introduction into Romania being made from Switzerland (The Federal Resort of Agricultural Researches from Changin) and France (The Biological Control Station from Antibes).

In 1987, in the collective of Biological control composed of Ionel Andriescu, Ion Moglan, Veronica Moglan and Georgeta Gaidău, in collaboration with Klaus Fabriţius from the Institute of Hygiene and Public Health Bucharest, started the organization of the farm of **Trichogramma**, the researches being funded in the 1988-1990 period by the MEI and by the Ministry of Agriculture, Department of State Agriculture.

It was created the farm of the laboratory hosthouse of the species *Sitotroga cerealella*, after some new ideas and there were begun the launching in villages from IAS Copou and Bucium, but, in 1991, following the changes in organization and operation of ministries, the funding interrupted. We hope that such researches to be resumed and developed.

Another important direction of entomological researches developed by Professor Mihai Constantineanu was that of the study of pest insects and of the complex of natural enemies.

Elena Patrascanu had as doctoral thesis the apple pests and their natural enemies. The results of these researches exceeded the professor's Constantineanu expectations, what determined him to insist on this direction. In this way, it is explained the fact that he oriented his assistant Mircea Varvara to take as doctoral thesis the study of pest insects to the plum tree and their natural enemies.

The complexes of parasitoids identified by Mr Varvara Mircea and their role in the realization of the control of some pest species constituted an impulse in order to choose subjects for similar doctoral theses.

Assistant Gheorghe Mustață received as theme: the parasitoid insects in pest insects to vegetable crops from Moldavia, and researcher Valentin Brudea, the study of clover and lantern pests and their natural enemies. There were not neglected the forestry ecosystems, the high school teacher Georgel Istrate being oriented to the pests of spruce forests and their natural enemies.

The agricultural engineer Nicolae Lupu had as PhD thesis the study of the insects injurious to the *Vitis vinifera* and their natural enemies.

In this research direction we can say that there were obtained spectacular results, which could not be achieved than in such an entomology school, because only in this school at “Alexandru Ioan Cuza” University could be determined almost all groups of entomophages.

In such researches, it was made evident the role of entomophages in the biological control of some pest species.

And, to complete the overall picture, Mr Gheorghe Mihalache received as a theme for his doctoral thesis **The Role of microorganisms in limiting some populations of pest insects**. It is about to control through microbiological methods, through the use of bioproducts, of some forest pest insects.

The third generation.

A research school at a university can only get contour than around great professors, especially as they also have the right to coordinate PhD students. The development of the entomology school could only be achieved around Professor Mihai Constantineanu, who conducted ichneumonological researches of great success and who also had the right to lead PhD students. It was a period in which in the Romanian universities you could be named assistant and to aspire even towards superior degrees of the didactical hierarchy without undertaking a scientific research activity, without having a PhD title in sciences. In this way, we can explain the fact that the desire of specialization by doctorate was considered somewhat exotic. And, yet, at the Faculty of Nature Sciences, there were young people who tended to do a doctorate at any prize and they succeeded.

It appeared a demand that, although it had a political connotation, had a positive role in stimulating scientific researches. It was imposed, on the party line, or rather said, through superior imposing the establishment of student scientific circles. Such a scientific circle was also founded by Professor Mihai Constantineanu, who had designed it so that to attract the best and most passionate students in order to initiate them in the entomological researches.

He chose as a researching theme Malophages and Anoplurra that attacked domestic animals.

The results of the researches were finalized through the publication of the first scientific papers. The greatest achievement, however, was the attracting of the best students in the field of scientific research.

The theme of the scientific circle gained a wider palette and, thus, the students Constantin Pisică, Victor Ciochia and Ionel Andriescu became really

interested in research. Starting from the study of Anoplurae and Mallophages, Constantin Pisica and Victor Ciochia were attracted to the study of Ichneumonids and Ionel Andriescu of Chalcidoids. However, the study of Mallphages and Anoplurae remained the research theme of the scientific circle.

Some young people recruited primarily from the members of the scientific circle, but also from the young teaching assistants began to polarize around Professor Mihai Constantineanu.

Ichneumonids attracted a lot of young researchers, what explains us the increasing number of researchers who dedicated themselves to the study of this family. The researchers of the third generation of this entomological school also began their activity around Professor Mihai Constantineanu. This polarization would have to be marked particularly by the professor's right to lead PhD students. Through his PhD students, the professor promoted the emergence of some more or less vigorous branches in the so-called tree of the entomological school from the University.

In what follows, we will make a short presentation of professor's Mihai Constantineanu doctoral students.

Professor **Constantin Pisică** is the first among the professor's students who dedicated himself to the study of Ichneumonids. It is also the most constant successor in the field ichneumonological researches. He realizes together with the professor the volume of the Romanian Fauna Series, in which he presents the subfamilies: Ephialtinae, Lycorininae, Xoridinae and Acoenitinae from the family Ichneumonidae. To ease the study of the complexes of parasitoids and hosts among the pest insects, he published numerous papers in which he presented the ichneumonids obtained through cultures and their hosts and the parasitoid ichneumonids. In 2001, he published a particularly valuable paper of synthesis in which he offered multiple data concerning the parasitoids and their hosts and also solved the problem of some of synonyms.

The professor Pisică brought himself an essential contribution to the development of this school of entomology through the great number of doctoral students he coordinated and through the orientation of researches on several directions. He achieved important researches in what concerns the knowledge of some pest insects and their natural enemies.

Professor **Ionel Andriescu**, along with the exceptional systematic contributions concerning the knowledge of Chalcidoids, with many new species for science and for the fauna of Romania, conducted and coordinated ample researches on the knowledge of the diversity of fauna in wet environments. There were contractual researches that he did in particular within the Center of Biological Research in Iasi, whose director he was for a long period of time, a

center that became such a **prolonged hand** of the entomological school from the University.

Professor Ionel Andriescu initiated a major direction of applied entomological researches. It is about the knowledge of the complex of pests in orchards (especially in apple trees) and their natural enemies with the application of biological control. In this direction, he stimulated several experienced researchers in the field, as follows: Constantin Pisică, Ion Moglan, Alecu Diaconu, Ion Cojocaru and others.

An important direction of researches on which Professor Andriescu put forward the fingerprint was already discussed. It is about the growing of parasitoids insects in sight of their use in controlling pest insects.

Through his PhD students he succeeded to develop the research of insects in the group of Chalcidoids, creating a true school, the strongest from Romania in this field.

Professor **Gheorghe Mustață** accomplished ichneumonological researches and published together with Professor Constantineanu, vol. IX, the fascicle 10, the family Ichneumonidae, the Mesochorinae subfamily, but he also tackled systematic and ecological studies on the parasitoid species from the Charipidae family. He opened an important direction of researches focused on the knowledge of the complexes of entomophages from the colonies of aphids. He presented, together with **Mariana Mustață** and other collaborators, the parasitoid complexes from the colonies of Brevicoryne brassicae L., Aphis fabae Scop., Uroleucon cichori Koch., Schizaphis graminis Rond., Acyrthosiphum pisum Koch. and so on. He developed the concept of parasitoid biocoenoses and studied their role in preserving natural balance. He published in this sense two books together with Mariana Mustață and Călin Maniu, one of which is in Romanian and English.

Raoul Constantineanu, the son of Professor Mihai Constantineanu, continued the researches of ichneumonology and published together with his wife and Irinel Constantineanu the volume from the series the Fauna of Romania, the family Ichneumonidae, the subfamilies Cteniscinae, Tryphoninae, Thymaridinae and Sphinctinae. Important researches accomplished on some pest insects particularly dangerous and their natural enemies. It is not at all irrelevant the information that the entire collection of ichneumonids was in his care and its scientific capitalization.

Professor **Victor Ciochia** tackled a very wide range of researches. In the field of ichneumonology, he achieved his doctoral thesis with the subfamilies Cryptinae, Gelinae, etc. He had important contributions in the field of useful insects' growth and their use in biological control. He realized a breeding laboratory of the species *Trichogramma dendrolini* on *Ephestia kuehniella* eggs,

using this parasitoid in controlling the butterflies species: *Mamestra brassicae, M. suassa, Autographa gamma, Scotia ipsilon* and *S. exclamation.* He realized with the support of the Academy of Agricultural Sciences and Forestry of Romania whose member is, a semi - industrial growth station for *Quadraspidiotus perniciosus* Const. and its specific parasitoids *Prospatella perniciosi* Tow. and *Aphytes proclia* Walk.

Professor **Ionel Petcu** is part of the ichneumonological school of Professor Mihai Constantineanu. He brought his contribution to the knowledge of Ophionoids. He studied thoroughly the genitalia in Ichneumonidae and realized an important revision of the Dusona genus. It is a pity that he disappeared prematurely.

Marin Voicu elaborated his doctoral thesis at Professor Mihai Constantineanu, studying the diversity of ichneumonids in Frumoasa and Bosancic Reserves from Suceava County. Working as a researcher at Podu Iloaiei Agricultural Research Station, he effectuated ample researches referring to the knowledge of some pests of agricultural plants and their natural enemies.

The high school teacher Liviu Țâțan also elaborated his thesis in the field of ichneumonology. He pursued the diversity of ichneumonids in Hârboanca and Bălteni nature reserves from Vaslui County.

Elena Malcoci (Gavrilescu) was part of the team of ichneumonologists of Professor Constantineanu. She published several works in collaboration concerning the knowledge of ichneumonids. She chose as theme for her doctoral thesis the knowledge of the parasite Trematodes in some domestic and wild animals. She left Iasi for Bucharest where she interrupted her researches.

Klaus Fabrițius drafted a valuable doctoral thesis on Proctotrupids and Scelionides. He became an appreciated researcher in Europe and not only, in this domain. He developed the technology of controlling the synanthropic fly *Musca domestica* through the use of the parasitoid Muscidifurax raptor Gir. Fabritius realized the mass multiplication, on cereal moths, of the species from the genus Trichogramma in view of their use in biological control. He was also concerned about the use of Trichograms as a test to determine the secondary influence of different pesticides on the entomophages and at the quality control of hosts.

Professor **Constantin Filipescu** elaborated a valuable doctoral thesis dedicated to the knowledge of Braconids. He is a reputable specialist, well known in the country and abroad for the works he published in this field, among which the volume in the series Romanian fauna, the family Braconidae. Being a professor at the University of Agronomy and of Veterinary Medicine "Ion Ionescu de la Brad", he also created an entomological school at this university. And, taking into account that Professor Mihai Constantineanu was a professor and even

a dean of the Faculty of Agronomy in Iasi, we consider that through Professor Constantin Filipescu the entomological school of Borcea and Constantineanu expanded into this academic institution.

Professor Constantin Filipescu headed the entomology school from “Ion Ionescu de la Brad” University of Agronomy and Veterinary Medicine and he formed many specialists thus strengthening the school set up by Professor Mihai Peiu. His student Mihai Tălmaciu through the PhD thesis ”The Carabid Fauna Study (Coleoptera, Carabidae), predatory insects, from a systematic point of view, morphologically, biologically and ecologically in order to control pests from the plantations of *Vitis vinifera* from Moldavia opened an important direction of study in the agricultural entomology.

Carol Nagy, become a citizen of Israel under the name of Qabir Argoman, elaborated the PhD thesis about the knowledge of Heterogenidae Hymenoptera *under the leadership of Professor Mihai Constantineanu*. He became a great specialist in the field and developed complex researches in Israel.

The regretted **Ion Suciu** remarked himself through the researches effectuated on Chalcidoids. He became very rapidly well known in Romania and abroad through his works with full data and ecological observations. He also worked much in the field of mites and for two years he was the director of “Prof. dr. Ion Borcea” Marine Biological Research Station from Agigea. He then retired to Brasov and did not continue the researches.

Professor **Varvara Mircea** had preoccupations of systematics bringing news in different families of insects: Carabidae, Chrysomellidae, Formicide and Staphylinidae. He is recognized for the ecological researches on the species from the family Carabidae. Knowing perfectly this group, he coordinated many researches in this field. His papers regarding the ecology of insects are required by specialists from France, Germany, Poland, Hungary, the Netherlands, etc. As I have already said, he opened an important direction of entomological researches dedicated to study the epigeic forms.

Felicia Bulimar was remarked herself through valuable researches on Odonates, a field in which she achieved her doctoral thesis. Through the volume in the Fauna of Romania consecrated to the research of Odonates, she established the bases of knowledge of this group in Romania. She had remarkable contributions to the knowledge of Formicides and of the conenoses in the litter of some forests, realizing valuable works alongside of acarologists from the Institute of Biological Research in Iaşi.

Elena Pătrăşcanu initiated the series of researches on the pests of some cultures and their natural enemies. She watched the pests from apple orchards and their natural enemies. The success of her reign led to the setting of another PhD

thesis aimed at knowing the pests of plum orchards and their natural enemies, which was elaborated by Professor Varvara Mircea.

Working in "Ion Ionescu de la Brad" University of Agriculture and Veterinary Medicine, Mrs Elena Pătrăşcanu worked with Professor Constantin Filipescu and the regretted professor Mihai Peiu, who defended his thesis as a lecturer at Professor Mihai Constantineanu. The relations of **collaborations** between the two universities were and are particularly good and fertile.

Georgel Istrate is another high school teacher who achieved his doctoral thesis under the coordination of Professor Constantineanu with a theme connected with the pests of spruce fir forests from Bucovina and their natural enemies.

Professor **Vladimir Olaru**, who functioned as a university professor at the Faculty of Natural Sciences from the Pedagogical Institute in Galati, elaborated a PhD thesis in which he studied the species of Geometrides from Gârboavele Natural Reserve in the Galati County.

Another doctor of Professor Constantineanu is **Nicolae Lupu**, who studied in the thesis of doctorate the pest insects to vineyards and their natural enemies. He, then, did not carry out researches or we do not know.

We have been preoccupied to present here the direct students of professor Constantineanu, through which he founded the school of entomology initiated by Professor Ioan Borcea. We apologize to the colleagues who are not presented in the fullness of their potentials and the scientific achievements that have consecrated them in the field.

The space could not allow us to extend some presentations. This would be the third generation from the genealogical tree of this great school that has been vigorously set to the future.

Other entomologists from Iaşi.

We are talking about the entomological school from Iaşi and about the founder and professor Ioan Borcea. Let us not, however, remain with the impression that we have exhausted with this the history of entomology in Iaşi or, more precisely, at "Alexandru Ioan Cuza" University Iaşi. We did not propose to make a history of entomology in the capital of Moldavia, but to follow entomological school at the "Alexandru Ioan Cuza" University and to take into consideration the special researches dedicated to the entomophages and the complexes of pest insects and their natural enemies. That does not mean I got everything. Beside Leon Cosmovici, we also mention Nicolae Leon, Constantin

Motaş and C.N. Ionescu who carried out entomological researches at University. I presented Nicolaie Leon, though very briefly.

The eminent hydroacarologist and limnologist **Constantin Motaş** also had some entomological preoccupations and wrote a series of papers in the journal “V. Adamachi” through which he supported the ideas of Professor Ioan Borcea of using useful insects in the protection of agricultural plants. He studied also some insects damaging to agriculture.

A special place is occupied by C.N. Ionescu as an entomologist. He remained in the history of biological sciences by elucidating the structure of the brain in bee, in the researches effectuated under the guidance of Ernst Haeckel. In the three-dimensional material model through which C.N. Ionescu explained the structure of the brain in bee is still found in the Phyletic Museum from Jena. C.N. Ionescu's study of Colemboles from the caves also represents one of his remarkable contributions. He is one of the first biospeologists in Romania.

In the third generation of entomologists, there should be also mentioned **Visarion Constantin Mândru**, who effectuated researches on Orthoptera, Mantides, Blatides, Meloids among Coleopters and of Neuropters. Together with Carol Nagler he published the fascicle 6 in the Fauna of the Socialist Republic of Romania, Neuroptera, in 1970.

Carol Nagler can be considered a student of Professor Petru Şuster. Although he did not work in the academic education achieved valuable works devoted to Neuropaters. He remains in the history of entomology as an eminent researcher and high school teacher.

Lidia Raianu worked at the Museum of Natural History in Iasi, belonging to “Alexandru Ioan Cuza” University. She is recognized as a reputed specialist in the study of Staphylinids, which she studied systematically, ecologically and ethologically.

A continuer of the researches effectuated by Professor Şuster in the field of Dipters is **Andy Z. Lehrer**. He researched the following five families: Caliphoridae, Larvaevoridae, Ectophasiidae, Stratiomyidae and Syrphidae.

It would be unfair not to present here Professor **Filimon Cârdei**, who was for a long time the holder of the entomology discipline, and then the head of the Department of Zoology. He had remarkable contributions in the study of Opilionides, but also of the Odonates. The volume published in the series of the fauna of the Socialist Republic of Romania imposed him as a specialist in this field. He also researched the Formicides, together with his closest collaborator, **Felicia Bulimar.**

The Odonata must be framed among entomophages, being particularly effective predators. But we do not have to consider that the dragonflies consume only pest insects. They do not make a selection, but taking into account the large number of pests we must consider that dragonflies contribute to the elimination of pest insects. We must, however, look at all the relationships among species and from an ecological point of view, i.e. in terms of nature interests (nature economics).

The fourth generation.

The separation of generations of entomologists can be done with difficulty because their succession is carried on and the researches have a natural continuity. The research directions set up by the first generations much developed, and the number of researchers naturally grew as a result of the right of guiding PhD students obtained by the doctors of Professor Constantineanu who reached at their turn university professors. We cannot talk about an exchange of generations, but rather about their joining.

To track the numerical growth of entomologists we could register their attraction in time, or specialization according to the PhD leadership, or take into account the continuity on certain research directions. We will try to merge the last two ways.

Researches on biodiversity.

As concerns the continuation of the researches of systematics this was achieved naturally going on the direction of the PhD leaders, but also on their tendency to pallet the investigated insect groups. If the researches of systematics fell into decline in the second half of the 20th century, we must emphasize with some satisfaction, that systematic researches have returned to the top of the research but in the form of knowledge of biodiversity. Biodiversity cannot be done without brand specialists in systematics and taxonomy. Biodiversity researches are somewhat broader assuming subtle ecological and ethological observations.

In the field of ichneumonological researches, two Ph.D. students, **Camil Lungu-Constantineanu**, the nephew of Professor Constantineanu, and **Mihaela Stavarache** studied the diversity of ichneumonids in Bârnova forest and "The Valley of David" Nature Reserve.

Irinel Popescu completed the doctoral thesis "**Contributions to the Knowledge of chalcidids (Hym., Chalcidoidea) from Romania, the families Eurytomidae and Torymidae"** under the leadership of Professor Ionel Andriescu. He managed to identify over 125 species, of which more than 50 are new for the fauna of Romania. Also, over 10 species are new to science. What

impresses more is the manner of used investigations, particularly modern, being realized researches with the help of electronic microscope to highlight some cryptic structures and genetic researches of the karyotype that permit the elucidation of some phylogenetic relationships among groups and among genera and species. It is worth paying all the attention to the fact that most species are obtained in laboratory from different hosts, which allow the establishment of trophic relationships and the knowledge of subtle ecological and ethological aspects.

Mircea Mitroiu has almost finished the doctoral thesis “**Biodiversity of Pteromalides (Hymenoptera, Chalcidoidea, Pteromallidae) from Romania**” under the leadership of Professor Andriescu. The accumulation of scientific data realized so far impresses through the richness of the processed material and the ecological aspects followed, most species being raised under laboratory conditions. He identified over 120 species, of which over 50 are new for the fauna of Romania, and some are new for science. Although he went on a road somewhat beaten by **Klaus Fabrițius** and **Irina Teodorescu**, two dedicated entomologists to the study of this family, Mircea Mitroiu succeeded, through the tenaciousness out of common and through the modern means of investigation to bring new data that recommend him as one of the best specialists. In fact, many of his works were presented at international scientific meetings of prestige, being very well appreciated.

Popovici Ovidiu Alin is also in the period of finishing the PhD thesis “**The biodiversity of plastigastrides and skelions (Insecta, Hymenoptera - Plastygastroidea) from the East of Romania**” under the coordination of Professor Constantin Pisică.

We appreciate the modern manner in which Ovidiu Popovici approaches the study of these insects. He performs anatomic-histological researches of great finesse and brings new information regarding the structure of the brain in insects. Such researches were first made by Constantin N. Ionescu, at Jena, under the direction of Ernst Haeckel; however Ovidiu Popovici's histological researches are made on another level, with particularly modern means.

Initiated and coordinated by Professor Ionel Andriescu in the entomological researches, **Lucian Fusu** approached the systematic study of Encyrtids. Become a systematician of class in the field of this group, he has oriented his researches towards the studies of genetics, trying to decipher some cryptic phylogenetic aspects under the leadership of Professor Ion Bara. The results of his attempts begin to take shape being brought new data regarding the karyotype in different families, genera and species. Looking to the future we hope to arrive at the

determination of these groups of insects based on the structure of nucleic acids (sequences of DNA).

Mrs **Elena Feraru** is at the beginning of the road in the shaping of a large family of pest insects - Aphidiidae. She has already had important achievements in the knowledge of this group, but what is even more important is the fact that she deals with the study of the aphids together with the entomophages which control their populations. She managed to find some new species of aphids for Romania's fauna, and we hope to fulfil the dreams of Professor Ioan Borcea with the regard to knowledge of this large group of pest insects. Going on the line drawn by her leader, Professor Gheorghe Mustață, Mrs Elena Feraru pursues the complexes of host-parasitoid interrelationships in the colonies of aphids.

Mrs **Otilia Barnea** comes even to cover the knowledge of a very important group of parasitoid insects, without which the particular interrelationships cannot be distinguished from the colonies of aphids. It is about Aphidiidae. Under the leadership of Professor Gheorghe Mustață, she tackles the study of this group of insects together with their hosts and the innumerable hyperparasitoid species that control their populations. Finding us in the sphere of researches dedicated to the knowledge of the complexes of entomophages from the colonies of aphids, we would like to emphasize that Mrs **Carmen Prelipcean** has just completed her doctoral thesis devoted to the knowledge of the complex entomophages limiting the colonies of *Aphis fabae* Scop. Under the leadership of Professor Gheorghe Mustață she managed to decipher the universe of an impressive biocoenotic complex. More than 30 parasitoid species and so many predators conjugate their actions in the natural limitation of the colonies of this aphid. The very large complex of hyperparasitoids complicate a lot the elucidation of the trophic relationships among insects, but this has been honourably resolved.

Mrs **Sorina-Octavia Andriev** has completed a valuable doctoral thesis, under the leadership of Prof. Gheorghe Mustață, dedicated to the study of the Coccinellidae. This is a group of predatory insects that has a major importance in limiting the populations of aphids. The coccinelids were studied only sporadically in Romania. Mrs Sorina Andriev managed to perform a monographic work of this group, to present the species according to the model of the Romanian Fauna Series and to bring ecological news of ecological and ethological order.

The researches devoted to the studies of biodiversity do not just stop at the groups of entomophages. In such researches a number of doctoral students have chosen very important different groups of insects, whose knowledge in Romania were not fully realized.

Mrs **Ana Davideanu** realized a valuable thesis dedicated to the study of aquatic Heteroptera. Begun at the regretted Professor **Ionel Petcu** and finalized at

Professor Gheorghe Mustață, this thesis represents a real monograph of aquatic Heteroptera from Moldavia, representing a precious working tool for those interested in the study of this group.

Mrs **Aristița Goagă** has been put into the unfortunate situation of moving from one leader to another, but eventually she managed to finish at Professor Mustață a valuable doctoral thesis dedicated to the knowledge of the wild bees from the family Halictidae. The thesis is particularly valuable not only from a systematic and taxonomic point of view but also ecologically and particularly ethologically.

Mrs **Gabriela Gurău** has completed a valuable doctorate thesis devoted to the knowledge of the Cerambycids biodiversity in Nemira Mountains under the leadership of Professor Gheorghe Mustață. The work is a successful model of researches of biodiversity in a nature reserve.

Also at Professor Gheorghe Mustață is in the final stage a thesis devoted to the knowledge of Elateridae family, by Mrs **Lăcrămioara Ciucă** and a thesis oriented towards the study of the biodiversity of the Scarabaeidae family in the central area of Moldova, elaborated by **Mrs Mihaela Ariton**. Gabriela Gurău, Lăcrămioara Ciucă and Mihaela Ariton are researchers at the Museum of Natural Sciences Museum in Bacău.

Mrs **Uşurelu-Guța Delia** approached the study of the curculionids from Piatra Craiului Mountains, being especially a biodiversity work.

The series of biodiversity works seems endless. In fact, this thing must rejoice us. **Andrei Litianu**, **Rosu Sorin**, **Florentina Togănel** and **Ilie Aurelian-Leonardo** have chosen, not long time ago, theses dedicated to the study of biodiversity of some groups of insects under the coordination of Professor **Constantin Pisică**. Andrei Litianu has chosen as a thesis of doctorate “**Researches on the biodiversity of Neuroptera (Neuroptera, Insecta) from the center and the north of Moldova”** and Roşu Sorin the thesis “**The Biodiversity of Staphylinidae (Staphylinidae, Coleoptera) from the Middle Siret basin”**.

Mrs Florentina Togănel approached the Orthoptera study in the doctoral thesis “**Researches on Orthoptera biodiversity (Orthoptera, Insecta) in the upper basin of the Mureş**” and Ilie Aurelian Leonardo has the research theme “**The taxonomic, biological and ecological study of chrysomelids (Chrysomelidae, Coleoptera) from Oltenia**”.

Another family taken into study is that of Cantarides. **Ms. Macovei Elvira - Monica** has chosen as a doctoral thesis “**Contributions to the knowledge of the Cantharidae family (insecta, Coleoptera) from Romania**” at Professor Ionel Andriescu.

Moscaliuc Liviu has chosen as a PhD thesis "**The diversity of Formicides (Insecta - Hymenoptera - Formicidae) from Romania and their ecological significance**", **Ailenei Cătălin** "**The diversity of Braconids (Insecta-Hymenoptera-Braconidae) from the East of Romania and their ecological significance**", and **Iorgu Ionut** "**The Orthoptera diversity (Insecta-Orthoptera) in eastern Romania and their ecological significance**." These theses will be coordinated by Professor Gheorghe Mustață.

To these there are added the theses: "**The mining Insects from Harboanca and Balteni Vaslui Nature Reserve and their natural enemies**" chosen by **Crăciu-Stolnicu Alina** and "**Pest insects to the oak forests from Suceava County and their natural enemies**" that **Mamciuc Bogdan** is going to accomplish.

The other major direction of research that oriented to knowledge of pest insects and of their complex of entomophages has developed spectacularly.

At Professor Constantin Pisică were prepared and presented works of high scientific probity regarding some pest insects of great economic importance.

Ion Moglan has researched the species of dangerous Coccidae to the fruit trees and their complex of entomophages. The Coccids have always raised problems in orchards and isolated fruit trees. Through his researches Professor Ion Moglan has opened a new direction in the entomological investigations from Romania, becoming known in the country and abroad. He connects his name with the success obtained in what concerns the growth of useful insects in Iaşi in order to biologically control some injurious insects. Together with Professor Ionel Andriescu and researcher Alecu Diaconu he contributed to the foundation of a modern Insect Growth Laboratory for the application of biological control of pests. He also has valuable contributions in effectuated researches in wet ecosystems and apple orchards.

Mariana Mustață elaborated a doctoral thesis on the knowledge of Coleopterans causing damage to heritage assets. She became a known specialist in the field of conservation of heritage assets and made a major contribution in the formation of an academic school in this field. It is about the Orthodox Theology - Cultural Patrimony of the Faculty of Orthodox Theology of "Alexandru Ioan Cuza" University. She also set up a "Resurectio" Research Center in this field, which operates under the aegis of Iasi Metropolitan Church. She also contributed to the good conduct of postgraduate studies of the Master Conservation Cultural Heritage from the Faculty of Biology.

Together with his husband, Professor Gheorghe Mustață, she made researches on the knowledge of the complexes of entomophages controlling some pest

insects to agriculture and she contributed to the development of the concept of parasitoid biocoenoses.

Professor Constantin Pisică taught and supported high works of scientific probity on some harmful insects of great economic importance.

Ion Cojocaru investigated the complex of entomophages that control the populations of pest lepidopterans to apple orchards from different counties of Romania. I already mentioned that this direction of research has become very important within the entomological school in Iasi. Ion Cojocaru has greatly contributed to the development of this research direction with professors Ionel Andriescu, Constantin Pisică, Ion Moglan and researcher Alecu Diaconu.

Another doctoral student of Professor Constantin Pisică, **Ioan Coroi**, currently a professor at the Faculty of Biology and Geology in Cluj-Napoca pursued the role of pheromones in the biological control of some populations of pest lepidopterans. Such researches were developed especially by the entomological school from Cluj and they have an important role in the biological control of pest insects.

Popovici Rodica presented in 1996 the doctoral thesis “**Researches on the dynamics of some species of Carabidae (Insecta, Coleoptera) from Bucegi Mountains**”. Besides the new aspects of systematics, there were brought important data on the presence and the significance of Carabids in the maintaining of the health statute of the forest ecosystems from Bucegi massive.

Vladimir Gusic brings important data of ecological and ethological nature and even of biodiversity regarding the aphids that provoke pseudocecids and cecids in the thesis: “**Researches on the gallic aphids”**, which he achieved under the coordination of Professor Pisică.

The doctoral students enrolled in the last years broaden the spectrum of entomological researches regarding the diversity of entomofauna in different types of ecosystems:

- **Coroliuc Claudiu Iulian** with the thesis “**Researches on the diversity of the wheat crop entomofauna from the Central Moldavian Plateau**”;
- **Turculeț Angelica** has a doctoral thesis “**Researches on the diversity of the entomofauna of clover crops in Suceava plateau”;**
- **Bota (Tiron) Crina-Elena** studied “**The complex of entomophages that limits the populations of some pest lepidopterans to the fruit trees from the central zone of Moldova”.**

Among the doctoral students of Professor Ionel Andriescu, who researched some pest insects and their complex of entomophages, we must mention Alecu Diaconu, Daniela Bărbuceanu and others.

Alecu Diaconu realized a valuable thesis concerning the knowledge of Lepidopterans from the Tortricidae family and the parasitoids complex that control their populations.

The work brings new data for science and it can be used as a precious tool in the carrying on some similar researches in the view of application of biological control in orchards. Alecu Diaconu contributed within the Institute of Biological Research from Iaşi to the development of entomological researches in the wet ecosystems and in the orchards of apples, researches initiated and coordinated by Professor Ionel Andriescu, as well as at the growth of insects for their use in the biological control of pests.

Mrs Daniela Bărbuceanu has made a remarkable thesis "**Researches on the parasitoid complexes of Lobesia botrana (Den & Schiff), Sparganostris pilleriana (Den & Schiff), and Eupoecilia ambiguella (Hübn.) (Lepidoptera) and of their role in limiting the moth populations in some vineyards from the south of Romania".**

The complexes of discovered parasitoids and the elucidation of some ecological aspects make the work be a precious tool for those interested in this field.

As concerns the importance of some groups of entomophages and the achievement of the biological control of some pests there have been developed and presented, under the leadership of Professor Ionel Andriescu, some doctoral theses, and others are in the course of elaboration: **Mrs Mihaela Paulian** made a valuable doctoral thesis on the importance of Chrysopids in keeping of the natural balance: "**The role of species of Chrysopa (Neuroptera-Chrysopidae) within of systems of control at some agricultural crops of economic importance"** (1988).

Mrs Marcu Florentina has made absolutely unique things about the role of some species of Trichogramma in the control of moths injurious to peach orchards in the elaboration of the doctoral thesis: "**Researches concerning the integration of the oophagous parasites of the genus Trichogramma (Hymenoptera-Trichogrammatidae) in the control of the peach moths (Cydia molesta Busck and Anarsia lineatella Zell, Lepidoptera)"** (1998).

Mrs. Manolescu Haritina Paraschiva contributes with an important PhD thesis at the elaboration of efficient methods for increasing the efficiency of the species Trichogramma at limiting some harmful lepidoptera, "**Contributions to the optimization of the use of Trichogramma species (Hymenoptera, Trichogrammatidae) in the controlling of pest lepidoptera" (1999).**

A thesis in the final stage, elaborated by Mrs **Camelia Ureche**, presents numerous data concerning the complexes of parasitoids that control the populations of mining insects: “**Complexes of parasitoids (Insecta) that limit the populations of mining insects in the spontaneous and cultivated plants”**.

Mrs **Roxana Voicu** investigates, in the doctoral thesis “**The complexes of parasitoids and commensals that regulate the populations of gallium cinipids (Hymenoptera, Cynipidae) in the oak tree in the central area of Moldavia**”.

Ion Şchiopu also realized a valuable research on the complexes of parasitoids that control the populations of some galium insects in the doctoral thesis “**Contributions to the study of the galigenous Cinipids (Insecta, Hymenoptera, Cynipoidea) in Dobrogea and of their natural enemies (Insecta)”.**

The elucidation of some complex trophic relationships characteristic to some galium species with the entire parasitoid suite that controls the populations give high scientific value to the researches carried out by Mr Ion Şchiopu, especially if we take into account that there seemed not to be much more to be done in this area.

Dascălu Maria Magdalena carries out interesting researches within her PhD thesis,–under the leadership of Professor Ionel Andriescu**, The biodiversity of Cerambycids biodiversity in Moldavia.**

Mrs Gabriela (Costea) Patriche managed to make an exceptional thesis of doctorate devoted to the research of parasitoid complexes that limit the populations of some pest Lepidoptera to the cabbage crops, realized under the guidance of professor Gheorghe Mustață. The thesis brings new data although in this area there have been done extensive researches in the country and abroad. The results obtained were the subject of some scientific papers presented at international congresses and published in foreign journals.

A thesis, which is focused on only one species, *Plutella xylostella* L., that attacks the cabbage and which through the damages provoked especially in the area of Asia and America have led to the foundation of special institutes dedicated exclusively to keeping this species under control was chosen by **Mrs Eliza Ursache** “**The entomophages complex controlling the populations of *Plutella xylostella* L.(Lepidoptera, Plutellidae) from the North-East of Romania”.**

A research direction developed by Mrs Mariana Mustață is dedicated to the conservation of heritage assets at the attack of the pest insect. These researches have been extensively developed with the students from the Department of Orthodox Theology-Cultural Patrimony from the Faculty of Orthodox Theology of the “Alexandru Ioan Cuza” University Iaşi, at “Resurectio" Research Center,

whose bases she put that belong to the Metropolitan Church of Iaşi, but also with a number of master students from the Conservation Section Heritage at the Faculty of Biology. The works published by the university Reader Mustata Mariana concerning the harmful insects to heritage assets and books have become working tools in this area. Thus, a number of PhD students have chosen their research theme in the field of cultural heritage preservation.

Silvia Crudu elaborates a doctoral thesis devoted to the knowledge of moths that attack patrimony property "**Harmful Tineide (Lepidoptera-Tineidae) to the heritage assets in North-East of Romania and their control**".

Georgiana Gămălie started on the path of knowledge of the pest insects to the books having as the PhD thesis "**The pest insects to the books and their control**".

Mina Moşneagu has chosen as a theme for her doctoral thesis the knowledge of the Annobiidae that provoke damages to the heritage goods on wood support: "**Conservation of the heritage assets attacked by Anobiidae (Insecta-Coleoptera- Anobiidae)".**

Mr **Bogdan Ungureanu**, although he is a graduate of the Faculty of Plastic Arts, was attracted, as a result of the master courses he attended at the Conservation Section Patrimony from the Faculty of Biology, by the study of pest insects to the cultural heritage made of wood and exhibited in nature.

Mr **Marian Marius Şolea**, graduate of the Orthodox Theology-Cultural Heritage, has chosen as a PhD thesis "**The conservation of the books and goods of heritage on wood support and / or textile fiber against pest insects".**

It is a research direction that is vital for the saving of the national cultural heritage that is in great danger.

Although these PhD students are enrolled at Professor Mustață Gheorghe, the coordination of the researches will, of course, be carried out in collaboration with Mrs Mustață Mariana, PhD.

Hopes for the future.

We have tried to bring to light people and deeds. We cannot insist on these aspects, although we have the moral duty to present them as achievements of the entomological schools from "Alexandru Ioan Cuza" University.

The entomological school from Iasi has reached to the fourth generation. The founder of this school was Professor Ioan Borcea. We proved that Professor Ioan Borcea was an outstanding entomologist and left us a valuable work in this field. But he has the greatest merits in the Romanian entomology by creating a school of

entomology on its own. Not accidentally, Professor Ioan Borcea is surnamed the “Titan of Romanian zoology”.

The second generation of the school created by Ioan Borcea is formed of those two great professors and friends, Mihai Constantineanu and Petru Şuster.

Maybe we have a dose of subjectivism and we would like you to forgive us, but we consider Professor Mihai Constantineanu as the greatest Romanian entomologist not only of his times, but of all times. We should also mention Professor Petru Şuster, in his short amazing life animated by a special intelligence, teaching grace and highly creative work.

It would to be given from God that Professor Mihai Constantineanu to consolidate and develop the entomological school initiated by Professor Ioan Borcea.

The third generation of entomologists of this school is represented by the disciples of Professor Constantineanu, about whom we spoke, but we will not succeed to encompass the whole no matter how much we talk about this. The third generation of this genealogical tree is quite dense, as it encompasses many leading entomologists of our time who greatly contributed to the development of the Romanian entomology through the fourth generation, which we see, perhaps, as the most powerful one. We feel rising now the golden generation of the Entomological School from “Alexandru Ioan Cuza” University. So, there emerged a new series of young scientists among whom we nominate Irinel Popescu, Mircea Mitroiu, Ovidiu Popovici and Lucian Fusu and we all have confidence that this school will raise its shadows over centuries.

The translation of the text from Romanian into English was done by Varvara Mircea (Faculty of Biology, Iaşi) and verified by Vladuț Alina, Faculty of Sciences, University of Craiova.