Annual Zoological Congress of "Grigore Antipa" Museum

12-13 NOVEMBER 2009
BUCHAREST, ROMANIA

Book of Abstracts

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"Grigore Antipa" National Museum of Natural History

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Taxonomy. Faunistics. Zoogeography

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Paleontology

Museum heritage research

Biodiversity Conservation

CZGA 2009 PROGRAMME

THURSDAY, 12th OF NOVEMBER 2009

Invited speakers

9:00-9:45
Dumitru Murariu - Why a Congress of Zoology? Why zoological research?

9:45-10:30
Dan Cogălniceanu, Dorel Ruşti - Linné versus PhyloCode

10:30-11:00
Coffee break

Taxonomy. Faunistics. Zoogeography

11:00-11:15
Adrian Gagiu - *Hirudo verbana* Carena, 1820 (Annelida, Hirudinea, Hirudinidae), new for the Romanian fauna

11:15-11:30
Galina Busmachiu - A Checklist of springtails (Collembola) from the Republic of Moldova

11:30-11:45
Ionuț Ștefan Iorgu - Two new bush-crickets (Insecta, Orthoptera) for Romanian fauna

11:45-12:00
Costică Adam, Gabriel Chişamera, Viorel Pocora, Szilárd J. Daróczi, Mircea Gogu-Bogdan - New data on the chewing louse fauna (Phthiraptera: Amblycera, Ischnocera) from the Danube Delta Biosphere Reserve (Romania)

12:00-12:15
Costică Adam, Costel Burghelea - Chewing lice (Phthiraptera: Amblycera, Ischnocera) collected on some wild birds (Aves) from southern and south-western Moldova (Romania)

12:15-12:30
Cecilia Șerban - Faunistic data on some bug species (Insecta, Heteroptera) from west Turkey [results of the "Taurus" 2005 and "Focida" 2006 expeditions]

12:30-12:45
Daniela Minodora Ilie - The aquatic and semi aquatic Heteroptera fauna (Heteroptera) in the Middle Basin of the Olt River

12:45-13:00
Jean Barloy, Florin Prunar - Population studies of *Carabus (Morphocarabus) seriatissimus* Reither in Maramureș county

13:00-14:00
Lunch break

14:00-14:15
Jean Barloy, Florin Prunar - Extension of the repartition region of *Carabus (Morphocarabus) alutensis* Săvulescu, 1972

14:15-14:30
Svetlana Bacal, Alexander Derunkov - Contributions to the knowledge of rove beetles (Coleoptera, Staphylinidae) from "Plaiul Fagului" Scientific Reservation, Republic of Moldova

14:30-14:45
Melania Stan - On the species of *Ocypus* Leach of the Carpathian Basin with special reference to the species of Romania (Coleoptera: Staphylinidae: Staphylininae: Staphylinini)

14:45-15:00
Irinel E. Popescu - First record of *Glyphomerus isosomatis* Zerova et Seryogina, 1999 and of the subgenus *Lioterphus* of the genus *Torymus* (Hymenoptera: Chalcidoidea: Torymidae) in Romania

15:00-15:15
Cristina Ban-Calefariu - Tribe Anthidiini (Hymenoptera: Apoidea) in Romania

Ecology

15:15-15:30
Oriana Irimia, George Năzăreanu - The incidence of zooplankton speed and sampling depth on the sampling efficiency / preliminary comparative data

15:30-15:45
Minodora Manu - The influence of some environmental factors on the species diversity of the predator mites (Acari: Gamasina) from natural forest ecosystems in Bucegi Massif

15:45-16:00
Nicolae Onea - Numeric fluctuations and population dynamics of aquatic nesting birds in mixed colonies Vulpaşu, Chiriloaia and Cucova (Brăila Small Wetland Natural Park)

16:00-16:30
Coffee break

16:30-16:45
Mirela Sabina Ridiche, Angela Petrescu - The qualitative and quantitative characterization of aquatic avifauna in the humid areas located in the flood plain of the Danube, Calafat-Jiu section (Dolj county)

16:45-17:00
Timur Vasile Chiş, Mihail-Gerald Manole - Study on winter feeding of large eagle owl (*Strix uralensis* Pallas) in the Maramureş Depression

17:00-17:15
Ana Maria Benedek, Ioan Sîrbu - Dynamics of *Asio otus* L., 1758 (Aves, Strigiformes) winter-spring trophic regime in Western Plain (Romania)

17:15-17:30
Natalia Vasilaşcu, Nicolae Zubcov, Andrei Munteanu - Adaptation peculiarities within the urbanization process of Chişinău city birds' fauna

17:30-17:45
Grzegorz Kłys, Bronisław W. Wołoszyn - Ecological aspects of bat hibernacula in temperate climate zone of Central Europe

17:45-18:00
Wojciech J. Gubała, Bronisław W. Wołoszyn - Bats hibernating in underground shelters of Małe Pieniny Mountains

Systematics and Evolutionism

18:00-18:15
Bronisław W. Wołoszyn - Microevolutionary trends in Western Palearctic bats

18:15-18:30
Katarzyna Stanik, Bronisław W. Wołoszyn - Microevolution of Bechstein's bat *Myotis bechsteinii* (Kuhl, 1817) in the Holocene of southern Poland

18:30-19:30
Poster session

FRIDAY, 13th OF NOVEMBER 2009

Invited speakers

9:00-9:45
Beatrice Simona Kelemen, Octavian Popescu - From DNA sequencing to molecular taxonomy and phylogeny

9:45-10:30
Marius Skolka - Why evolution?

10:30-11:00
Coffee break

Museum heritage research

11:00-11:15
Dumitru Murariu - Museum's Mission in 21st Century

11:15-11:30
Delia Ceuca - The Catalogue of the new species of diplopods in the Romanian fauna, described by T. Ceuca

11:30-11:45
Rodica Serafim - The Catalogue of the Palaearctic species of Lamiinae (Coleoptera: Cerambycidae) from the patrimony of „Grigore Antipa" National Museum of Natural History (Bucharest) (Part V)

11:45-12:00
Sanda Maican - Donaciinae (Coleoptera: Chrysomelidae) from the patrimony of "Grigore Antipa" National Museum of Natural History, Bucharest

12:00-12:15
Angela Petrescu, Iorgu Petrescu - Collection of birds in the National Museum of Bucharest during Carol Valstein's directorship

12:15-12:30
Dumitru Murariu, Angela Petrescu, Gabriel Chișamera, Petre Bogdan Matei - Robert Dombrowski's contribution to the development of mammal collection of the Museum of Zoology in Bucharest (Romania)

12:30-12:45
Cornelia Chimișliu, Gima Mogoșanu - New data regarding species of the Cetoniidae family (Coleoptera: Scarabaeoidea) preserved in the patrimony of the Oltenia Museum Craiova (Romania)

Biodiversity Conservation

12:45-13:00
Gabriela Patriche - Promoting studies on dragonflies (Insecta: Odonata) and environmental education in the Lower Prut Floodplain Natural Park

13:00-13:15
Silviu Chiriac, Radu Mihai Sandu - Conservation of Large carnivores from Vrancea

13:15-13:30
Bronisław W. Wołoszyn, Dumitru Murariu - The ABC Project (Atlas of Bats of The Carpathians) - new view

13:30-14:30
Lunch break

Invasive species

14:30-14:45
Marius Skolka, Cristina Preda - Biological invasions in Romania

14:45-15:00
Traian Manole, Irina Ionescu-Mălăncuş, Eugenia Petrescu, Gabriela Mărgărit, Oana Livadariu - The impact of *Leptinotarsa decemlineata* (Say, 1824) (Coleoptera:Chrysomelidae) upon the Arthropods biodiversity in some potato crops from Romania

15:00-15:15
Traian Manole, Irina Ionescu-Mălăncuş, Eugenia Petrescu, Gabriela Mărgărit, Oana Livadariu - First review of alien arthropods introduction in Romania and their invasive status

Taxonomy. Faunistics. Zoogeography

15:15-15:30
Beatrice Simona Kelemen, Oana Paula Popa, Dragomir David, Octavian Popescu - Population genetics of some soft-bottom bivalves from the Romanian Black Sea

15:30-15:45
Oana Paula Popa, Elena Iulia Iorgu, Beatrice Simona Kelemen, Andrei Sarkany-Kiss, Dumitru Murariu, Luis Ovidiu Popa - Morphometric analysis in some populations of Limnocardiid species from Razelm Lake (Romania)

15:45-16:00
Luis Ovidiu Popa, Oana Paula Popa, Elena Iulia Iorgu - Lack of divergence between 16S and 18S DNA sequences of *Monodacna pontica* and *M. colorata* (Bivalvia: Cardiidae) from Golovița Lake

16:00-16:30
Coffee break

16:30-16:45
Ioana-Cristina Constantinescu - *Oplitis hutuae* n. sp., a new myrmecophilous mite (Acarina: Anactinotrichida: Uropodina) from Romania

16:45-17:00
Viorica Honciuc - The analysis of the taxonomical, trophical and zoogeographical spectrum of the Oribatid's communities (Acari: Oribatida) from some forest ecosystems from Bucegi Massif

17:00-17:15
Iorgu Petrescu - New data regarding Amphipods (Crustacea: Amphipoda) from Bulgaria

17:15-17:30
Iorgu Petrescu, Richard Heard - New Leuconids from the Gulf of Mexico (Crustacea: Cumacea: Leuconidae)

17:30-17:45
Angela Petrescu, Mirela Sabina Ridiche, Ioana Minodora Sârbu - Ornithological observations along the Danube Meadow between 825 and 388 km

17:45-18:00
Carmen Gache - Bird fauna long-term monitoring in the lower Prut River basin

18:00-18:15
Andrea Pereswiet-Soltan, Bronisław W. Wołoszyn - Geographic distribution of bats North of the Carpathians

18:15-18:30
Victoria Nistreanu - Spreading of shrews from genus *Sorex* on the territory of Republic of Moldova

18:30-18:45
Dumitru Murariu, Gabriel Chişamera, Ivanka Atanasova, Ivaylo Raykov - Study on mammal diversity from Romanian and Bulgarian Dobrogea

18:45-19:45
Poster session

INVITED SPEAKERS

WHY A CONGRESS OF ZOOLOGY? WHY ZOOLOGICAL RESEARCH?

DUMITRU MURARIU

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Key words: Congress, Zoology, biological sciences, integrating science.

Starting in antiquity and continuing with Buffon, Liné and Lamark the zoological research was highly encouraged by Darwin's theory, proving that his principles based on huge zoological collections from all over the world. If we agree the evolution theory as a largest revolution in biological field also we can understand better the necessity of a zoological congress and of zoological researchers. Basing only on Zoology, it was possible to develop comparative morphological studies, of embriology and physiology of large groups of animals. New branches of biology (genetics, cell biology, molecular biology) cannot be separated by zoology and botany; they always appeal to the classic disciplines and are enriching their matter and topics, assimilating results of genetics and of other new branches of the modern biology. Thus, Zoology is a science of synthesis in which the results of all biological sciences (anatomy, embriology, paleontology, ethology, zoogeography etc.), must be revealed to reconstitute beings in their totality and allow both the understanding of their place in nature and their role in live world. Zoology itself is an integrating science which help humankind to answer to the great questions about the world, about its destiny, knowing that some branches of zoology serve directly to human economy (e.g. ichthyology uses the scientific data to increase the productivity of fresh and oceanic waters, with important role in human food). Biological pest control (mainly in entomology field) as well as the entertaining part of the stories on animals are additional aspects which lead us to make a proper estimation of zoology importance and its permanent topical character.

LINNÉ VERSUS PHYLOCODE

DAN COGĂLNICEANU[1], DOREL RUŞTI[2]

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Key words: Linné, PhyloCode, taxonomy, phylogenetics, classification, living organisms.

Taxonomists are criticized for their alleged inability to help curb the biodiversity crisis and make swiftly available species names to the user community: conservation biologists, ecologists, biogeographers, ecologists, molecular biologists etc. The main issue is, if the classical taxonomy (i.e. Linnean) can provide the required information efficiently, or is a new approach (i.e. phylogenetics), required to solve this crisis? While resources, both human and financial, available for taxonomy are decreasing, the rate of new species description has steadily increased. For example, during the last 25 years the increase in the number of amphibian species was more than 60%. Taxonomy is the science of classification of living organisms, and the scope of any classification is to provide a maximum predictive power. A classification of living organisms should ideally provide stability (i.e. act as a reference system that facilitates communication) and reflect phylogenetic relationships by identifying monophyletic taxa. Species are biological systems representing the fundamental unit of evolution, but "taxonomic species" represent concepts, i.e. hypotheses that are proposed, tested, modified and/or eliminated based on the accumulated proofs. This means that there can be no name stability in taxonomy. A stable taxonomy, however desirable, would be frozen and of very little use. Acceptance of this fact is vital for the larger user community. Linnean taxonomy is based on binary nomenclature and involves a hierarchical system. Since "Systema Naturae" was first published more than 250 years ago, it has evolved almost constantly, thus proving flexible, stable enough to provide a useful means of communication and compatible with phylogeny. Phylogenetic taxonomy was first proposed as a simple and rapid means for increasing the rate of species description, a "do-it-yourself" solution for the crisis. It is based on technological progress and state-or-the-art techniques, but technological advancement is not necessarily equivalent to progress in knowledge. While the Linnean system of zoological nomenclature is regulated by the International Code for Zoological Nomenclature (ICZN), phylogenetic nomenclature is governed by the International Code of Phylogenetic Nomenclature (PhyloCode). Phylogenetic analyses still require a solid taxonomic base in order to generate knowledge, and not mere data. The phylogenetic trees produced based on molecular data reflect changes in the state of characters and not of the taxa analyzed since most molecular characters used are

not selective. Since the PhyloCode admits only monophyletic taxa, it cannot recognize hierarchical categories that would be polyphyletic. Thus it cannot be used in museum collection management, taxonomic revision or even a faunistical list, since it does not allow for ranked categories in which to group the target taxa. This makes the two systems incompatible and generates chaos since at present new species are described based on both approaches. So, instead of stability and clarity we are confronted presently with confusion and chaos. A solution proposed for the end-users is promoting common names, but this is not feasible since many (if not most) species lack common names. Common names are usually restricted to the geographic range of the species, most existing names are ambiguous and there are many regional and local variations in names. The only option remaining are online databases constantly updated that will include all synonymies. This will provide a useful tool for practitioners and will avoid the regular changes of annexes in legislation.

FROM DNA SEQUENCING TO MOLECULAR TAXONOMY AND PHYLOGENY

BEATRICE SIMONA KELEMEN[1], OCTAVIAN POPESCU[1, 2]

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Key words: DNA sequencing, classical systematic, DNA taxonomy, phylogenetic trees, phylogenetic reconstruction.

The molecular genetic techniques are becoming more and more powerful in all fields of biological research. The advances in both computer technology and molecular genetics have a great and constant impact on the field of systematics. Within the field of taxonomy, there is presently a conjunction of new theories, technological advances and urgent needs (Wheeler, 2004). Among technological advances, the deoxyribonucleic acid (DNA) sequencing, with key sequences serving as a "barcode" represents the most important approach; this concept was proposed by Tautz et al. (2003). In spite of 250 years of work in systematics, a vast number of species remains to be identified; the classical systematic research resulted in the discovery and naming of only about 10% of all existing animal species. In most cases, the DNA barcoding resolves most species. In some studies, barcoding provided a means of highlighting potential cryptic, synonymous or extinct species as well as matching adults with immature specimens. The DNA barcoding uses one or a few reference genes in order to assign unknown individuals to species and facilitate the discovery of unknown species. For example, the mitochondrial cytochrome c oxidase subunit 1 (COI) gene has been employed as a possible DNA marker for species and a number of studies in a variety of taxa have accordingly been carried out to examine its efficacy. DNA barcoding appears to offer a means of identifying species and may become a standard tool. The promoters of DNA taxonomy claim that the current practice in taxonomy is not adequate to achieve the aim of a more or less complete inventory of animal life in a reasonable period of time, and even argue that the nomenclatural rules destabilize the system of scientific names. These and other problems culminate in a general 'taxonomic deficit' that calls for a courageous solution. DNA sequences used as universal reference to a species and made available via appropriate databases should help to overcome the problems of decreasing taxonomic expertise and ever-changing taxonomic names. However, some taxa have proved problematic, and principally higher taxa have not been resolved as accurately as species. Concerning molecular phylogeny (the study of molecular evolution by constructing phylogenetic trees based on DNA and amino acid sequences), methods for constructing a phylogenetic tree can be separated into

two major categories: character-based and distance-based methods. Genetic distance is a quantitative measure of evolutionary similarity or dissimilarity between taxa. This is based on the hypothesis that a pair of genes descended from the same ancestral sequence will autonomously accumulate nucleotide changes over time. The numbers of substitutions among sequences are used to calculate genetic distance. The number of observed character differences often does not represent the real number of substitutions that have occurred, particularly between distantly related sequences where multiple mutations of the same character may have occurred over time. Inevitably, phylogenetic reconstruction involves use of incomplete data, since the true ancestral sequences will almost always remain unknowable. Consequently, assumptions must be made during tree reconstruction in the place of ancestral data. These assumptions and the quality of the data will determine whether the final tree is reliable. Molecular phylogenetic inferences have been not only supportive of traditional phylogenies, but also instrumental in resolving some difficult questions regarding branching orders within many evolutionary lineages. Because of the vast and growing databases of molecular sequence information, this area promises to be an important key to understanding the history and relationships of all life forms on this planet. In our opinion, the get-together of classical taxonomy and phylogeny (using morphological, physiological, or ethological characters), on one hand, and the molecular approaches, on the other hand, might expedite accurate species identification.

WHY EVOLUTION?

MARIUS SKOLKA

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Key words: biological evolution, natural evolution, molecular biology, palaeontology, Darwin's theory.

Why evolution? Nowadays, along with the rapid development of world economy which is mostly based on the development of knowledge, we find ourselves facing with an apparent paradox: a large number of people are almost completely uninterested or adverse to one of the most important discoveries in all human history – the biological evolution.

Romanian society is not an exception, recent statistics found Romania to be one of the most primitive societies regarding scientific knowledge, with a dishonouring 13% of the population approving evolution.

What are the possible explanations for this phenomenon, and which are the short and long-term effects are only some of the questions to which academic society – especially biologists – should answer.

The author tries to review the problems of biological evolution, starting with the degradation of the scientific message reaching the society and ends with the rapid development of some particular sciences like astrophysics and genetics. We also should bear in mind that many of recent discoveries – from molecular biology to palaeontology – represent nothing but confirmations of Darwin's theory of natural evolution.

ORAL PRESENTATIONS

HIRUDO VERBANA CARENA, 1820 (ANNELIDA, HIRUDINEA, HIRUDINIDAE), NEW FOR THE ROMANIAN FAUNA

ADRIAN GAGIU

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Key words: *Hirudo verbana*, first recorded occurrence, Romania, conservation.

In 2006, a *Hirudo verbana* specimen was observed in Stracoș valley, within the Tășad reserve (Bihor county, NW Romania). Since the color pattern of this once forgotten species matches its genetic differentiation, the identification of the specimen as belonging to the SE European *H. verbana* appears plausible. Moreover, the species was cited in Central Europe (N Italy, Germany) and near Romania, in Hungary, Ukraine, Slovenia, Croatia, FYR Macedonia, and Turkey.

As recently pointed out, *H. verbana* is one of the three species commonly known as the European medicinal leech and the most abundant as such. Accordingly, most international and national conservation legislation containing only *H. medicinalis* (including IUCN, CITES, Berne Convention) needs completion, since both species were considered endangered.

POPULATION GENETICS OF SOME SOFT-BOTTOM BIVALVES FROM THE ROMANIAN BLACK SEA

BEATRICE SIMONA KELEMEN[1], OANA PAULA POPA[2], DRAGOMIR DAVID[1], OCTAVIAN POPESCU[1, 3]

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Key words: bivalves, population genetics, genetic structure, COI, Romanian Black Sea, *Cerastoderma glaucum*.

From among the numerous bivalves inhabiting the Romanian Black Sea soft sediments we pay particular attention to one family, the Cardiids. The family is represented in this geographic location by only one species, *Cerastoderma glaucum* Poli, 1795. Our preliminary results focus on the monitoring of the genetic structure of this species in its habitat. Several influencing factors as: shore geography, depth, marine currents, anthropic structures are discussed. A collateral of our inquiry is concerned with the analysis of the relation between the marine *Cerastoderma glaucum* Poli, 1795 representing the Cardiidae, and the brackish Limnocardiidae occupying the perimarine lakes adjacent to the Romanian Black Sea. In the absence of free accessible molecular data on any Limnocardiid species, an ongoing debate in taxonomy fails to definitively frame the Limnocardiids as free-standing family or integral part of the Cardiidae.

Specimens from several locations along the Romanian Black Sea shore are currently analyzed using sequencing of COI. Other molecular markers as 16S rDNA and ITS2 are considered for ulterior studies.

The present study is funded by the Romanian Ministry of Research Education and Inovation through the PNII_ID_2040/2008 project.

MORPHOMETRIC ANALYSIS IN SOME POPULATIONS OF LIMNOCARDIID SPECIES FROM RAZELM LAKE (ROMANIA)

OANA PAULA POPA[1], ELENA IULIA IORGU[1], BEATRICE SIMONA KELEMEN[2], ANDREI SARKANY-KISS[3], DUMITRU MURARIU[1], LUIS OVIDIU POPA[1]

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Key words: *Monodacna*, *Adacna*, morphometric variability, geographic variability.

In this paper we report the morphometric analysis of some populations of Limnocardiids species from the lakes Razelm and Golovița.

The subfamily Limnocardiinae includes relict and present species spread in the Pontic-Aral-Caspian range. The range covered by the present Limnocardiinae in Romania was larger 100 years ago; while in the present days the range is limited to the Razelm-Golovița lake complex.

Morphological identification of the collected specimens was made according to Grossu, examining the shape of the coasts (higher or more flattened), the density of the shells, the dentition of the cardinal platform, the thickness of the valves, and the position of the umbone. The following three morphometric variables were measured: shell length (SL), shell width (SW), and shell height (SH), and the SW/SL, SH/SL and SW/SH ratios were computed.

We used these ratios to perform a Principal Component Analysis and a Discriminant analysis, in order to compare the two genera in the Romanian fauna, *Adacna* and *Monodacna* (Razelm and Golovița populations were taken together). From this analysis we concluded that the morphological variables used in this study were not very effective in separating the two genera (86.78% of the specimens were correctly classified by the computed discriminant function), yet the Hotelling's t^2 test was very highly significant ($p = 3{,}251e\text{-}08$) in favour of the distinctiveness of the two analysed groups (genera).

This study was supported by the Grant IDEI no. 265/01.10.2007 from the National University Research Council, allotted to D. Murariu.

LACK OF DIVERGENCE BETWEEN 16S AND 18S DNA SEQUENCES OF *MONODACNA PONTICA* AND *M. COLORATA* (BIVALVIA: CARDIIDAE) FROM GOLOVIȚA LAKE

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Key words: morphological identification, molecular markers, 18S, 16S, *Monodacna pontica*, *Monodacna colorata*.

Present Limnocardiids species are relicts of a wide spread fauna during the geologic past in the Pontic-Aral-Caspian basin. In the Romanian fauna there are present only 2 genera: *Monodacna* and *Adacna*.

Genus *Monodacna* it is one of the newest genera of this family, which appeared in Pliocene and is spread in the Caspian Sea and in the lagoons around the Black Sea. In the Romanian fauna there were identified two species, *Monodacna pontica* and *Monodacna colorata*. In this paper, we analysed specimens of these two species from Golovița Lake, collected during field trips in 2008 and 2009.

The morphological criteria we used to describe the species were, according to Grossu, shape of the coasts (higher or more flattened), how dense the shells were, the dentition of the cardinal platform, the position of the umbone and the thickness of the valves.

We measured three morphometric variables, shell length (SL), shell width (SW), shell height (SH), from which we computed the SW/SL, SH/SL and SW/SH ratios. We used these ratios to perform a non-parametric multivariate analysis of variance (NPMANOVA) with 10000 of permutations for 53 *M. colorata* and 26 *M. pontica* specimens. The analysis revealed a significant difference ($p = 0.0136$) between the two investigated groups (species). We also analysed by DNA sequencing the molecular markers 16S rDNA (10 specimens of *M. pontica* and 7 of *M. colorata*) and 18S rDNA in (12 specimens of *M. pontica* and 8 of *M. colorata*). The analysis revealed practically no difference between the investigated specimens, with two haplotypes, differing by one single nucleotide position in 16S rDNA, shared by the two species, and just one haplotype in 18S rDNA. These results suggest that the two species might be different morphae of a single species.

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OPLITIS HUTUAE N. SP., A NEW MYRMECOPHILOUS MITE (ACARINA: ANACTINOTRICHIDA: UROPODINA) FROM ROMANIA

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Key words: Acari, Uropodina, *Oplitis*, new species, Romania.

On the basis of specimens collected from South of Romania (Argeş County), description and illustrations of a new myrmecophilous mite, *Oplitis hutuae* sp. n., has been given.

All the developmental stages of the species (excepting larva) were described and adults hypostome, chelicera and tritosternum.

The samples were collected from two pastures in a hilly areas, one of them is in Faget locality, on the 22nd of January 2009: holotype female and allotype male, and nine paratypes (5 ♀♀, 3 ♂♂ and 1 deutonymph). Another material examined is from the Barca's Lake locality, collected on the 21st of July 2009 (5 ♀♀, 1 ♂, 2 deutonymphs and 1 protonymph).

O. hutuae n. sp. belongs to the *conspicua* species group – entire perigenital line and preanal line present, prestigmatic part of the peritreme v – shaped (after Hirschmann, 1991). The new species differs from all congeners of the species group by the form of perigenital line (entirely wavy - line – like), and the ornamentation of genital surface of the female.

The new species is named in honour of Dr. Marina Huţu, one of the best acarologist of Europe.

THE ANALYSIS OF THE TAXONOMICAL, TROPHICAL AND ZOOGEOGRAPHICAL SPECTRUM OF THE ORIBATID'S COMMUNITIES (ACARI: ORIBATIDA) FROM SOME FOREST ECOSYSTEMS FROM BUCEGI MASSIF

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Key words: Acari, Oribatida, taxonomical, trophycal, zoogeographycal.

Knowing the fact that the oribatids are the most numerous group from the mites, and the forest ecosystems are the most favorable for their development, our researches were made in Bucegi Massif in three types of forest ecosystems: a fire-beech forest on Valea Seacă; a fir forest on Valea Urlătoarei, and a beech forest on Muchea Lungă, in: 1984-1985; 1993-1994 and 1994-1995 time periods. The taxonomical analyse showed 37 families, with 92 genera and 183 species. From the total number, 98 species were common to all ecosystems, 19 species were characteristic to the fir-beech forest, 26 species to the fir forest and 8 species to the beech forest. In spatial dynamics, the taxonomical structure of the oribatids had two maximum values, one in fir-beech forest (126 species) and another in fir forest (120 species), and a minimum value in beech forest (94 species). In temporal dynamics, the first period was characterized by a medium value of the taxonomical structure, by 2.5 times increased (133 species), in comparison with the second and the third periods (104 species and 106 species). The analyse of the trophical structure indicated the presence of the 9 genera with 23 macrophytophagous species, 26 genera with 40 microphytophagous species and 57 genera with 120 panphytophagous species. The identified oribatids from these forest ecosystems are euribiont species, with a holarctic-palearctic distribution, on which those from Asia and North Africa are added. Many of them are reported in Central and North of Europe.

NEW DATA REGARDING AMPHIPODS (CRUSTACEA: AMPHIPODA) FROM BULGARIA

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Key words: Crustacea, Amphipoda, new data, Bulgaria.

Most of the literature on surface water gammarids concerns the Danube River, Rhodope Mountains, Maritza basin, coastal lagoons and lakes (limans) or estuarine sectors of rivers emptying to the Black Sea, inhabited mainly by Ponto-Caspian relicts. Most of the papers are old, only a few are more recent. There were collected amphipods from 12 stations from NW Bulgaria, Bulgarian Dobrogea, including two lakes close to the Black Sea (Durankulak and Shabla). Five species from 3 families were identified: *Gammarus komareki* Schäferna, 1922 (Gammaridae), *Chaetogammarus ischnus* (Stebbing, 1899), *Dikerogammarus haemobaphes* (Eichwald, 1841), *Pontogammarus robustoides* (G. O. Sars, 1894) (Pontogammaridae) and *Orchestia cavimana* Heller, 1865 (Talitridae). From the old collections of „Grigore Antipa" National Museum of Natural History we mentioned *Gammarus pulex* Linnaeus, 1758 collected in 1927 from Kavarna (Batovo Valley). *Gammarus komareki* Schäferna, 1922 is redescribed. New data for collecting of several species, Onogur (Suha Reka) for *G. komareki* and Durankulak lake for *Orchestia cavimana* (previously known only from Blatnishko Lake, close to Durankulak, mentioned 37 years ago).

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NEW LEUCONIDS FROM THE GULF OF MEXICO (CRUSTACEA: CUMACEA: LEUCONIDAE)

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Key words: Cumacea, Leuconidae, *Eudorella*, *Leucon*, five new species, Gulf of Mexico.

Twenty one species of Leuconids were previously mentioned from the North American waters. Only *Eudorella monodon* Calman and *Eudorella* sp. A are present on the coast of Florida and surroundings (Heard, Roccatagliata, Petrescu, 2009); and *Leucon americanus* Zimmer, 1943 and *L*. sp. A and B. There are described five new species to science from the Gulf of Mexico: *Eudorella mihaibacescui* n. sp., *Leucon papadopoli* n. sp., *L. andreiae* n. sp., *L. serafimae* n. sp. and *L. raduletzi* n. sp. *E. mihaibacescui* n. sp. is closely related to *E. monodon* Calman, 1912. It differs by anterior margin of carapace without serration, dorsal margin without spine, pereopod 1 with shorter propodus, uropod with shorter endopod. Eight species of *Leucon* were anteriorly mentioned from North American waters, 3 from the Florida coast (Heard, Roccatagliata, Petrescu, 2009). First mention of subgenus *Crymoleucon* Watling from North American waters. The four new species of *Leucon* belong to subgenera *Crymoleucon* (3 species) and *Leucon* (1 species). The new species differs from the rest of the known ones by different combination of characters: carapace with/without ornamentations, anterior margin of carapace, length of uropodal rami.

A CHECKLIST OF SPRINGTAILS (COLLEMBOLA) FROM THE REPUBLIC OF MOLDOVA

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Key words: Collembola, checklist, Republic of Moldova.

The records of Collembola from Moldova started about fifty years ago and the first two species were published by Martynova in "Collembola" in "The key to insects of the European part of the USSR"(1964). Some more information about species diversity of Collembola from Moldova were included in Stegarescu's papers (1967).

However, this group has been included in systematical studies only in the last twenty years and more than two hundred species have been found. Since 2002, ten species new to science were described from the Republic of Moldova by Gama & Busmachiu (2002, 2004), Busmachiu & Deharveng (2008), Busmachiu & Weiner (2008).

Until now, the faunistic data on Collembola from the Republic of Moldova have not been summarised in a checklist form. In this work, we try to treat the whole existent information on Collembola from the Republic of Moldova according to modern nomenclature of this group.

The checklist is only provisional, based on the published information, and it is an open list to be completed by newly found species. Nomenclature is according to Zimdars & Dunger (1994), Pomorski (1998), Bretfeld (1999), Fjellberg (1998, 2007), Potapov (2001), Thibaud, Schulz & Da Gama (2004).

TWO NEW BUSH-CRICKETS (INSECTA, ORTHOPTERA) FOR ROMANIAN FAUNA

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Key words: *Metrioptera amplipennis*, *Metrioptera oblongicollis*, new records, morphological traits, stridulation, Romania.

Two new findings for Romanian Orthoptera fauna are described, the bush-crickets *Metrioptera (Zeuneriana) amplipennis* (Brunner von Wattenwyl, 1882) and *Metrioptera (Metrioptera) oblongicollis* (Brunner von Wattenwyl, 1882). The species *Metrioptera amplipennis* was considered so far as an endemic species for Serbia, but we found it in Balta Ialomiței (Il), on Danube's shores. *Metrioptera oblongicollis* was known from the whole Balkan Peninsula; it seems like the North-eastern distribution area limit of this species is Dobrogea, as we found the species at Strunga, Canaraua Fetii and Dumbrăveni (Ct). Considering these two species, the list of the Romanian Orthoptera now counts 182 species. The important morphological traits, species distribution and an analysis of the stridulation are discussed in this paper. The two species were identified relying on their morphology, *Metrioptera oblongicollis* being also identified by the oscillogram of its calling song, following Heller, 1988. It seems that the calling song of *Metrioptera amplipennis* is recorded for the first time.

NEW DATA ON THE CHEWING LOUSE FAUNA (PHTHIRAPTERA: AMBLYCERA, ISCHNOCERA) FROM THE DANUBE DELTA BIOSPHERE RESERVE (ROMANIA)

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Key words: chewing lice, birds, fauna, new host-parasite associations, new records, the Danube Delta, Romania.

The studies made along 2009 on the chewing louse fauna from some wild birds of the Danube Delta Biosphere Reservation are presented. The birds controlled for ectoparasites were captured within the period January – September 2009. All these birds were caught in 9 sites placed in the marine area (offshore bar) of the reservation, in the neighbourhood or within the perimeter of the next three localities: Letea, Sfântu Gheorghe and Vadu.

A total number of 194 birds (136 adults and 58 juveniles) were examined, they belonging to 43 species of 22 families and 6 orders. From all these examined birds, we found chewing lice only on 43 individuals (31 adults and 12 juveniles), which belong to 12 species of 14 families and 5 orders. The other 151 birds (105 adults and 46 juveniles), which belong to 33 species of 18 families and 3 orders, were not infested with ectoparasites of this group. From the studied birds, the largest share of not infested birds with chewing lice had the Passeriforms, the representatives of the families Paridae, Sylviidae, Fringillidae, Passeridae and Laniidae.

From the 39 chewing louse species identified in the studied material, three are new reports for the Romanian parasitological fauna, namely: *Actornithophilus multisetosus* Blagoveshtchensky, 1940 (from *Lymnocryptes minimus*); *Actornithophilus piceus lari* (Packard, 1870) (from *Larus cachinnans*) and *Austromenopon aegialitidis* (Durrant, 1906) (from *Charadrius dubius*). Also, the following five new chewing louse species – bird species associations are reported for the first time in the world: *Actornithophilus piceus lari* (Packard, 1870) – on *Larus cachinnans*; *Austromenopon* sp. – on *Larus cachinnans*; *Menacanthus curuccae* (Schrank, 1776) – on *Acrocephalus melanopogon*; *Philopterus* sp. A (which differ by some very obvious characters of *P. hercynicus* described by Mey in 1988 also from this host) – on *Cyanistes caeruleus*; *Philopterus* sp. B – on *Acrocephalus melanopogon*. As a matter of fact, we report the presence of some chewing lice (belonging even to 2 species) on *A. melanopogon* for the first time in the world. And not the least, we report two chewing louse species – birds species associations, for the first time in the parasitological fauna of Romania.

This study was financially supported by the Romanian Ministry of Research Education and Inovation within the project PNCDI-PC no. 31-084/2007.

CHEWING LICE (PHTHIRAPTERA: AMBLYCERA, ISCHNOCERA) COLLECTED ON SOME WILD BIRDS (AVES) FROM SOUTHERN AND SOUTH-WESTERN MOLDOVA (ROMANIA)

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Key words: chewing lice, birds, Moldova, new records, Romania, *Kurodaia* (*Kurodaia*) sp., *Accipiter gentilis*.

The results synthetically presented in this abstract were obtained after the study on the chewing lice collected during two periods of time (1971-1973 and 2002-2008) from 34 wild birds which belonged to 9 species of 6 families and 5 orders. These birds from which we collected the studied material, originated in 12 localities from the following 3 counties of the southern and south-western Moldova (for each county, the number of the collected sites is presented between brackets): Bacău (9), Vrancea (1), Vaslui (2).

From all studied material, 369 chewing louse specimens (132 females, 76 males and 161 nymphs) belonging to 24 species and 13 genera of 2 families (Menoponidae and Philopteridae) were identified. From these 24 chewing louse species identified from the studied material, two of them represent new reports for the parasitological fauna of Romania, namely: *Kurodaia* (*Kurodaia*) *fulvofasciata* (Piaget, 1880) (on *Buteo buteo*) and *Brueelia olivacea* (Burmeister, 1838) (on *Nucifraga caryocatactes*). Also, the following two new chewing louse species – bird species associations are reported for the first time: *Kurodaia* (*Kurodaia*) sp. on *Accipiter gentilis*; and *Degeeriella fusca* (Denny, 1842) on *Buteo buteo*. We report, for the first time in te parasitological fauna of Romania the presence of a new parasite species – host species association, that is *Colpocephalum nanum* Piaget, 1890 on *Accipiter gentilis*. Once again we confirm the presence of the genus *Kurodaia* on the bird species *Strix uralensis*. Although this association was also reported in the past twice, by some Romanian specialists, yet, it was not included in the last published world catalogue of the chewing lice.

And not the least, we present two interesting cases of polyparasitism with chewing lice in two adult individuals of *Corvus frugilegus*. This, on each of these two birds, we found five chewing louse species, all being typical parasites for this host species.

FAUNISTIC DATA ON SOME BUG SPECIES (INSECTA, HETEROPTERA) FROM WEST TURKEY [RESULTS OF THE "TAURUS" 2005 AND "FOCIDA" 2006 EXPEDITIONS]

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Key words: Heteroptera, bugs, faunistic data, Turkey, west, expeditions.

The paper presents a list of Heteroptera specimens collected during the expeditions carried out in Westren Turkey between 2005-2006 by "Grigore Antipa" National Museum of Natural History (Bucharest) and an NGO – „Oceanic Club", a society of oceanographical exploration and protection of the marine environment from Constanţa. The material received for study includes a generous number of specimens belonging to Infraorder Cimicomorpha, Superfamily Miroidea, but it is not the subject to this work.

Of the 523 specimens heteroptere identified, 73 species grouped in 57 genera belong to 4 infraorders, 7 superfamilies, 11 families.

Although studies on Heteroptera diversity in Turkey are many, we identified 4 species which are new reports for Turkey, and which are not included in the Catalogue of the Heteroptera of the Palearctic Region, vol. 5, published in 2006 by Berend Aukema and Christian Rieger.

THE AQUATIC AND SEMIAQUATIC HETEROPTERA FAUNA (HETEROPTERA) IN THE MIDDLE BASIN OF THE OLT RIVER

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Key words: Nepomorpha, Gerromorpha, faunistic research, *Mesovelia vittigera*.

The paper presents the results of the research done during 2000 - 2002 and 2004, in the middle basin of the Olt River. We identified 34 species of aquatic and semiaquatic Heteroptera, which belong to 18 genera and 10 families. Of these, 19 species are included in Infrasuborder Nepomorpha Popov, 1968, and 15 in Infrasuborder Gerromorpha Popov, 1971.

Mesovelia vittigera Horváth, 1895 is a new species of the Romanian fauna. *Velia rivulorum* Fabricius, 1775, *Callicorixa praeusta praeusta* Fieber, 1848, *Sigara (Subsigara) iactans* Jansson, 1983 and *Notonecta viridis* Delcourt, 1909 are new species of the Transylvanian fauna. 16 species are reported for the first time in the basin of the Olt River. In the studied area, we identified 3 rare species in Romanian fauna. The ecological preferences of each species are presented. We found the largest number of Heteroptera (29) in stagnant waters. Aquatic Heteroptera prefer stagnant waters in general, both permanent waters (15 species) and temporary waters (12 species). Semiaquatic Heteroptera prefer aquatic basins with permanent water, both stagnant waters (14 species) and rivulets and small rivers (11 species).

POPULATION STUDIES OF *CARABUS (MORPHOCARABUS) SERIATISSIMUS* REITHER IN MARAMUREŞ COUNTY

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Key words: Coleoptera, Carabidae, new fauna and zoographic data, carabocenoses, Maramureş county.

Carabus (*Morphocarabus*) *zawadzkii seriatissimus* Reitter, 1896 is a species whose distribution is badly known in Romania, reported only from two localities of Maramureş county, to Vişeul de Sus (Takacs A., 1997) and near Sighetul Marmaţiei (Takacs A., 2002; Merkl O., 2008).

The research organized by the authors in Maramureş (2007 to 2009) allows the identification of other 5 locations: in the forest (Bocicoiu Mare, Lunca Tisa, Borşa 1500 m), in forest edge (Bogdan Vodă, Bocicoel) and in the grassland (Ruscova-Repedea in Maramureş Mountains). It also occurs in the Bistriţa Năsăud county, on the western edge of Mountains Rodna to Fiad and Telciu.

It does not exist in Gutâi Mountains where the taxon *guttiensis* Takacs and Lie, 1992 of *Carabus* (*Morphocarabus*) *hampei* Küster, 1846 is found, which has a large size, close to *seriatissimus*. The habits are very different, notably for the ratio of pronotum, elytral aspect (elytra flats, stries indicated only by a series of shallow broken lines to *seriatissimus*) and form of the endophallus.

Populations have emerged rather late (end of May-early June), spread over about 2 months and are a variable part of the genus *Carabus* carabocenosis (12 to 25% according to localities). The dominant species is usually *Carabus cancellatus ungensis* Csiki, 1906 (26 to 62% according to places). *Carabus obsoletus* Sturm, 1815, low but steadily represented (7 to 9%), belongs rather to the form *csikii* Mallaz, 1900 (substantially in Maramureş Mountains). The presence in low numbers of *Carabus* (*Orinocarabus*) *linnei* Panzer, 1812, species rather enfeoffed to the wooded mountain regions poses the problem of its origin in the plain biotopes.

EXTENSION OF THE REPARTITION REGION OF *CARABUS (MORPHOCARABUS) ALUTENSIS* SĂVULESCU, 1972

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Key words: Coleoptera, Carabidae, *Carabus (Morphocarabus) alutensis,* new zoographic data.

Carabus (*Morphocarabus*) *alutensis*, discovered by V. Berbece in 1960 in Călimăneşti (Râmnicu Vâlcea County), was identified and described by N. Săvulescu (1972).

The recent monographs (Turin et al. 2003, Deuve 2004) attach *alutensis* in the subsp. *rothi* Dejean 1829. Various morphological features (tetraploid sculpture, elytra with costulation near of aberration *aequistriatum* Kraatz 1878 of *rothi*), but mainly the neighboring form of the endophallus underline this rapprochement.

Carabus (*Morphocarabus*) *alutensis* is one of the most localized species from all endemic species in Romania. Until now it was known only from places on the right bank of the Olt River ("Gr. Antipa" Museum Collection – Serafim, 1992; private collections Lie, 1999; A. Takacs, 1998).

The prospectings (2008-2009), made by the authors, show his absence on each bank of the Olt River, from Turnu Roşu up height Calimăneşti Cozia Monastery. On the contrary, on the right bank, it actually meets fairly frequently in the latter place until Râmnicu Vâlcea, in gardens and forest edges, in sandy soil.

This narrow location to one side the bank of the Olt River was surprising. Our research shows its presence in more sparse populations, on the left bank of the Olt, including:

- Along the Olt, from Păuşa (several locations) to Dăeşti;
- In Cozia National Park:
  - Proximity of monastery Stânişoara (709 m)
  - To the Poiana Bobolea (1400m) on the eastern slope of Cozia peak.

In these locations, regardless of altitude, individuals have the same size and the same colors range than the opposite bank.

This significantly increases the area of extension of this species and included in the inventory of species represented in the National Park Cozia.

CONTRIBUTIONS TO THE KNOWLEDGE OF ROVE BEETLES (COLEOPTERA, STAPHYLINIDAE) FROM "PLAIUL FAGULUI" SCIENTIFIC RESERVATION, REPUBLIC OF MOLDOVA

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Key words: Staphylinidae, Republic of Moldova, Scientific Reservation "Plaiul Fagului".

The paper represents the first contribution to the knowledge of the rove beetle fauna from the "Plaiu Fagului" Scientific Reservation. The identified coleopterans belongs to 5 subfamilies and 12 genera. From the 14 identified species within the area, 8 species are recorded from Republic of Moldova for the first time: *Atheta marcida* (Erichson, 1837), *Dinaraea aequata* (Erichson, 1837), *Geostiba circellaris* (Gravenhorst, 1806), *Lordithon trinotatus* (Erichson, 1839), *Tachyporus transversalis* Gravenhorst, 1806, *Tachinus rufipes* (Linnaeus, 1758), *Anthobium atrocephalum* (Gyllenhal, 1827) and *Lathrobium longulum* Gravenhorst, 1800. The genera *Geostiba* and *Anthobium* were recorded for the first time in the Republic of Moldova.

ON THE SPECIES OF *OCYPUS* LEACH OF THE CARPATHIAN BASIN WITH SPECIAL REFERENCE TO THE SPECIES OF ROMANIA (COLEOPTERA: STAPHYLINIDAE: STAPHYLININAE: STAPHYLININI)

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Key words: Staphylinidae, Staphylinini, *Ocypus*, Carpathian Basin, Romania, valid species, faunistic data, identification key, catalogue, distribution maps.

The *Ocypus* specimens of the Carpathian Basin, mainly collected from Romania, were studied. 14 species of the *Ocypus* genus are certainly present in Romanian fauna: *Ocypus olens olens* (O. Müller), *O. ophthalmicus ophthalmicus* (Scopoli), *O. biharicus* J. Müller, *O. kuntzeni* (J. Müller), *O. macrocephalus* (Gravenhorst), *O. nitens nitens* (Schrank), *O. ormay* (Reitter), *O. aeneocephalus* (De Geer), *O. fulvipennis* Erichson, *O. fuscatus* (Gravenhorst), *O. jeannei* Coiffait, *O. mus* (Brullé), *O. picipennis picipennis* (Fabricius). The species *Ocypus serotinus* (Ádám, 1991) represents a distinct species and the name is here revalidated. The figures of male genitalia for 12 species of *Ocypus* are given. A diagnostic key and a catalogue are provided for *Ocypus* species of Romania. The distributions in Romania of 14 species are mapped. The distributions in the Carpathian Basin of *Ocypus kuntzeni*, *O. tenebricosus*, *O. biharicus*, *O. macrocephalus* and *O. ormayi* are given.

FIRST RECORD OF *GLYPHOMERUS ISOSOMATIS* ZEROVA ET SERYOGINA, 1999 AND OF THE SUBGENUS *LIOTERPHUS* OF THE GENUS *TORYMUS* (HYMENOPTERA: CHALCIDOIDEA: TORYMIDAE) IN ROMANIA

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Key words: Torymidae, Chalcidoidea, Hymenoptera, distribution, hosts.

Three interesting torymids are recorded for the first time for the Romanian fauna: *Glyphomerus isosomatis* Zerova et Seryogina, *Torymus fuscicornis* (Walker) and *Torymus nitidulus* (Walker). *Glyphomerus isosomatis* is mentioned for the first time from galls of *Tetramesa brevicollis* on *Festuca valesiaca* and its presence in Romania enlarging the known distribution area to the west. With *Torymus fuscicornis* and *T. nitidulus*, the *Lioterphus* subgenus is for the first time mentioned in Romania.

TRIBE ANTHIDIINI (HYMENOPTERA: APOIDEA) IN ROMANIA

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Key words: Hymenoptera, Apoidea, Anthidiini, Romania.

The paper presents data regarding the Anthidiini species distribution in the Romanian fauna. The list includes 28 species, reported within the period 1897 – 2009, belonging to the following genera: *Trachusa* (one species), *Archianthidium* (one species), *Paraanthidium* (one species), *Rhodanthidium* (one species), *Paraanthidiellum* (3 species), *Icteranthidium* (one species), *Anthidium* (7 species), *Proanthidium* (one species), *Anthidiellum* (one species), *Stelis* (9 species), *Dioxys* (one species), *Dioxoides* (one species); 9 of them are rare species in our country, having only 2 or 3 reports, and the species *Paraanthidiellum melanurum*, *Anthidium mocsaryi*, *Stelis odontopyga* and *Dioxoides tridentata* remained at their first report in Romania, their presence needing to be confirmed. The rest of the species are distributed almost in the entire country, being good pollenizers of the alfalfa cultures, which cover large areas in some regions.

ORNITHOLOGICAL OBSERVATIONS ALONG THE DANUBE MEADOW BETWEEN 825 AND 388 KM

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Key words: ornithological observations, Danube meadow, Romania, SPA, Natura 2000, SCI, Bird Directive.

The special importance of the Danube floodplain from the biodiversity point of view was recognized by declaring ten ares of special avifaunal protection (SPA), as an integral part of the „Natura 2000" European ecological network in Romania (HG 1284/24 octombrie 2007) and three sites of community importance (SCI). Because of the geographical distribution, Romania is an important migration way for a very large number of birds. A part of the migratory birds of Europe migrates south-eastwards. Most of the branches of the migration ways reach the eastern Romania, from Dobrogea to Bosphorus, Minor Asia up to Africa. Generally, migration ways avoid the Carpathians through the western and eastern side or cross them through the gorges of the Olt and Jiu rivers, and the Danube Floodplain becomes an important resting and foraging station both during the spring migrations and the autumn ones for many species of migratory birds.

Our study was made during the spring of 2009, within the period the 28th of April – the 1st of May and the 5th – 6th of May. Observations were made in 25 stations along the Danube Floodplain, between the kms 825-388, from protected and unprotected areas. Within this period, over 25 aquatic bird species, protected by the national laws and the Bird Directive (79/409/EEC) use the temporary and permanent water surfaces from the Danube Floodplain as station during migration. This study bring new data on the nestling species of the Danube Floodplain and on the species which use this areas as a foraging territory during summer.

BIRD FAUNA LONG-TERM MONITORING IN THE LOWER PRUT RIVER BASIN

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Key words: monitoring, birds, breeding species, SPA.

In the present paper, we give data on the bird fauna's dynamics during the last 18 years in the lower sector of Romanian Prut River basin. This valley shelters a good level of the biodiversity, being very well protected through the border status, but due to the low level of the industrial development, too, despite an increasing of the human pressure in the last years. In this area, we recorded some very rare breeding bird species for Romania - *Platalea leucorodia*, *Plegadis falcinellus*, *Limosa limosa*, *Recurvirostra avosetta*, *Himantopus himantopus*, *Luscinia svecica* etc., but also some globally threatened species like *Phalacrocorax pygmeus*, *Aythya nyroca* or *Crex crex*. We followed the trends of the breeding populations and migration time bird effectives, recording a positive trend for 42% from the whole bird fauna, respectively, a negative trend for near 15% of it. In this sector of the Prut River basin, three Important Birds Areas were delimited – Carja - Mata - Radeanu ponds and Roscani Forest, Brates Lake, respectively, Prut River valley (Vlădești ponds - Frumușița) - all included in the Romanian Natura 2000 network, while the last two are parts of Lower Prut Natural Park, also. The diminution of the aquatic and swampy surfaces, increasing hunting pressure and the wind parks' development are the most important risk factors for the bird fauna's diversity.

GEOGRAPHIC DISTRIBUTION OF BATS NORTH OF THE CARPATHIANS

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Key words: bats, geographical distribution, Carpathians, north.

Bats are more numerous in tropical and subtropical regions but with their special biology they are adapted and distributed in temperate zones, too, as it is the case of whole Palaearctic Region. We can also observe these phenomena in the Carpathian Mountains (Tab. 1).

Table 1

Clines distribution of bat species along of the Carpathians Mountains.

Taxa / Region	Families		Genus		Species	
	N	%	N	%	N	%
South Carpathians Mountains (and Balkan Peninsula)	4	100	11	100	32	100
Pannonian Region	3	75	10	91	29	91
Southern Poland (North Carpathians)	2	50	9	82	25	78
North of Poland	1	25	7	64	17	53

Three species of bats are characteristic to Polish segment of the Carpathians: *Rhinolophus ferrumequinum, R. hipposideros* and *Myotis emarginatus.* These species reach their northern limits in this region.

Recently observed process of enrichments of bat fauna north of the Carpathians, both from systematic and population density point of view, is due to three reasons:

- Recuperation of bat fauna after ecological crisis which occurred in the second half of the past century (i.e. *Rhinolophus hipposideros*, *Myotis emarginatus*);
- Recent migration of some bat species to Southern Poland (*Rhinolophus ferrumequinum*, *Myotis blythi*, *Pipistrellus kuhlii*);
- Existence confirmation of newly described bat species (*Myotis alcathoe* and *Plecotus macrobullaris*.

SPREADING OF SHREWS FROM GENUS *SOREX* ON THE TERRITORY OF REPUBLIC OF MOLDOVA

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Key words: common shrew, lesser shrew, *Sorex*, spreading, ecology, morphology.

The studies were accomplished in 2003-2007 in various natural and anthropogenic ecosystem types from different zones of R. Moldova. The animals were collected in snap traps. At the whole, 127 common shrews (*Sorex araneus*) and 98 lesser shrews (*S. minutus*) were collected. Statistically, body and cranial morphological parameters were studied.

S. araneus is common and the most spread species among shrews, more tolerant to the environment conditions and to anthropogenic activity in comparison with other shrew species. It was recorded in the majority of studied natural and anthropogenic biotopes (frequency = 94%). The Lesser shrew is also rather spread all over the republic territory (frequency = 88%), but it is more rare (abundance = 33% among shrews). In southern zone of Moldova the species were recorded in natural reserves Codrii Tigheci, Prutul de Jos, near lakes, in swampy sectors, in humid gullies with hygrophilous vegetation, in woods, at forest edges and in forest shelter belts, in reed vegetation. In the center of the republic, the species are widly spread in Codri and Plaiul Fagului reserves in various types of biotopes, in different natural and anthropogenic ecosystems of central districts. In Chișinău, the species were recorded on river and lake banks, in woods, in humid gullies with hygrophilous vegetation. In the northern zone both species are widly spread on the territory of Pădurea Domnească reserve, in woods, forest edges, acacia stands, insular forests, near aquatic basins (ponds, lakes, fish farms, rivers). Unlike the common shrew, *S. minutus* avoid the agrocenoses and the recreational sectors of the forests.

STUDY ON MAMMAL DIVERSITY FROM ROMANIAN AND BULGARIAN DOBROGEA

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Key words: mammal species, ecosystems, habitats, biodiversity.

An inventory of mammal species from all Dobrogea was accomplished in a bilateral co-operation project in 2008 and 2009. Comparing previously reported species for Bulgarian part (only 14) with 49 for the Romanian one it is revealed a close determination of faunal structure by habitat conditions: steppic, agroecosystems, forests and shelter belts, road bridges as well as caves and crevices in limestone area. On all, there are information (collecting data, observations, footprints, galleries and hills) on 55 species from six orders: Insectivora (7); Chiroptera (16): Lagomorpha (1); Rodentia (15); Carnivora (11) and Artiodactyla (4).

The higher number of mammal species for Romanian Dobrogea is explained by the inclusion in previous surveys of larger mammals (carnivores and artiodactyls) on one side and on the other one, among small mammals bat species were included, too, while in Bulgarian reports only small mammals were considered - insectivores and rodents.

On the zoogeographical point of view, most Dobrogean mammal species are European, 10 are Central Asiatic-European, 4 Palaearctic, 4 Holarctic and only one of them (*Rattus norvegicus*) is cosmopolitan. Also, one of them (*Mesocricetus newtoni*) is a Balkan endemic species, largerly distributed before and very much restricted today, because of the continuing increasing anthropic pressure. This is why we recommend some of species to be protected.

Within this project it was possible to know and better understand the links between the state of mammal biodiversity and ecosystem physiology, the species diversity being much higher in natural ecosystems and much more reduced in cultivated ones.

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THE INCIDENCE OF ZOOPLANKTON SPEED AND SAMPLING DEPTH ON THE SAMPLING EFFICIENCY / PRELIMINARY COMPARATIVE DATA

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Key words: zooplanktonic species, cladocerans, copepods, limnologists, methodology, hydrodynamics.

The efficiency of the tubes, traps and nets is varying according to the type of the studied lake and the type of applied methodology. Thus, from one study to another, the obtained data can vary within certain limits for the same water body and season. The inherent variability led to some correlation studies between used methodologies in order to coroborate the results and render them comparable. The present study is referring to the comparative analysis of the eficiency of the tubes used for the sampling of the superficial layers in the stagnant water bodies. The Limnos and Green tubes have been compared to sampling tubes of different diameters. The water speed at the entrance in the tube is calculated and compared with the swimming speed of cladocerans (*Simocephalus vetulus* juveniles and adult individuals) and copepods (*Cyclops* sp. juveniles and adult individuals). It is demonstrated that the diameter of the tube used for sampling influences the sampling efficiency especially for the zooplanktonic species that are actively swimming in the water body (cladocerans, copepods). The present study sets the basis for a larger methodology study integrating statistical analysis and hydrodynamics in order to establish an unified methodology for limnologists worldwide.

THE INFLUENCE OF SOME ENVIRONMENTAL FACTORS ON THE SPECIES DIVERSITY OF THE PREDATOR MITES (ACARI: GAMASINA) FROM NATURAL FOREST ECOSYSTEMS IN BUCEGI MASSIF

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Key words: diversity, forest ecosystem, mite, population.

The ecological research was made in 2001-2003, in Bucegi Massif, in three natural forest ecosystems: with *Picea abies*, *Abies alba* and *Fagus sylvatica*. In order to show the influence of the environmental factors on the species diversity of the gamasids, the following abiotic parameters on soil level were analysed: temperature, humidity and pH, in correlation with altitude, slope and the type of vegetation. The species diversity was calculated with Shannon - Wiener index, in comparison with the equitability.

Taking account of the bio-edaphically conditions, the gamasids diversity had a various evolution. In spatial dynamics, the ecosystem with *Abies alba* offered better conditions for a species diversity (78 identified species), in comparison with *Picea abies* ecosystem (67 identified species), where, due to a high altitude and to the big slope, this parameter had the most decreased values. In ecosystem with *Fagus sylvatica*, the diversity showed the presence of 71 species. On the soil level, the litter and fermentation layer was a favorable habitat for development of the gamasids populations.

In temporal dynamics, the Shannon index had recorded seasonal fluctuations. The most increased values were obtained in spring and summer, in all three ecosystems, when due to the soil humidity, the habitat and trophical resources for these predator mites were proper for their development. In winter, this index had decreased values.

All these aspects are due to the different bioedaphical conditions, specifically for each studied natural ecosystem.

NUMERIC FLUCTUATIONS AND POPULATION DYNAMICS OF AQUATIC NESTING BIRDS IN MIXED COLONIES VULPAȘU, CHIRILOAIA AND CUCOVA (BRĂILA SMALL WETLAND NATURAL PARK)

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Key words: mixed colony, colonial aquatic birds, population dynamics, breeding period, migration period.

This study presents the observations made during a period of three years (2007 - 2009) in the three mixed colonies of the Brăila Small Wetland Natural Park: Vulpașu, Chiriloaia and Cucova. In the colonies, a number of ten aquatic nesting species, with specific differences for each colony separately, was reported. The 10 species are: *Phalacrocorox carbo* (Cormorant), *Phalacrocorax pygmaeus* (Pygmy Cormorant), *Nycticorax nycticorax* (Night Heron), *Ardeola ralloides* (Squacco Heron), *Egretta garzetta* (Little Egret), *Egretta alba* (Great White Egret), *Bubulcus ibis* (Cattle Egret), *Ardea cinerea* (Grey Heron), *Plegadis falcinellus* (Glossy Ibis) and *Platalea leucorodia* (Spoonbill). The presence or absence of certain species in a colony is closely related to its ecological requirements, with the structural features of the ecosystems (habitats) and the climatic conditions. From the numerical point of view Cormorant, Pygmy Cormorant, Little Egret and Glossy Ibis are the main species that are nesting in the colonies. There have been registered large quantitative fluctuations from one year to another in all the colonies. Despite all these variations, always in May, the maximum effectives of nesting adults was recorded and, in June, of the hatched chicks. The colonies breeding period is from March to July, with specific valences for each species. The colonies formation is closely linked to the spring afin type migration of the colonial aquatic species, while the leaving of the colonies is not the start of the difug type migration.

THE QUALITATIVE AND QUANTITATIVE CHARACTERIZATION OF AQUATIC AVIFAUNA IN THE HUMID AREAS LOCATED IN THE FLOOD PLAIN OF THE DANUBE, CALAFAT-JIU SECTION (DOLJ COUNTY)

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Key words: aquatic avifauna, composition, density, frequency, distribution, flood plain, the Danube, Romania.

The pedoclimatic and biogeographic characteristics in the area between the open bend bounded by the Danube – which flows from Calafat – and Jiu River which flows into the Danube, in the area of Zaval village, determined the creation of a mosaic of habitats (flood plain forests, moors with extended rush-beds or with large surfaces of water, dunes of sand flora and / or forests of *Robinia pseudacacia,* hydrophile, xeromezophile and xerophile meandows with small agrarian surfaces in between, which creates proper conditions for feeding and breeding for a rich and diverse ornithofauna.

The humid areas in this section of flood plains are attractive for numerous aquatic birds, not to mention that the flood plain of the Danube is an important migration route often led through by the aquatic birds.

The composition and the density of the avifauna from the humid areas which we have studied along the years is given by the interaction of the abiotic factors (level of water, seasonal thermic oscillations, chemical composition of water etc) and biotic (quantity and quality of organisms that assures the trophic basis, the presence of macrophites). The degree of biodiversity and the biomase of avifauna in the humid areas is at the same time influenced by anthropic factors that interfere in aquatic ecosystems (for example intensive fishing, poaching, activities of basins management, burning and cutting down the aquatic macrophites etc.).

As a result of qualitative and quantitative monitoring of populations and species of aquatic birds we have made an image regarding the avifaunistic spectrum of each studied humid area, based on which we can set conclusions regarding the frequency and distribution of aquatic species in the researched teritory.

STUDY ON WINTER FEEDING OF LARGE EAGLE OWL (*STRIX URALENSIS* PALLAS) IN THE MARAMUREŞ DEPRESSION

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Key words: winter feeding, large eagle owl, *Strix uralensis*, the Maramureş depression.

The large eagle owl (*Strix uralensis*) is a nesting species in Maramureş, from the altitude of 800-900m until the upper forest limit, but one year a nest was located near the town of Sighetu-Marmaţiei. During winter, the population is more numerous due to new comer individuals from north, nevertheless in harsh winters there is also an altitudinal migration, most of the individuals from the mountainous area descending in the lower parts of the depression.

As material, we have used the stomach composition of 12 individuals, between 1994-2005, and also from pellets, material deposited at the Museum of Maramures, Natural Science Department, Sighetu-Marmaţiei.

All the research was conducted with samples from the October-March period. From this research we conclude that 92% of the winter food consists of mammals for the large eagle owl (*Ratus norvegicus, Apodemus flavicollis, Apodemus agrarius, Microtus arvalis, Crocidura suaveolens, Sorex minutus*) and 8% of birds (*Garrulus glandarius*).

The pebbles (gastrolites) identified in the stomach of the large eagle owl come from the stomach of the bird pray it had eaten. The maximum amount of food consumed by the large eagle owl weighing 950 gr. (the individual's weight) was 55 gr., which represents 5.5% of its own body weight.

Altogether this research can be considered a contribution also to the knowledge of the vertebrate fauna in the preying areas of the large eagle owl predator.

DYNAMICS OF *ASIO OTUS* L., 1758 (AVES, STRIGIFORMES) WINTER-SPRING TROPHIC REGIME IN WESTERN PLAIN (ROMANIA)

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Key words: long-eared owl, pellets, rodents, diet's dynamics.

Pellets were collected from *Asio otus* colonies in two areas in the Western Plain. From Satu Mare four sets of pellets were gathered from mid-January to mid-March, and from Cefa two sets of pellets were collected in January and February. The *Asio otus* diet consisted only of small terrestrial mammals in both localities. Prey specimens were identified in most cases to species. Several specimens, with incomplete skull remains, were identified only to genus (*Mus* or *Apodemus*). In all, 10 prey species were identified, 8 rodents and 2 insectivores. Among rodents, *Microtus arvalis* was the only vole species found, the main prey of *Asio otus*.

Some differences were found between the food composition in the two areas. Insectivores (*Sorex araneus* and *Crocidura leucodon*) were identified only in the pellets from Cefa, where mice outnumber voles in the owl's diet. However, the food structure varies in time, in both localities the same pattern of trophic regime's dynamics can be observed. In January, *M. arvalis* represents only up to 30% of the prey specimens, the mice prevailing especially in number, but also as biomass. This low ratio of the main prey in the owl's diet is due to its behaviour in winter, when it uses the galleries in the snow, rarely coming to the surface. In February, due to snow melting, *M. arvalis* is hunted more often, representing about half of the prey. In March, the diet reaches its average structure, with the significant dominance of common vole.

ADAPTATION PECULARIETIES WITHIN THE URBANIZATION PROCESS OF CHIȘINĂU CITY BIRDS' FAUNA

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Key words: avifauna, urban environment, urbanization process, urban habitats, city's parks, ecological categories.

The present article presents our observations on the adaptation peculiarities of avifauna in the Chișinău city habitats. Chișinău city's position is in a favourable climatic zone from central part of Republic of Moldova. It has a total surface about 33.7 thousands ha, the green space occupying about 1.1 thousand ha. Our fieldwork was done during the period 2003 - 2008. In the city's parks, we identified 89 bird species, which belong to the following ecological categories depending on the urbanization level:

a. the complete urban species, including seven sedentary species (*Corvus monedula*, *Columba livia domestica*), some of them are very prolific and made troubles for people (*Passer domesticus*, *Corvus frugilegus*);
b. the lasting urban species that is 24 species, which were recently expanded their breeding area, as the *Phoenicurus ochruros*, which few decades ago, was present only on rocky slopes (cliff), while now, it is a common species in the building site, squares and parks. Another species, as *Apus apus, Delichon urbicum* are allured to high constructions;
c. the conditional urban species that includes 22 species. One of them is *Turdus merula*, which is in the advanced urbanization process. In this group, we found a big difference between species and within the species, between the populations originated in different geographical zones.

Adaptation for urban environment conditions denoted a high plasticity of some species that are in the urbanization process (*Sylvia atricapilla*, *Sylvia borin*, *Sylvia curruca*, *Phylloscopus collybita* or *Columba palumbus*). In the future, probably, these species will become common for urban habitats, because their presence is evidently bigger every year, but it is very important to increase surface and the trees' diversity in the urban green spaces that are similar to the woodland.

ECOLOGICAL ASPECTS OF BAT HIBERNACULA IN TEMPERATE CLIMATE ZONE OF CENTRAL EUROPE

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Key words: Chiroptera, ecology, hibernation, , cave microclimate, refugioclimate.

In temperate climate zone, caves are the main places for bat hibernation. It is posible to distinguish three kinds of usage of caves by bats:

- Caves used as a hibernaculum, where bats spend the winter period;
- Caves used as shelters for reproductive colonies during the summer period;
- Caves used as temporary shelters during transitional period (spring and fall) and also as places for food.

Caves used as hibernaculum must offer to bats a suitable microclimate. Several important physical factors decide on the selection by bats of a refuge for a period of hibernation:

- Darkness;
- Air circulation;
- Humidity;
- Thermal conduction of rocks;
- Impact of outside/external climate condition;
- Phases changes of air;
- Penetrated of geothermal warmth.

The hibernaculum should have a zone of total darkness. During hibernation bats pay special attention to air circulation, humidity and temperature. These factors are also significant in forming the microclimate condition inside cave system.

Throughout the influence above mentioned factors, a connection between microclimatic condition and topoclimate appears in the cave system and, as a consecquence, a refugioclimate forms.

BAT HIBERNATING IN UNDERGROUND SHELTERS OF MAŁE PIENINY MOUNTAINS

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Key words: bats, six species, hibernaculum, winter roosts, Poland, Slovakia.

Małe Pieniny is a mountain range in South-east of Poland and northern Slovakia, 14 km long and 4 km broad (Nyka, 2008). Highest point is Wysoka Mt. – 1050m a.s.l., whole range is formed mainly of limestones with small amount of rocks of volcanic origin. On the Polish side 48 caves and 3 old mines were found so far (Gubała, 2006; Gubała & Urban, 2007), only few of them have right conditions for hibernation of bats.

Six bat species were observed during winter censuses in years 2005-2009: lesser horseshoe bat (*Rhinolophus hipposideros*), mouse-eared bat (*Myotis myotis*), Daubenton's bat (*Myotis daubentonii*), whiskered/Brandt's bat (*Myotis mystacinus/ brandtii*), northern bat (*Eptesicus nilssonii*) and brown long-eared bat (*Plecotus auritus*), which is 33% of bat fauna found in whole Pieniny Mountains (18 species) (Wołoszyn & Gałosz, 2000; Szkudlarek & Paszkiewicz, 2001). *Rhinolophus hipposideros* was the most numerous, more than 20 individuals were observed during single census. This relatively low number of horseshoe bats, despite large maternity colony in the attic of church in village Jaworki, is probably caused by the existence of bigger hibernaculum on the Slovak side of range – Aksamitka cave- where up to 270 bats were recorded (Gubała, unpublished data). Old mine situated on Jarmuta Mt. is the largest hibernaculum on Polish side with max. 28 bat individuals. Only one individual of northern bat was found in Szczelina Naciekowa w Homolach cave, the species is fairly rare in winter roosts in Outer Carpathians.

Research was carried out based on permit of Nature Conservator.

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MICROEVOLUTIONARY TRENDS IN WESTERN PALEARCTIC BATS

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Key words: Chiroptera, microevolutionary trends, fossil bats.

The regime of physical factors which would have to be fulfilled in the adaptation to the aerial environment, were to be effective led to the formation of a complex of adaptive traits which were subjected to strong selection. This led to the formation of an optimal bat morphotype in a relatively short geological time. As a result of this process, bats as a group show a number of common aromorphoses, such a capacity for active flight, the evolution of echolocation, active thermoregulation allowing them to go into hibernation, and others.

The "model" of bats, evolved owing to this selection, has proved so ecologically succesful that for about 50 millions of years, i.e. at least from the Eocene onward, the anatomy of these animals has not undergone any basic changes. The adaptation of the main evolutionary line of bats to a narrow trophic niche (since we have limited ourselves to insectivorous species) leads to a distinct tendency toward a decline in phenotypic variation, and certain evolutionary trends are repeated in independent phyletic lines.

In comparing the anatomy of the splanchnocranium in populations of fossil bats from various periods and recent species, certain characteristic sequences of changes can be observed, which have the character of microevolutionary trends.

A frecuently recurring tendency in insectivorous bats is the cephalization of he skull. Two directions of change have been observed:

- A simplification of the dental formula through a reduction and loss of teeth or their parts;
- Molarization of premolars.

This process brought about a decline in skull mass, aminly owing to a decrease in the weight of the jaw apparatus, and a simultaneous decrease in body weight, which is desirable in a flying animal.

Broadly speaking, the process of the reduction of same elements of the splanchnocranium leads to an improvement of the jaw apparatus.

MICROEVOLUTION OF BECHSTEIN'S BAT *MYOTIS BECHSTEINII* (KUHL, 1817) IN THE HOLOCENE OF SOUTHERN POLAND

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Key words: Holocene, Bechstein's bat, microevolution, vegetation changes.

Bechstein's bat is one of the most common species in the middle and late Holocene of Southern Poland. It dominates in Kraków – Częstochowa Upland, but it was also frequent in Tatra Mountains.

Material from 21 thanatocenosis, dated by ^{14}C AMS method, was analysed. The aim of studies was to investigate the direction of changes in skull morphology of *Myotis bechsteinii* during the period from 5710 BC till present day and to answer the question which environmental parameters significantly correlates with these microevolutionary processes and frequency of species in different thanatocenosis. Mandibles and skulls were analysed separately. Morphology was correlated with climat characteristics, temperatures, and percentage pollen of such species of trees as Hornbeam (*Carpinus betulus*), Beech (*Fagus sylvatica*), Oak (*Quercus*) and Elm (*Ulmus*) in investigated time limits.

BIOLOGICAL INVASIONS IN ROMANIA

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Key words: invasive alien species, Romania.

Despite the ecological and economical impact, the problem of biological invasions remains almost ignored in Romania.

The aim of this study is to assess the situation of alien invasive species in Romania. Aspects regarding the origin of alien invasive species, ecology, distribution, mode of introduction, pathways, impact on native ecosystems and economy are discussed.

A preliminary list of alien species in Romania includes more than 700 species, but the number of potential invasive species is higher Some of them proved to have major impact on both natural habitats and biodiversity and other are agriculture pests. Potential invasive species, recorded from neighboring countries but not reported yet in Romania are also discussed.

Due to the rapid economic development and increase in trade of some areas – big cities or ports at the Black Sea coast or along the Danube River – and climate changes, the introduction and acclimatization of alien species will increase in the future. Therefore, the early detection, monitoring and management programs, and environmental impact studies of invasive alien species are necessary.

For some of the invasive alien species, mainly agricultural pests, quarantine measures were taken and strategies were established in order to limit the effect on crops. But, for most of the alien invasive species mentioned from Romania in the last decades – even for those that had a major impact – no concentrated measures were taken, and even a coherent national strategy concerning this problem is missing.

THE IMPACT OF *LEPTINOTARSA DECEMLINEATA* (SAY, 1824) (COLEOPTERA: CHRYSOMELIDAE) UPON THE ARTHROPODS BIODIVERSITY IN SOME POTATO CROPS FROM ROMANIA

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Key words: ecosystem balance, Ecological Based Pest Management, alien pest invasion, chemical resistance.

In the paper the study carried out in the period 2007-2008 in the four important region of potato cropping on experimental fields is presented.

For the first time the research assessed the impact of alien species *Leptinotarsa decemlineata* Say upon biodiversity level of potato fields in Romania. Since his active introduction in 1952 (Săpânța), no other research of this kind, concerning the impact of non-native species upon local populations of Arthropods had been made. The present study tries to find the ways to restore the ecosystem balance affected by the pest using an Ecological Based Pest Management (EBPM) integrated system for the first time in Romania in comparison with classical standard method: chemical control.

The measurement of invasion impact is economically established and for the first time two models of alien pest invasion are originally evaluated and compared. The major factor of *L. decemlineata* invasion is his highest chemical resistance and this important factor is for the first time analyzed in Romania by presenting the resistance mechanisms and the supporting evidence for studies. The arthropods biodiversity is studied and the principal parameters are compared and presented: taxonomic structure of arthropods, dynamics of number and species densities, dynamics of pest and useful species, comparative dynamics of species from different guild (trophyc levels) and statistical analysis of impact of the technologies applied upon arthropod biodiversity potato crops.

FIRST REVIEW OF ALIEN ARTHROPODS INTRODUCTION IN ROMANIA AND THEIR INVASIVE STATUS

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Key words: invasive species, Nematoda, Acarina, Insecta, pests, beneficial species, biological control.

Invasive species are plants, animals or microorganisms not native to an ecosystem, whose introduction threatens biodiversity, food security, health or economic development. This is the actually well accepted definition about such kind of species given by the international instrument of IUCN (International Union for Conservation Nature) called Global Invasive Species Programme (GISP).

The paper is the result of personal observations in the orchards, vineyard plantations, field crops and of intensive investigations in the greenhouses and, also from an elaborate study of the entomological literature concerning of the invasives and non-invasives alien species introduced in Romania. The data is referring to 97 species of invertebrates belonging to Nematoda (Tylenchida and Dorylaimida), Acarina (Eriophyiidae, Bryobiidae, Phytoptipalpidae, Tarsonemidae) and Insecta (Blattaria, Thysanoptera, Homoptera, Heteroptera, Hymenoptera, Coleoptera, Lepidoptera and Diptera).

Among the species listed, 86 are important pests and 11 are beneficial species introduced for biological control and for other economic purposes. The most numerous alien species introduced in Romania are from Homoptera and Coleoptera, many of them being pest species on ornamental and vegetables hosts in the greenhouses.

MUSEUM'S MISSION IN 21st CENTURY

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Key words: patrimony, exhibition, education, visitors, interactivity, museotechnics, community.

The principles of museology are changeable in time, together with organizational standard and educational programme's performances. „*Another kind of museology*", often appealed today, is necessary to imply museums as a component of community, to adopt new principles, new concepts and museological practices. These experiences should push museums to modernize their basic and temporary exhibitions as live institutions with high quality of the patrimony, with attractive exhibitions and with efficient educational programmes. New museological vision must preserve the clarity and correctness of the scientific message but, in the same time, it should consider the economic aspects, too. On the other hand, this last aspect must be an outcome of the modern and scientific exhibition with new museotechnical facilities, organized in a manner to surprise visitors, to attract their attention and to imply them in solving the problems of their interest. The interactivity in a natural science museum as a live encyclopedia is a key method in the 21st century to offer accessible and unexpected information and to excite visitors. Infotouches as advanced technologies are not checked only by children, but also by adults, because they are able to deliver with high speed, on a self-service basis the answers to visitor's expectations and interest. A healthy society must allow to all of its members (not only to a privileged minority) the access to cultural, educational and recreational programmes, using the newest museotechnical acquisitions. In a world with a huge technological progress must be clearly understood the need of museums to be financially supported by society which can't evolve without cultural dimension and, in their turn, museums must serve accordingly the society. These institutions do not host the simple physical objects, but inestimable sources of scientific information, absolutely necessary in making economical and political decisions in biodiversity conservation strategy (particularly in the case of natural sciences museums) and in sustainable development of the cultural and natural patrimony.

THE CATALOGUE OF THE NEW SPECIES OF DIPLOPODS IN THE ROMANIAN FAUNA, DESCRIBED BY T. CEUCA

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Key words: Zoology Museum, Cluj, collection, research, diplopods, classification, new species, Ceuca.

During the long research activity in the area of diplopods, Professor T. Ceuca participated in the enrichment of the University's Zoology Museum due to the collection he donated. The collection and study activities aimed at forms of biotopes in our country. Based on the microscope executed drawing that were verified, he described new species found on Romania's territory and we compiled a list using systematic classification, list which demonstrates the species. There are 33 species, 4 new genera and a family, all new to science. The role of this paper is to demonstrate, in a grouped manner, everything that means new species of Diplopods in Romanian fauna described by a single author.

THE CATALOGUE OF THE PALAEARCTIC SPECIES OF LAMIINAE (COLEOPTERA: CERAMBYCIDAE) FROM THE PATRIMONY OF "GRIGORE ANTIPA" NATIONAL MUSEUM OF NATURAL HISTORY (BUCHAREST) (Part V)

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Key words: Coleoptera, Cerambycidae, Lamiinae, catalogue, collections, "Grigore Antipa" Museum.

The Cerambycidae collections preserved in "Grigore Antipa" National Museum of Natural History from Bucharest consists of material from the old coleopteran collection from the Palaearctic area acquired between 1883 – 1923; lots of material from Dr. Nicolae Săvulescu's collection acquired between 1961 – 1982 and material from the same collection, which were included in the Museum patrimony in 1992, after Nicolae Săvulescu's death; specimens obtained by exchange with foreign specialists and collectors; donations; material collected in the field in Romania by the specialists of the Museum and by their collaborators, during 1946 – 2009 and material collected during the Expeditions of „Grigore Antipa" Museum in the Mediterranean countries, during 2005 – 2008.

In the fifth part of Palaearctic Cerambycidae catalogue, 95 species of Lamiinae are listed. A large part of the material originates in Romania. We mention rare species: *Oplosia cinerea*, *Agapanthia cynarae*, *A. kirbyi*, *A. osmanlis*, *Deroplia genei*, *Neodorcadion exornatum*, *Herophila tristis*, *Oberea pedemontana*, *Parmena unifasciata*, *Coptosia bithynensis*, *Helladia praetextata*, *Stenostola ferrea*, *Tetrops starki*.

Agapanthia annularis, *A. irrorata*, *A. sicula*, *Deroplia troberti, Parmena solieri* are Mediterranean species.

Iberodorcadion fuliginator, *I. navasi* (endemic for Spain), *I. seoanei* (Iberian Peninsula endemic species) are Westpalaearctic species.

In the museum collections the following Eastpalaearctic species are preserved: *Mesosa longipennis* (Japan, Korea), *Pterolophia caudata* (Russia, China, Korea, Japan), *Eutetrapha chrysochloris* (Asian Russia, Japan).

DONACIINAE (COLEOPTERA: CHRYSOMELIDAE) FROM THE PATRIMONY OF "GRIGORE ANTIPA" NATIONAL MUSEUM OF NATURAL HISTORY, BUCHAREST

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Key words: Chrysomelidae, Donaciinae, "Grigore Antipa" Museum.

Entomological collections preserved in the patrimony of "Grigore Antipa" National Museum of Natural History (Bucharest) have a historical and scientific significance, both at national and international level. This paper presents the results of the study of the Donaciinae material included in the collections of the "Grigore Antipa" Museum. The Donaciinae subfamily is represented by species from the following genera: *Donacia* (12 species), *Donaciella* (3 species), *Plateumaris* (3 species) and *Macroplea* (2 species) - representing about 80% from the total number of Donaciinae species recorded until now in the Romanian fauna. The presentation of each species includes information concerning the collecting date and place, number of examined specimens, previous reports in Romania, general distribution and some aspects regarding the biology of these species. From a faunistic point of view, among the valuable species preserved in the museum's collections should be mention: *Donacia brevicornis* Ahrens, 1810 and *Macroplea mutica* (Fabricius, 1798).

COLLECTION OF BIRDS FROM THE NATIONAL MUSEUM FROM BUCHAREST DURING CAROL VALSTEIN'S DIRECTORSHIP

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Key words: Carol Valstein, National Museum, historical data, first list of Romanian birds.

Carol Valstein (Toma Ioan Vela) (1795-1859/1863?), first director of National Museum from Bucharest, was firstly appointed as drawing professor at St. Sava College (1832). He was the author of the first manual of drawing that remained up to our days. He was appointed director of the museum in 1837. He worked there up to 1859/1860 when the Italian Carlo Ferreratti replaced him (1860-1867). The museum of natural history received several donations from Romania and abroad (Austria). We proved his activity as ornithologist with a list of 187 collected bird species from Romania, in 324 specimens, from 1847 (Romanian National Archives, 49/1847, files 6-8). In Ferreratti's inventory, made at his departure (Romanian National Archives, 112/1867, files 264-274), we found 116 species and 175 specimens of birds from Europe (Romania) and 14 species and 17 specimens from foreign fauna (Africa, America and Asia); we also could make a list of species and specimens from Valstein time based on it. These could be explained due to Valstein's changes of materials with the museum of natural history from Vienna, where we know that he offered birds collected by him from Romania and obtained collections of exotic birds, minerals and shells. These are the first mentions of bird species in Romanian ornithological literature and their popular names. Carol (Scarlat) Valstein (Walstein/Wallenstein) published in 1853 the first Romanian paper on ornithology, "Elements of ornithology".

ROBERT DOMBROWSKI'S CONTRIBUTION TO THE DEVELOPMENT OF MAMMAL COLLECTION OF THE MUSEUM OF ZOOLOGY IN BUCHAREST (ROMANIA)

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Key words: mammals, collection, skins, skulls, pieces of bone, taxidermist, Dombrowski.

Robert Ritter von Dombrowski is known in scientific circles through his work in ornithology and his outstanding contributions in this area. His monumental „*Ornis Romaniae*", in which he presents 47 families, 347 species and subspecies of birds from Romania, is the first paper describing the systematics, biology and zoogeography of bird species known from the beginning of the 20th century, based on a rich material.

Few know that Robert Ritter von Dombrowski worked and created 21 years from August 1895 until early August 1916 at the Museum of Zoology in Bucharest. Grigore Antipa employed him as a taxidermist, Dombrowski enjoying good working conditions and especially the special facilities for the work of collecting and field observations. In addition, to the museum collection of about 1000 skins and naturalized birds Robert Ritter von Dombrowski also donated a small collection of mammals (skins, skulls, pieces of bone) collected and made by him.

NEW DATA REGARDING SPECIES OF THE CETONIIDAE FAMILY (COLEOPTERA: SCARABAEOIDEA) PRESERVED IN THE PATRIMONY OF THE OLTENIA MUSEUM CRAIOVA (ROMANIA)

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Key words: new data**,** Cetoniidae**,** Oltenia Museum patrimony.

The paper includes new data concerning the species Cetoniidae family preserved in the patrimony of the Oltenia Museum Craiova. The examined material was collected between 1999-2009 from 45 sites, mostly from Oltenia. More than 950 cetoniides were determined and have been identified 16 of the 20 species and subspecies previously known in this area (Chimişliu, 1999, 2001). The *Protaetia (Netocia) ungarica* (Herbst, 1790), *P. (N.) vidua* Gory & Percheron, 1833 *P. (N.) fieberi* (Kraatz, 1880) and *Gnorimus variabilis* (Linnaeus, 1758) species haven't been found again.

A very rare species in the Romanian fauna, *Oxythyrea cinctella* (Schaum, 1841), was found again after 70 years. The only mention of this species belongs to Panin (1957) which made a reference to a specimen collected in 1939 from Gorj County. We collected 3 specimens from Dubova, Mehedinti county, on 15.05.2004. We have also identified the subspecies *Protaetia (Netocia) cuprea metallica* (Herbst, 1782), which was not mentioned previously in fauna of Oltenia. In the present, the museum patrimony preserves all the 20 species and subspecies known in Oltenia fauna, demonstrating once more the importance of the museum collections for the knowledge of the faunal diversity.

PROMOTING STUDIES ON DRAGONFLIES (INSECTA: ODONATA) AND ENVIRONMENTAL EDUCATION IN THE LOWER PRUT FLOODPLAIN NATURAL PARK

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Key words: Lower Prut Floodplain Natural Park, dragonflies, damselflies, Odonata, awareness, environmental education.

Dragonflies play an essential role in bioindication and surveys of dragonfly communities have become a powerful tool for the ecological assessment of floodplain areas.

The research activities concerning the inventory of the dragonflies and damselflies from the Lower Prut Floodplain Natural Park have been performed within the LIFE05NAT/RO/000155 project.

The study regarding the Odonata population of the Lower Prut Floodplain Natural Park has begun in 2006 and it will continue in the next years, having the objective of determining dragonfly associations and the discussion of the species' habitat requirements as an important basis for the conservation and the management of the Natural Park.

Our former data record of 23 Odonata species was completed on 27 species identified in the last two years of regular collecting and observation processes on dragonflies and damselflies. These are reported from 9 sites (Brateș, Tulucești, Ghimia, Cotul Chiului, Brănești, Vlășcuța, Vlădești, Pochina, Mața-Rădeanu) from the Natural Park, and many of Odonata species are common to the area.

The increasing in educating the public and raising awareness of the necessity to conserve the dragonflies (Odonata) this is one of the objectives of the *IUCN*/SSC *Status Survey and Conservation Action Plan*: *Dragonflies.*

Questionnaires assessed public awareness of dragonflies were used. The scientific results have been promoted in different educational projects initiated by the Natural Sciences Museum Complex Galați, involving students in activities of awareness of biodiversity and the protection of the environment by acquiring and testing practices used by scientists working in the zoological sciences.

CONSERVATION OF LARGE CARNIVORES FROM VRANCEA

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Key words: biodiversity, conservation, large carnivores.

Vrancea County is currently characterized by the existence of extremely compact forest habitats, some inaccessible, being ideal habitat for species of special conservative interest, among them a special place being occupied by large carnivores. The remarkable core, in terms of viable populations of large carnivores, overlapped on Vrancea territory, was the main argument for developping the projects „In situ conservation of large carnivores" and „Enhancing the protection system of large carnivores in Vrancea County", materialized in achieving of a local network for large carnivores protection related to Natura 2000 European Ecological Network.

The work represents a synthesis of large carnivores conservation activities, that concern *Ursus arctos, Canis lupus* and *Lynx lynx* species, applied in mountainous and hilly areas of Vrancea County since 2002. Exposure the capturing and tranquilizing techniques and methods is followed by presenting the monitoring practices for each species. The paper focuses on case studies for specimens of each species; a specimen of *Ursus arctos* captured in 18 August 2004 and monitored by GPS until 31 January 2006, a specimen of *Canis lupus* monitored between 16/10/2004 and 23/11/2005 by radio - telemetry and a specimen of *Lynx lynx* species currently monitored by telemetry and GPS. Overlapping the locations of specimens monitored in GIS applications and correlated with local issues of habitat are able to define territories and specific types of species behavior. Cartographic and photographic material completes the work.

THE ABC PROJECT (ATLAS OF BATS OF THE CARPATHIANS) – NEW VIEW

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Key words: bats, populations, range, European, Carpathian, protection measures, GPS system.

The main goal of the ABC is to get together all the available information about bats from the Carpathian parts in Poland, Slovakia, Hungary, Ukraine and Romania. Some of them (*Miniopterus schreibersii*, *Eptesicus serotinus*, *Nyctalus lasiopterus*) decreased drastically in number of individuals of their populations or even disappeared from their known shelters. Other bat species (*Rhinolophus hipposideros*) changed their range, being reported in higher altitudes, but also in latitude and longitude. In addition, the methodology of work was improved, adopted GPS system with precise geographic coordinates instead of UTM maps.

Between 45 European bat species, a number of 32 are reported from the Carpathian Mountains, too. This means about 70% of all European bats are in the Carpathians. Considering only bat species, this area is an important eco-region, with shelters offering optimum conditions for hibernating, nursery colonies and close by foraging habitats. These conditions give to the Carpathians a particular significance especially in the occurrence and range of bats species. However, the distribution of bats in the Carpathians differ by species to species. Some of them (*Rhinolophus hipposideros*, *Myotis myotis*, *Pipistrellus pipistrellus*) have a large distribution all over Carpathians, while others (*Barbastella barbastellus*, *Eptesicus nilssonii*, *Nyctalus leisleri*) were reported from few localities or are present only accidentally. The last case is for *Pipistrellus savii* recently reported (up to now only from South-East part of Romania) and *Pipistrellus kuhlii* identified after 2000, only at low altitudes (Cefa – Oradea and Iaşi – Moldova).

We consider the ABC an important tool to update the information about bats and an important tool for practical bat protection measures in the Carpathian Mountains.

POSTER PRESENTATIONS

SHORT SUMMARY OF CILIATES FAUNA COMPOSITION FROM DOBROGEA'S MARINE AND PARAMARINE WATERS

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Key words: taxonomy, ciliates, sediments.

Starting from a series of previous works of Lepși (Lepși, 1960), Țuculescu (Țuculescu, 1965), Petran (Petran, 1976, 1977) and Dumitrache - Kerkmann (Dumitrache, 2004, 2006) the present work is trying to make a new inventory of ciliates fauna from Dobrogea's marine and paramine waters.

The present work having on its basis researches made between 1997-2008 period sets off the existence of a number of 250 species, in the researched area, belonging to 38 families, representing 95.65% from the total of the 460 species previously mentioned by us (Dumitrache-Kerkmann, 2004).

It is discussed the appearance frequency of different phases of ciliates fauna, the adaptation capabilities of this structure components.

PRESENT STATE REGARDING THE DISTRIBUTION OF GASTROPODS IN THE INLAND WATERS OF ROMANIA

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Key words: gastropods, distribution, inland waters, Romania.

The hydrographic network of Romania is more than 66,000 kilometers long and includes 15 basins. The distribution of gastropods in the inland waters is mainly induced by the zonality of the hydrographic network. Thus, on the territory of Romania there are identified 11 hydrological zones according to the altitudinal factors of the Carpathians Mountains, which influence and determine the character of the inland waters.

The diversity of the ecosystems included in the hydrographic network (springs, mountain streams and rivers, hill and plain sectors of the rivers, the Danube and its Delta, lakes and swamps) impose a specific structure and distribution of the gastropod populations.

Following the distribution of the gastropods in the mentioned ecosystems, it results that there were identified 14 species in the mountain torrents and streams, 6 species in the sub-mountain and hill sectors of the rivers, 5 species in the plain rivers, 1 species in the glacial lakes and alpine marshes, 3 species in the lakes and pools from the hilly region, 13 species in the lakes and pools from the plain region, 18 species in the salty and brackish lake ecosystems, and 72 species in the Danube, its floodplain and Delta. According to their ecological features, the ubiquist species can be identified in many ecosystems at the same time.

NEW DATA ON THE DISTRIBUTION OF ORTHOPTERA (INSECTA: ORTHOPTERA) IN MUNTENIA

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Key words: Orthoptera, faunistics, zoogeography, Muntenia.

The paper presents the Orthoptera species collected and identified in the historical region of Muntenia between 2006-2009. From the 182 Orthoptera species known in Romanian fauna, we have identified 114 species in this region (63% of the total number), belonging to 9 families and 61 genera. The number of species reported in the literature for Muntenia is 116, from which we found only 106. The species *Decticus albifrons* (Fabricius, 1775), *Tetrix ceperoi* Bolívar 1887, *Miramella irena* (Fruhstorfer, 1921), *Celes variabilis* (Pallas, 1771), *Epacromius coerulipes* (Ivanov, 1887), *Omocestus minutus* (Brullé, 1832), *Chorthippus oschei* Helversen, 1986 and *Chorthippus montanus* (Charpentier, 1825) represents new reports for Muntenia. From the zoogeographical point of view, the Mediterannean elements are prevalent (24), followed by Palearctic, European and Eurosiberian elements (21 each), Central-Asian-European elements (20), Balcanic elements (9), Carpathic (7) and Pontic (3) elements.

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GENUS *MIRAMELLA* (ORTHOPTERA: ACRIDIDAE) IN ROMANIA

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Key words: *Miramella*, distribution, Romania.

Genus *Miramella* is represented in Romania by 3 species: *Miramella irena* (Fruhstorfer, 1921), *Miramella alpina* (Kollar, 1833) and *Miramella ebneri* (Galvagni, 1953). The main taxonomical character used in the species discrimination is the structure of the male genitalia and the length and form of the wings. *Miramella ebneri* is a Carpathic species and in Romania are found two subspecies: *M. e. ebneri* (Galvagni, 1953), the most common subspecies found in all Carpathian Mountains and *M. e. carpathica* (Cejchan, 1958) which is rarer, found only in few places in Rodnei and Maramureș Mountains. The species *Miramella alpina* is located especially in the Italian Alps and few sites in the Carpathians; in Romania it is reported only from one place in Banat Mountains. *Miramella irena* is a species with a Balcanic distribution. In Romania it was reported only from two places in Banat region: Mehadia and "Valea Mare" reserve. We have found several specimens in Comana and Cernica Forests, near Bucharest. These findings contribute to the knowledge of its distribution area, this being the most Eastern collecting points for this species.

This study was supported from TD grant no. 204/01.10.2007, funded by CNCSIS Human Resources programme.

VARIATION IN MORPHOLOGICAL CHARACTERISTICS OF THREE CHEWING LOUSE SPECIES PARASITIZING DIFFERENT HOUSE SPARROW (*PASSER DOMESTICUS*) POPULATIONS IN ROMANIA

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Key words: intraspecific variation, size, biometry, morphological characteristics, chewing lice, *Passer domesticus*.

Chewing lice have been considered to be organisms with relatively little intraspecific variation in size, however, population studies on different groups of parasites contradicts this assumption. Several different factors are responsible in explaining the variation in size between individuals within the same lice species, among which the body size of the bird hosts, bill morphology, feather quality and the grooming behavior were tested. In this study we analyzed the morphological variation of three chewing lice species parasitizing the house sparrow (*Passer domesticus*) collected from 16 different host populations in Romania between 2007 and 2008. Our preliminary analyzes show, that in case of all three louse species, *Philopterus fringillae* (Scopoli, 1772), *Brueelia cyclothorax* (Burmeister, 1838) and *Sturnidoecus refractariolus* (Złotorzycka, 1964), females were significantly larger than males, measured through the overall size and the head, thorax and abdomen length and width. Morphological characteristics varied significantly in all three species between house sparrow populations, indicating a strong environmental-related effect on the biometry of lice. We expect significant relationships between the morphological variables, condition, population density of the host and the morphological characteristics of the host, which will be proved in the subsequent analyzes.

This study was financially supported by the Romanian Ministry of Research Education and Inovation within the project CEEX-ET no. 94/2006.

OCCURRENCE OF *SCAPHOIDEUS TITANUS* BALL. ON GRAPEVINE IN BĂNEASA-BUCHAREST AREA

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Key words: *Scaphoideus titanus*, leafhopper, occurrence, *Vitis* sp., Băneasa-Bucharest, Romania.

The leafhopper *Scaphoideus titanus* Ball. (Hemiptera: Cicadellidae) is the natural vector of the Flavescence dorée phytoplasma, the causal agent of the most dangerous grapevine yellow diseases in European vineyards. This leafhopper is considered a specialized species on *Vitis* sp., introduced occasionally from N. America to Europe in the 1950s. In 2009, *S. titanus* was identified on grapevine in Băneasa (southern of Romania) during the survey activities of the grapevine yellows organized within the framework of a research project coordinated by the R&D Plant Protection Bucharest. The yellow sticky traps were used to detect the presence of vector insect from May to October, placed near vine foliages. The paper presents the adult and nymphal population dynamics of *S. titanus* based on the captures on yellow traps in connection with climatic conditions of Băneasa zone.

THE MOSQUITO (DIPTERA: CULICIDAE) FAUNA OF THE DANUBE DELTA BIOSPHERE RESERVE – A REVISED CHECKLIST

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Key words: the Danube Delta, mosquito fauna, checklist.

A checklist of mosquito species for the Danube Delta Biosphere Reserve (DDBR), Romania, is presented based on previously data and collections made between 2006 and 2009. Mosquitoes of 32 species were found belonging to 12 subgenera from 8 genera, *Aedes* Meigen, 1818, *Anopheles* Meigen, 1818, *Coquillettidia* Dyar, 1905, *Culex* Linnaeus, 1758, *Culiseta* Felt, 1904, *Dahliana* Reinert, Harbach & Kitching, 2006, *Ochlerotatus* Lynch Arribalzaga, 1891, *Uranotaenia* Lynch Arribalzaga, 1891. We report 8 new species for DDBR: *Culiseta alaskaensis*, *Cu. longiareolata, Cu. subochrea, Culex territans, Cx. torrentium*, *Ochlerotatus annulipes*, *Oc. cantans* and *Oc. zammitii*.

THE PRESENT STATUS OF THE SYSTEMATIC AND ZOOGEOGRAPHIC KNOWLEDGE OF THE MEDITERRANEAN GENUS *HILARA* MEIGEN (DIPTERA: EMPIDIDAE)

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Key words: *Hilara*, Empididae, Mediterranean, fauna, zoogeographic.

Hilara Meigen is the most difficult genus within the family Empididae by the large number of described species and by the uniform appearence of the external morphology.

Fortunately, Chvála (2005, 2008) published two monographic studies on European and the Mediterranean species of this genus, the systematic revisions being made after the type collections of Fabricius, Zetterstedt, Strobl, Loew, Becker, Collin, establishing 173 valid species for Europe and 82 species for the Mediterranean Region. Before Chvála's revisions, only two attempts to classify European *Hilara* species have been done, by Strobl (1892) and Collin (1961), in „natural" or morphologically distinctive groups of species. The revision of the Mediterranean *Hilara* species was based not only on the type collections but also on the material collected by many dipterologists, in the Mediterranean region, during the last thirty years. Mediterranean species were clasified in 13 groups: *flavipes* (5 species), *abdominalis* (4), *clavipes* (4), *canescens* (13), *litorea* (13), *intermedia* (4), *cornicula* (10), *lasiochira* (6), *interstincta* (16), *borealis* (2), *chorica* (5), *maura* (2), *albitarsis* (1 species). Throughout the "Antipa" Museum and "Oceanic Club" Society common project, "Romanian contributions to the knowledge of the Mediterranean Fauna", the first author described 3 new species of *Hilara,* e.g. *H. regnealai* Parvu and *H. borkalensis* Ciftci, Parvu & Hasbenli (from *clavipes* group) and *H. razvani* Parvu (from *interstincta* group).

From zoogeographical point of vew, from 82 species, 57 are northern Mediterranean and 35 southern Mediterranean, 55 western and 27 eastern Mediterranean, the real situation being probably adulterated by insufficient knowledge.

AGROECOSISTEMS FAUNA DIVERSITY AND THEIR ROLE IN BIOCONSERVATION – A CASE STUDY: MOARA DOMNEASCĂ EXPERIMENTAL CENTRE

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Key words: fauna diversity, agroecosistems, species list, Moara Domnească.

"Moara Domnească" Experimental Centre, situated 10 km East from Bucharest on Pasărea River, is a complex farm and has aquatic as well as terrestrial agroecosistems such as ponds, experimental cereal monocultures, vegetable monocultures, medicinal plants and different varieties of fruit trees. In order to evaluate the agroecosistem complex fauna biodiversity three trips were performed in spring, early summer, and late summer, during which the research team made observations and took different samples, aquatic as well as terrestrial, which were later sorted and identified in the laboratory. A list of 147 species was compliled. We have identified 126 invertebrate species: 7 arachnides belonging to 5 families and 119 insect species belonging to 9 orders and 56 families. The vertebrate fauna comprises of 21 species: 13 fish species (belonging to 2 families), 3 amplibian, one reptile and four mammal species.

Most of the species collected at the experimental centere are euribiont species with a high adaptation capacity and no special habitat requirements. Many of the invertebrate are pest species which were found in great numbers only in monocultures (Ord. Orthoptera, Heteroptera, Coleoptera).

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CURRENT STATE OF THE ICHTHYOFAUNA FROM THE UPPER BASIN OF THE RIVER SIRET

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Key words: biodiversity, index of biological integrity, fish associations, River Siret.

The study was conducted during 2008 to assess the current state of ichthyofauna from the upper basin of the River Siret. The ichthyological material was sampled in 19 sampling sites from the upper catchment of the River Siret.

The biological material was sampled by electronarcosis, by the means of a fishing device FEG 5000. A total of 22 species of fish was identified, including 2 species introduced.

Quantitative and qualitative methods and assessment techniques were used in order to process the data obtained.

To estimate the structure and composition of the fish associations in the sampling sites, analytical and synthetic ecological indices were calculated. Based on the ecological significance index, which provides information on the status of each species of the fish associations, the fish zones were established. We have also calculated the biodiversity index and the biological integrity index (IBI) to assess the quality of aquatic ecosystems investigated.

THE GENETIC IDENTIFICATION OF SPECIES IN GENUS *ANCISTRUS*

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Key words: exotic fish, Aquarium section, Constanta, Romania.

In this work, the authors describe the use of the DNA barcoding technique for the identification of auqarium fish species in the genus *Ancistrus*. To the date there are 99 species described in this genus, species that are known as „ greens eating". In Romania they were introduced in the spring of 1984, and were reproduced for the first time one year later. Although initially it was thought that the introduced species in Romania was *A. dolichopterus* Kner, 1854, the difficult morphological identification of the species led to the opinion that a different fish species was actually introduced.

The DNA sequencing of the mitochondrial 5'COI gene was performed on four individuals from the Constanța Aquarium, and the obtained sequences were used to interrogate the GenBank database. Our sequences showed around 90% similarity with the species *A. brevipinis*. However, the obtained similarity score is considered to be rather low in genetic identification, where score of around 98% are common. This situation could be explained by the lack of reference DNA sequences for the species in the genus *Ancistrus* in the GenBank database. A potential solution to overcome this situation would be to use different DNA sequence targets for the barcoding techniques, sequences which might be better represented in GenBank.

ISOLATED POPULATIONS OF WALL LIZARD (*PODARCIS MURALIS*) FROM ROMANIA AND BULGARIA

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Key words: wall lizard, isolated population, Dobrogea.

The isolated populations of wall lizard *Podarcis muralis* from Dobrogea are strictly located in a few rocky habitats situated in the southern area of this geographical province. The sizes of these populations are small, compared to the rest of the area. This aspect, together with their strict location, makes them suited for complex population studies.

Over the 2008 and 2009 research seasons, the populations from the following zones were investigated: Dumbrăveni Natural Reservation (Romania), Canaraua Fetii Natural Reservation (Romania), Yailata Natural Reservation (Bugaria) and the area between Rusalka and Cape Kaliakra (Bulgaria).

A total of 79 lizards were captured as follows: 55 individuals from Dumbrăveni, 11 from Yailata, eight from the area between Rusalka and Cape Kaliakra, and five from Canaraua Fetii. Each individual was photographed and measured biometrically. Also, small pieces of tail were collected for subsequent DNA analyses. Each individual was then released back in the area where it was captured from.

The data collected were analyzed in order to determine the presence or the absence of fluctuant asymmetry, as well as its type. Also, the data were compared to those collected from populations of *Podarcis muralis* from the Carpathian Mountains. The work hypothesis for this last case was that the wall lizard populations in Dobrogea are not connected to those from the Carpathians, the Danube being a bio-geographical barrier. In light of this hypothesis, the colonization of Dobrogea by the wall lizard occurred from the south with individuals coming from populations located in the Balkan Peninsula.

THE HERPETOFAUNA OF THE DOFTANA RIVER BASIN (PRAHOVA COUNTY)

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Key words: Amphibia, Reptilia, Doftana River Basin, distribution.

The Doftana River is a tributary of Prahova River, passing through two biogeographical regions: alpine and continental, thus having a diverse herpetofauna. In this note I report the results of herpetological investigations in the Doftana river basin (Prahova county, southern Carpathians, Romania). 10 species of amphibians (*Pelophylax ridibundus, Rana dalmatina, Rana temporaria, Hyla arborea, Bufo bufo, Bufo viridis, Lissotriton vulgaris, Triturus cristatus, Mesotriton alpestris, Lissotriton montandoni*) and 8 species of reptiles (*Lacerta agilis, Lacerta viridis, Podarcis muralis, Zootoca vivipara, Emys orbicularis, Natrix natrix, Natrix tessellata, Vipera berus*) were identified and are presented together with some distribution and ecological data.

STRUCTURE AND DYNAMICS OF WADER POPULATIONS ON FUNDATA LAKE (ROMANIAN PLAINE)

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Key words: waders, Fundata Lake, Romanian Plaine.

In this paper we present a synthesis of the observations made mostly during 2008 over the wader populations from Fundata Lake, through a series of eleven field trips carried on from February to August, to which we added some older information from 2006.

We recorded a total number of 22 wader species (including the species mentioned in the literature) belonging to five families (Haematopidae, Scolopacidae, Phalaropodidae, Charadriidae and Recurvirostridae).

Four of the species on Fundata Lake previously mentioned in literature (oystercatcher – *Haematopus ostralegus*, Red-necked Phalarope – *Phalaropus lobatus*, Turnstone – *Arenaria interpres* and Ringed Plover – *Charadrius hiaticula*) have not been identified during these observations, however a new one has been added to the list, namely curlew - *Numenius arquata*, which was observed two times during the autumn migration (2 specimens on 07.10.2006 and 3 specimens on 13.08.2008).

During the pre-breeding season, the wader flocks start to arrive on Fundata Lake in the first decade of March, and sometimes even towards the end of February, with their spring migration stretching until the end of May. This period is characterized by the presence of large flocks of Ruff – *Philomachus pugnax* (96 specimens on 29.03.2008).

Only four of the recorded species are regular breeding in the researched area (Lapwing – *Vanellus vanellus*, Little Ringed Plover – *Charadrius dubius*, Black-winged Slit – *Himantopus himantopus* and Avocet – *Recurvirostra avocetta*).

The post-breeding migration starts as early as the first half of July, when large flocks of waders begin to appear: *Philomachus pugnax* (87 specimens on 06.07.2008, 450 specimens on 14.07.2008), *Limosa limosa* (32 specimens on 14.07.2008, 58 specimens on 04.08.2008), *Tringa ochropus* (over 100 specimens on 13.08.2008) and *Himantopus himantopus* (130 specimens on 04.08.2008, over 200 specimens on 13.08.2008). These flocks consist mainly of young birds which stop here to feed in the small deep water along the lake shore. The autumn migration stretches until mid-November.

TIME EVOLUTION OF SPOONBILL COLONIES - *PLATALEA LEUCORODIA* L., 1758 (AVES: THRESKIORNITHIDAE) - FROM ROMANIA AND THE PRESENT BREEDING RANGE

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Key words: Spoonbill, *Platalea leucorodia*, breeding range, Romania.

Our work focuses on a synthesis of all the available data from literature on the breeding of Spoonbill in Romania, starting from mid 19th century, and analyzes the time evolution of Spoonbill populations during four periods of time, namely: before year 1900, between 1900 and 1959, between 1950 and 2000 and from 2000 to present. We detailed the available data for each of the mentioned periods with comments on the situation of the colonies and showcased a distribution map of Spoonbill colonies for each period.

The breeding range of the Spoonbill in Romania currently covers the Danube Delta Biosphere Reserve, some islands along the Danube River and some other few points inside the country. Outside the Danube Delta, the Spoonbill was recently mentioned as breeding species in the Prut River basin and in the north part of Moldavia. In addition to these points, we mention here a new breeding point in the Romanian Plain, namely Rodeanu Lake (Ialomița County), where on the 25th of May 2008 we identified a breeding colony formed of eight pairs.

The total number of breeding pairs from the Danube Delta varies according to different authors: from 200 breeding pairs in 2001 according to Platteeuw et al. (2001); to 50-250 breeding pairs between 2003-2006 in one single colony according to Kiss et al. (2007); to 600 breeding pairs according to Munteanu (2006); to 360-440 breeding pairs according to Papp & Fântână (2008).

Referring to the entire breeding population in Romania, by assembling the effectives given by Papp & Fântână (2008), the total number of breeding pairs should be somewhere between 1461 and 1966 pairs, but in our opinion these effectives are overestimated.

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MEROPS APIASTER NESTS IN TWO COLONIES WITH ATYPICAL LOCATION FROM ROMANIA AND BULGARIA

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Key words: Bee-eaters, *Merops apiaster*, nests, sandy ground, the Danube Delta, Romania, limestone cliff, Bejano, Bulgaria.

Bee-eaters nesting in vertical walls of loessoide clay deposits - sand heights between 50-600 cm. The walls are straight, without woody vegetation and abundant grass. Excavating nests from a great height above the ground does not allow access to nest predators. Nests are composed of an access tunnel and an incubation room. There are cases when *Merops apiaster* dig their nest atypically, in sandy clay mounds near the ground. They have been recorded in literature by Besson (1964) in the Camargue. Cătuneanu (1958) included a nest of bee-eater in Dobrogea, built in a burrow of *Citellus*, at ground level. Petrescu (1998) recorded bee-eater nests built in phosphate and carbonate residues from Turnu Măgurele chemical mill. This material has the consistency and colour of chalk, mixed with particles of sand and it is very brittle and easily excavated. As structure, it is similar to loamy sands of bee-eater searched for digging nests. To these isolated cases, already known in the literature, we add two more examples. Nests of *Merops apiaster* constructed in sandy ground, on the road, at ground level in the Danube Delta in Sfântu Gheorghe (Romania) and nests built in a limestone cliff, the small height (4-5 m) in Bejano, in Bulgaria.

This study was supported by the Grant PN II - Bilateral Cooperation No. 1/19.05.2008 (VERTEDOB) from the National Authority for Scientific Research (ANCS), allotted to D. Murariu.

MODERN CLASSIFICATION OF PINNIPEDS. THE MAIN SPECIES-SUBSPECIES OF INTEREST IN OCEANARIA / AQUARIUM

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Key words: taxonomy, zoogeography, ecology, ethology, marine mammals, Pinnipeds.

The authors dedicate this paper to the memory of the two personalities of Romanian oceanology: Acad. Prof. Dr. doc. Mihai Băcescu and Professor emeritus Dr. doc. Sergiu Cărăuşu.

It presents the general scheme of organizing the system of group Pinnipedia (Mammalia: Carnivora) after classification adapted from Jefferson T. A. (1993). There are also presented some data on the spatial distribution of order zoogeography of the species-subspecies of interest for Oceanaria / Aquarium and other similar institutions of environmental education.

The authors insist on the species on which their observations were made on the biology, ecology, ethology and distribution space in the natural environment.

A NEW MENTION POINT OF HEMPRICH'S LONG EARED BAT *OTONYCTERIS HEMPRICHII* PETERS, 1859 (CHIROPTERA: VESPERTILIONIDAE) FROM SYRIA - [RESULTS OF THE „EUPHRATES" - 2008 EXPEDITION IN SYRIA]

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Key words: *Otonycteris hemprichii*, Hemprich's long eared bat, bats, Syria.

We mention a new record point of *Otonycteris hemprichii* from Syria and present a synthesis map of the distribution points of this species in the area. The new mentioned point is a dry valley in the neighborhood of Assikhnekh village, approximately 30 km East of Palmyra (GPS coordinates: N34°38'53"/E038°33'07", 466 meters altitude).

Although *Otonycteris hemprichii* is a widespread species over the desert and arid steppes of the Near Est (Harrison & Bates, 1991), it's presence on the Syrian territory has only been reported in 12 – 14 records (see Benda et all., 2006, for detailed list).

In this paper we made a new distribution map which includes all the previous mentioned points, especially because Shehab et all., (2006) have wrongly figured their points on the map, probably due to a printing error (see. Fig. 33, page 124 in Shehab et all., 2006).

Our new record is made on the basis of two specimens from "Grigore Antipa" National Museum of Natural History collection (inv no.: MAM 9768, MAM 9769) that were accidentally collected on 28th of May 2008, during the Museum expedition "Euphrates 2008" in Syria. The bats were caught on the ground during night into a mistnet installed for birds in a rock dessert area on a dry valley with scarcely dwarf vegetation.

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MYOTIS AURASCENS KUSJAKIN, 1935 (CHIROPTERA: VESPERTILIONIDAE) A NEW BAT SPECIES IN ROMANIAN FAUNA

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Key words: *Myotis aurascens*, bat species, new record, fauna, Romania.

Visiting an artificial mining gallery in Canaraua Fetii (South-East of Dobrogea), the senior author observed, in 1995, a bat colony of about 300 individuals. The length of gallery is 230 m; width = 2.5 m; hight = 2 m. It was a nursery colony, supposed to be of *Myotis mystacinus przewalskii* (Bobrinski, 1926). Visiting the same place for next years, those colonies were not found anymore. Only on the 9th of July 2009, the team of authors discovered, at the same gallery's end, a 20 m high vertical chimney, where a bat colony of about 30 specimens were roosted. Because of difficult access there we set an Ecotone net (2 x 2.3 m) at the entrance in gallery between 20.00 – 23.00 h and collected a specimen of *Myotis aurascens* Kusjakin, 1935. To support this identification we compared body and skull measurements with data from literature. In addition we have pictures with goldish back fur colour and grey-witish on belly – different by *M. mystacinus*.

Accessing http://www.faunaeur.org/distribution_table.php after which Romania (together with Albania, Bosnia-Herzegovina and Slovenia) is mentioned with a doubtful presence of this species and considering previous uncertain reports (Ifrim, 2007) we precisely confirm the existence of *Myotis aurascens* Kusjakin, 1935 in South-Eastern part of the country. The above specimen is preserved as stuffed skin and skull in the „Grigore Antipa" National Museum of Natural History collections.

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TWO COMPLEMENTARY ROOSTS FOR *MINIOPTERUS SCHREIBERSII* (KUHL, 1819) (CHIROPTERA: MINIOPTERIDAE) IN SOUTH-EASTERN PART OF DOBROGEA – ROMANIA

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Key words: *Miniopterus schreibersii*, cave bat, Limanu Cave, artificial shelter, Dobrogea, Romania.

Miniopterus schreibersii is a cave bat, more frequent at low altitudes than in mountains. In spite of low (Hercinic) and limestone mountains in Dobrogea there are few underground roosts with optimum conditions for biology, physiology and ethology of this bat species. Thus the authors studied two complementary roosts in this part of the country. It is about Limanu Cave, on the right shore of Mangalia Lake, and Hagieni Cave, an artificial shelter on the territory of Natural Reserve "Hagieni Forest". These two shelters host the same colony of *Miniopterus schreibersii*. In the first one, bats use to spend winter time (October – March) and in the second one, use to be nursery colony with more than 200 individuals. As a matter of fact we remember huge colonies of this species with more than 5000 specimens not far than 30 – 40 years ago. The above colony is coming here because of higher temperature necessary for young and are concentrated in a bell of the ceiling at about 4 m high. The diameter of the excavation is about 2 m and 20 - 25 cm deep. Because of this relative large colony of Schreiber's bat on one side it is important to take some measures to protect the artificial roost in Hagieni Forest. First step should be the control of those two entrances in shelter, to avoid visits and disturbing nursery colony in summer time. On the other side the entrances in Limanu Cave should also be controlled, to avoid visits in winter time when the same bats are coming here for hibernation. Otherwise, the anthropic pressure should be twice stronger on the same bat population strictly connected in their life by the existence of safety underground shelters.

This study was supported by the Grant PN II - Bilateral Cooperation No. 1/19.05.2008 (VERTEDOB) from the National Authority for Scientific Research (ANCS), allotted to D. Murariu.

TWO OF THE LARGEST BATS COLONIES FOR EASTERN EUROPE: ȘURA MARE CAVE (ȘUREANU MOUNTAINS) AND ȘĂLITRARI CAVE (CERNEI MOUNTAINS) - ROMANIA

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Key words: largest bats colonies, Eastern Europe, bat colony's effectives, specific compositions, Romania.

This paper presents the studies done during the period 2002 - 2009, ain two important caves as habitats for bats. The Live Fire (Focul Viu) Caving Club, focused attention on the Șura Mare cave since 2002, under the project funded by the Dutch embassy „Life in unknown". Since then, the observations were done in different periods of year. The first data on the colony of *Pipistrellus pipistrellus* (most exemplars are in the crevices of the rock) were colected in March 2003 and published in 2007 (D. Murariu, V. Decu, V. Gheorghiu, V. Nistor). In February 2009, we done detailed observations, photographing all visible colonies on the ceiling, so, we could make a new assessment on the colony's existence here. We can say, as a result of new estimation that the colony effectives approaches 100,000, equal with the estimation made in the year 1953 (M. Dumitrescu, J. Tanasachi, T. Orghidan). This colony includes several bat species, being, together with the Huda's Papara Cave (Apuseni Mountains) one of the largest recorded bat colonies in Europe. Another bat colony was discovered and visited several times by the members of the Caving Club Prusik Timișoara. In January 2009, there were done detailed observations estimating the bat colony's effectives about 20,000 individuals. We focused our study on it specific compositions. These two large colonies neither present nor do only national importance in the context of decline the bat species populations in Europe.

RESEARCH CONCERNING THE DIVERSITY OF SMALL MAMMALS IN SOME HABITATS IN MIDDLE BASIN OF SIRET RIVER

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Key words: small mammals, faunistics, Siret Basin, Romania.

The paper presents the results of faunistic inventory of small mammals in the East Carpathian area covered by the middle basin of Siret river. The evaluation was done by capturing biological material through various methods and by studying the composition of pellets in *Asio otus* species.

204 individuals were studied and 195 pellets were analysed.

The research was conducted in various types of agricultural and forest habitats during 1995-2009.

In the researched material the identified species belong to 2 families: Arvicolidae and Muridae from Rodentia order and Soricidae familie from Insectivora order.

The identified species are: *Clethrionomis glareolus*, *Pitymys subterraneus*, *Microtus agrestis*, *Microtus arvalis*, *Mus musculus*, *Mus spicilegus*, *Apodemus agrarius*, *Apodemus flavicollis*, *Apodemus sylvaticus*, *Sorex araneus*.

RESEARCHES ON BENTHOS COMMUNITIES FROM GOLOVIȚA LAKE – THE DANUBE DELTA

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Key words: Golovița, benthos, invertebrates, synecological analyze.

Golovița Lake as a part of Razelm – Sinoe lagoon Complex has a double communication – with the sea and with the continental waters determining a characteristic flora and fauna, which combines elements of freshwater origin with brackish or marine species, which were adapted to the lagoon.

The study refers to an ecological analyze of benthic communities of the lake based on data resulted from several samples taken from six sites around the lake, from rocky faces or sediment.

The paper presents aspects regarding qualitative and quantitative composition of benthic fauna living associated with different kind of substrata or aquatic macrophytes.

Representatives of 11 invertebrates' taxonomic groups were collected - Foraminifera, Polychaeta, Oligochaeta, Gasteropoda, Bivalvia, Cladocera, Harpacticoida, Cumacea, Amphipoda, Isopoda and Insecta, larvae - and a frequency variation of them is presented.

An average density variation of zoobenthos groups for each studied site is done and variation of ecological significance indices (WD %) is analyzed.

Seasonal variation of invertebrates' density populations shows great values (500.000 -700.000 individuals*m^{-2}) during the autumn, mainly in two sites, Channel 5 and Portița.

A correlation between number of taxonomic groups and average density of zoobenthal populations in all studied zones is done, in order to emphasis the role of the substrate in population selection.

NEW DATA REGARDING THE CNIDARIA POPULATION – *HALAMMOHYDRA* (HYDROZOA-COELENTERATA), A PSAMOPHILE SPECIES IN THE MIDLITTORAL ZONE AT VAMA VECHE – THE ROMANIAN BLACK SEA COAST

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Key words: Meiofauna, psammon, interstitial species, cnidaria, midlittoral.

Nearly 10 years ago, we reported the presence of a representative of the interstitial meiofauna for the first time, a Cnidaria of the genus *Halammohydra* (Hydrozoa-Coelenterata) in the Black Sea, in the Vama Veche midlittoral sedimentaly habitats. We specify that our subsequent studies, which covered the entire Romanian littoral (in the shallow and deep zones) allowed us to signal these Cnidaria only in these life supporting coarse sediments located in the wave breaking zone, in the southern extremity of the Romanian littoral.

The purpose of our study was to evaluate the way in which the population of this psamophile Cnidaria develops within the interstitial meiofauna community of the midlittoral level at Vama Veche. It was realized based on 28 samples collected from the entire width of the midlittoral floor (72 m, at the Meteorological Observatory), by means of a corer (diameter = 14 cm), in August 2008.

The midlittoral meiofauna community in the interstitial space of the sediments includes, apart from typical representatives of this category (Cnidaria-Hydrozoa, Turbellaria, Nematoda, Polychaeta, Acarina, Ostracoda, Harpacticoida), also juvenile representatives of the macrofauna in the neighboring habitats (whose size is under 1 mm: Polychaeta, Oligochaeta, Amphipoda, Tanaidacea, Cumacea, Isopoda, Insecta). Even though the Cnidaria population does not have high values of the average density (according to abundance: 49 individuals*m^{-2}), by its position from the trophic point of view (exclusively predatory regime), it has however an important role in the fauna community of the psamic habitats.

STRATEGIES OF ADAPTATION OF PONTO-CASPIC RELIC PERACARIDES (AMPHIPODES AND MYSIDS) OBSERVED BY ANALYSING THE REPRODUCTION OF SPECIES IN NATURAL AND LABORATORY CONDITIONS

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Key words: ponto-caspian relic, reproduction, life cycle, laboratory.

The studies have been made on species of relic Ponto-Caspic amphipodes and mysids found in the waters of coastline lakes and in the brackish waters of the Black Sea (the northern sector of the Romanian seashore).

The approach intends to identify some aspects of the biology of reproduction in the case of relic species of zoo-geographic and evolution-related significance, with an effect on their strategy of adaptation to abiotic variations. In view of this, the following parameters have been analysed: the incubation period, the size of eggs with three species of amphipodes, the reproductive capacity with nine species of amphipodes and seven species of mysids, the fertilisation potential, the number of layings/life cycle and the correlation indices (HMFBL, HMFBLr) with amphipodes and mysids.

On the basis of the information indicated by the analysis of the population structures and the laboratory data, lifecycle models have been created for several representative species. Thus, one can estimate that amphipodes have a lifespan of 6-12 months, a period in which they develop 4-5 generations. Mysids present differences between the small types (maximum 10-12 mm) whose life expectancy is 6-8 months across 2-3 generations, and the large ones (17-35 mm), which have a 2-year cycle.

ASPECTS ON THE INFLUENCE OF MYCROMICETE BIODETERIORATION IN WOOD

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Key words: ligninolitic fungi, biodeterioration, wood.

The micromycetes, as a result of mycelia growth and development on wooden surfaces, produce their physical and chemical degradation.

We studied various wood samples, on different deciduous types: lime (*Tilia platyphyllos*) used as prop for icons in our country, hornbeam (*Carpinus* sp.) and oak (*Quercus* sp.).

The samples have different durability, density, strength and degrees of humidity.

After 30 days of incubation at a temperature of 30±2°C and a relative humidity of the air of over 90%, which are favorable conditions for the development of fungi, the samples of lime and hornbeam being used on a Czapek-Dox medium of culture (no extra carbon source), there were isolated ligninolitic fungi – *Chaetomium globosum* and *Paecilomyces variotii*, as well as species that degrade pulp: *Trichoderma viride*, *Myrothecium verrucaria*, and species of *Aspergillus* and *Penicillium*.

The quantification of the weight variation in wood pieces, as well as in sawdust, and the optical microscopy showed the involvement of fungi in the structural changes of wood.

By the methods that we used, we tried to point out, on one hand, the load level of the mycoflora depending on the wood type (healthy, not attacked) and on its humidity and, on the other hand, the beginning of some bio-deterioration processes (changes in the structure of pulp).

The purpose of this work is the application of a proper antifungic treatment to lime wood that is used as a prop for icons.

TECHNICAL AND PHYSICAL PARAMETERS MONITORING OF THE MULTIFUNCTIONAL TECHNOLOGICAL SYSTEM

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Key words: engineering developments, system monitoring, parameters, control scheme.

Engineering developments are discussed in this paper, and specifications necessary for technical and physical parameters of the system monitoring are presented. The construction of the system are versatile, modular concept to provide automated electronically adjustable environments parameters, i.e., accurate temperature, humidity heating and air filtered against airborne contaminants.

The room's climatic parameters are digitally controlled by the system designed in the block diagram of controlled-environment system showing the interfacing with all of the six chambers. The extended-memory unit the SDI-12 M512 interface. The complete system is composed by a central data-control bus links the six chambers in a parallel configuration to the control system. Since the HPxw4400 Workstation employs discrete-component logic and the remainder of the system is built around logic-level converters (wireless sensor interface) which are used to process the incoming and outgoing signals for system compatibility. The basic control scheme consists in four phases of each of the six chambers:

- measuring;
- data transmission;
- data processing;
- remote control unit.

MULTIFUNCTIONAL TECHNOLOGICAL SYSTEM FOR BENEFICIAL INSECT MASS REARING

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Key words: engineering developments, beneficial insect, populations, pest insects, mass rearing, insect mass production.

This paper presents recent contributions and engineering developments and equipment specifications necessary for constructing a workable, economically feasible rearing multifunctional technological system capable of supplying a production of individuals from beneficial insect populations. This system should also be of value in developing different levels of technology for the mass rearing of other insects, pest insects including. The design of facilities for culturing insects is, or should be, a key topic in the broader subject of insect rearing. The basic requirements for successful rearing: a) food; b) protection from natural enemies; c) a suitable physical environment; d) fit conditions for reproduction.

Over the years the recent researchable refinements of these elements in considering insect mass production are:

i) inexpensive standardized artificial media;

ii) techniques for extracting insect stages from their media;

iii) techniques for providing acceptable high-density space use;

iv) full understanding of the chemical and physical stimuli mediating mating and oviposition.

PRELIMINARY INVESTIGATIONS ON THE ROLE OF FURNISHING SERVICE UNITS (FSU) OF SOME FOREST ISLANDS IN AN AGRICULTURAL LANDSCAPE FROM WESTERN POLAND

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Key words: ecological landscape, ecological units, agricultural landscape, forest islands, flora, fauna, western Poland.

Ecological landscape studies are carried out concerning the ecosystems biocenoses restore and conservation and to define the ecological units of multi or over-ecosystemic character which furnish economically services and resources. Landscape ecology is today intenselly developed in many world sciences institutions by many researchers. The agricultural landscape predominating in western and central Europe occupies a significant place in Poland which constitues about 60% of the country's territory deciding, to a large extent, about the quality of the whole natural environment.

Forest islands studies were carried out in the agricultural landscape of Western Poland, 15 km north-east of Poznañ town. Ten forest islands of varying size (from 0.5 ha to 1.5 ha) were investigated. Flora and plant communities of small forests were examined and 58 plant associations were found. Small areas of forest islands became the refuges of forest plant species and invertebrate fauna in an agricultural landscape. Differentiation, number and domination structure of invertebrate fauna (Acari, Araneae, Apoidea and Curculionidae) and small mammals were studied. The studied forest islands provide suitable conditions for survival and reproduction of many animals species, and for others, accidental species, to which they are a place for feeding or a momentary shelter at least.

FAUNISTIC AND ECOLOGICAL CHARACTERIZATION OF AQUATIC AND SEMIAQUATIC HETEROPTERA COMMUNITIES (HETEROPTERA) IN PERMANENT SWAMPS SITUATED IN FĂGĂRAŞ DEPRESSION AND SIBIU DEPRESSION

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Key words: α–biodiversity, ecologic affinity, monthly dynamics, contact depressions between the Făgăraş Mountains and the Transylvania Plateau.

This paper assesses the biodiversity of aquatic and semiaquatic Heteroptera in permanent swamps situated in two contact depressions between Făgăraş Mountains and the Transylvania Plateau, and performs a species association and a species monthly dynamics analysis. We took samples from eight stations in the hydrographic basin of the Olt River, four of which are located in Făgăraş Depression and four in Sibiu Depression. The samples were taken during 2001 - 2002 and 2004. We have identified 30 species of Heteroptera, of which 18 species are aquatic (Infrasuborder Nepomorpha Popov, 1968) and 12 are semiaquatic (Infrasuborder Gerromorpha Popov, 1971). The α-biodiversity analysis reveals values between 0.379-3.475 for the investigated stations, which are almost similar to the two depressions (3.174 for Făgăraş Depression, and 3.426 for Sibiu Depression) and indicate a uniform distribution of individuals on species, both within stations and in each of the two depressions. The association analysis for the species in the swamps in Sibiu shows a maximum degree of affinity between *Nepa cinerea* Linnaeus, 1758 and *Hydrometra stagnorum* Linnaeus, 1758, as well as a strong affinity between *Plea minutissima* Füssly, 1775 and *Microvelia reticulata* Burmeister, 1835, and between *Gerris argentatus* Schummel, 1832 and *Ilyocoris cimicoides* Linnaeus, 1758. The monthly sampling, in 2004, enabled us to analyze the species dynamics. During 2004, *Notonecta glauca* Linnaeus, 1758 had an extended activity (from March to November) and only one generation. *Microvelia reticulata* was observed from April to October, the number of larvae suggesting the possibility to develop two generations.

DISTRIBUTION AND HABITAT USE BY AMPHIBIAN COMMUNITIES IN RETEZAT NATIONAL PARK

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Key word: amphibians, habitat use, alpine area, Retezat National Park

Habitat destruction and fragmentation is one of the most important causes of world wide amphibian decline. Habitat availability and habitat selection by amphibians are the recent major directions of research. The aim of our research was to study: i) the distribution of amphibian species in extreme habitats (high altitude aquatic habitats) in Retezat National Park and ii) the use and selection of aquatic habitats by amphibians based on environmental characteristics. We inventoried 76 aquatic habitats between 1650-2200 m a.s.l. out of which 44 are permanent glacial lakes. All habitats are natural with a depth range between 0.1 and 29 m. The aquatic habitats are surrounded by grassland, blocks of rocks or alpine shrubs. Amphibians were found in 70% of the aquatic habitats, but only 46% were used as spawning sites. The most common species is *Rana temporaria* with 64% pond occupancy and the largest altitudinal range followed by *Triturus alpestris* with 25% and *Bufo bufo* with 9%. Our results show that amphibian species use aquatic habitats differently in relation to local environmental characteristics.

INFLUENCE OF GENDER AND SIZE ON THE ASYMMETRY OF PLASTRON SCUTES IN GREEK TORTOISE (*TESTUDO GRAECA*)

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Key words: fluctuating asymmetry, *Testudo graeca*, growth rate, age.

Fluctuating asymmetry, subtle random deviations from perfect bilateral symmetry is often used as an indication of the environmental or genetic stress. Turtles are long-lived animals that can face lengthy exposure to a variety of stress conditions. Theory states that female grow faster than male. This difference in growth rate could cause more symmetrical shells in female than male due to more efficient use of resource and/or efficient shell growth, or a reverse pattern due to more frequent errors in symmetrical growth. Also prediction that turtle scutes became more asymmetrical as turtle aged was made. We studied the association of plastron scutes asymmetry with gender and size (carapace length) in Greek tortoise (*Testudo graeca*). We found that asymmetry of plastron scutes depends on turtle gender but not on size. The degree of FA tends to be higher in female than in males. This result suggests that the faster growth rate in female than in male lead to more frequent errors in symmetrical growth of the turtle shell.

EFFECT OF HABITAT DRYING ON DEVELOPMENT OF THE SPADEFOOT TOADS TADPOLES

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Key words: Spadefoot toads, *Pelobates fuscus*, *Pelobates syriacus*, tadpoles, metamorphosis, adaptive phenotypic plasticity

Amphibians exhibit extreme plasticity in the timing of metamorphosis, and many species respond to pond drying by accelerating their metamorphosis. In the present study we investigated the adaptive phenotypic plasticity of the developmental response to water volume reduction in two European spadefoot toads, *Pelobates fuscus* and *P. syriacus*. The response of tadpoles to the simulated drying conditions was evaluated by gradually reducing the water level in the experimental containers under controlled laboratory conditions. We tested if tadpoles can accelerate development in a drying aquatic habitat and if the accelerated development causes a reduced body size at metamorphosis. A 2 x 4 experimental design was used, with water levels being: constant high, slow decrease, fast decrease and constant low water level for each species. Our results indicate that the *Pelobates syriacus* larvae were able to respond to pond drying by speeding up their metamorphosis. The first metamorphs were those from the fast decrease water level treatments in both species. The accelerated development caused by decreasing water level resulted in smaller body size at metamorphosis. The smallest size at metamorphosis was in tadpoles raised in constant low water level treatments.

BIRD POPULATION DINAMYCS IN THE DANUBE DELTA IN 2007-2009 PERIOD

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Key words: the Danube Delta, population dynamics, birds, abundance, frequency, biogeographical regions, subregions.

The birds have the capacity to travel long distances, over vast geographical areas which can contain both large natural habitats and anthropized areas. The capturing and ringing areas were set along the Romanian Black Sea shore, which is a concentration area for migratory birds on the path of one of the most important bird migratory routes in Europe – the Eur-Asian-African Eastern path.

We explored this domain in order to obtain general data on the bird abundance, the migration, geographical origin and the blending of species during migration. Within this context, the influence of the climatic factors in relation to global warming must not be overlooked, being factors of major importance in the dynamic's structure.

The synthetic table of the ringed birds shows that 7495 birds were ringed in 2007 and 7091 in 2008, belonging to 15 suborders, 1 suborder, 43 families and 193 species, which shows a great specific richness and also various investigation possibilities.

From the specific dominance point of view, regarding the numeric abundance, 48% of the encountered species proved to be frequent and very frequent, among these the species with the most representative population were 99% ringed. The bird population frequencies in relation to the biogeographical region, show that the dominant species are the ones characteristic to the Palearctic region (85%) with the following subregions: European - 19%, Holarctic - 21%, Arctic - 11%, Euro-Turchestanian - 18%, Turchestanian - 6% and last the Cosmopolite - 10%.

This study was financially supported by the Romanian Ministry of Research Education and Inovation within the project PNCDI-PC no. 31-084/2007, allotted to Dr. Mircea Gogu-Bogdan.

THE IMPORTANCE OF BIRD POPULATIONS IN SPREADING MICROORGANISMS AND INVERTEBRATES

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Key words: bird populations, spreading, micromycetes, mites, chewing lice, pathogenic fungi.

The birds have the capacity to travel long distances very fast. During their migration, birds can carry pathogens which can be transmitted intraspecific during mating and chick-rearing periods and interspecific in the concentrating areas from the wintering roosts, staging and feeding areas where bird populations have high abundances and frequencies. Birds can carry on their bodies microorganisms taken from various habitats where they live, shelter and feed. Microorganisms can be bacteria, actinomycetes and micromycete, which birds can disseminate on their migration paths. Microorganisms are a part of the plant phyllopane, some of them being saprophyte other pathogenic. For this purpose 1257 samples were collected. Both pathogenic and saprophyte bacteria were isolated from the beak of birds. The micromycetes are represented by saprophyte species (*Altenaria cladosporium*) and pathogenic (*Rhizoctonia*). The legs and feathers carried on them bacteria, actinomycetes, fungi, mites and chewing lice. Pathogenic fungi (*Fusarium*) and actinomycete (*Streptomyces* - popato pathogen) were isolated from the cloaca. The feathers and the legs have a high concentration of saprophyte or pathogenic microorganisms as a result of the contamination from plants or the soil where the birds live.

This study was financially supported by the Romanian Ministry of Research Education and Inovation within the project PNCDI-PC no. 31-084/2007, allotted to Dr. Mircea Gogu-Bogdan.

CORRELATIONS BETWEEN NUMBER OF WINTERING WATER BIRDS AND CLIMATIC CONDITIONS ON THE SOUTH ROMANIAN BLACK SEA SHORE (1991-2000)

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Key words: birds, Black Sea, lagoons, Romania.

During the period 1991-2000, ornithological observations in the Southern Dobrodgean Littoral area have been made. The observations were made on the Sea and also on the surrounding lakes, between Midia Cape and Vama Veche Village. We tried to link the number of water birds which have wintered this Litoral with the climatic conditions.

The result: we observed that the average annual temperature is rising concomitantly with the number of wintering water birds. At the same time the average temperature of January is inversely proportionate with the number of said birds. Of course, this study is just the beginning of a series of long-term observations which will validate (or not) the work thesis.

ECOLOGICAL ASPECTS REGARDING THE BREEDING SEASON OF THE GENUS *SYLVIA* IN REPUBLIC OF MOLDOVA

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Key words: genus *Sylvia*, breeding season, distribution.

Our study gives data about the breeding season of the bird species from the genus *Sylvia*, following the horizontal and vertical distribution of the nests, feeding territories and refuge sites of these small passerines in different forest or woodlands types (regarding the structure and the flora composition of the ecosystem). Our fieldworks were focused on the five breeding species of the genus *Sylvia*: *S. atricapilla*, *S. borin*, *S. communis*, *S. curruca* and *S. nisoria*, recorded on R. Moldova territory. We paid our attention (2007 - 2008) on the presence and distribution of these passerines species in some parks from Chişinău city, natural forests and some woodland plantations from the forests' vicinity. In this paper, we present our results from two parks – "La Izvor" and Botanical Garden, respectively, two forests Trebujeni and Caracuseni. The data were analysed using the aggregation index and variance report. The Blackcap (*Sylvia atricapilla*) is the species with the highest density, dominant in the forest habitats. The species of the *Sylvia* genus prefer to build their nests in the perimeters with young oaks, elms or maples trees and bushes like *Cornus mas* and *Crataegus monogyna*. We observed that these bird species have some preferences for some qualitative parameters of the habitats (plants species composition, the existence of a bushes stratum, the presence of the herbs stratum). It is obviously that the mosaic habitats have a strong influence on the distribution and the density of these passerines.

USE OF VARIOUS HABITAT TYPES BY BATS (CHIROPTERA: VESPERTILIONIDAE) IN MOLDOVA AND DOBROGEA (ROMANIA)

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Key words: bat, habitat use, echolocation, summer period.

Our investigations were carried out in Moldova and Dobrogea areas during summer periods 2006-2007. 44 hours of records were analyzed. The importance of various habitat types to bats was assessed according to the mean numbers of the registered species and according to the frequency of occurrence of each bat species. The habitat types which were investigated were: 13 humid areas, 8 woodlands, 4 settlements – streetlamps and 11 car surveys. Woodlands and humid areas are the most important habitat types to the majority of bat species, whereas the habitats along roads (mostly made in open areas) are less important. In the humid areas *Myotis* sp. (27.5%) and *Pipistrellus nathusii/P. kuhlii* (21.2%) are the most abundant species, followed by *Nyctalus noctula* (14.1%), *Pipistrellus pipistrellus* (8.1%) and *Pipistrellus pygmaeus* (7.8%). In the woodlands, the most abundant species is *Pipistrellus nathusii/P. kuhlii* (21.2%) followed by *Nyctalus noctula* (17.9%), *Pipistrellus pipistrellus* (11.5%), *Pipistrellus pygmaeus* (11.2%) and *Myotis* sp. (10.8%). Along the roads the most abundant species are *Nyctalus noctula* (31%) and *Nyctalus leisleri* (21%), followed by *Vespertilio murinus* (19.3%), *Eptesicus serotinus* (17.9%). At the streetlamps *Nyctalus noctula* (37.3%) and *Pipistrellus kuhlii* (23.3%) are the most abundant species, followed by *Nyctalus leisleri* (10.1%). According to the frequency, *Nyctalus noctula, Pipistrellus nathusii/P. kuhlii, Myotis* sp., and *Eptesicus serotinus* are very common, *Nyctalus leisleri, Pipistrellus pipistrellus, Pipistrellus pygmaeus* and *Vespertilio murinus* are common, while *Eptesicus nilssonii, Nyctalus lasiopterus, Barbastella barbastellus* and *Hypsugo savii* are considered rare bat species in the habitat types of the primary importance.

DYNAMICS OF SMALL MAMMAL (ORD. INSECTIVORA AND ORD. RODENTIA) COMMUNITIES IN TWO INTRACARPATHIC DEPRESSIONS FROM TRANSYLVANIA (ROMANIA)

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Key words: rodents, insectivores, live trapping, community dynamics.

Investigations on small mammals communities' dynamics were carried on monthly in two intracarpathic depressions from Transylvania (Sibiu Depression and Târgu Secuiesc Depression) beginning with May 2007. Capture-mark-recapture method was used. In both locations a number of 50 traps were set in line or in a rectangular net, at about 15 m one from another, in several habitats, each time in the same places. In Sibiu Depression an oak woodland and a river bank were researched, while in Târgu Secuiesc Depression a river bank, a graveyard and a cultivated field were investigated. Results were expressed in terms of capture index.

In all, in both areas 4 rodent (*Apodemus agrarius, A. flavicollis, Microtus arvalis* and *Clethrionomys glareolus*) and 1 insectivore (*Sorex araneus*) species were captured, the communities' structure being very similar in the two areas. Dynamics of rodent communities presents some similarities but also some differences.

ANTHONOMUS RUBI (HERBST, 1795) (COLEOPTERA: CURCULIONIDAE) A NEW DANGEROUS PEST IN THE ECOLOGICAL CROPS OF STRAWBERRY IN THE SOUTHERN REGIONS OF ROMANIA

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Key words: *Anthonomus rubi*, strawberry, ecological plantations, Vidra, Comana, Giurgiu, Romania.

In Romania mostly of 70% of strawberry ecological plantations were cultivated with specific commercial cultivars like Premial, Red Gauntlet, Dana and Elsanta. In the last years, cultivars with increased resistance to various pest insects were cropped, specially in the first stages of vegetation period like Honeoye, Elsanta, Camorosa, Marmolada, Chandler, Darselect, Clery and Sonata. On the little individual farms with small surfaces the cultivars Senga Sengana, Marmolada, Elsinore should be the primary source of infestation with *Anthonomus rubi*.

A study of distribution, density and the degree of *Anthonomus rubi* was carried out in the period 2006-2007 in the Vidra and Comana localities, Giurgiu district in the southern part of Romania. The study and observations that was made showed that this species is increased in density in the new ecological plantations of strawberry from some individual farms. The strawberry blossom weevil is not a common pest of strawberry plantations in Romania but some cultivars cropped in ecological system became more sensitive to the weevil attack by increasing in density.

Observations and researches were carried out on 4 cultivars and showed that the degree of damage caused by *A. rubi* depends on cultivar morphological characteristics (small fruits) or phenophases (time of ripening and duration of budding and blossoming).

TECHNOLOGY OF MASS REARING AND INNUNDATIVE RELEASES OF *PODISUS MACULIVENTRIS* SAY (HETEROPTERA: PENTATOMIDAE) FOR ECOLOGICAL BASED PEST MANAGEMENT (EBPM) IN THE POTATO CROPS FROM ROMANIA

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Key words: *Podisus maculiventris*, efficient predator, mass rearing, *Leptinotarsa decemlineata,* pest management, potato crops, Romania.

Biological control by mass rearing of beneficial insects will require increasing attention in the agricultural context in which it is applied.

Research and development on mass rearing will optimize existing methods and anticipate changes that will favor new biological control technologies. In the worldwide the private industry will be involved increasingly in production and marketing of natural enemies: small businesses will satisfy specific needs in local areas and specialized cropping systems, whereas large corporations will supply natural enemies for wholesale distribution and large-scale application.

Many authors claimed that biological control offers real potential as a major tactic for central use and maximization in a strategy of integrated control of pests in natural environment and crops.

Since 1990 the species *Podisus maculiventris* Say (Heteroptera: Pentatomidae) has currently been mass reared in Romania which is an efficient predator for Colorado potato beetle (*L. decemlineata* Say). In the world literature we cited many researches concerning the mass rearing of different species of Asopinae but the field trials in large plots are dramatically rare.

In this paper we present the results of the introduction in large field experiments of the method of biological control of Colorado potato beetle using predatory insect *P. maculiventris*.

DNA-BARCODING APPLIED IN STUDYING ALIEN AND/OR INVASIVE SPECIES IN ROMANIAN FAUNA – DNA BRIS

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Key words: molecular technique, morphological traits, introduction, dissemination, invasive species.

The goal of this project is to develop an experimental model that will permit the monitoring of introduction/dissemination invasive animal species in Romania, using a molecular biology technique - DNA-barcoding. Alien species with invasive potential are considered one of the main concerns all across the globe. This problem can be solved using the DNA-barcoding technique that allows us to identify invasive species from the early stages of life.

The DNA-barcoding technique is successfully used in cryptic species identification which are almost impossible to identify using only morphological traits, and allows the identification of species regardless of their evolutive stage.

The final result of the project will be the development of an experimental model for monitoring establishment and spreading of invasive species in Romanian fauna.

This study was made within the project PC no. 32107/01.10.2008 from the National Programme Management Center, allotted to D. Murariu.

IS THE PET-TRADE A TIME-BOMB FOR BIOLOGICAL INVASIONS? A CASE STUDY IN ROMANIA

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Key words: pet trade, biological invasion.

The trade with exotic animals has represented, since the beginning of the 20th century, one of the main factors which led to the spread of certain species outside their native area. The magnitude of this type of commerce can be felt in Romania as well.

This study is based on bibliographical and field studies, as well as on methods borrowed from sociology and investigation journalism. We have taken into account all the species present in pet-shops and which have developed feral populations in other European states, as well as species which could successfully adapt to the climatic conditions of Romania.

The data collected between January 2008-September 2009 were processed statistically and they regarded the demand and selling of animals in the cities of Constanța, Bucharest and Ploiești. These are the cities where the main importers of exotic animals in Romania conduct their activity. We put together a "short list" containing 13 species of birds, five species of amphibians, five species of reptiles and seven species of mammals which are more likely to develop feral populations in the near future.

Our data suggest that, with the increasing demand for new species to be sold in pet-shops, there is also an increasing probability for many of these species to be released in nature. In some cases, these species may develop feral populations with or without impact on the local fauna.

THE EOCENE *EOTRIGONODON* (OSTEICHTHYES, PLECTOGNATII) FROM TURNU ROȘU (SIBIU, ROMANIA)

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Key words: oral teeth, *Eotrigonodon*, Breckner collection, Turnu Roșu (Sibiu).

The richness of the Eocene fauna from Turnu Roşu enabled it to be acknowledged and studied ever since the 18th century, especially due to the members' activity of the Transylvanian Natural Sciences Society, the one which founded the Natural History Museum in Sibiu. The first studies of the ichthyological fauna from Turnu Roșu (Porceşti) were made by L. J. Neugeboren (1850), a member of the Society, who primarily analyzed the fossil sharks, but also the bony fish.

The first record of the presence of the bony fish teeth in the Eocene limestone from Turnu Roşu was made by A. Koch (1900), when he included the *Capitodus* genus, possibly an Eotrigonodon, in the fauna lists.

In the present paper, we will deal with remains of fossil bony fish belonging to the *Eotrigonodon* genus. The studied fossil material consists only of isolated teeth and is part of the Richard Breckner collection, who was also a Society member.

Determining the species and even the genus posed difficulties since the studied teeth are isolated, rather than part of a dental apparatus. The morphology of the teeth, the main criteria for diagnosis, is determined not only by the systematic affiliation but alto by the position within the dental apparatus, the age, the degree of wearing out and a possible sexual dimorphism. The 8 teeth which are to be described in the paper made it possible to establish the systemic situation at species level of 5 of these teeth, which belong to the *indicus* and *serratus* species.

THE GEOLOGICAL AND PALEONTOLOGICAL RECORDS MANAGEMENT USING FREE AND OPEN SOURCE GIS SOFTWARE

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Key words: open source, GIS software, paleonthological records, Cenomanian, Turonian, Babadag Basin.

Within this paper there is exposed a new approach of a few aspects regarding the monitoring of the geological and paleontological records using free GIS and open source GIS software. In this purpose, the few elements were used, as follows: the free Landsat 1990/2000 coverage maps of the Dobrogea (https://zulu.ssc.nasa.gov/mrsid/), the data about the position of the sites, the land observation (in the different points of the Nothern Dobogea area), as well as FWTools and Quantum GIS – 1.2.0 Daphnis for map's visualization and editing, and OpenOffice for manage data and editing reports.

All of them can be used, saving at least 2.056 €, in order to understand the geological evolution of Dobrogea region, in general and the Babadag Basin, in particular. Within the Babadag Basin area, our studies were focused on an area (situated on the administrative territory of the Slava Cercheză commune) with a high geological and paleontological potential, due to the outcrops (rich in fossils of flora and fauna) characteristic to the Cenomanian and Turonian stages.

Among these points of geological and paleontological interest, three were considered with a special importance, for that study, these being located within the following hills: Arleanca, Dealul Lung and Coşarul Mare.

HUMANIZING THE ANIMAL WORLD BY TECHNOLOGY IN ANTIQUITY: ANCIENT BONE AND ANTLER ANVILS FOR MANUFACTURING TOOTHED IRON SICKLES DISCOVERED IN ROMANIA

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Key words: bone anvil, bone and antler industry, cattle metapodia, Greek city, Roman city, Romania, toothed iron sickle.

The paper presents the results of analysis of recent data regarding a special assemblage composed by 41 artefacts worked on cattle and horse bones as well as segments of red deer antlers used as anvils for manufacturing the toothed iron sickles blades and dated in the IInd-IIIrd centuries A.D.

The artefacts have been discovered during recent excavations in three archaeological sites: Histria, Constanța County: sector *Basilica extra muros* – 24 pieces; sector *Basilica with crypt – "Florescu"* – 2 pieces; Durostorum-Ostrov, Constanța County – 2 pieces; Chitila, Ilfov County – 13 pieces.

The context of discovery of the artefacts is related invariably to the area of iron working or reducing iron minerals.

Taking into consideration firstly the analysis of different traces of manufacture and use, we propose the reconstitution of phases of the standard manufacturing chain of the anvils on cattle metapodia.

Wear traces have been studied using optical microscopy; they consist in triangular holes successively generated, measuring about 1-2 mm in length, and deep about 1 mm, arranged in rectilinear or curved short lines, almost parallels, placed transversal or oblique on the bone's flat surface. The aim was to shaping the iron sickle's active part or resharpening her.

The artefacts discussed illustrate a complex interface of long traditions and complex human-animal interrelations, exploitation of domestic and hunted species, ancient crafts and agrarian economy, at the contact between bone and antler processing and reusing, the iron technology and the large cultivation of cereals during Antiquity in the regions beyond Black Sea.

HUMANIZING THE ANIMAL WORLD BY TECHNOLOGY IN PREHISTORY: EARLY NEOLITHIC BONE SPOONS DISCOVERED IN ROMANIA

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Key words: bone and antler industry, bone spoon, cattle metapodia, Neolithic, Romania.

The paper presents the results of the analysis of an assemblage of 39 artefacts recently discovered in Romania and manufactured on animal skeletal materials. They are usually designed by the term spoons, symbol of a new way of life and of complex human-animal relation and first farmers' civilization in the regions from Central-East Europe.

The pieces represent ones of the oldest artefacts of this type known in Romania; they belong to the earliest phases (I – II) of Starčevo-Criş culture (VIIth-VIth millennia B.C.).

The artefacts presented on this occasion have been discovered during 1998-2007 field archaeological research in well definite stratigraphic contexts.

The artefacts (N total = 39) were recuperated from three archaeological sites: Cerişor, Hunedoara County – 2 pieces; Miercurea Sibiului, Sibiu County – 3 pieces; Măgura, Teleorman County – 34 pieces.

The raw materials are represented by fragments of cattle metapodia (N = 14) and fragments of cattle ribs (N = 25).

The typology proposed takes into consideration the morphology of distal and proximal ends, middle part, and distal part.

The phases of the "manufacture chain" are almost standardized and they are reconstituted firstly by studying the preserved macro- and micro traces.

Regarding the hypothetical role of the spoons-spatulas and based on the microscopic analysis of traces of use, we consider that these bone artefacts were used generally as spoons for eating boiled food made by wheat.

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THE FAMILY HYGROMIIDAE TRYON (GASTROPODA: STYLOMMATOPHORA) IN THE TRANSYLVANIAN SOCIETY MALACOLOGICAL COLLECTION FROM SIBIU (Part I)

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Key words: the Transylvanian Society, family Hygromiidae, catalog.

The Malacological Collection of the Transylvanian Society for Natural Sciences of Sibiu, the founder Society of the Natural History Museum (Siebenbürgischer Verein für Naturwissenschaften zu Hermannstadt) includes currently over 9,000 pieces belonging to the family Hygromiidae.

This paper, established as a catalog, includes 11 species (2,996 pieces) belonging to the genera *Hygromia* Risso (1 species, 119 pieces), *Helicopsis* Fitzinger (5 species, 1,152 pieces), *Monacha* Fitzinger (2 species, 846 pieces), *Perforatella* Schlüter (2 species, 396 pieces), *Cernuella* Schlüter (1 species, 483 pieces) from the Society Collection, species existing all so in the Romanian fauna.

The initial identification of the species belonging to the family Hygromiidae from the Natural History Museum in Sibiu belongs to the famous malacologists Michael Bielz (1787-1866), Edward Albert Bielz (1827-1898) and Carl Friedrich Jickeli (1850-1925) according to the nomenclature of that period. Latest changes on the nomenclature of the species were brought in 1983 by Ileana Corocleanu, following Alexandru V. Grossu.

In order to assemble the catalog included in this paper I needed to check and update all the material in terms of the current literature. The taxonomy adopted in this paper is based on the system proposed by Bouchet and Rocroi in 2005.

The value of the collection consists not only in its historical value but all so in the opportunities that the collection offers in approaching zoogeographic, systematic and ecological studies of different time scale. The pieces were collected from geographic areas through out Romania, especially Transylvania, but also from Europe.

PALAEARCTIC LONGHORN BEETLES (COLEOPTERA: CERAMBYCIDAE) FROM „DR. KARL PETRI" COLLECTION OF THE NATURAL HISTORY MUSEUM OF SIBIU (ROMANIA). PART I: LEPTURINAE SUBFAMILY

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Key words: longhorn beetles, collection, Sibiu, catalogue, Karl Petri.

The catalogue consists of data on fifty six Palaearctic Cerambycidae species of the Lepturinae subfamily from the "Dr. Karl Petri" collection of the Natural History Museum from Sibiu. Dr. K. Petri collected an important part of the material, but also Eduard Albert Bielz, Friedrich Deubel, Moritz von Kimakowicz, Csiki Ernst, Dr. Arnold Müller, Eduard Scheeser, Rudolf Albrecht, Alexander Ormay, Dr. Eugen Worell and Ludwig Méhely, contributed to this valuble collection. Most of the specimens originate in Romania, mainly in Transylvania. In the collection, there is also material from Slovakia, *Acmaeops septentrionis* Thomson, 1866, from Germany, *Evodinus clathratus* (Fabricius, 1792), *Grammoptera ustulata* (Schaller, 1783) and *Pedostrangalia revestita* (Linnaeus, 1767) and from Hungary, *Pachyta lamed* (Linnaeus, 1758) and *Cortodera humeralis* (Schaller, 1783). Systematical classification is according to those used by Sama (2004) in "Fauna Europaea" and Danilevsky (2007). The value of K. Petri collection is given by the high diversity and age, some of the specimens date back even as far as 1825.

FAMILY DYTISCIDAE (INSECTA: COLEOPTERA) IN THE MUSEUM OF NATURAL HISTORY FROM SIBIU

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Key words: family Dytiscidae, Transylvanian Society Collection.

This paper is based on the Transylvanian Society Collection that was established in 1849, in the same year when the Natural History Museum in Sibiu was founded. The collection has the biggest amount of pieces (71,567 pieces) belonging to the entomological collection of Natural History Museum in Sibiu. This presents an important historical value and a scientific documentation because it is one of the oldest collections in the country, and in that it includes many types of species, rare species, exotic species, species showing the biogeographical character of Transylvania in general and of its lands in particular. The Society Collection ceased to be studied along time.

The present study conducted on the family Dytiscidae Leach, 1815 from the Society Collection, it is intended to be an introductory one that aims to refresh the nomenclature of genera and species of the family.

The 851 specimens identified as belonging to family Dytiscidae are Palearctic and exotic species, and belong to 136 species falling under the classification system proposed in 1997 by A. N. Nilsson: 5 subfamilies, 11 tribes and 19 genera.

This study is also a recall to the researchers regarding the entomological collection of the museum, that was established through the Society members strive.

SPHINGIDAE (INSECTA: LEPIDOPTERA) IN THE COLLECTIONS OF "GRIGORE ANTIPA" NATIONAL MUSEUM OF NATURAL HISTORY, BUCHAREST

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Key words: Sphingidae, Romania, museum collection.

From a total number of 3960 species of Lepidoptera in Romania, there are 25 species belonging to the family Sphigidae (Rákosy et al, 2003). Beside the collections already catalogued (Popescu-Gorj, Beregszaszy, Lăzărescu and Ostrogovich), in the "Grigore Antipa" National Museum of Natural History from Bucharest there is a relatively recent collection, representing the field work of the museum's research scientists. In this collection we found a total number of 558 specimens, from 16 species of Romanian Sphingidae: *Acherontia atropos* (Linnaeus, 1758) - 2 individuals; *Agrius convolvuli* (Linnaeus, 1758) - 35 individuals; *Daphnis nerii* (Linnaeus, 1758) - 2 individuals; *Deilephila elpenor* (Linnaeus, 1758) - 60 individuals; *Deilephila porcellus* (Linnaeus, 1758) - 65 individuals; *Hyles gallii* (Rottemburg, 1775) - 25 individuals; *Hyles euphorbiae* (Linnaeus, 1758) - 30 individuals; *Hyles livornica* (Esper, 1779) - 15 individuals; *Laothoe populi* (Linnaeus, 1758) - 95 individuals; *Macroglossum stellatarum* (Linnaeus, 1758) - 35 individuals; *Marumba quercus* ([Denis & Schiffermüller], 1775) - 20 individuals; *Mimas tiliae* (Linnaeus, 1758) - 50 individuals; *Proserpinus proserpina* (Pallas, 1772) - 9 individuals; *Smerinthus ocellatus* (Linnaeus, 1758) - 51 individuals; *Sphinx pinastri* (Linnaeus, 1758) - 55 individuals; *Sphinx ligustri* (Linnaeus, 1758) - 8 individuals.

DYNAMICS OF THE MOUFLON'S POPULATION (*OVIS AMMON MUSIMON*) FROM C.M.S.N. CONSTANȚA

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Key words: mouflon, population growth, adaptation.

Starting in 1987, in the Microdelta – department of CMSN Constanța, 3 specimens (2 males, 1 female) of mouflons (*Ovis ammon musimon* Pallas, 1811) from the hunting fund of Negureni, which belongs to the Forestry Băneasa, were brought; the twenty-two (22) specimens of the actual mouflon's population have as root only the initial three (3) specimens with no other input.

This work presents the dynamics of mouflon's population from the beginning of 1987 until the present day, meaning twenty two (22) years of research.

First 7 years, the birth rate was the maximum possible – 100%. Since 1999, due to inbreeding phenomenon, birth rate remained constant, but the offspring mortality increased in the first 8 months and thus the birth rate was between 60 and 70%. Since 2005, the birth rate is under 20%.

The evolution time of the mouflon's population considered shows the breed's degree of adaptation and the effects of inbreeding due to limited space, climatic conditions and the small number of specimens (three) of the initial population.

Also, this paper includes the management plan for the following five (5) years of the mouflon's population from CMSN.

WORKING STEPS IN MOUNTING BIRD SPECIMENS

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Key words: taxidermy, naturalized animals, birds, steps in mounting, "Grigore Antipa" Museum, Bucharest, Romania.

Taxidermy (gr. Taxis = to arrange; derma = skin) is a traditional profession within "Grigore Antipa" Museum of Bucharest (Romania). Following this tradition, in the Laboratory of Taxidermy and Restoration, animals collected by the museum specialists are restored, at European standards. From the numerous naturalized animals, a large part is represented by birds.

In this paper, we present the steps of the bird naturalizing process. In this respect, the following working steps are described: gathering of the necessary documentation for the animal naturalization (photos); checking of the animal not to present decaying signs; measurements; skinning; skin and bone cleaning by meat, ligaments and fat remains; animal wash; skin treating and conservation against decaying and pest; skin tenning; preparing of the artificial body according to the size of the natural one (after the measurements previously done); preparation of the materials (wires, glass eyes, putty, glue); preparing of the support; animal mounting; drying; feather arrangement; fixing of the animal on the support in the wanted position; fixing of the bandages for a proper drying in the right position and the underlining of the characteristic features; drying; removing of the bandages and final correction (puttying, painting); final photo.

WORKING STEPS IN MOUNTING FISH SPECIMENS

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Key words: taxidermy, fish naturalization, improved techniques, steps in mounting, "Grigore Antipa" Museum, Bucharest, Romania.

Following the studies made by the founder of National Museum of Natural History from Bucharest (Romania), Dr. Grigore Antipa, in the field of ichthyology, in the Laboratory of Taxidermy and Restoration new naturalizing methods of fish were searched. That is why, in this paper, improved techniques of fish naturalization are presented.

From the steps of this new method we mention the following: gathering of the necessary documentation for the animal naturalization (photos); checking of the animal not to present decaying signs; measurements; skinning; skin cleaning by meat, ligaments and fat remains; animal wash; skin treating and conservation against decaying and pest; skin tenning; preparing of the artificial body according to the size of the natural one (after the measurements previously done); execution of the head mould, after the natural one; preparation of the materials (wires, glass eyes, putty, glue); preparing and moulding of the support; skin mounting on the body; skin sewing; fixing of the artificial head; fixing of the animal on the support in the wanted position; fixing of the bandages for a proper drying in the right position and the underlining of the characteristic features; drying; removing of the bandages and final correction (puttying); painting of the animal after photos; final photo.

ACHIVEMENT AND POPULATING AN AQUARIUM DESIGNED TO REPRESENT INDIAN OCEAN REEF ZONES

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Key words: collection exhibition, reef, aquarium, marine environment, Indian Ocean, museum, Constanța, Romania.

Over the 51 years of activity (1958-2009), Aquarium from Constanța has enriched his own live ichthyological collections for attracting a great number of public visitors.

For patrimony diversification from "Marine environment" department, the exhibition "Coral Reef Tank", dedicated to reef biocoenosis from the Indian Ocean (FAO 51+52) was made, including zoogeographical subunit from the Red Sea.

There are presented maners of biotope organizations and achivement, sessile fauna and ichthyofaunistic species selection, as well as solutions adopted for specific ambiental conditions (Δ S‰, ΔT°C).

THE REORGANIZATION OF THE EXHIBITION SPACE IN THE CONSTANȚA AQUARIUM WITH ICHTHYOFAUNA BELONGING TO THE AQUATIC ECOSYSTEMS FROM SOUTH-EAST ASIA

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Key words: aquarium tanks, South-East Asia, exhibition space, Aquarium department, Constanța, Romania.

In this paper, the authors want to emphasize the very important role played by the Natural Science Museums and particularly of aquariums, in educating the young people to better understand, appreciate and protect all that we understand by ecosytems in general, and the aquatic ecosystem in particular. This can be realized by improving the presentation of collections, by the multitude of forms and colors they offer, but also by animal behavior.

It is known that vivaria represent an attraction for the public, but this work also demonstrates their importance as a research and collaboration base for all the institutes in the country.

For better capitalization of live patrimony from Aquarium departament a reorganization of exhibition space was made by expanding the capacity tanks containing live ichthyology collections of exotic fish species from South-East Asia ecosystem.

In this work there are also presented some methods which the specialists of Aquarium department use in children education.

THE DESIDERATA OF MUSEUMS IN DEFINING THE POLICY FOR THE PROTECTION OF THE CULTURAL PATRIMONY

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Key words: cultural patrimony, museums, protection.

Sometimes, we analyze the immediate reality and we are able to ascertain surprisingly some people's indifference or, perhaps, their incapacity to understand the overwhelming role of information in time, implicitly needing to invest for some atemporal values.

The cultural patrimony preserved by museums from the entire world represents the continuous source of information which is considered absolutely necessary by the researchers. This serves also for less scientific purposes but very important for the cultural education at the global level. But no serious study on politics, history, social life, etc. would be possible without these cultural assets which have remained under the custody of our times.

Throughout the world, the concept of Cultural Patrimony was unfortunately not efficiently defined sometimes, simultaneously with the concept of its protection within culture – *sine qua non conditio* – therefore the method of protecting the cultural assets differs from one country to another and from one museum to another.

As we are accustomed to the extremes, we reach the conclusion that prevention of crimes regarding the Cultural Patrimony is treated with carelessness, indifference or, on the contrary, with excess of security, with bluntness and with non-existent indulgence.

The responsibility to ensure the security of a museum, if it is not properly organized, the protection can lay in the ground the objectives under restrictions so that they stop to represent anymore the instruments for study, becoming unuseful, regarded only throught the grills of the warehouses or more tragically just photographs.

The information must be put at the disposal of everyone and the access to it should be made without difficulty, so that the preservation of these data represents one of the requests to preserve and to protect the cultural assets, no matter is the category they belong, and represents actually a guarantee to the access to it.

Therefore we would like to expose, in antithesis, the ethics of museums and the legislation which governs this domain in order to apply some new policies of Protecting the Cultural Patrimony.

THE STUDY OF THE ASSOCIATED FAUNA ON THE PHYTAL SUBSTRATE IN THE SHALLOW WATERS FROM VAMA VECHE RESERVATION, AT THE ROMANIAN LITTORAL OF THE BLACK SEA

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Key words: substrate, phytophyll, benthos, meiobenthos.

Vama Veche Marine Reservation, located at the southern extremity of the Romanian littoral, does not include the shallow littoral belt located under the direct action of anthropic activities (especially touristic). However, this area is characterized by a considerable diversity of habitats which is due to the variety of substrate: the sedimentary habitats include sandy areas whose grain size varies between medium and coarse, sometimes mixed with fragments of bivalve shells (of different size, more or less rounded). These habitats are populated by strongly psamophile invertebrate communities. The presence of limestone platforms is a characteristic of the area, as it fragments the littoral belt with sedimentary deposits. This substrate is mostly covered by a vegetal blanket dominated by macro-algae species: *Enteromorpha* and *Cladophora* (Chlorophyta) and *Ceramium* (Rhodophyta). Though relatively isolated and on small surfaces, there were also encountered areas with *Corallina* (Rhodophyta) and *Cystoseira* (Phaeophyta), at greater depths. The invertebrate fauna associated with this type of substrate is typical and it has a phytophile character, the vegetal blanket being also shelter (the shallow zone is characterized by a strong water mass hydro-dynamism) and food resource.

The invertebrate community associated to the phytal substrate is dominated mostly by crustacean species (Harpacticoida, Amphipoda, Isopoda) and to a lesser extent by worm species (the latter developing considerable populations, especially in meiobenthos).

ABNORMAL FORMS AND COLORS OF APPENDIX AND BODY PRESENT IN *AUSTROPOTAMOBIUS TORRENTIUM* (SCHRANK, 1803) (CRUSTACEA: DECAPODA) FROM ROMANIA

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Key words: Decapoda, *Austropotamobius torrentium*, abnormal forms, abnormal colors, appendix, body, Romania.

Form of carapace and appendix are main elements in species identification of crayfishes. Form of rostrum, of cephalothorax, chela and mail gonopods are the main identification characters. We bring information about abnormal form and color in *Austropotamobius torrentium* from Romania. After macroscopic analysis of 283 captured specimens from SW Romania, between Mureş and Jiu hydrographic basins, it revealed 16 different status of morphology: color modifications (sometimes differ from the normal brown), the tufa-coated crayfish (becomes a problem only when the mouthparts become so encrusted that the crayfish is unable to feed), body modifications (more visible in the rostrum and cephalotorax, probably because of the aggressions endured during shell recovery after shedding), appendices modifications (chelipeds are the most vulnerable). Aspect of these crayfish is due to their ecology and ethology, to aggresiveness between individuals or small natural incidents.

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STONE CRAYFISH *AUSTROPOTAMOBIUS TORRENTIUM* (SCHRANK, 1803) IN THE SW OF ROMANIA MOUNTAIN AND SUBMOUNTAIN AREA

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Key words: Crustacea, Decapoda, *Austropotamobius torrentium*, ecology, morphometry, Romania.

This paper presents data on the geographical distribution of the endangered species *Austropotamobius torrentium*. 124 locations were investigated on rivers belonging to 13 geographical units of SW Romania (Anina Mts., Almaj Mts., Dognecea Mts., Godeanu Mts., Locva Mts., Ţarcu Mts., Retezat Mts., Semenic Mts., Mehedinţi Mts., Vâlcan Mts., Poiana Ruscă Mts., Lipova Hills, and Mehedinţi Plateau). The specimens were actively captured by looking for their hiding places in the river bed and were released in the same spots where they were captured after measuring them, 13 measures for body and appendices (total length, length and width of cephalotorax, length of abdomen, length of rostrum, length of 1, 3, 5 abdomen segments, length of telson, width of propodus and dactyl of first pair of legs and length of first chela). The dimension of the populations was established and a distribution map was drawn. Data from previous papers were also centralized. By comparing the past situation with the present one we conclude that the evolution of this endangered species is on the decline.

This study was supported by the grant PN II - IDEI No. 1019/2009 from National Council of Scientific Research in Higher Education (CNCSIS), allotted to I. Petrescu.

PROTECTED SPECIES OF LEPIDOPTERA IN BOTOŞANI COUNTY (NORTH-EAST OF ROMANIA)

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Key words: Lepidoptera, Romania, Habitats Directive, protection.

Romania is considered an European country rich in insects. After Romania's integration into the European Union the legal framework for the protection and conservation of rare species was adopted. In the present work there have been made references to the species of Lepidoptera in need of protection specified in the EU Habitats Directive, as well as the species included in the Government Emergency Ordinance no. 57/2007 on the regime of natural protected areas, conservation of natural habitats of flora and fauna. There is provided information on the distribution and the protected population status of Lepidoptera from Botoşani county (North-East of Romania): *Proserpinus proserpina* (Pallas, 1772); *Zerynthia* (*Zerynthia*) *polyxena* (Denis & Schiffermüller, 1775); *Parnassius mnemosyne* (Linnaeus, 1758); *Leptidea morsei major* Grund, 1905; *Colias chrysotheme chrysotheme* (Esper, 1781); *Lycaena dispar rutila* (Werneburg, 1864); *Cupido* (*Cupido*) *osiris* Meigen, 1829; *Maculinea nausithous* (Bergsträsser, 1779); *Aricia eumedon* (Esper, 1780); *Argynnis laodice* (Pallas, 1771); *Euphydryas maturna partiensis* (Varga, 1973); *Neptis hylas* (Linnaeus, 1758); *Lopinga achine achine* (Scopoli, 1763); *Arytrura musculus* (Ménétriés, 1859); *Pericallia matronula* Linnaeus, 1758; *Euplagia quadripunctaria* Poda, 1761.

NEW SCENARIO REGARDING THE ORIGIN OF THE BUCHAREST POPULATION OF *PODARCIS MURALIS* (REPTILIA: LACERTIDAE)

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Key words: reptiles, *Podarcis muralis*, colonization scenario, Bucharest city.

The common wall-lizard (*Podarcis muralis*) is a xerothermophylic species, knowing to inhabit dry and rocky areas. In Romania, its North-Eastern range limit is known to be widespread, inhabiting mountainous rocky landscapes, quarries, but also dry wood sides, road sides, stone piles and railroad embankments. It was recently cited from different sites outside the mountain area, mostly associated with railroad embankments. In Bucharest, it was cited on 15th October 2008 from a railroad embankment, being assumed that it could be colonized here from more than 60 km away (the nearest known population at that time). In the present note we give the first record for several populations of *Podarcis muralis*, much closer to the one recorded in Bucharest city in 2008, thus suggesting another colonization scenario.

BIRD FAUNA' STUDY IN THE SPECIAL PROTECTED AREA "BENTURI" (IALOMIȚA COUNTY, ROMANIA)

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Key words: SPA/Natura 2000 network, bird fauna, breeding species.

The special protected area (SPA) "Benturi" includes three parts, Bentul Mare, Bentul Mic and Bentul Mic Cotoi, situated in a natural area, without built dams, part of the lower Danube Green Corridor. Through its position in the middle of Ialomița Marsh, the SPA Benturi represents one of the few territories which did not suffer major negative influences, being visited by many birds. Our fieldwork started in 1990 and the birds' fauna's list comprise a number of 74 bird species that use this territory for its trophic, resting and nesting potential. Between them, we found 27 bird species of EU community interest, 35 bird species that need special protection and 19 bird species from the Romanian Red List (for their conservation a Special Protected Area is needed). The breeding birds' fauna includes 46 breeding species and other 15 probably breeding species, some of them with relatively large populations; we notice the presence of some rare breeding species in Romania (like *Aythya nyroca*, *Ciconia nigra*, *Burhinus oedicnemus* or *Bubo bubo*) and globally threatening species (*Aythya nyroca* and *Phalacrocorax pygmeus*). Founded closely to the archaeological reservation Popina Bordușani and having in the neighborhood a forestry administration point, the area was supervised and there were no situations of extreme human intervention.

FAUNA BIODIVERSITY OF THE PUTNA – VRANCEA NATURAL PARK

ȘTEFAN CIURESCU

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Key words: endemic, vulnerable, endangered, threatened.

Putna-Vrancea Natural Park with an area of 38.204 ha. Is situated in north-central area of Vrancea Mountains and is established by Government no. 2151 / 2004.

This work represents a synthesis on most representative vulnerable or threatened species, being under ptotection of more legislation (Birds Directive, Habitats Directive, Bern Convention, Convention and GEO no. 57 / 2007), Putna-Vrancea Natural Park receiving also the status of Avifauna Special Protected Area (ROSPA 0088 Vrancea) and Site of Community Importance (ROSCI Putna-Vrancea 0208) identified and published in the literature according to the bibliographical list, and also new observations of the autor on their spreading in mountain area.

For example, of the over 1,000 determined species of invertebrates, 8 species are endemic (*Succinea vranceana* Grossu), 6 species are *endangered* and *strictly protected* (*Rosalia alpina* L., *Lucanus cervus* L., *Cerambyx cerdo* L.) and 18 species are *vulnerable* (*Carabus gigas* Creutzer, *Maculinea arion* L.).

Of the 151 vertebrate species, 8 species of amphibians are *threatened* or *vulnerable* (*Bombina bombina* L., *Hyla arborea* L.), 6 species of reptiles are *vulnerable* (*Anguis fragilis* L., *Elaphe longissima* Laurenti) and *Vipera berus* L. is *threatened*.

Of the 92 species of birds, 5 species are *endangered* (*Milvus milvus* Bodd., *Jynx torquilla* L., *Tichodroma muraria* L.) and 16 species are *vulnerable* (*Bubo bubo* L., *Carduelis carduelis* L.).

Of the 35 species of mammals, 5 species are *endangered* (*Neomys fodiens* Pennant, *Vespertilio murinus* L.) and 23 species are *vulnerable* (*Canis lupus* L.).

THE ARK PARK NATURE CONSERVATION CENTRE

MALCOLM T. HYETT, TEODOR GLĂVAN, DANA DIMA

"Terranostra" Association, Str. Gh. Doja no. 12, Bl. D7, Sc. 5, Ap. 85, Galați, Romania, Tel./Fax: 0368 431924, 0723 179722, e-mail: mal.t.hyett@gmail.com; www.zoolinx-romania.ro

Key words: education, training, conservation, research, recreation.

The world of Natural History Museums and Zoological Gardens is linked in many ways including: Research, Education, Conservation and Recreation.

They should complement each other as Zoological Gardens are Living Museums and work together more closely for the benefits of the institutions and that of their visitors, and the scientific world needs to play a substantial role in this, especially in areas such as ex-situ conservation.

There needs to be a "Flag Ship" establishment which will cover ALL the aspects involved with a zoological garden. This establishment must go further in that it must show by example the benefits of working together and show the real potential available for other establishments and even broader with the benefits for the local and national economies.

It is no good providing facilities if people are not trained in all aspects of keeping animals in captivity and this includes museum staff who need to have a full knowledge of their exhibits.

The Ark Park is a key environmental project, probably the most important to be developed in Romania at the present time. Romania is one of the last strongholds of free-ranging wildlife in Europe and this must be preserved.

The Ark Park will offer *education*, *conservation*, *training* and none invasive *research* activities whilst at the same time offering the visitor the opportunity of a wonderful *recreational experience* run with *sustainable development* throughout, at the same time help people understand the animals, their needs and sometimes even their own actions.

AUTHORS' BRIEF PRESENTATIONS

Costică Adam
Dr. Costică Adam is senior researcher within "Grigore Antipa" National Museum of Natural History. His field of interest is the chewing louse systematics, faunistics and ecology (Phthiraptera: Amblycera, Ischnocera), parasites on birds. Research themes on which he focuses are: revision of the genus *Penenirmus* from the species of the family Sylviidae of Europe; revision of the genus *Philopterus* from the species of *Acrocephalus* of Europe; the checklist of the parasite chewing lice on the wild and domestic birds of Romania; zonal and seasonal dynamics of the chewing louse populations on the representatives of the House sparrow (*Passer domesticus*); morphometrical variations of chewing lice parasitizing on the representatives of some populations of the House sparrow (*P. domesticus*).

Veronica Antone
Veronica Antone is curator at the Museum Complex of Natural Sciences of Constanța. She is an undergraduate PhD in Forestry and Wildlife Hunting at "Transylvania" University of Brașov. Her interests are the biology and the ecology of mouflon (*Ovis ammon musimon* Pallas), and she's aiming to improve the knowledge base upon the mouflon subject and to find methods of improving the intensive growing of mouflon population in Dobrogea County (Romania).

Józef Banaszak
Jozef Banaszak is actually Professor of Entomology at the University of Bydgoscz, Poland, former principal researcher at Research Institute for Plant Protection from Poznan, Poland. He is PhD in biology and specialist in taxonomy of wild bees (Apoidea). His studies, elaborated earlier, are associated with the identification of wild bees fauna from some agricultural and forestry ecosystems from Romania and Poland and with the assessment of presence and density of such insects, strongly associated with pollinating process. He is the author of the method of sampling wild bees, elaborated in 1980 which in knowing like Banaszak belt method for bees capture.

Cristina Ban-Calefariu
Cristina Ban-Calefariu is researcher at "Grigore Antipa" National Museum of Natural History. She got the PhD title in biology at the University of Bucharest. Her studies focus on Romanian apoid systematics, faunology, biology and ecology. Within 2008 – 2009 she was the manager of the project "Comparative study of two Apoidea families (Megachilidae and Anthophoridae) of the Romanian fauna: morphology, systematics and distribution". She participated to 10 research projects which dealt with the fauna biodiversity and its evolution monitoring in some of the protected areas.

Jean Barloy
Jean Barloy, engineer agronomist, PhD in plant physiology and biochemistry, is currently Professor Emeritus at the University of Agrocampus Ouest Rennes in France. He was titular

holder of Teaching Department of Plant Production - Plant Breeding and Director of the INRA Agronomy Station, responsible for several research programs in Europe. Trained in entomology by R. MNH Jeanel to Paris, he is interested in amateur flight to Carabidae, notably in Romania (10 recent publications of which the one in collaboration on „Faune des espèces des genres *Carabus* et *Cychrus* du Banat roumain").

Raluca Ioana Băncilă
Raluca Ioana Băncilă is a PhD student at "Ovidius" University, Constanța and a researcher at "Emil Racoviță" Institute of Speleology, Bucharest, Romania. She has a BSc in Ecology and Wildlife Conservation and Protection, and a MSc in Taxonomy and Conservation of Biodiversity. Her general aim as researcher and PhD-candidate is to develop tools for the efficient and reliable quantification of the level of population stress, to be used as a management tool in conservation biology.

Gabriel Bănică
Gabriel Bănică is a student of the Doctoral School of "Ovidius" University of Constanța and he works as biologist at "Biosys Group", a small research company from Constanța (Romania). His favourite field of activity is the ornithology. He is also interested in other biology branches like: ecology, biodiversity, zoogeography.

Corneliu Beldiman
Dr. Corneliu Beldiman has a PhD in Prehistoric Archaeology at "Vasile Pârvan" Institute of Archaeology of the Romanian Academy with the thesis: "Industry of bone and antler industry in Prehistory of Romania-from Upper Palaeolithic until the Early Neolithic times". Now he teaches courses of Prehistory and Ancient History as Lecturer at "Dimitrie Cantemir" Christian University, Bucharest. Corneliu Beldiman's research interest is focused on: technology of ancient bone and antler artefacts, prehistory, archaeology, paleoeconomy, complex relations between man and animal world during Pleistocene and Holocene times, modern methods for studying artefacts made from skeletal materials. He participates at international and national conferences and has numerous published papers and reports about bone and antler industry in Prehistory, Antiquity and Middle Ages of Romania.

Ana Maria Benedek
Ana Maria Benedek is lecturer at "Lucian Blaga" University from Sibiu, Department of Ecology and Environmental Protection. She is a PhD in Zoology, her thesis dealing with small mammals from Transylvania. The recent studies focus on small mammals communities' structure and dynamics, variability in some rodent species, systematics of *Apodemus* genus, and the role played by small mammals in the diet of different owl species.

Voicu Radu Boşcaiu
Voicu Radu Boşcaiu graduated at the University of Bucharest, Faculty of Mathematics and has a PhD in mathematics since 1991. He is a researcher at the "Gheorghe Mihoc, Caius

Iacob" Institute of Statistics and Applied, Mathematics of the Romanian Academy and also a collaborator of the National Institute of Research and Development for Biological sciences. His domains of interest are: bio-informatics and mathematical statistics (biostatistics, data analysis, statistic survey theory, econometry, medical informatics, mathematic modeling and biomathematics).

Corneliu Bucşa
Dr. Corneliu Tiberiu Bucşa is a professor and Pro Dean of the Faculty of Science, "Lucian Blaga" University, Sibiu, Romania. Until 2008, he was Head of the Ecology and Environmental Protection Department. He has a PhD in zoology, and the main area of interest is the ecology and faunistics of beetles (Coleoptera: Anobiidae, Scolytidae, Cerambycidae). Also his research interests include Forest Ecology and Conservation. Dr. Bucşa has over 90 published papers, reports and books on ecology, biodiversity, entomology and conservation.

Delia Ceuca
Delia Ceuca is a specialist in museography at the "Zoological Museum" of "Babeş-Bolyai" University in Cluj-Napoca. Her museological activity consists in: taking an account of scientific collections and exhibits from the exhibition halls, restoration of deteriorated collections, organizing temporary exhibitions. Also, she realizes several booklets and folders about the Museum; she has made up a web page to promote the Museum; she organizes the summer practical period together with the students of the Biology Faculty - this practical period is based on museology and museo-technology issues. As regards her scientific research, the field of high interest is the "Study of Diplopodes from Romania", in which she has published several papers.

Adriana Chiorean
Adriana Chiorean, museologist of over 15 years, the department Aquarium-Constanța, PhD student of the „Dunărea de Jos" University Galați, in the aquarium area (domain). Thesis subject is „Studies and research on reproduction and growth under conditions of captivity of the exotic ichthyofauna" - in particular Loricariidae family and Callichthyidae family. I have several published papers, the most recent being a study on the importance of fish nutrition (a recent review), published in AACL, Bioflux Publisher, Cluj-Napoca.

Constantina Chireceanu
Constantina Chireceanu has a PhD in Plant Protection and works as a principal scientist researcher at Research-Development Institute for Plant Protection Bucharest, Department of Entomology. She works on bio-ecology of psyllids in orchards, their associated predators and parasites and develops the control strategies of pests. She is also interested in psyllids and leafhoppers as vector of phytoplasmas in orchards and vineyards. She is the project manager for the risk assessments of apparition and spreading of grape yellows disease caused by phytoplasmas in Romania.

Silviu Chiriac
Silviu Chiriac works at the Environmental Protection Agency Vrancea - Nature Protection Department and is a PhD in natural sciences. Since 2002 he coordinated two LIFE Nature project whose aim was the conservation of large carnivores in Vrancea County. The research activity has resulted in the application of methods for large carnivores monitoring, the application of techniques to reduce conflict and also to achieve the management plans of protected areas in Vrancea County. He is member of Scientific Council of Putna-Vrancea Natural Park and of National Working Group for Large Carnivores Conservation.

Gabriel Chişamera
Gabriel Chişamera is a research scientist, with a 5-year background in the Department of Terrestrial Fauna of "Grigore Antipa" National Museum of Natural History. The central point of his PhD-thesis was the biology and ecology of sand martin populations from southern Romania. His interest is currently focused on systematics, ecology and distribution of bird and mammal species from Romania and from the Mediterranean area. He is also interested in inter-specific relationships of birds and mammals with their ectoparasites.

Nicoleta Chişamera
Nicoleta Chişamera is a passionate birdwatcher, graduate of the Faculty of Biology, University of Bucharest. She is currently developing her PhD programme in the above mentioned institution, working on the bird communities from salted lakes of eastern part of the Romanian Plain. In the last few years she published a series of papers regarding the bird communities of these lakes.

Rodica Ciobanu
Rodica Ciobanu has a PhD in paleontology, has been working as curator in the National Brukenthal Museum and she is currently the Director of the Natural History Museum. She is a specialist in the study of fossil sharks. Most of her studies deal with palaeogene sharks. During eight years she has worked as university professor, she has also done studies on the protection of the geological areas and tourism.

Ioana-Cristina Constantinescu
Dr. Cristina Constantinescu operating within the Natural Sciences Argeş County Museum. Her field of interest is linked to study uropodide mites (turtle mites), both in terms of systematics and ecology. Research has sought to elucidate particular aspects of the trophic spectrum of these mites, demography of populations and taxonomic study of myrmecophilous species.

Constantin Corduneanu
Constantin Corduneanu is a teacher at High School Dimitrie Negreanu Botoşani. He has been studying Lepidoptera of Romania for almost 30 years, particularly in northern Moldova, but also in the Rodnei Mountains, Băile Herculane, in the South Dobrogea. He published several papers about Lepidoptera in North-Eastern Romania. He has a personal

collection of over 12.000 specimens. He is the founding president of the Association for Sustainable Development OPTIM, since 2007.

Gabriela Cuzepan
Gabriela Cuzepan has a master degree in the Expertise and management of ecological systems and works as a specialist in museography/curator at the Natural History Museum of the Brukenthal National Museum in Sibiu, Romania. The research interests are in the fields of aquatic ecology, biodiversity and conservation but especially on the Dytiscidae, Coleoptera macroinvertebrate group. The studied aspects regarding the group are systematics, biodiversity, fauna and ecology aspects.

Alexander Derunkov
Dr. Alexander Derunkov is the head of the Laboratory of terraneous invertebrate animals in the Scientific-practical center of the National Academy of Sciences of Belarus for biological resources in Minsk. He has a M.S. (Hons) and Ph.D. in Biology. Dr. Derunkov's research interests lies mainly in the field of faunistics and ecology of Coleoptera, especially Staphylinidae (from 1996), study of the soil invertebrate communities and populations (mainly Coleoptera) in different landscapes of eastern Europe, trophic relationships of amphibians and staphylinid beetles, beetle fauna of Belarus and neighboring countries. Now he is working on the community ecology and conservation biology of Staphylinid beetles in the river floodplains.

Elena Fălcuță
Elena Fălcuță is a researcher in the Department of Medical Entomology at the "Cantacuzino" National Institute of Research and Development for Microbiology and Imunology. She completed her BSc and MSc at the University of Bucharest and currently she is a PhD student in EDEN project (Emerging Disease in a changing European eNvironment, www.eden-fp6project.net). Her research work focuses on comparative studies regarding the mosquito fauna belonging to two Romanian wetlands: the Danube Delta and Comana area (Giurgiu County).

Carmen Gache
Carmen Gache is Reader Professor in the "Al. I. Cuza" University of Iași (Romania) and the President of the Board of the Romanian Ornithological Society (SOR/BirdLife Romania); she is working in the birds' monitoring and conservation programs, especially for wetlands, but also in the evaluation of the human activity on the biodiversity (including, wind farms' development and ecological restoration projects). By other hand, she is active in the „greening" education programs' implementation.

Adrian Gagiu
Adrian Gagiu operating within "Țării Crișurilor" Museum (Museum of the Criș Region), Oradea. Fields of interest include the rare semiaquatic Heteropteran *Mesovelia thermalis*

(Gerromorpha, Mesoveliidae) in the region, in terms of biology and behaviour. Current objectives of the research are the number and duration of nymphal stadia and the population dynamics in the field, its environmental demands, and the possibilities for captive breeding if re-populating would be necessary.

Mircea Gogu-Bogdan
Mircea Gogu-Bogdan has graduated University of Bucharest, Faculty of Biology, and has a PhD in Biological Sciences since 1996. He currently is a researcher at the Romanian Ornitological Centre from the Research-Development Institute for Plant Protection, Bucharest. His main domains of interest are: ornitology, ecology, etology and environment protection.

Wojciech J. Gubała
Wojciech J. Gubała is a undergraduate student at University of Agriculture in Cracow, Poland. His research include influence of orexin A on hormonal secretion of pituitary gland. Since 2003, as a member of Beskidian Speleological Society, Society of Cave Protection "Grupa z Malinki" and Chiropterological Information Centre, he is conducting winter bat censuses, mainly in caves and summer and swarming activity of bats in Beskidy and Pieniny Mountains in Poland and Slovakia. He also carried some research on butterflies of Beskid Niski Mountains. He is member of British Society of Animal Science (BSAS).

Anamaria Gurzău
Anamaria Gurzău is a PhD student of the Faculty of Biology in the University of Bucureşti, and an Assistant Teacher in the Faculty of Food and Tourism of "Transylvania" University of Braşov, Romania. In her PhD study she is analyzing the dimension of the ecological niche of different rodent species of Romania. Her Undergraduate and Master degree (Faculty of Science, department of Ecology and Environment Protection, "Lucian Blaga" University of Sibiu) also focused on the study of small rodents.

Călin Hodor
Călin Hodor is a wildlife biologist working in consultancy after almost 5 years as park biologist at Retezat National Park Administration. Scientific interest on birds, herptiles and mammals and the impact of different type of infrastructure and industrial development on protected areas, species and habitats.

Viorica Honciuc
Dr. Viorica Honciuc is a principal scientific researcher at Romanian Academy, Institute of Biology, Department of Ecology and Nature Conservation. She is also co-coordinator of Ecological Stationary Posada-Institute of Biology, a complex of taxonomical and ecological laboratories. Her interests are in taxonomy, systematics, biodiversity and ecology of edaphic micro arthropods (Acari, Oribatida) from natural and anthropised terrestrial ecosystems. She has been working in many projects with different goals: increase of productivity of some

natural ecosystems and human community; problems connected with the secondary productivity of some forestry ecosystems with specific or different compositions; maintenance and reconstruction of some natural ecosystems in the mountain area degraded by human community; the increase of productivity in the alpine lawns; influence of human impact on the main ecosystems in the Danube Delta, i.e. Dr. Honciuc has over 80 published papers on the biodiversity, ecology and conservations of Romanian terrestrial oribatid mites.

Daniela Minodora Ilie
Daniela Minodora Ilie is an Assistant Professor at "Lucian Blaga" University of Sibiu, Faculty of Sciences, Department of Ecology and Environmental Protection and has a PhD in systematics and ecology of aquatic Heteroptera: Nepomorpha, Gerromorpha. Her main interests are: the distribution of aquatic and semiaquatic heteroptera (Heteroptera: Nepomorpha, Gerromorpha) in Romania, species dynamics and habitat use by aquatic and semiaquatic heteroptera as well as the impact of different ecological factors on Nepomorpha and Gerromorpha communities. Another domain of interest is the ecology of different insect groups (epigaion insects, and pest insect ecology).

Teodor Ion
Teodor Ion has graduated University of Bucharest, Faculty of Biology. He currently works as a researcher at the Romanian Ornitological Centre from the Research-Development Institute for Plant Protection, Bucharest. His main domains of interest are: general biology, taxonomy, ornitology, IT specialist.

Irina Ionescu-Mălăncuş
Irina Ionescu-Mălăncuş is asistant researcher at Research-Development Institute for Plant Protection Bucharest, Romania working on the field of applied entomology, ecology and biology of beneficial and pest fauna from agricultural ecosystems. She is PhD student and her research at PhD thesis is related with the aromatic and medicinal plant, spontaneous or cultivated ones looking for the possibility to elaborate an ecological pest management of Mentha crops and for botanical bio-products used in pest control obtaining.

Vilica Ionică
Vilica Ionică is a legal adviser specialized in Juridical sciences since 1999 and starting with 2005 she is in charge with legal adviser at the "Grigore Antipa" National Museum of Natural History – Bucharest. She worked mainly with legislation in the cultural field for nine years, studying and applying cultural law in museological institutions. Conservation of natural and cultural patrimony as well as complex valorification of cultural items are her main topics. She accomplished a synthesis between Romanian museological deontology and European legislation in order to implement the last regulation regarding conservation of cultural patrimony in Romania and new policies for protection of cultural patrimony.

Elena Iulia Iorgu
Elena Iulia Iorgu is a researcher at the "Grigore Antipa" National Museum of Natural History, Molecular Biology Department. Her main domain of interest is the systematics of

the orders Orthoptera and Odonata (Insecta: Orthoptera, Odonata) from Romania as well as the study of Orthoptera communities in relation to their habitats. She is currently in the last year of her PhD programme, studying the systematics, distribution and ecology of Orthoptera species from Muntenia as her thesis subject.

Ionuț Ștefan Iorgu

Ionuț Ștefan Iorgu has a PhD in Entomology (order Orthoptera) and now is employed as curator at „Grigore Antipa" National Museum of Natural History, Bucharest. Here he is responsable of the Lepidoptera collections, especially the families Papilionidae, Pieridae, Lycaenidae, Nymphalidae, Hesperiidae, Sphingidae and Noctuidae. For about 9 years he studied the Orthoptera from Romania, with observations in their distribution, ethology, ecology etc, being author of more than 20 papers and 2 books. In present time he is particularly interested in bush-crickets and grasshoppers ethology, including stridulations and courtship behavior.

Oriana Irimia

Oriana Irimia is a PhD student of the "Alexandru I. Cuza" University of Iaşi, specialized in the study of the cladoceran taxonomy and ecology (Crustacea, Cladocera). She has a Master's degree in Oceanography, Climatology and Meteorology obtained at the University Paris VI – Pierre et Marie Curie, France. Presently she studies with the reputed cladoceran specialist, Dr. Ștefan Negrea, at the "Emil Racovitza" Speleological Institute from Bucharest and she is an associated member of the CRIFST, the Romanian Committee for the History and Philosophy of Sciences and Technology of the Romanian Academy. She is working with George Năzăreanu in the development of new and cheaper technologies for the observation and identification of the aquatic microfauna, as well as for the public information regarding the environmental protection.

Gina Raluca Kerkmann

Mrs. Gina Raluca Kerkmann has defended her doctorate in 2004 in the specialty "Environment ecology and preservation" with subject reference to the ciliates of Dobrudja. The study of ciliates constitutes a constant preoccupation since her student years, her steps being guided by the late Professor Julius Geza Müller, PhD until 1997. She worked for three years as a teacher in pre-university education, then up to the present holding the position of museographer specialist within the Constanța Science Museum Complex. The study of fresh and salt water ciliates represents for her a constant activity, having the chance to enjoy the professional support of specialists in the field, Mr. Jean Dragesco, PhD and Mr. Norbert Wilbert, PhD; under the guidance of the latter she became familiar with the techniques to obtain permanent preparations in the German specialty school version (DAAD scholarship in 2002, as well as research internship in 2003). Her modest contributions to the Romanian protistology have materialized in a few scientific works, as well as participation in specialty scientific events. Since 2006 she is a member of the German Protistologic Society.

Oana Livadariu
Oana Livadariu is Assistant Professor at the Department of Biotechnology, Faculty of Biotechnology, Bucharest, Romania since 2003. She works in the field of the application of biotechnology in plant protection, teaching on Cell and tissue cultures; Biotechnology in plants breeding; Plant protection by biotechnological methods; Monitoring and control systems in environmental protection.

Sanda Maican
Dr. Sanda Maican is a senior researcher at the Ecology, Taxonomy and Nature Conservation Centre from the Institute of Biology Bucharest, Romanian Academy. Her researches are focused especially on the systematics, taxonomy, ecology and zoogeography of the leaf beetles (Coleoptera: Chrysomelidae) from the Romanian fauna, and also on the Coleoptera species of conservative and economical importance, general problems of biodiversity and nature conservation, environmental quality monitoring. Dr. Maican published many papers regarding the biodiversity of leaf beetles species from various regions within Romania and the Mediterranean area.

Traian Manole
Traian Manole is principal researcher, PhD in biology at Research-Development Institute for Plant Protection Bucharest, Romania, working on the biology, ecology, taxonomy and biological control of agricultural pests strongly connected with the acquired international knowledge of sustainability. He is, also the Head of the Departmental Agricultural Commission of Romania responsible with invasive alien species monitoring and has many scientific contributions in alien invasive species monitoring like the first report for Romania of the non-native species *Lixus incanescens* Boh., *Corimalia pallida* Oliv., *Corimalia tamarisci* Gyll. *Nanophyes pallidulus* F., *Nanophyes globulus* Germ., in the Biosphere Reserve of the Danube Delta and the monitoring of *Cameraria ohridella* Deschka & Dimic and *Diabrotica virgifera virgifera* LeConte on the national country level. He is also specialized as an expert for the taxonomy of Curculionidae species from Romanian fauna. Traian Manole's recent research topics are concerning with the ecological management of medicinal and aromatic pests, the cited control programs like *Stenocarus fuliginosus* March. and *Ceuthorhynchus macula-alba* control on poppy, *Crysomela* spp. on *Mentha piperita* and so on.

Minodora Manu
Minodora Manu is a researcher at Romanian Academy, Institute of Biology, Department of Taxonomy, Ecology and Nature Conservation, since 1999. Her professional experience is terrestrial ecology, ecological reconstruction, studies of biodiversity. Her main professional task is taxonomy and ecology of soil mites (Acari: Mesostigmata- Gamasina), focused on the diversity, structure and dynamics of the terrestrial gamasid populations from natural-protected and man-affected ecosystems. She obtained the PhD from Romanian Academy - Institute of Biology, in 2007. She is author or co-author of over 55 papers and 4 book

chapters, with participation at national and international conferences, member of the European Association of Acarologists (EURAAC).

Gabriela Mărgărit
Gabriela Mărgărit is Lecturer Professor PhD at the Faculty of Biotechnology in Bucharest and visiting research fellow at Institute of Research Development Institute of Plant Protection. She has university studies in Economics, MSc and PhD in Agronomy. Dr. Gabriela Mărgărit's research interests are especially in financial management, quality management, decision and risk management, marketing, image promoting and evaluation on potential customer demands, SWOT analysis. These areas allow her to observe and analyze general aspects, including statistical analyses in agronomy, ecology or education domains.

Ana-Maria Mesaroș
Ana–Maria Mesaroș is a Masters student specializing in the Expertise and Management of the Natural Ecosystem, at "Lucian Blaga" University, Sibiu, the department of Ecology and Environment Protection. She has a degree in Ecology and Environment Protection. Since December 2008 she has been working at the Natural History Museum in Sibiu as a zoologist. Currently she is studying the Malacological Collections from the Museum – the morphology, taxonomy and geographical distribution of the species included in the collections.

Dumitru Murariu
Dumitru Murariu is a senior researcher at the "Grigore Antipa" National Museum of Natural History in Bucharest. He was graduated in 1966 as a Diplomate in Biology at the Faculty of Biology-Geography – Section of Biology–Zoology at "Al. I. Cuza" University of Iași. Since 1975, he is PhD in Biology at the Faculty of Biology - University of Bucharest and he is specialized in the study on mammals: morphology, systematics, ecology, distribution. He is implied in structuring some management plans of different protected areas. Currently he supervises 13 PhD students at the Faculty of Biology in Bucharest.

George Năzăreanu
George Năzăreanu is a student in the third year at the University of Agronomic Sciences and Veterinary Medicine, Bucharest, Specialization Biology FR, and he works at "Grigore Antipa" National Museum of Natural History as a conservator. His interests are ichthyology, genetics, aquaristic, geography, speleology, taxidermy and photography. He also is a freelance photographer & graphic designer.

Ticuța Negreanu-Pârjol
Ticuța Negreanu-Pârjol is associate professor, chemist and pharmacist at "Ovidius" University of Constanța, Romania, Faculty of Pharmacy, PhD in bioinorganic chemistry. She is director, scientific responsible and member in 14 Romanian and international projects in environmental protection, bioinorganic chemistry and pharmaceutical fields. She has competences in the atomic absorption spectrometry and photo-chemiluminescence analysis

for natural and synthetic compounds. She has over 100 published papers in the domains of bioinorganic chemistry, biotechnology, sanitary chemistry of environmental and food, water pollution and aquatic ecosystem protection. She has 9 Romanian Patents in organic covered and protection for wood, bioinorganic chemistry and pharmaceutical technology.

Tiberius Nicoară
Tiberius Nicoară is technician at "Grigore Antipa" National Museum of Natural History, where he coordinates the Department of Guard, Civil Protection and Patrimony Security. His base specialization being in mural art and restoration, he is making the necessary steps for the creation of the Plastic Art Collection within the Museum, whose custody and administration he got in 2009. After numerous collaborations with the professor of art history, Bogdan Panțu, as well as with institutions whose main activity was represented by the cultural patrimony protection and security, Tiberius Nicoară wants to point out the cultural patrimony protection and security as integral part of the Civil Protection, by law application and also by museal education.

Nicolae Onea
Nicolae Onea has a PhD in Biology (Ecology and Environment Protection) and is an Expert in items with scientific importance (vertebrate). Also he is a researcher and chief of Department of Natural Sciences at Brăila Museum. His area of scientific interest is represented by the ornithofauna from the Lower Danube and especially aquatic birds. Most research topics are focused on the biology, ecology and protection of aquatic birds, study of colonial aquatic birds and aquatic bird migration from the Natural Park Small Wetland of Brăila. He is a member of the Romanian Ornithological Society and the Scientific Board of the Brăila Small Wetland Natural Park.

Péter László Pap
Dr. Péter L. Pap is an assistant professor at the "Babeș-Bolyai" University from Cluj Napoca, Romania. He is interested in avian ecology, host-parasite interaction and in the physiological responses of birds against various parasites' infection. His present main activity focuses on lice, feather mites and house sparrow interaction, the physiological response of sparrows against coccidian infection and the annual cycle in immune function in birds.

Nicolae C. Papadopol
Mr. Nicolae C. Papadopol, PhD, was director in charge of strategies-cooperation at the "Grigore Antipa" Research-Development Institute and currently is serving as Scientific Director at the Constanța Science Museum Complex. He is a 1st Degree scientific researcher and associated professor at the Naval Academy, Maritime University and "Andrei Șaguna" University, with more than 40 years' experience in the field. As a specialist in applied ichthyology he had a significant contribution to the exploration of remote fishing areas, being also an expert in maritime fishing law. During 1970-2007 he has coordinated and organized another 27 missions in the South-East Atlantic, Western Indian Ocean and sub-

Antarctic area. Mr. Nicolae C. Papadopol, PhD has summarized the results of his prestigious research in 90 scientific works, 6 books and countless participation in specialty scientific events, nationwide and abroad.

Dalia Paraschiv
PhD student Dalia Paraschiv is biology curator at Vivarium Department of „Ion Borcea" Natural Science Museum Complex from Bacău (Romania). Systematical group studied: Mammalia, Ord. Rodentia. Interest fields and professional competence: Rodent biology, ecology, etology and systematics; Conservation of several rodent species.

Gabriela-Mihaela Paraschiv
Dr. Gabriela Paraschiv's research area is aquatic ecology, the benthic fauna, marine and freshwater, a Ponto-Caspian relict species; she is also interested in aquatic ecosystems biodiversity study and works as assistant professor at the Natural and Agriculture Science Faculty of "Ovidius" University of Constanța.

Gabriela Patriche
Dr. Gabriela Patriche is chief curator of Museum Department in Natural Sciences Museum Complex Galați, Romania. She is responsible for coordination of the activities of collection management, research, exhibition and education of the museum department. For PhD thesis she studied the parasitoid complex that limits Lepidoptera population; Hymenoptera parasitoids; host plant-phytophagous insect-parasitoid tritrophic interaction, biological control. The current scientific interest is focused on the fauna, ecology, phenology and distribution of the Odonata species in the SE Moldavia, Romania (Prut, Siret, the Danube basins).

Corneliu Pârvu
Dr. C. Pârvu is the Chief of Department of Terrestrial fauna within „Grigore Antipa" National Museum of Natural History from Bucharest. His research interests are: the systematics and zoogegraphy of the dipterans (mainly Tabanidae, Dolichopodidae and Empididae but also other families like Hybotidae, Mycetophilidae, Limoniidae, Tipulidae, Syrphidae). Dr. Pârvu has over 100 published papers and raports on systematics, biodiversity and conservation of terrestrial ecosystems. He participated on 7 scientific expeditions in Indonesia, Africa, Asia and lectured more then 40 conferences of vulgarization.

Lucian Pârvulescu
Lucian Pârvulescu is University Assistant at the Invertebrate Zoology Department – West University of Timișoara and PhD student, studying freshwater crayfish for more than three years. He accumulated experience and information about all the native species of crayfish from Romania and also was the first to report a non-indigenous crayfish species (Orconectes limosus) in Romanian waters. Presently, his attention is focused on Natura 2000 prioritary species *Austropotamobius torrentium*, working with a team of researchers from "Grigore

Antipa" National Museum of Natural History, to establish the national distribution as well as ecological aspects and population genetics of this species in Romania.

Andrea Pereswiet-Soltan
PhD student International Doctoral Studies in Natural Sciences, Institute of Systematics and Evolution of Animals - Polish Academy of Sciences. Principal research interest: Evolution, systematics, paleontology, biogeography, ecology and protection of bats. Stricly interest: fossil bats, morphology of bats, ecology of bats of Western Paleactic.

Angela Petrescu
Dr. Angela Petrescu is principal researcher and expert on ornithology collections at the "Grigore Antipa" National Museum of Natural History from Bucharest for more than twenty years. Scientific interest on systematics, faunistics, ecology of birds (Aves) and bird collection. Present themes on which she is focused in her activity now are ecology (food composition, role in maintaining ecological balance for Strigiformes, Ardeidae, Meropidae); inventory of bird species in protected areas and conservation; history of ornithological knowledge and Collections in Romania.

Eugenia Petrescu
Eugenia Petrescu is asistant researcher at Research-Development Institute for Plant Protection Bucharest, Romania and her work in scientific research includes the botanical studies concerning the agro-systems, spontaneous flora, the complex interrelations with host culture crop and also with the systematic and ecological studies from natural reserve area "Nature 2000". She is PhD student and her study for her doctoral dissertation refers to the possibility of biological control of pathogenic fungi with some other antagonist species of fungi.

Iorgu Petrescu
Dr. Iorgu Petrescu is principal researcher at the "Grigore Antipa" National Museum of Natural History from Bucharest. Scientific interest on systematics and faunistics of cumaceans and amphipods (Crustacea). Present themes on which he is focused in his activity now are systematics of Cumacea from different marine areas, systematics and faunistics of amphipods from Romanian and foreign fauna (Bulgaria), distribution and ecology of stone crayfish from Romania and history of our collections.

Teodora Ramona Pintilieasa
Teodora Ramona Pintilieasa completed her undergraduate work and her MSc at the Faculty of Sciences, at the University of Bacău. Now she is a PhD student at the University "Al. I. Cuza" of Iaşi, Faculty of Biology, Romania. Her research interests are best summarized in the fields of fish ecology: fish association, biodiversity, dynamic of fish populations from the upper and midbasin of the River Siret.

Dorin Alexandru Pop
Dorin Alexandru Pop is assistant professor at the Ecological University of Bucharest – Faculty of Natural Sciences and Ecology, teaching General Ecology seminaries and Animal Biology laboratories. He is in charge with the field practice and projects of the Biodiversity Working Group of the same Faculty. As a PhD student at the University of Bucharest – Faculty of Biology, he is studying the linkage between landslides, pond formation and amphibian populations.

Luis Ovidiu Popa
Dr. Luis Popa is a research scientist at the "Grigore Antipa" National Museum of Natural History, where he is the head of the Molecular Biology Department. He has a BSc in Biology, MSc and PhD in Genetics. His main research focuses are molecular phylogenetics, population genetics of different animal species (mainly freshwater bivalve mollusks and fishes). Dr. Popa is also collaborating in human medical genetics projects as a follow-up of his PhD programme.

Oana Paula Popa
Oana Paula Popa is a Research Scientist at the Molecular Biology Department of the "Grigore Antipa" National Museum of Natural History Bucharest, Romania. She studies different aspects of genetic diversity, molecular identification of juvenile forms and actual distribution of invasive freshwater bivalves or Ponto Caspian relict species in the Romanian Fauna.

Irinel E. Popescu
Irinel E. Popescu is associate professor PhD on Entomology and Parasitology at "Al. I. Cuza" University of Iași, Romania. His researches are focused on the parasitoid-phytophagous-plant relations. As taxonomist his major interest is on the Chalcidoidea (Hymenoptera), especially Torymidae and Eurytomidae families. He is also vice-president of the AquaTerra Ecological Society from Iași, Romania, with major activities on the management of natural reserves with personal interest especially on the steppe regions.

Răzvan Popescu-Mirceni
Răzvan Popescu-Mirceni is the general manager of the Oceanographic Research and Marine Environment Protection Society "Oceanic-Club". PhD. student at the Biology Faculty – Bucharest University. Areas of interest of most research projects are the fauna and zoogeography both marine and terrestrial species in the Mediterranean, European and North African areas. 8 papers published as primary/single author and another 12 as a co-author. 26 Conference for vulgarization during 1998-2009. Co-author of 6 exhibitions with the biodiversity and nature exploration theme. Coordinator for 47 within 11 expeditions were for scientific research and other 36 were for educational purposes.

Cristina Preda
Cristina Preda completed a Master in Science degree in Sustainable Development of Coastal Area at the Faculty of Natural and Agricultural Sciences – "Ovidius" University in

Constanța. Now she is a second year PhD student at the same institution, having as primary research interest alien invasive invertebrates in Constanța county. Currently she is a research assistant at "Ovidius" University, working on two projects: CNCSIS/PN II 322/2007 MODSIS (Monitoring and Detection System for Invasive Species) and PNCDI II CNMP 1387/2008 DNA-Bris (DNA barcoding technique applied in the studies of alien or invasive species in Romania).

Liviu Prioteasa
Liviu Prioteasa is a research entomologist at the "Cantacuzino" National Institute of Research and Development for Microbiology and Imunology. He received his BSc and MSc from the University of Bucharest and plans to complete his doctorate in entomology next year. His research program focuses on the vectorial potential of the mosquito species from the Danube Delta Biosphere Reserve in transmitting West Nile virus. The latest project he is involved with is a FP 6 project (EDEN - Emerging Disease in a changing European eNvironment, www.eden-fp6project.net).

Florin Prunar
Florin Prunar is biologist, PhD lecturer at the University of Agricultural Sciences and Veterinary Medicine of Banat, Timișoara. In the last 10 years, he has made studies on the spread, biology, ecology and systematics of species from the genus *Carabus* L. in Romania and collaborated to the paper „Faune des espèces des genres *Carabus* et *Cychrus* du Banat roumain".

Halina Ratynska
Halina Ratynska is actually Professor of botanic and plant ecology at the University of Bydgoscz, Poland, former principal researcher at Research Institute for Plant Protection from Poznan, Poland. Her studies in biology and her PhD dissertation is connected with the phtyto-sociology of plant communities from natural and agricultural ecosystems.

Mirela Sabina Ridiche
Mirela Sabina Ridiche is a museographer specialist at Museum of Oltenia Craiova – the Natural Sciences Department and she is certified as expert in *Assets of scientific significance in ornithology.* She unfolds scientific studies upon biology, ecology and preservation of avifauna in the flooded plain of the Danube (Calafat – Jiu section), theme that is the object of her PhD thesis which she is working on. At the same time she unfolds activities of scientific and cultural – educative capitalization of the ornithologic collection at the Museum of Oltenia. She is a member of Romanian Ornithologic Society since 1997 and she participated at many programmes cooronated by this ONG.

Manuela Diana Samargiu
Dr. M. Samargiu is lecturer at "Ovidius" University of Constanța, Natural Sciences and Agricultural Sciences Faculty, Romania. She is member of World Association of

Copepodologists, Commission Internationale pour l'exploration scientifique de la Mer Méditerrané (CIESM), Monaco and Society for Conservation Biology. She has a PhD in Biology with thesis "The harpacticoids biology from the Romanian Black sea coast". She is teaching courses of Aquatic Ecology, Water Resources Management, Animal Biology, Water, air and soil protection and she organizes a student scientific field work in the Danube Delta every summer. Dr. Samargiu's research interests are summarized in the fields of aquatic ecology, biodiversity and environmental protection. She has papers regarding ecology and biodiversity of benthic invertebrates and fish populations from different continental waters or from marine shallow waters of the Romanian littoral.

Radu Mihai Sandu
Radu Mihai Sandu working at the Environmental Protection Agency Vrancea - Department of Nature Protection. Since 2001 participated in the implementation of protected areas management project in Vrancea County in the context of local NGOs and participated in the LIFE Nature projects actions whose aim was the conservation of large carnivores in Vrancea County. The research activity has resulted in the application of methods for large carnivores monitoring, being remarked in the tranquilization and rescue animals in need actions. He is member of National Working Group for Large Carnivores Conservation.

Verginica Schröder
Verginica Schröder is a biologist at the Romanian Water Direction, from Constanța and assistant professor at "Ovidius" University Constanța. Since 1993 she has been working in the field of marine research, freshwater and estuarine benthos, paying a special attention to the crustaceans. The PhD was made on taxonomy, ecology and present distribution of Ponto-Caspian relicts peracarides (Crustacea, Peracarida) from Dobrogea´s coastal water. Presently she is focused on invertebrates' cellular biology research and development of its medical applications.

Marius Skolka
Marius Skolka is an associate professor of Invertebrate zoology, Entomology and Evolution at "Ovidius" University of Constanța, department of Biology – Ecology, teaching also courses of Invasive species, Human diversity and Zoological diversity at Master study programs. Since 1992 he developed studies on Lepidoptera, of biology and ecology of some marine, freshwater and terrestrial invasive species in Romanian Black Sea area and biodiversity inventories. Since 2000, he coordinates a center for biodiversity studies in "Ovidius" University focusing on monitoring in protected areas and impact of invasive species. Author of scientific papers on marine and terrestrial biodiversity of Dobrogea, invasive species impact in aquatic ecosystems and ecology of plankton communities.

Melania Stan
Melania Stan is a researcher at the "Grigore Antipa" National Museum of Natural History and she has a PhD title, with a thesis on the Romanian rove beetles. She is focused on the

taxonomy, systematis, faunistics and zoogeography of the rove beetles (Family Staphylinidae) from Romania. She took part to different national and international projects, with the assessment of the coleopteran diversity of some Romanian areas as an objective. She was involved in the elaborating the technical-scientific documentation for the coleopteran species included in Annex II of the CEE Habitats Directive throughout the projects which have contributed to the establishment of the Natura 2000 network in Romania.

Katarzyna Stanik
M.Sc. Katarzyna Stanik is a PhD student at Institute of Systematics and Evolution of Aminals, Polish Academy of Sciences in Cracow, Poland. Her principal research interests are: evolution, systematics, distribution and ecology of bats, currently focused on PhD thesis.

Diana-Maria Sztancs
Diana-Maria Sztancs is PhD student in Prehistoric Archaeology at "Lucian Blaga" University, "Nicolae Lupu" Faculty of History and Patrimony, Sibiu. Her PhD thesis aims to analyse the bone and antler industry belonging to Neo-Eneolithic cultures in Transylvania using actual methodologies. In 2008, she had obtained her M.A. degree at the same university with dissertation: "Study of archaeological patrimony of Brukenthal Museum, Sibiu: the collection of bone and antler prehistoric artefacts". Diana-Maria Sztancs's research interest is focused on: technology of bone and antler artefacts, prehistory, archaeology, paleoeconomy, complex relations between man and animal world during Holocene times, modern methods for studying artefacts made from skeletal materials. She participates at international and national conferences and has numerous published papers and reports about bone and antler industry in Prehistory, Antiquity and Middle Ages of Romania.

Cecilia Șerban
Cecilia Șerban is a curator in the Natural Sciences Museum Complex of Galați, responsible for organizing Heteroptera insect collection. She currently follows a PhD program in zoology with the theme concerning studies of Coreoidea fauna in the lower basin of the Siret River and Măcin Mountains. The field of interest includes systematics, faunistics, morphology, biology and ecology of the terrestrial true bugs in Romania.

Ioan Tăușan
Ioan Tăușan is a Masters student at "Lucian Blaga" University, Sibiu, Romania. His research from his undergraduate degree, also at "Lucian Blaga" University, included ant (Hymenoptera: Formicidae) ecology and faunistics. Since December 2008, he has worked in the Natural History Museum from Sibiu, where he is curator of the Zoological Collection. From July 2009, he is named Interim Head of Department of the Natural History Museum. His area of interest includes terrestrial insect ecology and also ecological system modeling.

Camelia Ureche
Camelia Ureche is an associate professor, working at the University of Bacău. Her research interest is in the field of entomology. She completed her PhD studies at the University "Al. I. Cuza" of Iași, studying the leafmining insects. Now she is also studying the aquatic macroinvertebrates which are the food resources for the fish populations.

Dorel Ureche
Dr. Dorel Ureche is an associate professor at the University of Bacău. His main research interests are in the areas of aquatic ecology, ichthyology, fish communities and fish monitoring. These areas and his experince of almost 15 years allow him to evaluate the actual state of the fish communities, the structure and dynamics of the fish populations under the human impact.

Csongor István Vágási
Csongor I. Vágási is a PhD-student at the University of Debrecen from Debrecen, Hungary. He is interested in behavioural ecology with the main study topics focusing on the costs of moulting, growth of high-quality flight feathers, and the production costs of plumage ornaments using great tits and house sparrows as model organisms. Specifically, he tries to understand (1) which factors are responsible for the diversity of moulting (e.g., why some species replace only a part of the plumage?), (2) what are the main sources of variation in flight feather quality, (3) whether moult is traded off against immune investment, and if it is, how this affects the moulting process, the quality of feathers, and immune response, and (4) do the quality of ingested food and the time available for moulting constrains the expression of plumage ornaments used in intra- and intersexual communication.

Bronisław W. Wołoszyn
Prof. dr. hab. Bronisław W. Wołoszyn is a Professor Emeritus of the Institute of Systematics and Evolution of Animals, Chiropetrological Information Center, Polish Academy of Sciences. His principal scientifical interest is: paleontology, evolution, systematics, distribution and ecology of small mammals (mainly bats) of Holarctic. Especialy: fossil and recent mammals of Central America, fossil end recent mammals (bats) of Europe and Middle East, biospeleology, nature protection. Actually, he works on ABC Project (Atlas of Bats of the Carpathians).

AUTHORS' INDEX

PROFIL AMP DIAGNOSTICS

Dupa o activitate semnificativa pe piata de diagnostic de laborator inceputa cu 30 de ani in urma si materializata prin prezenta momentana in peste 63 de tari ale lumii, incepand cu anul 2003 firma **AMP Medizintechnik GmbH -** Austria s-a implicat decisiv si pe piața din România, prin deschiderea filialei sale **AMP Diagnostics**. Specialiștii firmei AMP sunt și au fost permanent instruiți de către furnizorii si partenerii externi cu care se colaboreaza, calitatea produselor si serviciilor oferite fiind in permanenta ireproșabilă. Dovada stau cei peste 280 de clienti multumiti din intreaga tara, (universitati, laboratoare de cercetare sau de diagnostic, spitale si cabinete publice si private, scoli, institute si statiuni de cercetare), care apreciaza munca noastra si revin in permanenta cu proiecte tot mai diversificate si interesante la care suntem mandri sa colaboram !

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- **Advantage Lab – Belgia – etuve, autoclave, incubatoare, bai ultrasonice, bai termostatate cu recirculare etc**
- **Berthold Detection Systems – Germania – luminometre si fluorimetre specializate, pt. cercetare si diagnostic**
- **BIO-TEK – SUA – cititoare ELISA universale pt. microplaci sau stripuri - cu aplicatii in medicina si cercetare**
- **SNIJDERS – Olanda – Congelatoare si incubatoare de laborator**
- **METABION – Germania - kituri si reactivi specifici pentru biologie moleculara**
- **BIOSAN – Letonia – aparatura speciala pt biologie moleculara (agitatoare, incubatoare, vortexuri etc)**
- **Thermo-Fisher Scientific - SUA – o gama foarte variata de echipamente si aparate de cercetare**
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- **LI-COR – SUA – secventiatoare automate pt biologie moleculara**
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- **Microgenics – Germania – reactivi specifici pt monitorizarea medicamentelor, drogurilor şi metaboliților lor din sânge şi urină (ex. Cyclosporine, Amfetamine, Barbiturice, Benzodiazepine, Cocaina, Ecstasy etc)**
- **Diamond Diagnostics – SUA – reactivi si aparate pentru gaze şi electroliți**
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Firmă specializată în furnizarea de produse, aparatură şi servicii în biologia celulară şi moleculară, genetică, microbiologie, imunologie, biotehnologii, microscopie optică şi electronică (TEM şi SEM), consumabile şi aparatură de laborator.

Personal însumând peste 40 de ani de experienţă (din care peste 10 ani în laboratoare de specialitate din străinătate: Belgia, Franţa, Germania) în domeniile precitate, asigurând un suport tehnic imediat, precum şi consultanţă de specialitate.

Reprezentant şi distribuitor exclusiv/autorizat în România al firmelor internaţionale:

FERMENTAS (http://www.fermentas.com/)
leader mondial în producerea de enzime de restricţie (digestia ADN în 5 minute)
reactivi pentru: digestia enzimatică a ADN, **extracţia**, **ligarea** sau **amplificarea ADN** (prin PCR), **revers-transcripţia ARN**, **clonarea** fragmentelor de ADN în plasmizi, pentru **electroforeza ADN şi a proteinelor. Calitate germană, preţuri imbatabile !**

EUROGENTEC (http://www.eurogentec.be/code/en/hp.asp)
oligonucleotide cGMP, terapeutice sau pentru amplificarea ADN prin PCR şi Real Time qPCR, **DNA microarray**, sinteza oricăror **anticorpi primari mono şi policlonali**, producător de **anticorpi secundari**, **peptide**, **kituri de clonare** şi **sisteme de expresie şi producţie de proteine în bacterii, multiplexing assay, antisense research, RNAi, Luminex & Immuno Assay Development, Epitope mapping, Custom Gene Synthesis, etc.**

Banca Transilvania
Cod IBAN: RO92 BTRL 0130 1202 B337 83XX in Lei
Cod IBAN: RO67 BTRL 0130 4202 B337 83XX in Euro
Cod IBAN: RO19BTRL01302202B33783XX in USD $

Banca Volksbank
Cod IBAN: RO21 VBBU 2511 CJ08 4569 2701 in Lei
Cod IBAN: RO56 VBBU 2511 CJ08 4569 1101 in Euro

Banca Nationala, Trezoreria Cluj
Cod IBAN: RO38 TREZ 2165 069X XX01 6782 in Lei

LONZA (http://www.lonza.com/group/en.html; CAMBREX şi AMAXA sunt acum parte a LONZA))

medii de cultură (generale, specifice sau produse la comandă), **sute de tipuri de celule primare şi de linii celulare** umane sau animale, **kituri pentru detecţia micoplasmelor, microorganismelor şi prezentei endotoxinelor**, **anticorpi**, diverse **seruri** de proveniență umană sau animală, **reactivi pentru terapie celulară,** pentru **electroforeza rapidă a ADN şi proteine, unic producator de SeaKem, NuSIeve şi MetaPhor agaroză**, deținătoarea tehnologiei de **transfecţie a oricărui tip celular** nucleofectorul AMAXA), şi a sistemului **StellARray pentru quantificarea simultană a expresiei a oricăror 94 gene dorite prin RT-qPCR în placă** etc.

PIERCE (parte a grupului Thermo Fisher Scientific) (http://www.perbio.com/)

SOLUȚIA COMPLETĂ pentru lucrul cu proteine: kituri, reactivi şi consumabile pentru **extracţia**, **purificarea**, **electroforeza**, **expresia**, **imunodetecţia/western blot-ul, marcarea**, **studiul structurii şi funcţilor proteinelor!**

DHARMACON RNAi Technologies, HYCLONE Cell Culture (http://www.perbio.com/))

AbD SEROTEC (www.ab-direct.com), **Abcam** (www.abcam.com), **R&D Systems** (www.rndsystems.com), **Santa Cruz Biotechnology** (www.scbt.com), **Covance** (www.covance.com), **Exbio Antibodies** (www.exbio.cz): **firme producatoare de anticorpi ;i kituri ELISA.**

HISS DIAGNOSTICS (www.hiss-dx:de): producător sau distribuitor European al firmelor NOVITEC (prot. recombinante şi enzime), SANQUIN (kituri ELISA), INTRON BIOTECHNOLOGY (kituri DNA, RNA, Proteine).

ZYMO RESEARCH (http://www.zymoresearch.com/) **- THE EPIGENETICS COMPANY!**

Kituri de extracţie şi purificare ADN şi ARN (din plante, animale, insecte, ciuperci, drojdii, bacterii, viruşi), **din diferite probe biologice:** sânge, culturi celulare, fecale, urină, microbi din sol sau din gel de agaroză), diferiți reactivi/ linii celulare bacteriene şi de drojdii, **kituri pt. epiginetică (metilarea ADN, anticorpi)**.

AXYGEN (http://www.axygen.com): leader mondial în producţia de vârfuri de pipetă universale/specifice, cu/fără filtru, sterile/în vrac, microtuburi pentru PCR sau centrifuga (0,2-2 ml), microplaci de 96-386 godeuri, etc.

OriGene (http://www.origene.com/)

colec'ii de clone de cDNA full-length (TrueClone) de şoarece, om şi alte specii, anticorpi, **reactivi pentru RNAi**, kituri şi reactivi pentru **expresia proteinelor** sau pentru **transfecţie**, suşe bacteriene, vectori de expresie.

LABORIMPEX (www.laborimpex.be) – Echipament medical ;i de laborator, substanțe chimice, diverse consumabile, microscoape și accesorii etc. (MERK, SIGMA, CETI).

Christine Gröpl Electron Microscopy (http://www.christine-groepl.com/index.html) **Echipament si consumabile pentru microscopia optică și electronică TEM și SEM,** de la următoarele firme producatoare: AGAR SCIENTIFIC, DDK, PLANO, TEDPELLA, GRATICULES, PELCO INTERNATIONAL, DIATOME, BRITISH BIOCELL, EMS, APIEZON, DUMONT, NEUBAUER, SOMAR.

STARLAB (www.starlab.de) – vârfuri de pipetă, tuburi PCR și microcentrifugă, pipete, mănuși din latex sau nitril, echipament de biosecuritate, sisteme electroforeză, echipament și consumabile pentru criostocare etc.

UNO BV (www.unobv.com) – cu;ti pentru animale (;oareci, hamsteri, cobai, șobolani, iepuri, câini), diverse materiale pentru infuzie și anestezie (catetere, ace, pompe pentru infuzie, microventilatoare, vaporizatoare, măști faciale, unități de eutanasie etc.), identificarea (transpondere și cititoare transpondere) și manipularea animalelor (mănuși, plase, veste, cadre metalice sau din plastic pt. imobilizarea animalelor etc).

PAA PAA Laboratories GmbH (www.paa.com) - **THE CELL CULTURE COMPANY:** cutii Petri rotunde sau p[trate, tuburi, flaskete, diverse alte recipiente pentru biologia celulară și moleculară, culturi celulare în vitro, corespunzând normelor IVD, pipete serologice, plăci ELISA, cryotuburi, cutii și rackuri de stocare etc.

Reprezentant/distribuitor regional al altor firme producătoare de reactivi, consumabile, aparatură de laborator, produse pentru microscopia optică și electronică:
SIGMA-ALDRICH, MERK, VWR, TaKaRa, VWR, EPPENDORF, GREINER-BIO-ONE, AXYGEN, NUNC, NALGENE, BD FALCON, BECTON DICKINSON BIOSCIENCES, WHATMANN, MILLIPORE, SARTORIUS, GILSON, BIOHIT, SOCOREX, THERMO-LABSYSTEMS, SACACE, HELENA IDUSTRIES, FISHER BIOBLOCK SCIENTIFIC, SANYO, LAWTON, LABOMODERNE; GENTAUR, BASE CLEAR, BIO-ART, KERN, DOMINIQUE DUTCHER etc.

Timpul de livrare al produselor comandate: maximum **3 zile** lucrătoare dacă avem produsele în stoc, sau în maximum 30 de zile dacă acestea trebuiesc comandate la furnizorul nostru extern si acesta le are in stoc.

Plata: 30 zile după recepția produselor. **Garanție:** minimum 12 luni.

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