International Zoological Congress of "Grigore Antipa" Museum

19 - 22 November 2014
Bucharest - Romania

Book of Abstracts

Edited by:
Luis Ovidiu Popa, Costică Adam, Gabriel Chişamera, Elena Iorgu, Dumitru Murariu, Oana Paula Popa

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Popa, L. O., C. Adam, G. Chişamera, E. Iorgu, D. Murariu, O. P. Popa (eds) 2014. International Zoological Congress of "Grigore Antipa" Museum - Book of abstracts. "Grigore Antipa" National Museum of Natural History, Bucharest, Romania.

ISBN: 978-606-92462-8-3

Cover design: **Adrian Mihalcea-Suru**
Editorial assistance: **Mihaela Barcan-Achim**
Technical assistance: **Ana-Maria Krapal**

Printed by "Editura MEDIALUX", Bucharest, Romania

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Phylogenetics, Evolution and Systematics

Palaeontology

Ecology

Poster presentations

Taxonomy. Faunistics. Zoogeography

Ecology

Invasive species

Parasitism in the animal kingdom

Biodiversity conservation

CZGA 2014 PROGRAMME

WEDNESDAY, 19th OF NOVEMBER 2014

8:30-12:00
Registration

10:00-10:30
Luis Ovidiu POPA - Welcome and greetings

Invited speaker

10:30-11:10
Alberto BALLERIO - Current topics in Zoological Nomenclature: ZooBank, Electronic Publication and Taxonomic Vandalism

11:10-11:40
Coffee break

Invited speakers

11:40-12:20
Josef BRYJA - African rodents - important biogeographical model group despite poor knowledge of their alpha taxonomy

12:20-13:00
Dumitru MURARIU - Actuality of zoology in the context of unprecedented development of the biological sciences

13:00-14:00
Lunch break

Taxonomy. Faunistics. Zoogeography

Chair: Alberto BALLERIO (Brescia, Italy)

14:00-14:15
Mehmet Zeki YILDIRIM, Ümit KEBAPÇI - Nonmarine mollusks of parasitological importance in the Lakes Region of Turkey

14:15-14:30
Victor SURUGIU - On the taxonomic status of *Scolelepis* Blainville, 1828 (Polychaeta: Spionidae) from the Black Sea

14:30-14:45
Omid JOHARCHI - Review of the genus *Hypoaspis* Canestrini (Acari: Laelapidae) occurring in the Western Palaearctic Region

14:45-15:00
Constanţa-Mihaela ION - Inventory and distribution data of centipedes (Myriapoda: Chilopoda) from south Romania (Muntenia province)

15:00-15:15
Fran REBRINA - The case of *Platycleis kraussi* Padewieth, 1900 – solving an orthopterological mystery

15:15-15:30
Josip SKEJO - European Tetrigidae: how far we are from the stable taxonomic state

15:30-15:45
Emilian PRICOP - Contribution to the study of *Anaphes* Haliday (Hymenoptera: Mymaridae) from Romania, including new records and taxonomic notes

15:45-16:00
Irinel E. POPESCU - The family Ormyridae (Hymenoptera: Chalcidoidea: Ormyridae) in Romania

16:00-16:15
Irinel E. POPESCU - First record of *Sceliphron curvatum* (Smith, 1870) and new data about the distribution of *S. caementarium* (Drury, 1770) in Romania (Hymenoptera: Sphecidae)

16:15-16:45
Coffee break

Forensic entomology

Chair: Oldřich SYCHRA (Brno, Czech Republic)

16:45-17:00
Lavinia IANCU, Cristina PURCĂREA - Temperature dependence of necrophagous insect species diversity and dynamics in an experimental forensic model

Ecology

Chair: Oldřich SYCHRA (Brno, Czech Republic)

17:00-17:15
Ana Bianca PAVEL, Priscila OPREANU, Irina CATIANIS, Silviu RADAN, Neculai PATRICHE - Preliminary data regarding the present state of benthic fauna from Trei Ozere and Bogdaproste Lakes, Danube Delta, Romania

17:15-17:30
Sukanlaya TANTIWISAWARUJI, Ana SILVA, Uthaiwan KOVITVADHI, Miguel A. PARDAL, Maria J. ROCHA, Eduardo ROCHA - Do body size and sex shape the neural ganglia volume and cellularity in bivalves? A study using as model organism the adult peppery furrow shell (*Scrobicularia plana*)

17:30-17:45
Geta RÎŞNOVEANU, Marius BUJOR - Epigean arthropods response to the experimental design

17:45-18:00
Minodora MANU, Marilena ONETE, Virgil IORDACHE - Edaphic mite communities on polluted grasslands from Trascău Mountains (Romania)

18:00-18:15
Cristina-Maria POPESCU, Geta RÎŞNOVEANU, Marius BUJOR - How experimental design can influence research results: preliminary results from terrestrial Diptera communites

18:15-18:45
Discussions

18:45-19:30
Poster session

THURSDAY, 20th OF NOVEMBER 2014

8:30-12:00
Registration

Invited speakers

9:00-9:40
Frank WESSELINGH, Luis Ovidiu POPA, Marius STOICA, Suzanne LEROY, Rachel FLECKER, Tom WILKE, Tamara YANINA, Wout KRIJGSMAN, Hülya ALÇIÇEK, Vitaliy ANISTRATENKO, Elmira ALIYEVA, Matthias PRANGE, Joy SINGARAYER, Christian ALBRECHT, Arjan GITTENBERGER, Pavel FROLOV, Hemmo ABELS, Angela BRUCH, Arjan de LEEUW, Cihat ALÇIÇEK, Yesim BUYUKMERIC, Niels RAES, Alexey TESAKOV - Drivers of Pontocaspian biodiversity Rise and Demise

9:40-10:20
Andrei Daniel MIHALCA - Threatened or threatening? Conservation biology of parasites and their host

Palaeontology

Chair: Frank WESSELINGH (Leiden, The Netherlands)

10:20-10:35
Ümit KEBAPÇI, Mehmet Zeki YILDIRIM - Plio-Pleistocene malacofaunas of the Lake Burdur Basin

10:35-10:50
Maksim CHEPRASOV, Semyon GRIGORIEV, Gavril NOVGORODOV, Theodor OBADĂ, Konstantin PROTODOAKONOV - The last discoveries of frozen ancient animal carcasses in Yakutia (Northeastern Russia)

10:50-11:05
Ştefan VASILE, Emese Réka BODOR, Zoltán CSIKI-SAVA, Zoltán SZENTESI - "Neighbour, I think we have termites!" – Isopteran feeding traces from the Upper Cretaceous of Hungary and Romania

11:05-11:20
Ştefan VASILE, Márton VENCZEL, Zoltán CSIKI-SAVA, Ana ALEXANDRU - New data on the taxonomical affinities of Late Cretaceous albanerpetontids from the Haţeg Basin (western Romania)

11:20-11:50
Coffee break

Phylogenetics, Evolution and Systematics

Chair: Josef BRYJA (Studenec, Czech Republic)

11:50-12:05
Denis COPILAȘ-CIOCIANU, Lucian PÂRVULESCU, Petr PAŘIL, Adam PETRUSEK - The Carpathian Mountains: a biodiversity hotspot for freshwater *Gammarus* (Crustacea: Amphipoda)

12:05-12:20
Oldřich SYCHRA, Ivan LITERÁK, Miroslav ČAPEK, Daniel L. GUSTAFSSON, Jan ŠTEFKA, Jana MARTINŮ - Phylogeny of the chewing louse genus *Menacanthus* (Phthiraptera: Amblycera) - host generalists and specialists emerging side by side

12:20-12:35
Maria-Magdalena DASCĂLU, Lucian FUSU - Genetic differentiation of *Dorcadion pusillum* populations in the western part of its distribution area (Coleoptera: Cerambycidae)

12:35-12:50
Lucian FUSU, Andrew POLASZEK - Looking for a needle in a haystack: sex association in a *Dicopomorpa*-like species with aberrant males using DNA sequences (Hymenoptera: Mymaridae)

12:50-13:05
Alexandru IFTIME, Oana IFTIME - The biological species concept: insights from ichthyology and herpetology

13:05-14:05
Lunch break

Invasive species

Chair: Abraham bij de VAATE (Lelystad, The Netherlands)

14:05-14:20
Ion TODERAȘ - Biological invasions in water and terrestrial ecosystems of the Republic of Moldova

14:20-14:35
Cristina PREDA, Daniyar MEMEDEMIN, Sven BACHER - Prioritizing invasive alien species: a national approach

14:35-14:50
Luis Ovidiu POPA, Ana-Maria KRAPAL, Oana Paula POPA, Elena Iulia IORGU, Abraham bij de VAATE - Insights into the invasion process of zebra mussel (*Dreissena polymorpha*) in The Netherlands

14:50-15:05
Oana Paula POPA, Martin REICHARD, Karel DOUDA, Josef BRYJA, Veronica BARTAKOVA, Marianna SOROKA, Elena Iulia IORGU, Alexandra Florina LEVĂRDĂ, Victor SURUGIU, Ana-Maria KRAPAL, Luis Ovidiu POPA - Genetic diversity of native *vs.* invasive populations of *Anodonta woodiana* (Bivalvia, Unionidae) – preliminary data

15:05-15:20
Ana-Maria KRAPAL, Fabio CROCETTA, Oana Paula POPA, Alexandra Florina LEVĂRDĂ, Elena Iulia IORGU, Luis Ovidiu POPA - Inferring the origin of Adriatic and Black Sea *Anadara kagoshimensis* (Mollusca, Bivalvia) by means of molecular markers

15:20-15:35
Seyed Hamidreza FORGHANI, Javad SHATERIAN, Aidin HAMIDI - Study on some physiological aspects of wheat and barley cultivars with regard to damage of two store pests in Iran

Parasitism in the animal kingdom

Chair: Oldřich SYCHRA (Brno, Czech Republic)

15:35-15:50
Ioana Cristina CONSTANTINESCU, Gabriel CHIȘAMERA, D. Khlur B. MUKHIM, Costică ADAM - Feather mite fauna (Acariformes: Analgoidea and Pterolichoidea) of Meghalaya (Northeast India): a largely unexplored "treasure chest" of diversity

15:50-16:05
Olukayode Amos SOGBESAN, Rosemary Ekene OKAFOR, Adebowale Hammed ADEDEJI - Helminth parasite of some fish species in Lake Geriyo, Adamawa State

16:05-16:35
Coffee break

Ecology

Chair: Oldřich SYCHRA (Brno, Czech Republic)

16:35-16:50
Hussein B. B. JENJAN, Fathe Ben-Ali S. A. FARAG, Fatima A. AL-ALWANY, Aisha S. JUMME - Gill morphometry of *Tilapia zillii*: potential use of gills as a welfare indicator in wild fish

16:50-17:05
Olukayode Amos SOGBESAN, Emmanuel Yohanna NGADINA - Piscicidal effect of *Adenium obesum* bark water on *Clarias gariepinus* hybrid

17:05-17:20
Sebastian Theodor TOPLICEANU, Florina STĂNESCU, Diana SZÉKELY, Paul SZÉKELY, Dan COGĂLNICEANU - Age-related parameters in a *Pelobates fuscus* (Anura: Pelobatidae) population from NW Romania over a decade

17:20-17:35
Alexandru STRUGARIU, Iulian GHERGHEL, Paul C. DINCĂ, Tiberiu C. SAHLEAN, Ștefan R. ZAMFIRESCU - Ecology and current status of the Nikolsky's viper (*Vipera (berus) nikolskii*) in Romania

17:35-17:50
Özden YALÇIN, Nihat GÜLDAŞ, Kiraz ERCIYAS-YAVUZ, Ali OKUR, Ahmet ÇOK, Hakan YOĞURTÇU - The relationship between nest box design, occupancy and breeding parameters of some bird species

17:50-18:05
Bronisław W. WOŁOSZYN, Grzegorz KŁYS, Dominika OLSZEWSKA, Andrzej J. WÓJCIK - Biostalactites – bat origin organic stalactites

18:05-18:20
Edoardo VERNIER, Bronisław W. WOŁOSZYN - The bats of the cave "Grotta Zinzulusa" of Castro Marina (Province of Lecce, S.E. Italy) with notes on the presence of *Rhinolophus mehelyi* Matschie, 1901 in the Italian Peninsula

18:20-18:35
Ekaterina KONDRATYUK, Ivan POLIKARPOV, Eugene NOVIKOV - The retardation of maturation in red-backed voles (*Myodes rutilus*) doesn't increase their longevity in laboratory condition

18:35-18:50
Discussions

18:50-19:15
Poster session

FRIDAY, 21st OF NOVEMBER 2014

8:30-12:00
Registration

Invited speakers

9:00-9:40
Lutz BACHMANN - Exploring the treasures of natural history collections; lessons from flatworms and whales

9:40-10:20
Saâd HANANE - The importance of Moroccan irrigated perimeters as breeding areas for migratory gamebirds: The case study of the Turtle dove (*Streptopelia turtur*)

Taxonomy. Faunistics. Zoogeography

Chair: Lutz BACHMANN (Oslo, Norway)

10:20-10:35
Adebowale Hammed ADEDEJI, Azubike CHUKWUKA, Olukayode Amos SOGBESAN - Incidence of hybridization among the tilapiine cichlids in Eleyele Reservoir, southwest Nigeria

10:35-10:50
Alexandru IFTIME - Newly determined fish specimens from the Anton Bruun, Vitiaz, Ekvator and Thalassa cruises

10:50-11:05
Alexandru Nicolae STERMIN, Alin DAVID, Ioan COROIU - Neighbors *vs.* foreigners – in Water Rail (*Rallus aquaticus*) acoustic communication

11:05-11:20
Ioan COROIU, Anda CULIȘIR, Regina KLÜPPEL, Crin THEODORESCU, Alin DAVID, Alexandru Nicolae STERMIN - Seasonal dynamics of Mouse-Eared bats (*Myotis myotis/blythii*) in Northern Romania

11:20-11:50
Coffee break

Studies and recovery of the natural history museum patrimony

Chair: Dumitru MURARIU (Bucharest, Romania)

11:50-12:05
Dorel RUȘTI - Romanian ethnozoology as seen by Mihai Băcescu

Biodiversity Conservation

Chair: Marius SKOLKA (Constanța, Romania)

12:05-12:20
Ana-Maria PETRESCU, Otilia ZĂRNESCU - Aspects of reproductive biology of narrow-clawed crayfish *Astacus leptodactylus* Eschscholtz, 1823 (Crustacea: Decapoda: Astacidae) regarding the female gonad

12:20-12:35
Marius SKOLKA, Daniyar MEMEDEMIN - Habitat vulnerability reflected by butterfly fauna evolution - Northern Dobroudja case

12:35-12:50
Alexandru BURCEA, Iulia Elena FLORESCU, Andreea DUDU, Sergiu Emil GEORGESCU, Marieta COSTACHE - Uncovering the profile of twelve nuclear microsatellites in case of the Russian sturgeon (*Acipenser gueldenstaedtii* Brandt & Ratzeburg, 1833)

12:50-13:05
Gabriela GRIGORAȘ, Tamás MÜLLER, Adrian GAGIU, Ionuț BONTAȘ, Marcela ROȘCA - Thermal rudd (*Scardinius racovitzai* Müller, 1958) ex situ conservation project. Captive breeding by controlling environmental factors

13:05-14:05
Lunch break

Chair: Marius SKOLKA (Constanța, Romania)

14:05-14:20
Marian TUDOR - Ex situ conservation for endangered species: Getting the know how – A case study involving *Dolichophis caspius*

14:20-14:35
Matei-Ionuț DRAGOMIR, Adrian-Cosmin STÎNGĂ - Hunting management of game birds in the Special Protection Area ROSPA0071 Lower Siret Meadow and at national level (Romania)

14:35-14:50
Mihaela CIOBOTĂ, Andreea CIOBOTĂ, Cristina Andrea STAICU - Seasonal dynamics and frequency variations in bird species from the protected area Dumbrăviţa (Braşov, Romania)

14:50-15:05
Dragoş Ş. MĂNTOIU, Marius C. NISTORESCU, Marius A. CIOCĂNĂU, Ionuţ C. ŞANDRIC, Oana T. MOLDOVAN - A bat mortality case study in a wind farm in Northern Dobrogea, Romania

15:05-15:20
George BOUROŞ - Comparative diet analysis of the Eurasian otter (*Lutra lutra* Linnaeus, 1758) in two different habitats: Putna-Vrancea Natural Park and Lower Siret Valley Natura 2000 Site, Romania

15:20-15:35
Andrea CORRADINI - The Eurasian lynx (*Lynx lynx*) in the Italian Alps: past and current status of the most threatened large carnivore in Italy

15:35-15:50
Teodora SIN, Andrea GAZZOLA, Silviu CHIRIAC, Geta RÎŞNOVEANU - Winter diet of wolf (*Canis lupus* L., 1758) in relation to prey species availability in the Romanian Carpathian Mountains

15:50-16:20
Coffee break

Chair: Marius SKOLKA (Constanţa, Romania)

16:20-16:35
Alexandra SALLAY, Lajos BERDE, Klaus HACKLÄNDER, Frank ZACHOS, Marcia SITTENTHALER, Szilárd SZABÓ, Ioan Mihai POP - Kin-related social organization among food-conditioned brown bears in Băile Tuşnad, Romania

16:35-16:50
Ioan-Mihai POP, Silviu CHIRIAC , Szilárd SZABÓ, József BOTH, Lajos BERDE - Brown bears *vs.* farmers? Whose strategy is better?

16:50-17:05
Bronisław W. WOŁOSZYN, Dumitru MURARIU, Andriy Taras BASHTA, Grzegorz KŁYS - Biological diversity of the Carpathians Mts. Same problems of evaluation and conservation strategy

17:05-17:35
Discussions

17:35-18:30
Poster session

19:00-20:00
Visit of the permanent exhibition of "Grigore Antipa" National Museum of Natural History

20:00-22:00
Gala Dinner

SATURDAY, 22nd OF NOVEMBER 2014

Whole day excursion to historical places from Bucharest and its surroundings (The "Brancovan Palaces" Cultural Center - Mogoșoaia, Căldărușani Monastery, National Village Museum "Dimitrie Gusti", Bucharest night tour).

Poster Presentations

Taxonomy. Faunistics. Zoogeography

P 01.
Marius SKOLKA - *Hexaplex* (*Truncullariopsis*) *trunculus* Linnaeus, 1758 in ancient city of Histria area

P 02.
Maryam EZHEHI, Omid JOHARCHI, Bijan HATAMI - Laelapid mites (Acari: Mesostigmata) associated with scarab beetles (Coleoptera: Scarabaeidae) in Isfahan province, Iran

P 03.
Nazila HONARPARVAR, Seyed Hamidreza FORGHANI, Bahman FAYYAZ ASALI, Mohammad KHANJANI - The first report of *Bryobia rubrioculus* Scheuten (Acari: Tetranychidae) on *Geranium* in Iran

P 04.
Liviu Aurel MOSCALIUC - Some salticid spiders (Araneae: Salticidae) collected during "Dakhla" (2012) and "Merzouga" (2013) scientific expeditions in Morocco and notes on their distribution

P 05.
Marius SKOLKA - *Selysiothemis nigra* (Odonata) – new species for Danube Delta

P 06.
Josip SKEJO, Tamara GAJŠEK, Fran REBRINA - Croatian Orthopterology: What is done and is to be done

P 07.
Elena Iulia IORGU, Oana Paula POPA, Ana-Maria KRAPAL, Alexandra Florina LEVĂRDĂ, Veronia BIȚINEANU, Larisa Bianca DUMITRESCU, Ionuț Ștefan IORGU, Luis Ovidiu POPA - Preliminary data on the phylogeography of *Pholidoptera transsylvanica* in the Carpathians

P 08.
Ionuț Ștefan IORGU, Elena Iulia IORGU, Anton KRIŠTÍN, Peter KAŇUCH, Benjamín JARČUŠKA, Kirill Márk ORCI, Gergely SZÖVÉNYI, Gellért PUSKÁS, Barnabas NAGY, Tiberiu C. SAHLEAN - Insights into the climatic

niche of a glacial relict (*Pholidoptera transsylvanica*) using species distribution modeling

P 09.
Daniel Kazimir KURZELUK - Distribution of *Opetiopalpus scutellaris* (Panzer, 1797) and the first record of *O. sabulosus* (Motschoulsky, 1840) (Insecta: Coleoptera: Cleridae) in Romania

P 10.
Daniel Kazimir KURZELUK - The first recording of the species *Trichodes punctatus* Fischer von Waldheim, 1829 (Insecta: Coleoptera: Cleridae) for Romania

P 11.
Ioan TĂUȘAN - A preliminary list of the ant fauna (Hymenoptera: Formicidae) from Parâng Mountains (Romania)

P 12.
Sergiu-Cornel TÖRÖK, Gabriela CUZEPAN - Butterfly (Insecta: Lepidoptera) hot spots in Sibiu County (Transylvania, Romania)

P 13.
Cosmin-Ovidiu MANCI, Constantin CORDUNEANU, Cătălin BALAN, Ioan SURUGIU - First contribution to the study of lepidopteran fauna (Insecta: Lepidoptera) from Stânca, Iaşi and new or scarcely known species from Moldova region (Romania)

P 14.
Viorel-Dumitru GAVRIL - Biometric data on 4 fish (Actinopterygii) species from the western coast of the Black Sea

P 15.
Lucian D. GORGAN, Mitică CIORPAC - *Carassius gibelio* - Life history and evolution

P 16.
Florinel Dănuț DRĂGAN - First complete observations of the avifauna for the Natura 2000 site ROSPA 0140 Scroviștea (Romania)

P 17.
Mirela Sabina RIDICHE, Dan MUNTEANU - Ornithological characterization of biotopes from the perimeter of the International Airport Craiova (Romania) and its surroundings (0-13 km)

P 18.
Gabriel CHIȘAMERA, D. Khlur B. MUKHIM, Ioana DAMOC, Costică ADAM - Bird surveys and new distribution records in Jaintia Hills, Meghalaya, India

P 19.
Emanuel TÂRNOVEANU - Ethological aspects regarding the breeding of the long-eared owl (*Asio otus* L.)

P 20.
Dragoș Ș. MĂNTOIU, Gabriel CHIȘAMERA, Răzvan POPESCU-MIRCENI, Cătălin R. STANCIU, Georgiana MĂRGINEAN, Oana Mirela CHACHULA - Bat distribution in the Dobrogea area, Romania

P 21.
Georgiana MĂRGINEAN, Ionuţ CREŢU, Oana Mirela CHACHULA, Dumitru MURARIU - New data regarding distribution of bats (Mammalia: Chiroptera) from Piatra Craiului Natural Park area, Romania

P 22.
George Ştefan NĂZĂREANU, Oana Mirela CHACHULA - Observation points of species *Nyctalus noctula* (Mammalia: Chiroptera) migration routes in East Romania

P 23.
Radu DRUICĂ, Răzvan DEJU, Sebastian CĂTĂNOIU, Lucian D. GORGAN - Estimation of gene flow and genetic variability in two Romanian populations of European bison *Bison bonasus*

P 24.
Victoria NISTREANU - On the occurrence of *Erinaceus concolor* in the Republic of Moldova

Phylogenetics, Evolution and Systematics

P 25.
Hanna SHEVERDYUKOVA - Variability in the development of some skull bones in Grass Snake

P 26.
Andrei ŞTEFAN, Mitică CIORPAC, Ovidiu POPESCUL, Alexandru STRUGARIU, Ştefan ZAMFIRESCU, Lucian D. GORGAN - Post Pleistocene radiation in *Vipera ursinii* complex inferred by mitochondrial DNA analysis

P 27.
Mitică CIORPAC, Radu DRUICĂ, Constantin ION, Gogu GHIORGHIŢĂ, Lucian D. GORGAN - CHD-Z gene as a new reliable nuclear marker used in passerine birds' phylogeny

P 28.
Sadik DEMIRTAS, Islam GUNDUZ - The cranial variation within genus *Erinaceus* in Turkey

Palaeontology

P 29.
Emese Réka BODOR, József KOVÁCS, Ştefan VASILE, Zoltán CSIKI-SAVA, Zuzana VÁCHOVÁ - Fossil insect eggs from the Maastrichtian of the Haţeg Basin (Romania) - employment of morphometrics in taxonomical assessement

P 30.
Roksana SKRZYCKA, Piotr SKRZYCKI, Grzegorz NIEDŹWIEDZKI, Bronisław W. WOŁOSZYN - Tracing fossil fishes in the Lower Triassic of Poland

P 31.
Rodica CIOBANU, Nicolae TRIF - The pycnodont *Phacodus* Dixon, 1850, in the Late Eocene of the fossil area Turnu Roşu (Romania)

P 32.
Pavel GOL'DIN, Theodor OBADĂ - New records of true seals *Cryptophoca* (Carnivora, Phocidae) from the Late Miocene of Moldova

P 33.
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INVITED SPEAKERS

Exploring the treasures of natural history collections; lessons from flatworms and whales

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Key words: natural history museum collections, *Gyrodactylus*, *Balaena mysticetus*, Spitsbergen stock.

The scientific collections of natural history museums comprehensively cover biodiversity, and house not only the species' type specimens but also document diversity throughout the species' range. Many natural history museums prioritize collection-based research but nevertheless there is many debates what this actually implies for modern research. No doubt, the natural history collections are an indispensable for providing reference material, but in addition the collections can provide unique material for research.

In a recent project on assessing the biodiversity of monogenean flatworms of Norway we made use of the fish collection of the Natural History Museum (NHM) Oslo. Several species of the monogenean genus *Gyrodactylus*, mainly ectoparasites on fish, cause severe ecological and economic damage. This is particularly true for *Gyrodactylus salaris* that parasitizes Atlantic salmon (*Salmo salar*) and Rainbow trout (*Oncorhynchus mykiss*). Not surprisingly, research has focused on these economically important species, while the diversity of this species rich genus remained otherwise unexplored and poorly documented. The fish collection at NHM comprehensively documents the fish fauna of Norway, and along with the thousands of fish specimens there parasite fauna was collected as well – although never studied. We therefore set out to screen the fish specimens in the collection for ectoparasites of the genus *Gyrodactylus*. Throughout the project we discovered more than 25 *Gyrodactylus* species, 12 species new to science, and 6 until now unknown for Norway.

The second example will be on bowhead whales (*Balaena mysticetus*). Five stocks of bowhead whales are recognized, one of them the Spitsbergen stock that is almost extinct. It is understandably a very challenging task to get hold of samples. However, several hundred well preserved bones collected from the elevated beaches of Svalbard are available in NHMs mammal collection, some of them more than 50.000 years old. This unique material allowed to genetically characterize the Spitsbergen stock of bowhead whales in the. DNA survival in the samples was found very good, and with next-generation-sequencing approaches even suitable for shallow genome sequencing.

Current topics in Zoological Nomenclature: ZooBank, Electronic Publication and Taxonomic Vandalism

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Key words: nomenclature, databasing, e-taxonomy.

The aim of the presentation is to illustrate some recent innovations in the field of zoological nomenclature (ZooBank and electronic publication), which are still not well known by the community of taxonomists and to spread the word on an ongoing discussion on taxonomic vandalism and the relationships between taxonomy and the ICZN. The author firstly introduces ZooBank (http://zoobank.org/), which, after the 2012 amendment to the Code plays an official role in the system of zoological nomenclature. According to the Glossary of the Code, ZooBank is "The online version of the *Official Register of Zoological Nomenclature*". It's an authoritative online, open-access, community-generated registry for zoological nomenclature, created as a service to taxonomists, biologists, and the global biodiversity informatics community. Its functioning and its future developments are shortly described.

The author briefly discusses the recent (2012) amendment to the International Code of Zoological Nomenclature on electronic publication, made in order to adapt nomenclatural rules to new trends in publishing scientific journals, by ensuring at the same time traceability, fixedness and durability of electronic records.

Finally, the controversial concept of "taxonomic vandalism" is introduced by discussing a recently published provocative proposal (Kaiser, 2013), aimed at fighting taxonomic vandals by changing some zoological nomenclature rules. Some criticism on this proposal is provided. The International Commission on Zoological Nomenclature is now receiving comments on this topic by the community of taxonomists, therefore any taxonomist willing to contribute to the ongoing discussion is welcome to send a comment to the Secretariat of the Commission.

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African rodents - important biogeographical model group despite poor knowledge of their alpha taxonomy

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Key words: Eastern Africa, rodents, biodiversity, phylogeography, host-parasite co-evolution, speciation.

Most of African rodent species richness was described on the basis of morphology (especially skulls), while the genetic approaches have been used more widely only in the last decade, leading to discoveries of new cryptic species and corrections of the alpha diversity. Most species of rodents have relatively narrow habitat requirements, low dispersal ability and are easy to sample, which makes them an ideal model also for phylogeographical studies. However, most of these studies are either focused on relatively small geographical area and/or analyses only few individuals. Recently increased intensity of genetic sampling in many parts of Africa together with the use of new approaches for genotyping of museum collections provide an ideal tool for the description of real African biodiversity. Newly developed statistical approaches for testing phylogeographical hypotheses further facilitate to understand the mechanisms of biodiversity evolution in last cca 5 My. Within a 5-yr project supported by the Czech Science Foundation, we genetically studied rodents in the large area of Eastern Africa. The aim of the presentation is to show how a single project using simple genetic approaches can lead to unexpectedly high quantity of new knowledge about African rodents, from discoveries of new species, through single-species phylogeographies to the understanding of many aspects of pan-African biogeography evolution.

The importance of Moroccan irrigated perimeters as breeding areas for migratory gamebirds: The case study of the Turtle dove (*Streptopelia turtur*)

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Key words: irrigated perimeters, migratory game birds, Turtle dove, review, Morocco.

Since the late sixties, Morocco has sought to make the large hydraulic a pillar of agricultural development. It was thus launched the project of one million irrigated hectares for the horizon 2000. Reconciling production and naturalness, these environments are considered of a great interest in the sustainability of wildlife and particularly of some migratory birds like the Turtle dove. The largest known concentrations of this precious breeding-and-migratory game bird spatially coincide with irrigated areas. Our knowledge about the population size (Tadla irrigated area), the selection of nesting habitats (olive and orange trees) and the breeding performances (clutch size; chicks hatched and fledged/nest; nest survival rate) allowed us to point out the great environmental importance of these agroecosystems, up to now little advocated (Hanane, 2014a): (i) They constitute a "reservoir" of Turtle doves, certainly the largest and most concentrated throughout the Western Palearctic; (ii) They are also important production areas (recruitment) that help maintain the numbers of Turtle dove's Euro-African metapopulation.

This review is the product of an eight-year study (2003-2009 and 2013) on Turtle doves within the Moroccan agroecosystems, especially those of the Souss (Taroudant Region; Hanane, 2010), the Haouz (Marrakech region; Hanane & Maghnouj, 2005) and the Tadla (Béni Mellal region: Hanane & Baâmal, 2011; Hanane et al. 2011; Hanane, 2012; Hanane, 2014b; Hanane & Besnard, 2014).

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Threatened or threatening? Conservation biology of parasites and their host

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Key words: coextinction, coendangered, conservation biology, parasitism, coevolution.

Despite its name, parasitology has been for a long time a science with a host-centered approach rather than with a parasite-centered view. Parasites can influence a host in many ways and at different levels and the perspective of this influence can vary from medical to ecological. The medical effect is usually on individual level, but from ecological point of view, the effect on the host's population and communities is particularly interesting. Parasites can mediate natural selection and evolution of their hosts and vice-versa. This bilateral effect is known as coevolution. Considering that more than half of the known species of animal organisms on Earth are parasitic during at least one of their developmental stage, the evolutionary importance of parasite-host interactions is evident. Although a parasite can kill a host individual, parasite mediated extinctions are extremely rare events. The opposite situation however is not uncommon. Extinction of host is associated with the extinction of all dependent symbiotic organisms like mutualists, commensals and parasites. These events are known as coextinctions and are highly dependent on various factors. Among these, host specificity plays a particularly important role. It has been unequivocally demonstrated that parasite play a key role in ecosystems processes, and we urge the scientific community to advocate for the co-conservation of parasites and equal right with their hosts.

Actuality of zoology in the context of unprecedented development of the biological sciences

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Key words: zoology, scientific classification, modern biology, human economy, educational role.

The old methods and theories were first leaps in today modern biology building. Starting with the Aristotle's books, with very first classification of animals, there are mentioned most important contributions up today, to the zoology development.

Differences between Lamarck's and Darwin's philosophy are explained by their different social environment and when they were working, but in fact, as Paul Brien mentioned - „...*Lamarkian and Darwinian concepts completed more than oppose, if evolution is depicted through the phylogenesis and current genetic data and ontogenetic phylogeny* ". Today, we can say that the subject of zoology is represented by the structure, function, behaviour, development, phylogeny, classification, dissemination and use of animals. Undoubtedly, zoology had an overwhelming role in studies of comparative morphology, embryology and physiology of major groups of animals. Zoology delivered clear examples of being evolution, and these phenomena (evolution) became a proved fact and not a hypothesis.

In the 20th century, neolamarckian biologists asserted that the topic of being evolution represented materials for a new transformist theory. However, the mechanisms of evolution, physical location of the significant characters of the hereditary elements are mostly the prerogatives of new branches of biology: cell biology, genetics. But these new branches cannot break from classical botany and zoology. In all their avant-garde, new fields of biology always inspire themselves from classical subjects.

For the conceited researchers who cannot understand how much zoological research still need, there are the most recent examples from the mammalogy field, which after some wrong opinion there is nothing more to study. It is about the volume 95, no. 2 (April 2014) - *Journal of Mammalogy*. Based on anatomical descriptions, research on karyotype and mitochondrial sequencing, a genus and a new species of Sigmodontinae (*Calossomys apicalis*) were described in the State of Minas Gerais - Brazil. In the same journal (no. 3 since June 2014) it was descriebed from Namibia a new species of macroscelids – a relative of *Elephantulus*. Also, based on morphological and genetic methods a new species of shrew (*Crocidura paradoxura*) of the Family Soricidae was described in western Java - Indonesia. A new species of marsupial (*Lutreolina masso*) of Didelphidae marsupials was described in Argentina, based on morphometric analysis and DNA sequencing. These are just a few examples, in which the molecular biology helps α-systematics for clarifications in zoological classification.

As regards changes and conditions that caused such changes in fauna there are still many questions that are waiting the point of view of zoological research. Science itself of zoology is a science of integration that helps humanity to answer the big questions about the world, its destiny, knowing that some branches of zoology directly serve human economy, biodiversity conservation strategies and has a huge educational role.

Drivers of Pontocaspian biodiversity Rise and Demise

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Key words: Pontocaspian, Mollusca, Ostracoda, lake system evolution, biodiversity, turnover.

In the past two million years, the region of the Black Sea Basin, Caspian Basin and adjacent Anatolia and the Balkans were the stage of the evolution of a unique fauna, the so-called Pontocaspian fauna. The fauna contains many endemics, species only living in that region, and is very well adapted to the unusual salinity regimes of the lakes and seas there. Many species have limited distributions, yet others have developed in highly invasive species, such as the Zebra mussels that have completely overtaken lakes and rivers in Western Europe and North America.

The stormy development of the Pontocaspian fauna is the result of the very dynamic nature of the lakes and seas in that region in the past two million years. In most times the various lake basins were isolated (like today), but in other episodes connections existed. Episodic connections existed between the Black Sea and the Mediterranean. In the Pontocaspian lakes successive episodes of rapid diversification and extinctions resulted in the unique Pontocaspian fauna.

Over the past 80 years however, the Pontocaspian faunas have been thrashed. In the coastal zones of the northern Black Sea the lakes and estuaries became silted up, polluted or were converted into land. Lake systems in the Balkans and Anatolia have greatly suffered from development and nutrient imput. In the Caspian Sea the introduction of some five marine species has resulted in a collapse of the Pontocaspians there.

The question we explore is what we can learn from the past (geological) ups and downs of the Pontocaspian faunas in respect to the current biodiversity crisis. What processes drove the development of the unique Pontocaspian faunas in the past and how severe is the current crisis? Can the fauna still recover and how could we help to do so?

ORAL PRESENTATIONS

Nonmarine mollusks of parasitological importance in the Lakes Region of Turkey

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Key words: Mollusc fauna, intermediate host, vector, trematode infection, native invaders.

Due to its long and dynamic history of different civilizations, the area of Turkey has experienced many changes. Human mediated changes were favored by many species that acquired invasiveness due to their adaptability to modified habitats. Among land and freshwater gastropods, a significant number of such species, which tend to become dominant taxa in various ecosystems, are recognized as hosts of human and livestock parasites. Hence their identification and distribution in a particular area demand a more careful look than any other similar taxa. The data presented is a summary of the faunistic field work carried out during 1993-2013 period for land and freshwater gastropod taxa that have been reported in the relevant literature as hosts for zoonotic trematodes. According to the results, there are 4 prosobranch and 18 pulmonate freshwater gastropods and at least 10 terrestrial gastropods in the area. *Potamopyrgus antipodarum* of Hydrobiidae is the only alien invader prosobranch species in the area and is distributed sporadically. Like *Physa fontinalis,* some basommatophoran species occur locally in Eğirdir Basin. However, other species of freshwater gastropods are relatively common and the five species among these (*Radix labiata, Physella acuta, Galba truncatula, Stagnicola palustris,* and *Planorbis planorbis*) are the most commonly encountered species in the area. Apparently, the percentage of species non-native to the region is much higher in terrestrial gastropods species in the area. Although locally common, such species show scattered and often synanthropic distributions across the area. The extent of parasite transmission among these and native species is yet unknown, as the parasitological data on terrestrial gastropod taxa known from the area is very scarce. On the other hand, endemism is very high both in aquatic and terrestrial gastropods from the area and many endemics are found in restricted habitats, thus their biology remain largely unknown. Also, according to the recent studies, cryptic species, previously assumed to belong to commoner taxa, occur and morphotaxonomy is often only weakly capable of discerning such species. Better understanding of the biological characters of the endemic species, including the parasite-host relationships, may contribute to our knowledge on their taxonomy as well as their ecology.

On the taxonomic status of *Scolelepis* Blainville, 1828 (Polychaeta: Spionidae) from the Black Sea

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Key words: Black Sea, Polychaeta, Spionidae, *Scolelepis*, morphology, SEM.

Up to the present, three species of *Scolelepis* have been reported in the Black Sea: *Scolelepis (Scolelepis) squamata* (as *Nerine cirratulus*), *Scolelepis (Scolelepis) cantabra* (as *Nerinides cantabra*) and *Scolelepis (Parascolelepis) tridentata* (as *Nerinides tridentata*). The examination of the polychaete collection lodged at the "Grigore Antipa" National Museum of Natural History in Bucharest revealed the presence of material identified as *Nerine cirratulus* and *Nerinides cantabra*. However, the specimens (mostly juveniles in bad condition) labelled as '*Nerine cirratulus*' have characters that agree more with *Scolelepis mesnili*, a species described from the Atlantic coast of France. Also the specimens labelled as '*Nerinides cantabra*' could not be assigned with certitude neither to *Scolelepis cantabra*, nor to *Scolelepis tridentata* due to some intermediate character states and poor preservation. Intensive sampling for new material, performed in June 2013 and June 2014 in sandy sediments situated to the north of Constanţa, revealed the occurrence only of specimens identified tentatively as *Scolelepis squamata*. Examination of both large and small worms showed that many characters are size-dependent. The comparison of populations from the Black Sea with those from the Tyrrhenian Sea, Atlantic coast of Morocco, Spain and France and the North Sea did not revealed any consistent morphological differences between them, suggesting that all belong to one species. Therefore, *Scolelepis cirratulus* and *Scolelepis mesnilii* are regarded as junior synonyms of *Scolelepis squamata*. Three incomplete specimens received from the Ukrainian coast were examined in great detail and were ascribed to the subgenus *Parascolelepis*. The use of scanning electron microscopy (SEM) enabled to note some previously unobserved features, such as the spatial arrangement of teeth in the hooded hooks or the shape of nuchal organs.

Review of the genus *Hypoaspis* Canestrini (Acari: Laelapidae) occurring in the Western Palaearctic Region

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Key words: Mesostigmata, *Hypoaspis*, Iran, review, Western Palaearctic Region.

The classification of the mite family Laelapidae is unstable as a result of continued discussion about the definition and status of some of its genera and subgenera. Different generic and subgeneric concepts have been used by authors, for example, Evans & Till (1966), van Aswegen & Loots (1970), Tenorio (1982) and Karg (1993). Species have been described in up to 10 subgenera of a very loosely-defined genus *Hypoaspis* Canestrini. Recently, authors have attempted to reassess and stabilize the diagnosis and taxonomic rank of several of the subgenera (Beaulieu, 2009; Joharchi & Halliday, 2011). The nominotypical subgenus, i.e., *Hypoaspis sensu stricto*, is most easily recognised by the greatly elongate setae Z4 on the dorsal shield (3–5 times longer than J4) and greatly elongate setae on some of the leg segments (Evans & Till, 1966; Karg, 1979). 16 species of *Hypoaspis sensu stricto* had been reported from the Western Palaearctic Region: *Hypoaspis alborzensis* Razavi Susan & Joharchi, 2014; *H. campestris* (Berlese, 1887) *sensu* Bregetova (1977); *H. elegans* Joharchi, Ostovan & Babaeian, 2014; *H. integer* Berlese, 1911; *H. krameri* (G. & R. Canestrini, 1881); *H. larvicolus* Joharchi & Halliday, 2011; *H. maryamae* Joharchi & Halliday, 2011 (=*H. surii* Khanjani et. al., 2013); *H. melolonthae* Joharchi & Halliday, 2011; *H. neokrameri* Costa, 1971; *H. pentodoni* Costa, 1971; *H. phyllognathi* Costa, 1971; *H. polyphyllae* Khanjani & Ueckermann, 2005; *H. rhinocerotis* Oudemans, 1925; *H. terrestris* (Leonardi, 1899) and *H. zaheri* Fouly & Al-Rehiayani, 2011.

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Inventory and distribution data of centipedes (Myriapoda: Chilopoda) from south Romania (Muntenia province)

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Key words: centipedes, new records, fauna, endemic, Muntenia.

Chilopoda is the second largest class in Myriapoda, the number of world-widely described species reaching 3300 with 21 families and 325 genera (Minelli & Golovatch, 2001). In Romania, 117 species are known to occur and around 40% of these have at least one record in Muntenia province. However, distribution data in the region, as well as taxonomic status of the species, has not been summarized nor reviewed in a useful manner for almost half of century.

Based on the examination of the material collected during the surveys conducted in the last ten years, as well as on the literature published from the last review, a database was compiled and records were mapped in order to identify blank areas were more research needs to be done.

Three species are endemic to Romania: *Clinopodes rodnaensis* (Verhoeff, 1938), *Lithobius* (*Sigibius*) *burzenlandicus euxinicus* Prunescu, 1965 and *Schendyla capusei* (Darabantu & Matic, 1969). The last one was described upon two males from Comana forest but it was not cited further. Bonato indicates the need for its status assessment and distinction from *Schendyla tyrolens*i (Bonato & Minelli, 2014). For geophilids like *Dignathodon microcephalus* (Lucas, 1846) and *Schendyla walachica* Verhoeff, 1900, identified in the studied material, it is only the second record for the county.

A tiny specimen (under 15 mm), collected from a forest near Bucharest, has morphological characters that agree closely with the description of *Geophilus pygmaeus* Latzel R., 1880. This is a new species not only for the county, but for Romania fauna as well.

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The case of *Platycleis kraussi* Padewieth, 1900 – solving an orthopterological mystery

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Key words: taxonomy, morphology, morphometrics, Croatia, Platycleidini.

Since the description of *Platycleis kraussi* Padewith 1900 from Sv. Križ by Senj, Croatia, there was not a single finding of this species for more than a hundred years. Later revisions of genus *Platycleis* moved this species to genus *Modestana* according to some morphological characters given in the description, although type specimens were lost and true taxonomic position of this species was uncertain.

Our first expedition aiming to find *P. kraussi* in the surroundings of Sv. Križ in the summer of 2013 proved to be unsuccessful, but in a later attempt a number of specimens fitting the description of *P. kraussi* were caught in a nearby locality – Francikovac by Veljun Primorski. Based on external morphological traits, as well as titillator morphology in males, the specimens were identified as *Bicolorana kuntzeni* (Ramme, 1931), a species previously known from several other localities in south-western Croatia. This conclusion opened a new taxonomic problem, the solution of which, according to Article 23.1., the Code is to be reached only by designating *Bicolorana kuntzeni* **syn. nov.** a junior synonym of *Bicolorana kraussi* (Padewieth, 1900) **comb. nov.** Detailed morphological and morphometrical analyses of specimen series from several localities in Croatia and comparisons with morphological traits of presumably closely related *Bicolorana bicolor* (Philippi, 1830) and *Modestana modesta* (Fieber, 1853) showed significant differences between those three species, while they proved to be almost indistinguishable in terms of song structure. Preliminary molecular analyses indicated the existence of two separate clades constituting *Bicolorana* genus – one occupied by *B. bicolor* (and, surprisingly, also *Vichetia helleri* (Schmidt, 1998)!) and the other by *B. kraussi*.

This research finally solved a long unsettled case of *Platycleis kraussi*. It also stressed the importance of revision of the group Platycleidini on the Balkan Peninsula.

European Tetrigidae: how far we are from the stable taxonomic state

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Key words: taxonomy, problems, nomenclature, pygmy locusts, groundhoppers.

Groundhoppers are one of the less studied Orthopteran groups in the world, mostly because of their small body size, lack of audible song and unusual ecology. Altough European list of groundhoppers' species (Caelifera: Tetrigidae) counts only 2 genera, 15 species and 3 subspecies, taxonomical situation of the family in Europe is still not steady.

There are at least six problems that are to be solved: (i) new genus should be erected for *Tetrix nodulosa* incertae sedis, (ii) the subspecies *Tetrix ceperoi brachyptera*, firstly described as a variety of *T. ceperoi* should be considered as invalid according to the International code of zoological nomenclature, (iii) the (sub)specific status of *Tetrix transsylvanica hypsocorypha* needs to be re-evaluated on the larger series, (iv) the (sub)specific status of *T. undulata gavoyi* is to be re-evaluated: are the differences between this and the nominal subspecies enough to consider *T. undulata gavoyi* as the valid taxon, (v) *Tetrix kraussi* vs. *Tetrix bipunctata* issues – there are a few ideas how to solve this problem: Mayr's species concept – it is best for the solution of the problem and (vi) *T. wagai* needs to be synonymized with *T. tuerki.*

Besides these six taxonomical problems there will be discussed how well do we know the distribution of groundhoppers in Europe: the Balkans Peninsula – the least studied area in Europe.

Contribution to the study of *Anaphes* Haliday (Hymenoptera: Mymaridae) from Romania, including new records and taxonomic notes

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Key words: *Anaphes*, Mymaridae, fauna, taxonomy, first record, Romania.

A total of 16 species belonging to *Anaphes* Haliday are reviewed and identified from Romania.

Three species: *Anaphes pectoralis* (Soyka, 1946), *Anaphes tenuis* (Soyka, 1949) and *Anaphes variatus* (Soyka, 1949) are recorded for the first time from Romania.

The species previously recorded from Romania are: *Anaphes arenbergi* Debauche, 1948; *Anaphes aries* Debauche, 1948; *Anaphes brachygaster* Debauche, 1948; *Anaphes calvescens* (Debauche, 1948); *Anaphes diana* (Girault, 1911); *Anaphes flavipes* (Forster, 1841); *Anaphes fuscipennis* Haliday, 1833; *Anaphes medius* Soyka, 1946; *Anaphes gauthieri* Debauche, 1948; *Anaphes leptoceras* (Debauche, 1948); *Anaphes luna* (Girault, 1914); *Anaphes maialis* (Debauche, 1948) and *Anaphes latipterus* Botoc, 1962. At present, in Romania, *Anaphes flavipes* and *A. diana* are the most important species for the biological control of some insect pests belonging to Chrysomelidae and Curculionidae (Col.). Present contributions to the Romanian Mymaridae have been published by Pricop (2013) and Pricop & Andriescu (2011).

Taxonomic notes on W. Soyka's type material are also provided. Regarding the structure of the external male genitalia of some *Anaphes* species, notes are also given. We have illustrated the morphology of the specimens utilizing microphotographies obtained with a camera attached to the optical microscope. Some drawings are also provided.

This work was supported by the strategic grant POSDRU/159/1.5/S/133391, Project "*Doctoral and Post-doctoral programs of excellence for highly qualified human resources training for research in the field of Life sciences, Environment and Earth Science"* cofinanced by the European Social Fund within the Sectorial Operational Program Human Resources Development 2007 – 2013".

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The family Ormyridae (Hymenoptera: Chalcidoidea: Ormyridae) in Romania

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Key words: Hymenoptera, Chalcidoidea, Ormyridae, biodiversity, review, România.

The family Ormyridae currently includes 3 genera (*Ormyrus* Westwood, *Ormyrulus* Bouček, *Eubeckerella* Narendran) with 143 species (Noyes, 2014). Ormyrids were sometimes included in Pteromalidae or Torymidae families, sharing with torymids the presence of the occipital carina, the venation (very short stigma vein) and the enlarged posterior coxae but they can be distinguished from them based on the body shape, shorter antenna, abdomen with coarsely pitted sculpture and the short ovipositor below the elongate epipygium. *Eubeckerella* includes just one species, *E. malaica,* from Malaysia, and *Ormyrulus* contains also one species, *O. gibbus,* from India and Oman. *Ormyrus* (141 species) has a cosmopolitan distribution but in Palearctic Region there are approximately 40 species.

Ormyrus species have associations with other galls insects , whereas their larvae are usually primary solitary and ectophagous parasitoids. The hosts of *Ormyrus* species are mainly from Hymenoptera (Cynipidae, Eurytomidae) and Diptera (Tephritidae, Cecidomyiidae, Agromyzidae, Lonchaeidae) associated with plants of Asteraceae, Lamiaceae, Rosaceae, Fabaceae, Dipsacaceae, Poaceae, Apiaceae, Papaveraceae, Fagaceae etc.

In Romania, 8 species of *Ormyrus* are present: *O. diffinis* (Fonscolombe, 1832), *O. gratiosus* (Förster, 1860), *O. nitidulus* (Fabricius, 1804), *O. orientalis* Walker, 1871, *O. papaveris* (Perris, 1840), *O. pomaceus* (Geoffroy, 1785), *O. rufimanus* Mayr, 1904 and *O. wachtli* Mayr, 1904. In Romanian bibliography, *O. punctiger* Westwood, 1832 and *O. viridiaeneus* (Ratzeburg, 1844) are mentioned but now both species are minor synonyms for *O. pomaceus*. In Romania, the *Ormyrus* species were obtained especially from galls produced by Cynipidae on *Quercus* spp. mainly by Constanţa Tudor (Tudor, 1970) and Ion Şchiopu (Şchiopu, 1998).

If we compared the Ormyridae fauna from Romania and the bordering country from the southern part, Bulgaria, and we found some similarities. The number of Ormyridae species from Romania is comparable to the number of species from Bulgaria, 8 species in Romania and 10 in Bulgaria (Stojanova, 2005), 7 species being shared in both countries. *O. destefanii* Mayr, 1904, *O. longicornis* Bouček, 1970 and *O. speculifer* Erdös, 1964 are present only in Bulgaria, being collected from Rhodope Mts.

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First record of *Sceliphron curvatum* (Smith, 1870) and new data about the distribution of *S. caementarium* (Drury, 1770) in Romania (Hymenoptera: Sphecidae)

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Key words: Hymenoptera, Sphecidae, *Sceliphron curvatum*, *S. caementarium*, distribution, Romania.

The *Sceliphron* genus (Hymenoptera: Sphecidae) includes 34 species in the entire world. Until recently, the only species of *Sceliphron* recorded in Romania was *Sceliphron destillatorium* (Illiger, 1807). Recently, *S. caementarium* (Drury, 1770) was mentioned from Oradea (Gagiu, 2012).

Sceliphron curvatum was described from India and seemed to be confined to mountainous regions South and West of the Himalayas, in Tadzhikistan, Pakistan, India and Nepal. It was recorded for first time in Europe, from Austria, in 1979, probably as a result of an accidental introduction. In 1991 it was reported from Slovenia, in 1995 from Italy, in 1996 from Sardinia and at present the species colonizes 13 countries in Europe. We found this species at Potoci, near Bicaz (Izvorul Muntelui) Lake (Neamţ County).

S. caementarium is a Nearctic species, with a remarkable colonizing capacity, occurring in many islands of Pacific, in the West Indies, Madeira, Peru, Japan etc. It was also been accidentally introduced in Europe, in 1942, in the Czech Republic and after that in France, in 1970. It was also recorded from Portugal, Luxembourg, Italy, Corsica, Madeira, Croatia, Belgium, Austria, Switzerland, Germany, Slovenia and Ukraine. In 2012 was mentioned first time in Romania from Oradea (Gagiu, 2012). We found this species in the Văcăreşti Valley, Bucharest.

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Incidence of hybridization among the tilapiine cichlids in Eleyele Reservoir, southwest Nigeria

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Key words: tilapiine cichlids, divergence, taxonomy, morphometric, meristic, Eleiyele reservoir.

An inquiry into the incidence of hybridization among tilapiine cichlids in Eleyele reservoir was carried out in a 6-month bi-monthly sampling from landed fisheries at different sites of the reservoir. Eight tilapiine cichlids i.e. *Sarotherodon melanotheron*, *Sarotherodon galilaeus*, *Tilapia zillii*, *Tilapia galilaeus*, *Oreochromis. niloticus, Chromidotilapia guntheri, Tilapia mariae* and *Hemichromis fasciatus* were used for this study. Morphometric measurements (total weight, total length, standard length, body depth, head length, snout length, left eye diameter, right eye diameter, dorsal fin length, anal fin length, left pectoral fin length, right pectoral fin length, pre orbital length, caudal peduncle length, caudal peduncle depth, pre dorsal length, pre anal length, lower lip width, lower jaw width, pelvic distance check distance, lower lip length, upper lip length, left pelvic spine length, right pelvic spine length, last dorsal length and third anal spine length) and meristic counts (dorsal spine, dorsal ray, anal spine, anal ray, lateral line scale, left gill raker and right gill raker) were selected as predictor variables using Principal Component Analysis (PCA) and canonical discriminant analysis (CDA) to determine which groups of variables contributed the discriminant function's ability to accurately segregate the species. All species showed distinct colour patterns and morphometric divergences particularly for the adult stages. The mean total weight and standard length of *T. zillii*, *T. guineensis, S.melanotheron, S. galilaeus, O. niloticus, H. fasciatus* and *C. guntheri* from Eleyele lake were 110.41(±35.8), 135.29(±15.44); 110.23(±35.69), 138(±17.78); 161(±57.09), 155.32(±20.71); 103.8(±43.22), 126(±20.22); 147.3(±42.97), 147.79(±17.52); 32.88(±9.16), 95.54(±7.9) and 35.73(±8.64), 96.64(±7.79) respectively. It was inferred from this study that all tilapiine cichlids had a tendency to filter feeding, either as a primary or secondary mode of feeding, but the degree of dependence on this mode of feeding is habitat specific, and that morphometric or meristic features related to feeding are primary variables for taxonomy of close species.

Newly determined fish specimens from the Anton Bruun, Vitiaz, Ekvator and Thalassa cruises

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Key words: fish, species, collection, museum, Squatina legnota, Indian Ocean, expeditions.

A number of fishes collected in the Anton Bruun (1965), Vitiaz (1959-1975), Ekvator (1969) and Thalassa (1977; Indian Ocean) cruises were kept in the collection of the "Grigore Antipa" National Museum of Natural History but not specifically determined. Here we present the results of their identification; a number of 20 specimens pertaining to 12 species were identified, including deep-sea fishes belonging to nine families (Alepocephalidae, Bathylagidae, Gonostomatidae, Macrouridae, Melamphaidae, Myctophidae, Ophidiidae, Sternoptychidae and Stomiidae) and a specimen of the recently described, rare species *Squatina legnota* Last et White, 2008. For each species the coordinates and depth of the collection point are presented. These data complete the results of a number of well-known oceanographic expeditions of the 20th century and add to the known data on the spatial and vertical distribution of a number of deep-sea fishes. The *Squatina legnota* specimen is also important since the species is extremely rare being previously known from only four collection points, all commercial landing sites in Indonesia (Java, Bali, Lombok). Our specimen, albeit without precise coordinates for its collection, allows us to significantly enlarge the range of *S. legnota* since it was collected in the 1977 Thalassa expedition which only cruised the north-western Indian Ocean (Arabian Sea).

Neighbors *vs.* foreigners – in Water Rail (*Rallus aquaticus*) acoustic communication

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Key words: behavior, aggression, conspecific, playback, territoriality calls.

Water Rail (*Rallus aquaticus*) is a species that strongly expresses interspecific and conspecific aggression, during entire breeding season. This behaviour is requiring a high level of energy.

In this context, we chose to test the existence of differences in the aggressive reaction to the neighbours and foreigners calls and analyse the intensity of the reactions.

In the Sic Reedbeed (N-V Romania) ten observation points were established. In each point during three days (18, 19 and 20 April 2011), between 6:00 - 8:00 p.m. we applied the following methodology: from each point we expected spontaneous territoriality calls of a water rail located no more than 20 m around the point. In the start of spontaneous reaction, we recorded all water rails calls for one minute. After that, we performed a playback of the species' territoriality calls . After the playback started we recorded for one minute all water rail's calls.

We performed an ANOVA test, and we found a statistically significant difference between the number of calls recorded after spontaneous activity and the number of those who responded after playback ($F(1.62) = 14.400$, $p = 0.00034$). Regarding the reactions' distribution during that one minute of each experiment, we analysed the number of calls from the first half-minute and the last half-minute. We didn't find any statistically significant difference after the spontaneous activity ($F(1.62) = 0.176$, $p = 0.676$), but a significant statistical difference was observed after the playback performance ($F(1.62) = 4.089$, $p = 0.0474$).

In conclusion, the Water Rail individuals can differentiate between neighbours and foreigners - NSD ("Neighbour-stranger discrimination") (Stoddard, 1996), reacting less aggressively to familiar calls and more aggressive to new ones - DEE ("Dear Enemy Effect") (Temeles, 1994).

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Seasonal dynamics of Mouse-Eared bats (*Myotis myotis/blythii*) in Northern Romania

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Key words: mouse-eared bat, winter and summer roosts, local migration, "metapopulation".

The Tăușoarele Cave in Rodnei Mountains is a downward cave which holds the record for the highest altitude difference in Romania. It also represents a very important winter roost for mouse-eared bats. This cave is an unusual hibernacula (it is descending, the temperature is very low, the air currents are strong) but it is located in an area without limestone caves. During the winters of 2012 and 2013, we counted about 3600 individuals of *Myotis myotis/blythii*, but this data is relative due to the size of the cave (about 17,000 m), the complex gallery network and the difficulty in its exploration. We also recorded the Greater horseshoe bat and Lesser horseshoe bat, but in lower numbers. We identified 4 Mouse-eared bat nurseries, all situated inside the maximum migration range (120 km radius) between the summer and winter shelters. All of the reproduction colonies are found in areas with a mosaic of favourable habitats, either natural or slightly anthropic. All nurseries were found in church attics (Prundu Bârgăului, Șanț, Cepari – Bistrița-Năsăud County and Uila – Mureș County) and are currently being monitored with the help of a protection project. We consider that all of these nurseries use the Tăușoarele Cave as a hibernacula and that this cave offers good long-term stability for the bats in this region.

The Carpathian Mountains: a biodiversity hotspot for freshwater *Gammarus* (Crustacea: Amphipoda)

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Key words: cryptic species, *Gammarus balcanicus*, *Gammarus fossarum*, lineage diversity, Miocene.

The Holarctic genus *Gammarus* comprises approximately 200 freshwater species exhibiting patchy distributions, weak vagility and ubiquity. Moreover, some of the apparently widespread species are actually diverse species complexes. The aim of this study was to assess the lineage diversity and estimate divergence times of two widespread species complexes in the Carpathians, *G. balcanicus* and *G. fossarum*. We sequenced the COI marker from 49 localities for *G. balcanicus* (118 individuals) and 46 localities for *G. fossarum* (94 individuals). Phylogenetic relationships were reconstructed using maximum-likelihood and two different approaches were followed for quantifying lineage diversity. Phylogenetic analysis revealed that both taxa comprise highly diverse lineages that are distinct from those of the type localities of nominal taxa. Depending on criteria used (general mixed Yule coalescent and a 16% patristic distance threshold), estimations of lineage diversity indicated at least 8 (up to 45) entities within *G. balcanicus* and no less than 16 (up to 27) within *G. fossarum*. Sequencing of additional genes confirmed that these lineages are distinct also at nuclear level (and remain so even when coexisting in syntopy).

Overall Kimura 2-parameter distances averaged 18.3% within *G. balcanicus* and 21.3% within *G. fossarum*. The timing of divergence (estimated within a Bayesian framework) between the two complexes is ca. 38 MA, while within-complex divergences span the length of the Miocene (ca. 6 to 21 MA). The *G. balcanicus* complex contains three widespread lineages while the others seem to have more restricted distributions. In contrast, *G. fossarum* encompasses micro-endemic lineages that follow a mosaic-like distribution pattern. Given the old divergence times, we presume that the complex geomorphological past of the region might have been responsible for the observed patterns of diversity. Thus, we conclude that the Carpathian Mountains represent an ancient diversification centre and a biodiversity hotspot for freshwater *Gammarus* species.

Phylogeny of the chewing louse genus *Menacanthus* (Phthiraptera: Amblycera) - host generalists and specialists emerging side by side

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Key words: host-specificity, specialist, generalist, population structure, geographic distribution, *Menacanthus*

Parasites with wide host spectra provide opportunities to study the ecological parameters of speciation, as well as the process of the evolution of host specificity. The specious and cosmopolitan louse genus *Menacanthus* comprises both multi-host and specialised species, allowing exploration of the ecological and historical factors affecting the evolution of parasites using a comparative approach. We used phylogenetic analysis to reconstruct evolutionary relationships in 14 species of *Menacanthus* based on the sequences of one mitochondrial and one nuclear gene. The results allowed us to validate species identification based on morphology, as well as to explore host distribution by assumed generalist and specialist species. Our analyses confirmed a narrow host use for several species, however in some cases, the supposed host specialists had a wider host spectrum than anticipated. In one case a host generalist (*M. eurysternus*) was clustered terminally on a clade almost exclusively containing host specialists. Such a clade topology indicates that the process of host specialisation is not irreversible in parasite evolution. Finally, we compared patterns of population genetic structure, geographic distribution and host spectra between two selected species, *M. eurysternus* and *M. camelinus*, using haplotype networks. *Menacanthus camelinus* showed limited geographical distribution in combination with monoxenous host use, whereas *M. eurysternus* showed a global distribution and lack of host specificity. It is suggested that frequent host switching maintains gene flow between *M. eurysternus* populations on unrelated hosts in local populations. However, gene flow between geographically distant localities was restricted, suggesting that geography rather than host-specificity is the main factor defining the global genetic diversity of *M. eurysternus*.

Genetic differentiation of *Dorcadion pusillum* populations in the western part of its distribution area (Coleoptera: Cerambycidae)

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Key words: population genetics, *Dorcadion*, habitat fragmentation.

This study reports on allozyme variation and genetic structure of *Dorcadion pusillum* populations from the western part of the species distribution range (Romania and Republic of Moldova). *Dorcadion pusillum* is a flightless longhorn beetle that inhabits dry grasslands, its habitat being currently strongly fragmented by human activities. Allozyme polymorphism was assessed at 12 loci in each of the investigated populations. Overall, 14 enzymes activities were tested but only nine enzymatic activities (12 gene loci) produced clearly stained bands and were used for further analysis: aspartate amino-transferase (AAT, 2 loci), glucose-6-phosphate isomerase (GPI), glucose-6-phosphate dehydrogenase (G-6-PDH), isocitrate dehydrogenase (NADP+) (IDH, 2 loci), L-lactate dehydrogenase (LDH), malate dehydorgenase (MDH, 2 loci), malate dehydrogenase (NADP+) (ME), L-iditol 2-dehydrogenase (SDH) and phophoglucomutase (PGM). Using the program STRUCTURE (Pritchard et al. 2000) the analysed populations were grouped in 3 genetic units based on similarities in allele frequencies. Genetic diversity was generally low as indicated by the allelic diversity, proportion of polymorphic loci, average expected heterozygosity, etc. High $F_{ST.}$ values and genetic distance measures indicate a very high genetic differentiation between local populations and therefore a high degree of physical and genetic isolation. A complementary phylogeographic analysis is undertaken using a mitochondrial marker (COI).

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Looking for a needle in a haystack: sex association in a *Dicopomorpa*-like species with aberrant males using DNA sequences (Hymenoptera: Mymaridae)

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Key words: sexual dimorphism, male-female association.

For several groups of insects, including many parasitoid wasps in the superfamily Chalcidoidea, male-female associations are problematic because of the extreme dimorphism between the sexes and there are numerous examples when conspecific males and females where described as different species or even as different genera. *Dicopomorpha* Ogloblin is a genus of Mymaridae (Chalcidoidea), a family of minute egg-parasitoid wasps also known as fairyflies. It is included in the *Alaptus* group of genera, whose members are very small even for mymarids (Huber, 2009). This group includes both the smallest known winged insect -*Kikikihuna* Huber - at 0.158 mm and the smallest insect - the male of *Dicopomorpha echmepterygis* Mockford - at 0.126 mm (Huber & Noyes, 2013). Known *Dicopomorpha* males are reasonably similar to females except for the males of *D. echmepterygis* that are aberrant in having extremely reduced or absent appendages. A single male of a presumably undescribed species of *Dicopomorpha* was collected in Costa Rica. It is similar to the so far unique male of *D. echmepterygis* in lacking eyes, ocelli, and wings, and in having unisegmental antennae, but it has almost typical, un-fused tarsal segments. We try to associate *Dicopomorpha* females collected in the same locality with this male by using sequences of the D2-D3 expansion segments of the 28S rRNA.

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The biological species concept: insights from ichthyology and herpetology

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Key words: species concept, reproductive incompatibility, Bateson-Dobzhansky-Muller incompatibilities, hybridization.

As the taxonomical world is divided between competing species concepts, we resort to insights from the study of fishes, amphibians and reptiles to find answers for the challenges for the (historically) most important: the biological species concept (BSC). Fishes, amphibians and reptiles, as creatures with diverse life histories and peculiar reproductive characteristics, exemplify most of the situations that are brought forward as challenges for the BSC: fluctuating ecotypes, apomictic populations, purported "ring species", complex hybridization situations (exemplified by cases in newts and toads, e.g. *Lissotriton montandoni* x *L. vulgaris* and *Bombina bombina* x *B. variegata*). We show that, despite claims to the contrary, none of these situations actually undermine the theoretical frame of the BSC – instead, it is other species concepts that are shaken by the given examples.

We further discuss the implications of BSC for taxonomy, conservation and theoretical biology (such as the study of the theory of evolution). We conclude that in spite of the fact that the last decades witness a decline in the use of the BSC it continues to provide the only objective criteria for delimitating species, which is invaluable in theoretical biology, and also a more stable nomenclature (which we argue to be positive for conservation).

Plio-Pleistocene malacofaunas of the Lake Burdur Basin

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Key words: paleontology, Bivalvia, Gastropoda, palaeoecology.

Lake Burdur Basin is an intermontane basin of tectonic origin which started forming during Pliocene. According to our findings between 2005 and 2013 from 11 localities of fossil bearing sediments, a total of 35 mollusk species (4 species from Bivalvia and 31 species from Gastropoda) have been determined. The malacofaunas reveal three phases in the development of the lake basin. Fluviolacustrine sediments of initial Pliocene age are characterized by dominance of terrestrial gastropod taxa mainly indicating a steppic fauna. Early to Middle Pleistocene aged lacustrine sediment assemblages are in general consistent. However, Late Pleistocene assemblages mark a distinct change in salinity due to appearance of the brackish water taxa such as *Dreissena* and *Micromelania* species. Although the basin is considered to be largely isolated due to the high rate of endemism observed in the fossil and recent freshwater faunas, presence of shared taxa in Pleistocene assemblages with other neighboring basins indicates faunal exchanges.

The last discoveries of frozen ancient animal carcasses in Yakutia (Northeastern Russia)

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Key words: Yakutia, mammoth fauna, animal carcasses, remains of ancient animals, soft tissues, permafrost.

On the territory of Yakutia remains of ancient animals have been found since ancient times. The first descriptions of fossils were made in the 18th century by I. G. Gmelin (Gmelin, 1751) and P.S. Pallas (Pallas, 1809). They described the finds of the woolly mammoth remains (*Mammuthus primigenius*), rhinoceros (*Coelodonta antiquitatis*) and musk ox (*Ovibos* sp.).

Over the past few decades more than 90% of all mammoth carcasses with soft tissues have been found on the territory of Yakutia. Only over the past five years (2009-2014) 12 animal carcasses - five mammoths (*Mammuthus primigenius*), three Bisons (*Bison* sp.), two ancient horses (*Equus* sp.), one elk (*Alces* sp.) and one ancient mummified dog (*Canis familiaris*) – have been discovered in the North of Yakutia. Due to the permafrost all the animal carcasses have been well preserved – most of them have soft tissues, internal organs and fairly well preserved hair.

Let us take a brief look at some of them.

In 2009, in the Batagaika site which is located in Verkhoyansk region, 2 unique carcasses of Holocene animals (an ancient horse 4450 years of age and a baby Bison mummy 8200 years of age) were found.

Currently, the Department of Ancient DNA, University of Copenhagen, is carrying out a genetic analysis of the fossil horses and modern Yakut horses from the Yana and Kolyma Rivers.

In all probability, the bison died at the age of 2 months. This is the last evidence of bison from Siberia.

In 2010, on the coast of the Laptev Sea the carcass of a young elk was discovered. Radiocarbon analysis, done by the University of Groningen in the Netherlands, have shown that the elk had been frozen over 9000 years. Nevertheless the carcass has been perfectly preserved.

Over the past few years another unique find is considered to be a mummy of Pleistocene dog found in 2011 in the lower reaches of the Yana River (Fedorov et al., 2014). This mummy was the first in the world to find full carcasses of fossil predator of the ice age. Definition of the geological age was done in the University of Groningen in 2012 with the result 12460±50 years BP (GrA-52435).

Fur remained on the head, limbs and tail. The scalp was distorted. The body length is 51 cm, the tail length – 11.5 cm, the head length – 14.7 cm. Judging by the teeth of the animal it was no more than one year old.

One of the most unique finds is the mammoth carcass discovered in 2013 on the island Small Lyakhovsky (Grigoriev et al., 2014). The geological age of this find is 32000 years old. Currently, this find has the best preservation of soft tissues. This has been confirmed at the International paleontological seminar on the study of the finds in March 2014, and the scientists from 7 countries have participated in the seminar. Today, the mammoth carcasses are studied in the course of the project on mammoth rebirth.

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"Neighbour, I think we have termites!" – Isopteran feeding traces from the Upper Cretaceous of Hungary and Romania

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Key words: Isoptera, ichnofauna, coprolites, Late Cretaceous, Central-Eastern Europe.

The search for microvertebrate fossil remains in the Upper Cretaceous continental deposits of Hungary (the Santonian beds of Iharkút, Bakony Mountains) and Romania (the Maastrichtian beds of Budurone, Fântânele 1, Pui "swamp" sites from the Haţeg Basin, and of the Fărcădeana site from the Rusca Montană Basin) led to the discovery of a large number of small (up to 2 mm long) structures, shaped like elongated hexagonal prisms. The morphology and size of these structures are consistent to those of *Microcarpolithus hexagonalis* (Vangerow, 1954), an ichnotaxon similar to the faecal pellets of Recent dry-wood termites belonging to the families Kalotermitidae and Mastotermitidae.

Another type of structure related to termite activity discovered besides the coprolites is represented by small wood fragments pierced by cylindrical channels, interpreted as possible kick-out holes, used by termites to evict pellets from the wood within which they lived and fed.

Geochemical analyses of the termite coprolites and of the surrounding sediment supports the organic origin of the hexagonal prismatic structures studied herein: X-ray fluorescence shows that phosphorous and sulphur are present in the coprolites but not in the sediment, whereas other elements usually found in high concentration in the mounds of Recent termites (e.g., iron, calcium, zinc) are also significantly more abundant in the coprolites than in the surrounding sediment. The geochemical differences between the Romanian and the Hungarian material suggests that, although the shape and size of the respective coprolites is very similar, they might have been produced by termites belonging to different species or genera.

The importance of termites as members of the Late Cretaceous ecosystems of Central-Eastern Europe is also discussed: besides their role in wood decomposition, termites must have also represented an important food source for the small vertebrates of the time.

New data on the taxonomical affinities of Late Cretaceous albanerpetontids from the Haţeg Basin (western Romania)

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Key words: Albanerpetontidae, Maastrichtian, taxonomy, palaeobiogeography.

Albanerpetontids are an extinct group of tailed lissamphibians, with fossil remains known from the Middle Jurassic to the early Pleistocene. Four genera (*Albanerpeton*, *Celtedens*, *Anoualerpeton*, *Wesserpeton*) have so far been described and documented from Europe, North America, Northern Africa and Central Asia.

Abundant albanerpetontid fossil remains were also found in the continental Maastrichtian (uppermost Cretaceous) deposits of the Haţeg Basin, Romania (Grigorescu et al., 1999; Folie & Codrea, 2005). The fragmentary material did not, however, allow a precise taxonomical assessement of these specimens; they could only be assigned to the genus *Albanerpeton*.

The research carried out during the past few years led to the discovery of additional albanerpetontid remains, including cranial elements - frontals, premaxillae and maxillae - useful for the taxonomical assessement of the Romanian albanerpetontids. Although the newly discovered material is still too fragmentary to allow precise specific identification, it preserves sufficient features to place the Maastrichtian albanerpetontids from the Haţeg Basin to the "robust-snouted" clade of the genus *Albanerpeton*. This is considered a derived group of *Albanerpeton*, and includes species such as *A. inexpectatum* and *A. pannonicum*, taxa present in the Miocene and, respectively, the Pliocene to early Pleistocene of Europe.

The presence of a "robust-snouted" species of *Albanerpeton* (perhaps *A.* aff. *A. inexpectatum*) in the Maastrichtian of the Haţeg Basin improves the knowledge on European Late Cretaceous albanerpetontids, known from a variety of sites in Southwestern and Central-Eastern Europe but only by fragmentary material that did not allow a more accurate taxonomical assignment.

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Preliminary data regarding the present state of benthic fauna from Trei Ozere and Bogdaproste Lakes, Danube Delta, Romania

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Key words: Danube Delta, benthic fauna, deltaic systems.

Along with an integrated and interdisciplinary perspective, the benthic fauna are relevant as bioindicator of a rigorous characterization of the specific environments in deltaic systems. Any change on particular species (appearance, disappearance, replacement, morphological anomalies, population dynamics, etc.), could be useful for highlighting a stressful environment linked with natural or anthropogenic impacts. A preliminary study on benthic fauna associations from deltaic environments of the Trei Ozere and Bogdaproste Lakes, located on the southern part of the Matița-Merhei Depression of the fluvial delta plain has been performed in 2013 to assess the environmental quality of this area. The preliminary investigations present data regarding the main living communities existing at the water/sediment interface. In Trei Ozere Lake, 19 taxons have been identified; a large frequency is represented by chironomids (larvae and pupae), oligochaetes, hydrids and from ostracods *Cypria ophthalmica*, falling in euconstant organism group. The type of the predominant residue was a dark brown-gray bank, softer, dark at the top loose fragments blunt reed rare shell fragments, pieces of 1-2 cm of peat fine smell of H2S. Within the Bogdaproste Lake 27 taxons have been demarcated, prevailing insect larvae, ostracods and worms. The largest biomass is encountered in molluscs (gastropods in juvenile stages). Bottom sediment was a dark grey brown shore, very soft, cohesive, relatively coarse (with fine plant fragments), with smell of H2S. The main taxons of the submerged vegetation were represented by two species of *Ceratophyllum*: e.g. *Ceratophyllum submersum* and *Ceratophyllum demersum,* respectively. In both lakes organic matter-rich sediment is prevalent.

Do body size and sex shape the neural ganglia volume and cellularity in bivalves? A study using as model organism the adult peppery furrow shell (*Scrobicularia plana*)

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Key words: bivalve, histology, stereology, nervous ganglia, neurons, glial cells.

Scrobicularia plana (Mollusca: Bivalvia) is a gonochoristic species inhabiting intertidal estuarine areas in northern Europe, Mediterranean and West Africa. The species is of economic importance and viewed as an excellent bioindicator in both field and experimental toxicology. It is amenable to in-lab care and thus can be usable as an animal model, in applied or fundamental research, such as nervous system (NS) plasticity. In this regard, we hypothesize that age and sex influence the NS, and so we are studying the ganglia size and neuronal numbers.

Mature animals were collected in Portugal and grouped in length classes: S (2.4 cm); B (3.8 cm). Four animals of each sex were embedded in paraffin and cut into 35 μm thick serial sections. Those having the left cerebral right cerebral, pedal, and visceral ganglia were studied at light microscopy. Stereology estimated: 1) the ganglia volume (V), using the Cavalieri principle; 2) the total neuron number (N), using the optical fractionator method. Other parameters are being estimated and worked out. Data were analysed via multivariate-ANOVA, and post-hoc tests.

As to the V, the visceral ganglion is consistently more voluminous than the pedal, and this is greater than the cerebrals (left-right do not differ between them). Overall, and in either sex, every ganglia of size-class B has a bigger volume than the corresponding ganglia of class S. As to the neuron N, in size-class B the values for each ganglia type are twice as high as in S animals. In view of marginally significances, it seems there is a trend for a higher neuron N in males. Despite data are preliminary, glial cells N seems to follow this trend. At this stage of the study it seems to us that, in adult specimens of the species, ganglia enlarge with time with increases in cell number.

The work was financially supported by: (a) Thai Government Science and Technology Scholarship Students; (b) ERDF funds via COMPETE and Portuguese public funds via FCT (project PEst-C/MAR/LA0015/2013); and (c) EUCVOA (project NORTE-07-0162-FEDER-000116), provided by ON.2 - O Novo Norte, via NSRF and ERDF.

Epigean arthropod response to the experimental design

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Key words: epigean arthropods, Little Island of Braila, interior and exterior habitats, carrion bait.

Epigean arthropods are important links in the terrestrial food webs and support important mechanisms which interfere in provisioning ecological services and the resilience of the integrating systems. Although the wetland areas along the Danube River are known as being rich in species richness and biological diversity that undergo direct and indirect anthropogenic pressures, arthropods received a little concern so far. Till now researches were focused on characterizing the taxonomic diversity of these communities. Factors controlling their spatial and temporal distribution and the populations dynamics remained limited, making it difficult to understand the role and mechanisms by which this group of invertebrates quantitatively and qualitatively influences the ecosystem's processes and the range of services they are providing to humankind.

Based on a field experiment conducted in two small islands of different ages (Harapu and Chiciu Cucului), located in the Little Island of Brăila Natural Park, the paper characterizes the epigean arthropod communities and identifies ecological patterns for their structuring. It is revealed that positions of the sampling stations across the habitats as well as the attractant used in traps are important control factors that should be considered if the underlying ecological processes are to be understood. Environmental conditions seem to be important in defining arthropods temporal dynamics and succession patterns in colonizing the baits.

Edaphic mite communities on polluted grasslands from Trascău Mountains (Romania)

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Key words: heavy metal, grassland, mite, abundance, soil.

The soil fauna is not very well studied throughout Europe, often being a neglected component of the biodiversity of grasslands. This is a serious omission because the soil fauna is characterized by large populations, consequently it is of major importance as an indicator of the environmental conditions that exist in grassland ecosystems. One of the most important and useful bio-indicators of the environmental conditions of grasslands are the predatory mites.

There are very few studies of the influence of heavy metal pollution on soil mite communities in European grasslands, especially in Romania. The objectives of this study were to determine the species diversity and to analyze the correlations between heavy metal concentrations and the abundance of these invertebrates, identified in six grasslands. The heavy metal concentrations increased with the proximity to the pollution source. In terms of the legal limits, the highest concentrations were Pb > As > Zn > Cu. These concentrations influenced the representation of mites within the Acari Orders Oribatida, Mesostigmata and Prostigmata. There was a severe decrease in the numerical density of prostimatids and increase of oribatids. So far as the mesostigmatids are concerned the high heavy metal concentrations in the soils of the grasslands close to the pollution source have caused a significant reduction in their species-richness and relative abundance. The statistical analysis demonstrated the existence of species associated with the most contaminated grasslands, while others were only present in the less polluted soils. This differential response of soil mites, especially the mesostigmatids, to heavy metal pollution highlights the importance of the Acari as bio-indicators of grassland ecosystems that have been damaged by industrial pollution.

This study was funded by project no. RO1567- IBB01/2014 “Researches concerning the relation between biodiversity and functions in some ecosystems from the Romanian Carpathians” from the Institute of Biology-Bucharest, Romanian Academy and by project no. 50/2012 “Accounting for the Service-providing units of Plants in the environmental Assessment of plans and projects with Biogeochemical Impact at multiple scales in River basins (ASPABIR)”.

How experimental design can influence research results: preliminary results from terrestrial Diptera communites

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Key words: field experiment, Diptera, carrion decomposition, Barber and suspended traps, different bait, Little Island of Braila.

In the context of clarifying the relationship between biodiversity and functioning of ecological systems, following the initial studies which focused on the relationship between producers and productivity of the ecological systems, researches were extended to the complementary food chains, originating in plant and animal debris, whose breakdown is a source of energy and nutrients for ecosystems and also habitat for various species. Whereas mechanistic understanding of decomposition process and its ecological significance were provided for leaf litter in terrestrial and aquatic ecosystems, knowledge concerning the distribution and structure of necrophagous invertebrates and their relation with provision of ecosystem services at different spatial and temporal scales as well as the main drivers which influence species richness and the dynamics of the secondary production decomposition remained virtually unknown in Romania.

The present study is based on an experiment conducted in the one island (Harapu) located in the Little Island of Brăila Natural Park. The insect of the order Diptera - well known for their high mobility, implication and dominance on the decaying carrion in all the decomposition stages - were collected in spring 2012, using traps mounted in different places (suspended in the trees and on the soil - Barber), and containing different chicken baits. The field experiment lasted for 12 days. The main objective was to assess the effects of experimental design with respect to the type of traps and baits on the insects' abundance and taxa. We present preliminary results which show the insects' preference for both traps and baits. The paper present and discuss the observed patterns.

Gill morphometry of *Tilapia zillii*: potential use of gills as a welfare indicator in wild fish

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Key words: gills, morphometry, welfare, *Tilapia zillii*.

Tilapia zillii was used to investigate the effect of habitat on gill morphometric thus to explore the possibility of using gill morphometrics to assess welfare in wild fish. Thirteen adult *Tilapia zillii* individuals were collected from Ain-Ziyana lagoon in eastern of Benghazi city and the dimensions of their gills were estimated. The gill respiratory surface area of *Tilapia zillii* ranged from 851.31 mm^2 to 1929.32 mm^2/g of body weight. The relationship between gill respiratory surface area to body weight was found to be highly significant (P= 0.001). The gill respiratory surface area of *Tilapia zillii* increase as the fish develops and this could happen because the total number of gill filaments, the number of secondary lamellae and bilateral surface area of secondary lamellae also increases. Large gill respiratory surface area could assist survival of Tilapia in oxygen-stressed conditions. This suggests that the measurement developed here might potentially be used as an index of welfare in wild fish.

Piscicidal effect of *Adenium obesum* bark water on *Clarias gariepinus* hybrid

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Key words: piscicidal, freshwater fish, *Adenium obesum*, *Clarias gaiepinus*, LC_{50}, safety level.

The acute toxicity of *Adenium obesum* to *Clarias gariepinus* fingerlings was conducted using static bioassay under laboratory conditions. The 96h LC_{50} was determined as 2.18g/l. Mean mortality was 0, 60, 80, 100% in the concentration of 0.0, 1.2, 2.4 and 3.6g/l respectively, while there was no mortality in the control treatment. There were significant differences ($p<0.05$) on the effect of concentration, the higher the mortality of C. *gariepinus* fingerlings while toxicity of phenergan increased with duration of exposure. *C. gariepinus* showed increased hyperactivities, cell deformation, lesions and necrosis during the period of exposure. The physicochemical parameters also showed a slight increase as the concentration increased. The LC50 of the plant extract to *C. gariepinus* is2.18g/L while the safety level is 0.022g/dm. Hence the usage of *A. obesum* in killing fish should be discouraged.

Age-related parameters in a *Pelobates fuscus* (Anura: Pelobatidae) population from NW Romania over a decade

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Key words: common spadefoot, skeletochronology, age distribution, lifespan.

We used skeletochronology to investigate age-related parameters in a *Pelobates fuscus* population from northwestern Romania (Cluj County) that reproduces in a permanent pond. The population was sampled at four different moments: 2004 and 2012-2014. The quality of the aquatic and surrounding terrestrial habitats decreased constantly during the study due to urban development. The measurements and biological samples were collected in the spring, during reproduction, as part of a mark-recapture study. We estimated and compared the following parameters: median lifespan, age at sexual maturity, longevity and potential reproductive lifespan. Since in the sample collected in 2004 the sex of the individuals was not noted, we did not consider sex in our analyses.

We estimated age in 152 adult individuals. No significant differences in age-related parameters over time were found. Age distribution was similar in all four years (Kruskal-Wallis $\chi = 4.25$, $P > 0.05$), with 3 and 4 years age classes being the most abundant in all samples (63% and 47% respecively). The median lifespan of the population was 3 years, with a longevity of 6 years. The age of sexual maturity was attained at 2 - 3 years. The reproductive lifespan was 4 years. Our results suggest that the studied population did not react to the severe human impact affecting its habitat during the study period, indicating a slow response. This could explain the severe decline of the species over it's entire range.

Ecology and current status of the Nikolsky's viper (*Vipera (berus) nikolskii*) in Romania

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Key words: Reptiles, snakes, melanism, conservation, Central Moldavian Plateau.

The present study aimed to conduct a preliminary investigation of the current distribution, population characteristics and ecology *Vipera* [*berus*] *nikolskii,* a taxon recently identified in Romania.

To our current knowledge, *V.* [*b.*] *nikolskii* persists only in the deciduous forests from the Central Moldavian Plateau from Iaşi and Vaslui County. Several potential habitats outside this region have been identified and should be surveyed in the future. Our studies on one of the identified populations revealed a slightly male biased sex ratio. Melanism was slightly more common in males than in females. Females were superior to males with respect to snout-vent length, snout-vent length / tail length, the number of ventral scales and body mass.

The annual activity cycle is similar to that observed in *V. b. berus* populations. However, the Nikolsky's viper emerges from hibernation relatively late. Males emerged in the last days of March and females in early April and both sexes were last observed during the last week of October. Vipers were mostly observed in mid-morning to early noon in partially clouded (males) or sunny (females) conditions, on areas with Eastern, Southern and South-Eastern exposure.

With regard to reproductive characteristics, our preliminary results indicate a significant positive correlation between the female pre-partum body mass and the number of neonates. No relation was found between the size of the female and the size of the neonates or between the length of the female and the number of delivered neonates. A mean value of 8 newborns per litter was recorded.

Taking into account the restricted distribution range of the Nikolsky's viper and the observed anthropic pressures, we propose a status of endangered (EN), according to IUCN criteria, for this taxon in Romania.

The relationship between nest box design, occupancy and breeding parameters of some bird species

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Key words: Nestbox, insectivorous birds, Oak forests, Elazığ, breeding.

Nest boxes are important for some birds where insufficient nesting places occur. Nest boxes are mainly used to increase the number of breeding birds, where the aim is to increase birds active in biological control, especially insectivorous ones.

In 2009-2013, 1200 nest boxes, differently colored (yellow, orange, blue, green, unpainted) and sized, were placed in Elazığ, Gözeli district, on different oak forest locations. The nest boxes were monitored during the breeding season and breeding activities were observed. The occupation and breeding success for passerines and an owl species was recorded.

Only 116 large sized nest boxes were occupied out of 600. There was a breeding success of 14.3% annually. From 600 small sized nest boxes, only 369 were occupied. There was a breeding success of 83,4% annually. The nest box preference to small and large sized boxes changed between species. The nests were occupied by *Parus major* (66,4% small boxes, 20,9% large boxes), *Cyanistes caeruleus* (5,2% small, 16,3% large), *Sitta europaea* (4% small, 23,2% large), *Petronia petronia* (15,2% small, 4,7% large), *Passer domesticus* (9,2% small, 27,9% large) and *Otus scops* (7%, occupied only large boxes).

The selection to different colored nest boxes differed also between species. *Cyanistes caeruleus* preferred yellow painted nest boxes, while *Sitta europaea* preferred orange nest boxes. In small sized nest boxes *Parus major* preferred unpainted and in large nest boxes, green painted nest boxes. There was not a specific selection by *Passer domesticus* and *Petronia petronia*.

During breeding season birds were feeding their chicks with arthropods, annelids and mollusks. Within these phyla the harmful species to oak belonged to Pentatomidae, Arctiidae, Noctuidae, Tortricidae, Lymantriidae, Pieridae, Scarabaeidae, Gryllotalpidae, Tettigoniidae, Acrididae, Forficulidae families.

Biostalactites – bat origin organic stalactites

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Key words: biostalactites, mouse-eared bat, urea crystals.

In the attic of a local school building in Sokole Pole (Southern Poland) senior author found, in summer of 1986, interesting epigenetic structures in form of thickened stalactite tubes and surface coats covering the ceiling beams. The building's roof was constructed on a system of C-sharped reinforced concrete beams. The pairs of 6 m long beams were joined at 30° angles and 25 cm gaps remained between the beams. The southern part of the attic has been periodically inhabited by a breeding colony of the mouse-eared bats numbering about 200 females and their young. There, all the inner and lower surfaces of the beam are covered by a layer of yellow-brown infiltration coats and stalactites and drops of brown liquid could be seen suspended on their ends. Organoleptic features of this liquid indicated that it was bat urine. The number of stalactites found was quite significant: 59 and 61 on the two sides of the beam respectively. Minimum length of stalactite was 1.5 cm, maximum length 9.0 cm, and 3.88 cm on average (Wołoszyn, 1992).

The stalactites were composed of a very hard material that shows a crystalline fracture. The formation and growth of the forms and deposits is undoubtedly related to the presence of summer colony of bats in the attic. The following observation supports this notion (Wołoszyn, 1992):

The stalactites were found only on the beams between which bats were living as indicated by both accumulation of organic secretions on the beam and deposits of guano under them.

The stalactites were formed on the length of the beam inhabited by bats with only a slight shift caused by the angle of its inclination.

The infiltration stalactites remained active only when bats were there. After the bats left (usually in August) the stalactites dried up and remained in this condition, irrespective of weather, till the return of bat in June next year.

In conclusion, the stalactites are apparently formed of idiomorphic urea crystals joined with needle-sharped oxalate crystals. There might also some other components washed out by the urine from the underlying material. It may be confirmed by occurrence of crystals of potassium phosphate in the stalactites. The literature provides only one report about the stalactite forms associated with the presence on bats. In 1957 A. Kolb described deposits on a wooden beam in a roof inhabited by a breeding colony of *Myotis myotis*. In his opinion,

the infiltration was formed only by the urine of juvenile bats born during the occurrence of the breeding colony of bats. The differences i.e. the prevalence the stalactites over infiltration coat were caused by the differences in the underlying material.

The scarcity of information on the described above phenomena indicates how rare such structures are. It is mostly probable that their growth requires numerous favourable conditions present at the same time (Wołoszyn, 1992): very low humidity of both air and the substrate material, neither too small not to large number of animals in the colony (about 200 individuals) that could ensure steady but not too intensive influx of organic matter, low humidity of the environment enables complete drying of the infiltration after the bats leave, which does prevent erosion, and relatively high temperature.

The formation of above described forms is so dependent upon steady influx of organic matter, a senior author proposed for them a term: **Biostalactites** (Wołoszyn, 1990, 1992).

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The bats of the cave "Grotta Zinzulusa" of Castro Marina (Province of Lecce, S.E. Italy) with notes on the presence of *Rhinolophus mehelyi* Matschie, 1901 in the Italian Peninsula

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Key words: bats, bat ecology, Rhinolophidae, *Rhinolophus mehelyi,* Zinzulusa cave.

Inside the deep southern part of the region Apulia (S. Italy) called "Salento", placed in front of the sea in a unique limestone natural habitat, the cave "grotta Zinzulusa" represents one of the most interesting marine caves of S.E. Italy. This cave was used as roost by bats of different species for centuries, and had important deposits of guano; for this reason, the cave "grotta Zinzulusa" was excavated for an industrial use of guano as fertilizer in agriculture, a unique case for Italy.

A population of bats still lives in the cave; in the year 1969 a study noticed that for this cave 4 species of bats were recorded, and represented the second known locality for *Rhinolophus mehelyi* in Italian Peninsula. No information was given about the size of bat population of the cave, and no other records of *Rhinolophus mehelyi* in Italian Peninsula were published.

For this reason, several research trips to the cave "grotta Zinzulusa" were done in the years 1988-1999 to assess the real situation of the bat population, with special attention to *Rhinolophus mehelyi*, meanwhile disappeared from the first known locality of Italian Peninsula (caves "grotte di Castellana"; Province of Bari, region Apulia).

The control of emergence flights of bats at dusk gave data on the number and composition of the cave's bat population; some interesting observations on different behaviours of the two bat species found in the cave towards a grilled gate not designed for bats were also done.

In the years 1988-1999, the total bat population was only of about 120-150 specimens, and represents a relict population. The 2 species found were *Rhinolophus euryale* and *Miniopterus schreibersii*; also some *Myotis blythii* were present in the cave. In the year 2000-2010, other researchers studied this cave (and several other caves in the region) searching *Rhinolophus mehelyi*, with no results; in the year 2013 this bat species was rediscovered inside the cave, and represents now the only recent record of this species for all Italian Peninsula.

The retardation of maturation in red-backed voles (*Myodes rutilus*) doesn't increase their longevity in laboratory conditions

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Key words: pace of life theory, photoperiodic control of maturation, metabolic rates, immune response, longevity.

Pace of life theory suggests direct correlation between the rates of development and individual longevity. In boreal murid rodents individuals of early seasonal cohorts attain maturity in the first month of life and die at the age of 5-7 months, whereas individuals that are born at the end of the reproductive season become mature only in the next spring and their longevity exceeds one year.

To reveal direct physiological mechanisms of such variations in longevity we used immature individuals of red-backed voles, removed from native populations at the end of the reproductive season. In laboratory, the voles were divided into two groups of 16 individuals each, exposed to different photoperiodic-temperature regimes - (8L:16D, 17^{o} C short-day) and (16L:8D, 20^{o} C long day). All the animals were maintained in individual cages with food and water provided *ad libitum*.

Manipulating photoperiodic regimes we succeeded to delay sexual maturity in animals of the short–day group. In the first month of the experiment, males of this group had significantly lower testosterone concentrations in plasma than males exposed to long-day regime (*t=2.9; p=0.01, n=12; Student t-test*).

The cycle of the tests didn't reveal any significant differences between groups in standard metabolic rate, cold-induced maximal oxygen consumption and in magnitude of the decrease in body temperature at cold exposition. Quantity of leukocytes, activity of plasma peroxidase, and level of immunoglobulins also did not differ between long- and short day groups. Eventually, animals of both groups had similar rates of survival (*U=-0.5; p=0.6; n=51; Cox-Mantel Test*). So in laboratory conditions, individuals of red-backed voles did not reveal any effects of maturation rate on physiological traits, essential for animal's survival and longevity. We can explain the contradictions between our results with the expectations of pace-of-life theory by the seasonal differences in environmental conditions (temperature, food availability, parasitic load) that may affect longevity in natural population.

Temperature dependence of necrophagous insect species diversity and dynamics in an experimental forensic model

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Key words: temperature, necrophagous insect species, succession.

Temperature plays an important role on the development cycle of insects, due to their poikilothermic character. While certain species can cope with low temperatures and remain active, others migrate to warmer areas, or use a diapause mechanism to overcome cold periods.

Our investigation represents a comparative study of the necrophagous insect species succession on a forensic animal model in a Romanian urban location during the cold and warm seasons, to identify necrophagous insects for estimating the postmortem interval in our country.

Domestic pig carcasses were used in triplicate as experimental model. While the environmental temperature is a critical parameter in establishing the necrophagous insect species colonization dynamics in a forensic study or casework, the carcass decomposition process was monitored during both warm and cold season. The carcass decomposition and colonization by insects were monitored during the cold season (November 2012 - May 2013) and warm season (July - October 2013), and analyzed in relation with meteorological parameters.

During cold season, the succession of necrophagous insects and the decomposition process were altered due to freezing intervals. Carcass decomposition was interrupted in the bloat stage, associated with the absence of necrophagous insects. Calliphoridae species were the first to appear when temperatures reached 10-11°C. Colonization of carcasses started with week 15, when temperatures increased above 13°C.

For the warm season, the temperature varied between 10°C and 29°C, accelerating the decomposition process. Under these conditions, the carcass colonization started at field mounting time and lasted until skeletal remains stage.

A different number of necrophagous insect species were present during warm and cold season, among which 5 Diptera and 2 Coleoptera were common. The presence and activity of insects during the two experiments differed by the corresponding carcass decomposition stage and by their occurrence during a broader (10°C-30°C) or a more restrictive (17°C-30°C) temperature interval.

Biological invasions in water and terrestrial ecosystems of the Republic of Moldova

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Key words: alien species, water and terrestrial ecosystems, biological invations.

The results of many years of complex interdisciplinary studies performed at the Institute of Zoology of ASM are given, regarding the formation of the biological diversity of natural and anthropogenic ecosystems under the influence of alien species. The main question is "Why in the late twentieth century, biological invasions of alien species have become a priority of the global environmental problem?"

The universalism of penetration process of invasive alien species in ecosystems that are outside their natural range is underlined, by emphasizing only 3 main reasons: 1 – self-dispersal of organisms is connected with climatic changes and fluctuations of their populations' number; 2 - intentional introduction by man of important / useful from economic point of view organisms (plants, worms, mollusks, crustaceans, fish, birds, mammals and other species); 3 – accidental introduction with agricultural production, ballast water, biofouling with introducents themselves etc.

The success of bioinvasion is guaranteed primarily by genetic potential (adaptive potential and norm of organism reaction) of species-invaders, secondly it depends on the state of the recipient ecosystem and only then is predetermined by infestation vector. Also, an alien species on the way to colonization must overpass 4 highly complex barriers: First - geographical barrier; Second - finding a suitable ecological niche; Third - population barriers to naturalization and, finally, the Fourth - expansion on new territories due to a significant increase in population size.

We would like to extend our appreciation to Supreme Council for Sciences and Technological Development of Academy of Sciences of Moldova for providing funding for this study (project 11.817.08.13 F).

Prioritizing invasive alien species: a national approach

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Key words: exotic, non-native, risk assessment, impact, Black List.

Resources available for managing invasive alien species are limited, therefore there is a stringent need to identify and prioritise species in order to ensure a feasible and optimal allocation of funds towards species of major concern. In order to categorize invasive alien species in Romania based on their environmental impact, we used a generic protocol that builds upon previous European listing methods and makes use of a recently developed impact assessment tool (Blackburn et al. 2014). The impact refers to any negative consequences an alien species might have on the recipient community while the current distribution and spread are used as indicators of the extent of the impact. The species under assessment would therefore be assigned to different risk categories/lists using a combination of the magnitude and extent of their environmental impact.

Although invasive alien species are a major topic, the situation of these species is currently insufficiently known and inadequately handled in Romania. The list of alien species in Romania available on DAISIE website (www.europe-aliens.org) was updated and assessments were performed for several species. Some difficulties were encountered in procuring data about impact and distribution in the assessed area however this allowed for identification of current gaps in knowledge. Furthermore assessments will be subsequently updated as such information accrues. Also, the robustness of the method should be tested further as the current assessments were performed by a single assessor. Nevertheless, following assessment species like *Myocastor coypus* (Molina 1782) and *Ailanthus altissima* (Mill.) Swingle were identified as being of high environmental concern, thus proceeding further with the development of a national "Black List" of invasive alien species.

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Insights into the invasion process of zebra mussel (*Dreissena polymorpha*) in The Netherlands

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Key words: genotyping, microsatellites, invasive species, genetic barrier, population genetics, *Dreissena rostriformis bugensis,* quagga mussel.

The goal of our study was to determine whether there have been multiple colonization events in the present zebra mussel *Dreissena polymorpha* (Pallas, 1771) population in the Netherlands, which may coincide with the more recent invasion of its relative, the quagga mussel *Dreissena bugensis* Andrusov, 1897.

We analyzed 162 zebra mussel specimens from 10 sampling areas across The Netherlands, collected from 2000 to 2011, using seven highly polymorphic microsatellite DNA markers. Genetic barriers between our samples were distinguished using Monmonier's maximum distance algorithm, and two such barriers were identified, separating the Lake IJsselmeer 2000, 2004, and 2010-2011 subpopulations respectively. This finding is consistent with the scenario of new propagules becoming established in Lake IJsselmeer which disrupts temporal continuity in the genetic structure of the *D. polymorpha* populations, manifested as a genetic barrier. Our data show the presence of a continuing process of zebra mussel invasion in The Netherlands.

Genetic diversity of native *vs*. invasive populations of *Anodonta woodiana* (Bivalvia, Unionidae) – preliminary data

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Key words: genetic diversity, genetic differentiation, invasive species, microsatellite.

Phenomena of biological invasions in freshwater bodies are becoming increasingly common, but our understanding of the invasion process from the biological and genetic points of view is still largely insufficient. The genetic diversity of populations of introduced species is a key factor in understanding their potential to establish and spread in the novel habitats.

Chinese Pond Mussel, *Anodonta (Sinanodonta) woodiana* (Lea, 1834), is the largest unionid species present in the European fauna. Its native range is in East Asia (South-Eastern Russia to Malaysia), but over the last few decades it has spread rapidly across the Europe and other parts of the world.

We genotyped 95 individuals at 10 microsatellite loci to determine the levels of genetic diversity of native (Nanchang, China) and introduced populations (Lake Balaton, Hungary; Szczecin, Poland; Kyjovka River, the Czech Republic) of *A. woodiana*. For each population we calculated: number of alleles, number of private alleles, expected and observed heterozygosity, and inbreeding coefficient F_{is}. The population differentiation was estimated following Weir & Cockerham (1984) F_{ST} index and by the calculation of Jost (2008) D_{est} measure of genetic differentiation.

The highest genetic diversity was found in the native Chinese population of *A. woodiana*, while significantly lower genetic diversity was found in all invasive European populations. The genetic differentiation between the native and each of the invasive populations was larger than the differentiation between any of the invasive populations.

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Inferring the origin of Adriatic and Black Sea *Anadara kagoshimensis* (Mollusca, Bivalvia) by means of molecular markers

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Key words: COI, *Anadara kagoshimensis*, source populations, Black Sea, Adriatic Sea.

The ark shell *Anadara kagoshimensis* (Tokunaga, 1906) has a wide native distribution in East Asia (Tanaka & Aranishi, 2014) and is a well-known alien invader in Europe, with established populations in Italy (mostly in the Adriatic Sea) (Crocetta, 2012) and in the whole Black Sea (Sahin et al., 2009), where it was first reported in the early 60's (Parenzan, 1976) and in 1984 (Gomoiu, 1984), respectively. Its identification history in the alien range has been usually based on shell morphology, resulting in a long and troublesome process due to resemblances between *Anadara* species (Krapal et al., 2014). Despite these taxonomic debates, it currently represents one of the most common soft bottom littoral species both in the Black and the Adriatic Sea.

In this study, we tracked the population source of European *A. kagoshimensis* by using the COI mitochondrial marker, as previously done in many invasive species (Weese & Santos, 2009). Fifty COI sequences were obtained from two Black Sea and one Adriatic Sea populations. Our data, coupled with those previously published from Japan (Tanaka & Aranishi, 2014), resulted in 26 *A. kagoshimensis* haplotypes. All but one specimen from the Black Sea exhibited a single haplotype shared with samples from Mikawa Bay (Japan).

The haplotype diversity of Japanese *A. kagoshimensis* populations is higher than that of the invasive ones. In particular, in the native area, the frequencies and numbers of haplotypes were different in each population, whilst in the Black and Adriatic Sea only two different COI haplotypes were found. The extreme similarity between our specimens and those sequenced from Mikawa Bay would suggest that the most likely point of origin for the European *A. kagoshimensis* populations is represented by the Japanese populations.

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Study on some physiological aspects of wheat and barley cultivars with regards to damage of two store pests in Iran

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Key words: germination, osmotic potential, seed damage, wheat.

Seed is considered the important agricultural product which has a significant effect in the yield. We aimed to survey some seed characteristics such as pest feeding on grains, leakage tests and seed germination on different seed cultivars. Therefore, the study was carried out (2011-2013) for seed-susceptibility against store pests including *Sitophilus oryzae* and *Rhyzopertha dominica*, on 11 cultivars wheat and barley under growth chamber circumstances: RH (40±5)%; (L:D),(16:8); T(28±1) ºC). Also, few samples in the two treatments (sound and damage seeds) were selected to determine osmotic potential, electrical conductivity and PH under lab conditions: (25 ± 0.5) $^{c^{\circ}}$, (L:D), (16:8), (45 ± 5) RH% and seed germination (PG) in greenhouse. The findings showed that Bam wheat cultivar as the most sensitive seed cultivar (%pests damage= 10.65, Op= -0.291, PG= 73.33%) and Kavir barley cultivar tobe the most resistant (%Pest damage= 0.66, Op= -0.135, PG= 93.33%). In total, pest damage clarified a correlation with seed germination and osmotic potential. This approach could be considered in seed production management.

Feather mite fauna (Acariformes: Analgoidea and Pterolichoidea) of Meghalaya (Northeast India): a largely unexplored "treasure chest" of diversity

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Key words: feather mites, Analgoidea, new species, birds, hosts, Meghalaya, India.

Feather mites (Acariformes: Analgoidea and Pterolichoidea) are commensals or ectoparasites that can be commonly found on birds. So far, over 2400 species of feather mites have been described, and experts believe that the currently known number of species represents less than 20% of the extant species (Mironov, 2003). The diversity of feather mites in India is poorly known, data on species recorded in this country beeing scattered among various taxonomic works. Considering that the avian fauna of India includes over 1300 species of which 644 are present in Meghalaya (Lepage, 2013), and each of them is a potential host for several feather mite species, we can say that the research of feather mites in this country is in a very early stage.

The studied acarological material was collected from two places in India: Khahnar village, in February 2013 and Shnongrim village, in January 2014, both in East Jaintia Hills, Meghalaya. The birds were captured, identified and visually checked for the presence of mites. After the mites were collected, the birds were released back into the wild.

On the 146 specimens of bird hosts belonging to 26 species that were caught and checked for the presence of ectoparasites we found 72 species of feather mites. 45 out of this 72 species are new to science. So far, only 8 new species have been described from this acarological material: *Timalinyssus actinodurae* Constantinescu, 2014 on the host *Actinodura cyanouroptera*, *Pteroherpus meghalayensis* Constantinescu, 2014 on the host *Hemixos flavala* (Constantinescu et al., 2014 a); *Proterothrix daberti* Constantinescu, Chișamera, Mukhim & Adam, 2014 on the host *Cinclidium leucurum*, *Proterothrix khahnarensis* Constantinescu, Chișamera, Mukhim & Adam, 2014 on the host *Myophonus caeruleus*, *Proterothrix indica* Constantinescu, Chișamera, Mukhim & Adam, 2014 on the host *Alcippe nipalensis* (Constantinescu et al., 2014 b); *Pedanodectes angustilobus* Constantinescu, 2014 on the host *Arachnothera longirostra* (Constantinescu et al., 2014 c); *Megalaimobius* **sp. nov.** and *Picalgoides* **sp. nov.** on the host *Psilopogon virens* (Constantinescu et al., in press).

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Helminth parasite of some fish species in Lake Geriyo, Adamawa State

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Key words: helminths, *Clarias gariepinus*, *Synodontis schall*, *Oreochromis niloticus*, incidence, Lake Geriyo.

Infestation of fish helminths parasites has been recorded as being virulent, affecting fish growth and humans' well-being. 360 fish of different sizes of *Clarias anguillaris* (120), *Synodontis schall* (120) and *Oreochromis niloticus* (120) species were collected from Lake Geriyo and examined for infestation of helminths parasites. At the most 59 (49.17%) *C. anguillaris* and at least 20 (16.67%) *O. niloticus* were infested. Out of these fish, 78.33% females were infested while 21.67% were males. There were significantly differences ($p<0.05$) between the level of infestation among the sexes. Majority of the parasites were nematodes (65.82%) while trematodes had the lowest number (15.27%). The alimentary canal (75.64%) remains the most prevalent site for the parasites while the least of 15.09% are from muscles. All the fish identified were infested but with different levels of infestation.

Aspects of reproductive biology of narrow-clawed crayfish *Astacus leptodactylus* Eschscholtz, 1823 (Crustacea: Decapoda: Astacidae) regarding the female gonad

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Key words: gonad, development, oogenesis, vitellogenesis, yolk, gonadosomatic index.

The abundance of data regarding aspects of the reproductive biology of macrodecapods is rather high in comparison with the scarcity of information regarding structural aspects of the gonads on each main episode of their life (developing of the gonads, ecdysis, mating and spawning).

This study aims to describe structural, ultrastructural and immunohistochemical morphology of the female gonad throughout a reproductive cycle correlated with oocyte diameter and gonadosomatic index. Ovarian development occurs annually, after each cycle, with a primary winter cycle in which the larger crayfish reproduced followed by the rapid development of the gonadal structures during spring season. There was no evidence between the diameter of the oocytes from the larger females compared with the smaller ones.

During oogenesis the oocytes were classified by diameter and histochemical characteristics in: oogonia, early previtellogenic, late previtellogenic, early vitellogenic, late vitellogenic, mature, spent and oobsorptive. Oogenesis is a continuous process, until late previtellogenesis. Oogonia is located in the center of the ovary, in the germinative zone. The undifferentiated gonad is represented by the germarium, in which oogonia are the most abundant. Oogonia will differentiate into primary previtellogenic oocytes with condensed chromosomes and few rough endoplasmic reticulum. Mesodermal tissue forms partially around each oocyte a single follicle layered epithelium. During the previtellogenic stage the nucleus is located centrally with two visible peripheral nucleoli. In the late previtellogenic stage the diameter of the oocytes is larger than the previous stage and few lipid droplets are present. Accumulation of peripheral acidophilic yolk marks the onset of vitellogenesis. Oocyte diameter has doubled its value in comparison with previtellogenic stage. The nucleus presents compacted chromatin and four-six peripheral nucleoli. Mature yolk droplets form during the late vitellogenesis by incorporating ovocitary components and coalescence of neighbouring smaller yolk droplets. This study reveals the endogenous vitellogenesis during the primary stage of vitellogenesis.

The understanding of the reproductive particularities of *Astacus leptodactylus* in Romanian climate and environmental conditions could represent a necessary stage for introducing this species as a model organism for aquaculture.

This work was supported by the strategic grant POSDRU/159/1.5/S/133391, Project "*Doctoral and Post-doctoral programs of excellence for highly qualified human resources training for research in the field of Life sciences, Environment and Earth Science"* cofinanced by the European Social Found within the Sectorial Operational Program Human Resources Development 2007 – 2013.

Habitat vulnerability reflected by butterfly fauna evolution - Northern Dobroudja case

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Key words: Rhopalocera, northern Dobroudja, 150 years evolution.

In 1865, Joseph Mann, an Austrian entomologist from the Natural Sciences Museum in Vienna, studied the insects of Northern Dobroudja. The results were published a year later and the result was the first list of butterflies and moths from Dobroudja. In this list, 113 species of rhopalocera were included. Some of these species are very interesting for habitat conservation assessment because they were never recorded in this part of the country (*Parnassius apollo*, *Lycaena alciphron*, *Lycaena hippothoe*, *Cupido osiris*, *Iolana iolas*, *Aricia anteros*, *Eumedonia eumedon* etc.). Comparing these data with modern records, the changes are evident. In this case, the diversity of butterflies is connected with the dramatical changes that took place in the forest area of northern Dobroudja after 1870. The list of Joseph Mann is a very valuable document that presents the situation just before the severe exploitation of the forests and the changes in agricultural habits (grazing, herding) in the area. The measure of this habitat changes could be estimated using the species included in the Habitat Directive 92/43/eec annexes. 29 of the species from Mann's list are included in annexes 4A and 4 B of Habitat Directive. From these species, 21 (72.4%) disappeared from the region. An overview of these species shows that 15.8% are extinct from Romania, 14.3% are critically endangered in other parts of the country, 38.1% are vulnerable, 9.5 are not threatened, 19.0 are leveled as least concern (but in Dobroudja their extinction is related with climate changes) and 9.5 of them are data deficient. Two disappeared species are enlisted in annex 4B and 7 in annex 4B of the Emergency Ordinance of Romanian Government 57/2007 concerning natural protected areas, natural habitats, wild flora and fauna in Romania. The picture of the changes could be completed with other information: in July 2014, in the same area where Mann's inventory had mentioned 57 species, we found only 34. But, from these 34 species, 8 of them were not mentioned by the Austrian entomologist in July and there are even some species not mentioned in the list - *Polyommatus daphnis* and *Arethusana arethusa*.

Uncovering the profile of twelve nuclear microsatellites in case of the Russian sturgeon (*Acipenser gueldenstaedtii* Brandt & Ratzeburg, 1833)

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Key words: Russian sturgeon, polyploidy, nuclear microsatellites, disomic loci.

The Russian sturgeon (*Acipenser gueldenstaedtii*) is critically endangered in the Lower Danube. For an exact genetic diversity study of this species there is a need for disomic nuclear microsatellites, which represent multiple tandem repeated copies of a short sequence of 2-9 base pairs. Microsatellites are distributed uniformly on chromosomes and have a high degree of length polymorphism.

Because of its approximately 250 chromosomes, the Russian sturgeon is classified in the "evolutionary scale" as octoploid and in the "recent scale" as tetraploid, this being a drawback in the discovery of disomic microsatellite loci.

In this study we analyzed twelve nuclear microsatellites (AciG93, AciG198, AnacC11, AnacE4, Aox27, AoxD234, As002, LS19, LS34, LS39, LS54, Spl106) that were isolated from different sturgeon species not found in the Lower Danube. The purpose was to determine the percentage of disomic loci and to shed light on the polyploidy level of the Russian sturgeon. The microsatellites were cross-amplified in several standard PCR reactions. The fragment analysis was performed on ABI PRISM®310 Genetic Analyzer (Applied Biosystems), and the raw profiles were observed with the program GeneMapper®IDv3.1 (Applied Biosystems).

The results show that eight of the twelve analyzed microsatellites have a tetrasomic profile (AciG93, AnacC11, Aox27, AoxD234, LS19, LS34, LS39, LS54), one has an octosomic profile (As002), one with a trisomic profile (AnacE4), and two have a disomic profile (AciG198, Spl106). Of the two disomic loci discovered, AciG198 has just two fixed alleles and it's not suitable for a genetic diversity study. Spl106 has alleles ranging between 234 and 246 base pairs.

This type of study is important in uncovering disomic microsatellites that help in the genetic diversity analysis. Other motives for genotyping are in differentiating between species, correctly classifying individuals, and determining the level of inbreeding in case of natural hybrids.

Thermal rudd (*Scardinius racovitzai* Müller, 1958) ex situ conservation project. Captive breeding by controlling environmental factors

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Key words: Fish, endemic, captivity, propagation, environment, spawning.

An ex situ conservation project is developed during 2013 – 2014 as an urgent action for preserving samples of genetic diversity from the endemic thermal rudd population in Peţea Natural Reserve, "Ochiul Mare" Lake, near Oradea, northern-western Romania. The project is financially supported by The Mohamed bin Zayed Species Conservation Fund.

The experimental model applied for ex situ conservation of this fish took into account several preceding and decisive factors for fish propagation: broodstock catching and preparing, its physiological status, the presence of individuals of both sexes, identification and induction of essential environment factors for spawning, slow and gradual increasing of daylight intensity and duration (11 hours during February in the natural distribution area of the fish), as well as a slow and gradual decreasing of water temperature (Abraham, 2007) (according to the natural conditions in the Ochiul Mare Lake during winter and spawning season, respectively). All these factors allow optimal conditions for eggs fecundation, hatching, larvae and juveniles rearing, and preparing of fish for re-introduction in natural habitat.

Four experimental variants were applied in order to assess the effect of environment changes on the reproductive performances. Some aspects with special relevance for ex situ fish conservation and propagation are discussed. These include: light and temperature changes that induce the reproductive response in fish, multiple spawning strategy of fish reproduction, the length of the spawning season, ovulatory/spawning rhythm, the eggs hatching time depending on water temperature, the duration between hatching and yolk absorption, and the fecundity/hatching/surviving rates of larvae until the 14 -18 days age.

The discussed data complete the present knowledge of the biology of this species and could be available for future projects needed to allow the population reinforcement, the restoration of the thermal ecosystem and the survival of the critically endangered species form "Ochiul Mare" Lake.

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Ex situ conservation for endangered species: Getting the know how – A case study involving *Dolichophis caspius*

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Key words: ex situ conservation, artificial incubation, sex ratio, juvenile fitness.

The global decline of the amphibian and reptile species has led to the need for active conservation methods, which sometimes involve programs of reproduction in captivity and repopulation. The *ex situ* conservation efforts often encounter fundamental gaps in the knowledge of the biology and ecology of the target species, which can lead to the failure of the respective programs. These gaps are caused both by the legislation, sometimes restrictive and ambiguous in terms of the actual work and experimentation with endangered species for the purpose of accumulating fundamental knowledge, and by the difficulties related to the cryptic behavior of the respective species, and often by the rarity of the individuals.

In view of determining the reproductive parameters of the species *Dolichophis caspius*, two clutches of eggs, from females recovered from people that kept them illegally, were laid in captivity and incubated in 2012 and 2014, respectively. In both cases, the females had been captured after mating, and the oviposition occurred in the experimental terrariums, subsequently to the recovery of the individuals. After oviposition, the females were tested for endo- and exoparasites and then released in locations known for their *Dolichophis caspius* populations. All the juveniles resulted from the experiment were analyzed biometrically and, after the first shedding, they were released in the same locations as the females.

The results obtained justify the critical importance of temperature and humidity both in terms of the reproductive success (percentage of hatched eggs) and the fitness of the juveniles resulted, and also of the sex ratio. Our data also emphasize the existing correlations between the age and the general proportions of the female, the total number of eggs laid and the size of the hatched juveniles.

Hunting management of game birds in the Special Protection Area ROSPA0071 Lower Siret Meadow and at national level (Romania)

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Key words: avifauna, hunting, management, Lower Siret Meadow, Special Protection Area, Romania.

In Romania, the assessment of hunting species populations is based on technical instructions which does not include specifications for the representatives of the Anseriformes order, species that are subject to hunting and which in some cases are also protected in Special Protection Areas, including ROSPA0071 Lower Siret Meadow. The lack of well-established technical rules led to a conflict situation in Romania, where, for some bird species, in the hunting season 2014-2015 more individuals that actually exist nation widly can be legally hunted. Several Natura 2000 sites, which have as their object of protection bird species listed in Annexes 5C and 5D of Emergency Government Ordinace no. 57/2007, are subject to hunting activity. The species can thus be harvested inside protected natural areas or in their immediate vicinity, without taking into account the existence of protective measures for certain species, which could lead to significant negative changes in population numbers of the species subject to conservation. Furthermore, legislation in Romania has a very simple procedure for authorizing hunting activity, without a detailed assessment of the impact on bird species populations, subject to conservation interest.

Analyzing the numbers of individuals present in the standard form of ROSPA0071 Lower Siret Meadow and those estimated from the results of surveys made by the Custodian of the site in the period 2010-2014, compared with those approved for harvest, we conclude that the hunting activity can lead to degradation of the conservation status of these bird species.

Seasonal dynamics and frequency variations in bird species from the protected area Dumbrăviţa (Braşov, Romania)

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Key words: seasonal frequency variation, seasonal dynamics, stopover point, *Ardea alba*, *Anas platyrhynchos*, Dumbrăviţa.

Situated in Braşov County, on Hamaradia River, Dumbrăviţa artificial lake represents a major stopover point, within the Nature 2000 Sit ROSPA 0037. Anthropic and climatic factors have impacted on the 180 ha area, leading to a complex ecosystem, hosting 114 bird species, out of which 14 are listed in the Appendix I of Birds Directive. This study focuses on the importance of Dumbrăviţa Lake for major avian migration routes, assessing the impact of its dualistic status (fishing complex and protected area) on certain cynegetic and protected species.

From July to April, in two different research seasons (2009-2010, 2013-2014), weekly observations were made, from five counting points. Data assessment revealed important frequency increases - for *Anas platyrhynchos* (100% in 2014) and *Ardea alba* (80% in 2014), associated with phenology changes for *Cygnus olor* (first nesting record in 2014). For the Mallard and the Great Egret, higher winter temperatures could have favored the high frequencies and also caused a preference for the Dumbravita lake on their migration route.(600 malards counted in January 2014). Seasonal dynamics recorded an increase of the population size for the protected species *Tringa glareola* and *Ardea alba*, especially during the fall passage (twofold increase for the Great Egret in September 2014) correlated with a decreased water level, alongside the formation of new feeding places on the northern shore. Consequently, new habitat distributions were registered for the aforementioned species. On another hand, hunting influenced Mallard population size, causing its decrease during the hunting season (50 individuals in October). Negative population and frequency trends were also recorded for *Charadrius dubius* (40% in 2009; 9.09% in 2013), geared by loss of *Typha-Phragmites* communities on the northern shore.

The importance of Dumbrăviţa Lake as a stopover point and nesting site, could be sustained by management solutions regarding the amphibious habitat, controlled decrease of water level and limitation of the human impact over the area.

A bat mortality case study in a wind farm in Northern Dobrogea, Romania

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Key words: bat fatality study, wind farms, ultrasound monitoring of bats, bat migration.

During the last five years, the south eastern part of Romania has been subject to rapid wind farm energy development. Green energy is considered environmental friendly, but it can also have a direct impact on birds and bats. Our case study involves a one year monitoring at a wind farm near Babadag, Tulcea. Results show that sedentary and potential migratory bats are dying at the wind turbines, mainly due to barotrauma, in low wind and high temperature conditions. The late summer period, which recorded a mortality peak, also coincides with the beginning of the migration season, and the emerging of young bats from the roosts.

In order to identify the areas where bats are more active, a mobile acoustic monitoring has been carried within the wind farm and its vicinities. A static detector was also installed at the base and in the nacelle of a wind farm. It showed periods of high activity that were correlated with the mortality results in the field. The species that recorded mortality values were: *Pipistrellus nathusii*, *P. kuhlii*, *P. pipistrellus*, *P. pygmaeus*, *Nyctalus noctula* and *Vespertilio murinus*. Small *Pipistrellus* species are residents, with mortality values and ultrasound contacts distributed throughout the year, while the larger species gather mortality values starting with late summer, which may indicate migration or simply a shift in diet, towards greater heights. The corrected mortality values for searcher detection accuracy and scavenger removal reached a mean of 2.26 bats/MW/year.

The spatial approach, based on the ultrasound acoustic monitoring, land use, and other important elements for bats, such as linear landscape elements or potential roosts, helped to isolate areas where bats are more likely to be killed by the wind turbines. The approach may be useful in future pre-construction assessments, capable of influencing spatial positioning of wind farms in the landscape.

Comparative diet analysis of the Eurasian otter (*Lutra lutra* Linnaeus, 1758) in two different habitats: Putna - Vrancea Natural Park and Lower Siret Valley Natura 2000 Site, Romania

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Key words: Eurasian otter, comparative ecology, diet analysis, mammals, Mustelidae, carnivores.

The Otter (*Lutra lutra*) is a semi-aquatic carnivorous mammal that has one of the widest distributions of all Palearctic mammals, due to its ability to inhabit a wide variety of wetland habitats from Eurasia.

In Romania, the Otter uses as habitat a wide range of ecosystems: highland and lowland lakes, rivers and streams, as well marshes, riparian forests, delta and coastal areas. All these habitats determine a high variability of food items that compose the otter's diet.

The diet content of Eurasian otters was studied based on spraint (excrement) analysis (n=174 samples), for a period of three years, from December 2012 till July 2014, in Putna-Vrancea Natural Park (n=118 samples) and Lower Siret Valley Natura 2000 Site (n=56 samples), south-east Romania.

The Relative Frequency of Occurrence (RFO) and Percentage Frequency of Occurrence (PFO) were callculated for the spraints collected from two different areas of study.

Fish (RFO 34.8%, PFO 88.9%) and amphibians (RFO 24.9 %, PFO 63.5%) were the primary food for otters in Putna-Vrancea, while in Lower Siret Valley, fish (RFO 36.1%, PFO 67.8%) and crayfish (24.7%, PFO 46.4%) formed the bulk of the other's diet.

Fish consuming was high,durring all seasons in Putna-Vrancea, except the winter. In Lower Siret Valley, the highest fish consuming was found in autumn and the lowest in the summer.

In Putna-Vrancea, amphibians were eaten more frequently in the spring, while, in Lower Siret Valley, they were consumed during summer.

Crayfish has been the primary food of otters from Lower Siret Valley in summer time, while, in Putna-Vrancea, crayfish remains were not found in the spraints.

Mammals, birds, reptiles, molluscs, insects and plants were consumed at low levels in Putna-Vrancea and Lower Siret Valley.

Our results indicate that the otter feeding ecology is strongly influenced by environmental factors of ecosystems in which otters live.

The Eurasian lynx (*Lynx lynx*) in the Italian Alps: past and current status of the most threatened large carnivore in Italy

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Key words: Lynx, Italy, Alps, trend, past and current status.

Eurasian lynx (*Lynx lynx*), one of the large carnivores present in Europe together with wolf (*Canis lupus*) and bear (*Ursus arctos*), was exterminated in several parts of Europe during the 18th and 19th centuries by human persecution and environmental changes. Afterwards, with a widespread reintroduction program, it has recolonized part of the old areal after almost 100 years.

Important ecological indicator, its presence in the ecosystem complete and support trophic chain. Nevertheless, the species needs large home range, shelter area and presence of prey species, mainly wild ungulates; currently, in Italy, there are these conditions but Lynx is still threatened.

Historically widespread in the Alps, the Lynx started to decline in late '800 and disappeared completely from Italy and the entire Alpine area until 1930's. Absent for fifty years, the first individual was detected in Italy (Trentino Alto Adige) in 1981. The individual came from a nucleus generated by reintroductions made in Central Europe, between 1970 and 1983. Currently, 10-15 individuals are estimated to be in Italy.

Several factors are leading Lynx population trend. In this study, we analysed forest cover, prey abundance, number and size of protected areas, connectivity among suitable habitat, human presence and level of poaching. Habitat fragmentation and a high level of poaching represent the main variables that are limiting the recolonization of Lynx in the Italian Alps.

Winter diet of wolf (*Canis lupus* L., 1758) in relation to prey species availability in the Romanian Carpathian Mountains

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Key words: wolf, *Canis lupus*, winter diet, wild boar, Carpathians, Romania.

At European level, wolf diet has been subject to numerous studies, and local and regional variations have been observed. Understanding wolf's feeding habits is of highly importance, especially for proper substantiation of management measures. Although the Carpathian mountains are home-range to one of the greatest wolf populations in Europe, reliable data about wolf diet in Romania are scarce.

Winter diet composition and prey preference of wolves in Vrancea Mountains was assessed by scat analysis. From November 2013 to April 2014, 99 wolf scats were collected on pre-established transects (summing up to 450 km in length), and analysed. The samples were washed and filtered through sieves with 0.5 mm meshes. Prey remains were macroscopically identified using a reference collection of mammal hairs. When necessary, microscopic identification by hair structure (medulla and cuticula) was used. Wolf diet was determined by frequency of occurrence of prey items (%occ). Ivlev's selectivity index (D) was used to assess if prey is consumed in proportion to its abundance. Relative abundance of wild ungulates (number of observed tracks/number of kilometers) was assessed by Kilometric abundance index (KAI).

Among four wild ungulates (Red deer *Cervus elaphus*, Roe deer *Capreolus capreolus*, Wild boar *Sus scrofa*, Chamois *Rupicapra rupicapra*) present in the area, cervids were more abundant ($KAI_{cervids}$ = 1.06 tracks/km), followed by wild boar and chamois ($KAI_{wild\ boar}$ = 0.76 tracks/km, $KAI_{chamois}$ = 0.03/km). Nevertheless, wild boar was the predominant prey species (%occ = 70.59) in wolf's diet. Cervids followed on the second place (%occ = 20.59), whereas other prey species seemed to be less important in the wolf diet (%occ = 8.82). Wolves showed a strong preference for wild boar (D = 0.65), as opposed to other areas in the Carpathian range (Slovakia, Poland), where cervids clearly dominate the wolf diet.

Kin-related social organization among food-conditioned brown bears in Băile Tușnad, Romania

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Key words: brown bear, food-conditioning**,** kinship, hair sampling, matrilinear assemblages, Romania.

Kin-related social structures have been documented in many gregarious animals, even for solitary mammals as the bear. It may influence population dynamics by means of reproductive success and survival. The mechanism behind this demographic entity seems to be sex-biased dispersal among these polygynous mammals. Still, it is not clarified if the aggregation of kin has a positive effect on the inclusive fitness of female bears. Former studies could indeed identify local clusters of genetically related individuals whereas other matrilines were dispersed. But matrilinear assemblages might only exist in habitats with sufficient food resources. Therefore one of the purposes of this survey was to analyze the kin-related social structure among food-conditioned bears in Băile Tușnad and find out if multigenerational clusters in such human-bear conflict areas where food resources are abundant exist.

Besides developing such a kin scheme, our objectives were to obtain a bear ID data base with sex and age profiles. We set up 16 fixed hair traps (photo-traps) on 23 km^2 that were weekly baited and verified and we collected faeces from April until December 2013. For genetical analyses we obtained a total of 98 hair samples (83 from hair taps, 6 captures, 8 dead bears, 1 injured individual) and 21 scat samples. We could identify at least 43 different genotypes (22 males, 20 females, 1 unknown sex). 2 individuals could be possible matches with others. 6 individuals (3 males, 3 females) were recaptured at least more than once.

Due to monitoring, we assume 12 bears being "full-time residents" in Băile Tușnad, having their home ranges established in the area. Thus, 33 individuals used the area at least for crossing. Our preliminary results clearly proof the importance of the ecological corridor around Băile Tușnad and its function as a wildlife migration zone connecting the Eastern and Western mountain range.

Brown bears *vs.* farmers? Whose strategy is better?

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Key words: brown bear, Romania, damage, conflict.

The multi-functional landscape of Romania Eastern Carpathian Mountains is considered to have an important role in maintaining the actual brown bear population. Characterized by a development of livestock farming and agricultural activities due to the accessibility to European financing, the Southern part of the Eastern Carpathian area is recognized as the area with the highest density of brown bears. Without considering the ongoing bear habitat degradation, the increasing of damage is explained by local people with the boost of the brown bear population size. During 2007-2013 we registered 704 damages made by brown bears to livestock, crop fields, bee hives and orchards. Each registered conflict was analyzed considering the time of occurrence, type of damage, distance from forest patches and human settlements, presence of reliable protection systems and estimated brown bear density.

Over 73% of the damage were on livestock half of them involving the killing of bovines during grazing activity. The distance from wood side was an important factor, over 60% of damage being made at a distance of less than 400 m from the tree cover. At the same time, almost 60% of damages occurred at a distance less than 1500 m from villages. Overlapping the two ranges we can say that some areas have a higher potential of damage occurrence and need more attention in planning grazing activities. Considering the size of the killed animals, the attacks on close vicinity of the villages were targeting small animals like birds, rabbits, swine, sheep and goat suggesting the fact that the size matter when the survival is the most important aspect. Just 18% of all damages were reported on agricultural land, mostly on corn field. In the studied area, the density of bears seems to have a low importance on damage occurrence and frequency, other factors being determinant for the conflicts situations.

Biological diversity of the Carpathians Mts. Same problems of evaluation and conservation strategy

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Key words: biodiversity evaluation, conservation strategy, bats, virtual and real diversity.

Introduction. Biodiversity is the diversity of life forms on Earth manifesting itself at the species, ecological and genetic levels. This concept includes diversity of species, biocenoses, landscapes, ecosystems and genes. Biodiversity is a factor shaping the biosphere, ensuring the normal functioning of the natural environment and directly influencing human living conditions. Sustaining biodiversity is the most basic task of the environmental protection, both at the local and at the international level

Study area. The Carpathian Mountains are the Europe's largest mountain range (approx. 1,500 km across seven countries) and a natural treasure of global significance. They support Europe's largest remaining area of virgin forest, many endemic species of plants and significant populations of brown bears, wolfs, lynx etc. A rich cultural heritage reflects centuries of human settlement and history. The actual profound social and political change faces this area with unprecedented challenges.

The problem. According to the Millennium Ecosystem Assessment, the total number of species of the Earth ranges from five to 30 million, and only about 2 million species have been formally identified. Knowledge of World fauna is unevenly balanced (and in the Carpathians also). The known number of species is highly biased in favour of the larger, more charismatic plants and animals, notably vertebrate animals and vascular plants. Most of the world's species at risk of extinction are neither particularly attractive nor obviously useful, and consequently lack conservation support. We have to be aware that in the majority of cases biodiversity, defined in such a way, is in some sense "Virtual" as it depends on the degree of fauna research, and in the case of many ecosystems it leaves much to be desired.

Case study. A good example of close relation between "Virtual" and "Real" biodiversity are bats. In this case, the "Virtual" biodiversity is close to the "Real" ones. Between 53 European bat species a number of 33 (only insectivorous) are reported from the Carpathian Mountains. This means about 70% of whole bat fauna of Europe. Generally, there is a decrease in biodiversity from the south to the north. We can also observe these phenomena in the Carpathians Mountains. But recent bat fauna in the area North of the Carpathians (Southern Poland)

consists of 25 bat species, meaning about 55% of whole European bat fauna and 78% of bat fauna of the South Carpathians Mountains.

Diversity index at the α-level (Margalef's Index) is higher if, at the comparable species number, the number of individuals is lower. The similarity of hibernating bat fauna in the Southern Carpathians and in the Beskidy Mountains in Poland at β-level of diversity is low – lost from 0.28 to 0.30. Similarity of bat hibernating fauna in the Southern Carpathians is higher and equal to 0.50. It corresponds to the geographycal gradient of bat distribution in the Carpathian Mts.

The significant difference can be observed between bat fauna during hibernation and summer periods of activities. As an example, St. Grigore Decapolitul cave (in Southern Carpathians - Romania) was inhabited by bats during the summer and winter periods. Jackard Index is very low (0.25).

In case of bats, because of their behaviour which they use in different biotopes during summer activity, transitory and hibernating periods, the standard methods of evaluation of both alpha and beta diversity are not comparable, We must find new standards for quantitative evaluation of diversity of bat fauna during different periods of their activities.

Observed recently, global changes of climate facilitates stenothermal species migration to the North. This event supports the more often and earlier appearances of rare species such as the greater horseshoe bat and dynamic increase in the population of the lesser horseshoe bat in Southern Poland

Conclusions.

In the light of the Convention on Biological Diversity, its protection and the sustainable use of its components are strictly related and complementary notions. The most crucial feature of this approach is that it ensures the conservation of the natural environment as a whole, which includes rich and diverse ecosystems, poor ecosystems, and those at different stages of ecological succession as well as components that have been so far unappreciated or even deliberately destroyed.

Above all, it is necessary to give more attention to the basic study in the field of systematics and distribution of plants and animals to get basic information on the changes of biodiversity in longer periods of time.

Romanian ethnozoology as seen by Mihai Băcescu

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Key words: ethnozoology, ethnoichtyology, Romania, Mihai Băcescu.

Mihai Băcescu (MB) was not only preoccupied by taxonomy, ecology and museology, but also by the perception of the environment by common people. This direction of research was finalized by the publication of three books dedicated to Romanian ethnozoology. Since they were written in Romanian, these books are little known. As a case study we will summarize the main contributions of his first book on fishes.

In *Peștii așa cum îi vede țăranul pescar român [Fishes as seen by the Romanian fisherman peasant],* (1947) Mihai Băcescu presents a list of over 700 popular names for freshwater fishes, of which almost 500 were previously unknown. Thus over 400 names refer to 15 species freshwater species of no economic value, but widely distributed in hilly and mountain areas. For the species from the plains and especially the Danube floodplain the nomenclature is uniform. Thus, *Cobitis taenia* has in the lowlands only 2-3 popular names while the mountain sister species *C. aurata balcanica* has over 40 names. There are few names for the large species with economic importance in order to facilitate communication.

MB resumes the following principles for the Romanian ethno-ichthyology nomenclature: (i) the more widespread a species without economic value, the higher the common names; (ii) the number of names increases from the plains towards the mountains; (iii) the homonyms could be explained by geographic isolation or by some similar traits. The vitality of Romanian ethno-ichthyology is exemplified by MB by the invasive pumpkinseed sunfish (*Lepomis gibbosus)* which in less than 25 years since its introduction received over a dozen popular names.

The monograph papers of Mihai Băcescu on the perception of fishes and birds in Romania represent a major contribution to ethnozoology, but the language barrier limits its accessibility in the international literature. A database on Romanian ethnozoology hosted by the museum could represent an important contribution and allow dissemination of this valuable knowledge.

POSTER PRESENTATIONS

Hexaplex (*Trunculariopsis*) *trunculus* Linnaeus, 1758 in ancient city of Histria area

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Key words: *Hexaplex trunculus,* ancient Histria, invasive species.

On September 25th, during a monitoring survey of the sandy habitats in Histria area (ancient Greek city), in a small area with pottery garbage in the ancient city ruins, among shells of *Hinia reticulata, Cyclope neritea, Lentidium mediterraneum, Chione gallina, Cerastoderma edule* and *Donax trunculus* we identified a young specimen of *Hexaplex trunculus*. This gastropod lives in shallow waters. Studies on the diet of this predator in the Mediterranean area revealed that the snail is a generalist predator, feeding on different kind of prey, including barnacles, mytilid bivalves, oysters, other gastropod species - even other specimens of *Hexaplex trunculus*, tunicates, encrusting bryozoans and dead fishes. In the Black Sea, the prey could consist of gastropods as *Hinia reticulata* and *Brachyodontes lineatus* or *Mytilus galloprovincialis*. This species, well known in antiquity as a source for die pigment, is present in the whole Mediterranean basin, on the Atlantic coasts of Spain, Portugal, Morocco and Western Sahara. It was also mentioned (in 2002) from the Black Sea, in Crimea, and in 2008 it was found in Arcachon region (South Western France).

In this case, *Hexaplex trunculus* seems to be another alien species for both Black Sea and Atlantic Coast of France. The presence of one shell in the pottery garbage at Histria could prove at least two hypotheses:

This species was present at that time in the Black Sea, introduced in the fouling of the ancient Greek ships. In this case, this could be a proof for the "antropochorous immigration" of marine species in ancient times. Most probable, its eggs could have been transported on the hull of the ancient greek ships. Because there are no evidences of the presence of this species on the western Black Sea coast, in the case of this species we are in front of a "failed invasion".

This species was present in the Black Sea in the past, penetrated along the Eastern coast after the Bosphorus strait opening at the end of last glaciar period, with other species originated in Mediterranean sea that are today common in the Black Sea. *Hexaplex trunculus* adapted only in few particular areas – like gulfs with calm waters – and disappeared after these gulfs were closed by sandbelts and transformed in brackish lagoons.

Laelapid mites (Acari: Mesostigmata) associated with scarab beetles (Coleoptera: Scarabaeidae) in Isfahan province, Iran

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Key words: *Hypoaspis*, Laelapidae, Scarabaeidae, Iran.

Mites of the family Laelapidae are abundant in agricultural ecosystems, especially in association with scarab beetles (Scarabaeidae: Coleoptera). During this investigation, six species belonging to two genera of Laelapidae were collected and identified in Isfahan province, in the western part of Iran, during 2012-2013. The genus *Hypoaspis* sensu stricto is most easily recognized by the greatly elongated setae Z4 on the dorsal shield (3–5 times longer than J4) and greatly elongated setae on some of the leg segments. This diagnosis is distinguishing *Hypoaspis* from related genera. *Coleolaelaps* Berlese, 1914 has lateral incisions in the dorsal shield (except *Coleolaelaps abnormalis* Costa & Hunter, 1971 and *C. ferdowsi* Joharchi, 2012), 28 pairs of dorsal shield setae, Z4 not elongated, tarsus II without subterminal spines, and seta h3of normal length. *Mumulaelaps* Clark, 2012 has 22 pairs of dorsal shield setae and Z4 not elongated; and *Promacrolaelaps* Costa, 1971 has 30-31 pairs of dorsal shield setae, and tarsus II without subterminal spines. All identified species and their hosts are listed below: *Coleolaelaps costai* Joharchi & Halliday, 2011 ♀ [*Polyphylla olivieri*]; *Hypoaspis integer* Berlese, 1911 ♀ [*Polyphylla* sp.]; *Hypoaspis maryamae* Joharchi & Halliday, 2011 ♀ [*Polyphylla olivieri*]; *Hypoaspis pentodoni* Costa, 1971 ♀ [*Polyphylla olivieri*]; *Hypoaspis rhinocerotis* Oudemans, 1925* ♀[*Oryctes* sp.]; *Hypoaspis terrestris* (Leonardi, 1899) ♀ [*Polyphylla olivieri*].

The first report of *Bryobia rubrioculus* Scheuten (Acari: Tetranychidae) on *Geranium* in Iran

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Key words: frequency, Iran, *Geranium*, the brown mite.

The brown mite is one of the most important species of the family Tetranychidae. It is reported from Iran and around the world on some host plants. In 2013-2014, for the first time, it is observed on a plant *Geranium molle* in Bu Ali-Sina University, Hamedan Iran with a remarkable frequency more than on sweet-cherry, sour-cherry, apple and plum. Regard to this, recently the mite has been populated in some parts of Iran particularly in Hamedan. Therefore, the applied of natural enemies and other management methods would be considered to control mite for its sizable increasing on new hosts.

Some salticid spiders (Araneae: Salticidae) collected during "Dakhla" (2012) and "Merzouga" (2013) scientific expeditions in Morocco and notes on their distribution

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Key words: Araneae, Salticidae, new records, Morocco, scientific expeditions, North Africa.

"Grigore Antipa" National Museum of Natural History maintains a long tradition in organizing scientific expeditions in various parts of the world focusing on biodiversity and specimen collecting. The most recent expeditions had a more focused research interest concerning the biodiversity of areas bordering the Mediterranean basin. The "Dakhla 2012" and "Merzouga 2013" scientific expeditions, were organized on the Moroccan territory, within the periods March - April 2012 and May - June 2013, both in partnership with the Oceanographic Exploration and Marine Environment Protection Society „Oceanic Club" (Constanța, Romania), SEO/ BirdLife, Morocco programme, the Research Group for Bird Protection of Morocco – GREPOM and „Institut Scientifique (Université Mohammed V-Agdal), Rabat.

Scientific research on the spider fauna of Morocco was marked by the works of Eugene Simon and Jacques Denis prior to the 1970s, with J. Denis especially keeping track of the subject with his "Notes d'araneologie Marocaine" that contained bibliographic lists and new faunistic/species records. After the 1970s the published research pertaining to the Moroccan spiders consists mostly of papers focusing on certain spider genera and families or on distribution data for some (also Moroccan) species and genera that were the subject of reviews. To the best of my knowledge there is no recent work concerning the entire spider Moroccan fauna.

The Salticidae family appears to have been less studied in Morocco being represented by 24 species and 16 genera, notably less than in the neighboring Algeria - 109 species or the other North African countries: Tunisia - 39 species, Libya - 45 species and Egypt - 75 species (Metzner 2014).

The present note focuses on two newly recorded salticid species in Morocco: one *Aelurillus* sp. and one *Mogrus* sp., the later representing also a newly recorded genus for the country. The *Aelurillus* sp. was previously recorded only from Algeria and Tunisia. The *Mogrus* sp. has been so far identified in Azerbaijan, Egypt, Saudi Arabia and Yemen, this new record extending its known range over the entire North Africa.

References:

METZNER, H., 2014 - Worldwide database of jumping spiders (Arachnida, Araneae, Salticidae). Internet: http://www.jumping-spiders.com (accessed on 11.11. 2014).

Selysiothemis nigra (Odonata) – new species for Danube Delta

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Key words: *Selysiothemis nigra,* Odonata, new record, Danube Delta Biosphere Reserve.

In the spring of 2014, during a monitoring survey of the sandy habitats in Gura Portiţa (ROSCI 0065 Danube Delta Biosphere Reserve) many specimens of a new species of dragonfly were identified. This dragonfly, *Selysiothemis nigra* (Odonata, Anisoptera), is a IUCN Red List Least Concern species. This species is present in Central Asia, Middle East and Mediterranean area. In the past, this species was probably spread all around the Tethys Sea. In the Mediterranean area, the distribution of *Selysiothemis nigra*, is very scaterred. It is mentioned from small areas in all Mediterranean basin: Portugal, Spain – mainland and eastern part, Baleare Islands, Sicilly, Malta, Sardinia, parts of Italy, Adriatic coast of Croatia and Slovenia, Greece, Cyprus, Crete. In the Black Sea area, this species is present in the southern part of Bulgaria, Crimeea region and Odessa area. Also, this species is present in mainland Russia, near Ural Mountains. For the Black Sea area, *Selysiothemis nigra* is a new species. It was mentioned only in 2002 for Bulgaria and Ukraine. In Romania, this species was mentioned only in 2013, by a British birdwatcher from Danube Delta, on his blog. This year, many specimens, all females, were observed in sandy habitats dominated by *Leymus sabulosus* and *Crambe maritima*, among other dragonfly species as *Aeshna isosceles*, *Anax parthenope*, *Anax imperator*, *Orthetrum cancellatum*, *Crocothemis erythraea*, *Ishnura elegans*, *Sympetrum vulgatum*, *Sympetrum sanguineum* and damselflyes - *Lestes macrostygma*, *Erythromma najas*, *Erythromma viridulum*, *Erythromma lindenii*, *Coenagrion* sp. The presence of a high number of specimens of *Selysiothemis nigra* on the sandbelt that isolate the paramarine lakes from the Black Sea, and the mentions of this species from Ukraine and Bulgaria suggest that this species extended their range northwards in the last decade. In this case, we are in front of a new example of climate changes induced regional evolutions.

Croatian Orthopterology: What is done and is to be done

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Key words: grasshoppers, Croatia, checklist, catalogue, novelties.

Croatian Orthoptera were never systematically studied in the past, there are only data dispersed in a lot of publications by foreign authors. In the last three years of intensive research of Croatian Orthoptera, we have added more than thirty species to the national fauna and omitted about twenty species which were included in the former lists. For example: *Rammeihippus dinaricus* was found for the very first time since the description of the species, western border of the *Leptophyes discoidalis* distribution was reported and some of the recent problems of European Tetrigidae taxonomy were solved and a new subspecies – *Tetrix transsylvanica hypsocorypha* was described. For the first time, exhaustive faunistical research was performed on Papuk Mtand Dinara Mountain.

We found a new species from the genus *Gryllotalpa,* a new species from the *Poecilimon elegans* group and Balkan species of the genus *Psorodonotus* are being reviewed. One of the oldest mysteries of Croatian and European orthopterology, the *Platycleis kraussi* case has just been solved (Skejo *et al.* in prep.), *Stenobothrus croaticus* was re-discovered, as well as *Rhacocleis buchichii*, *Barbitistes kaltenbachi* and *Paramogoplistes novaki* – all of them in new and interesting localities.

There are a lot of ongoing projects concerning the *Chorhippus biguttulus* aggregate, the Platycleidini tribe, the description of a new species of *Leptophyes* from the Dinaric Alps (Szövényi & Puskás in litt.), new cryptic species of *Oedipoda* (Hochkirch in litt.), the discovery of *Xya variegata* (and checking out for some new localities) and our major project: the first annotated checklist and catalogue of Croatian grasshoppers.

There are a lot of novelties concerning molecular, morphological, morphometrical, ecological and bioacoustical data.

Preliminary data on the phylogeography of *Pholidoptera transsylvanica* in the Carpathians

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Key words: mitochondrial DNA, molecular phylogeography, Orthoptera, alpine species.

The Carpathians are one of the largest mountain ranges in Europe and played an important role in the survival of boreo-alpine taxa during Pleistocene. *Pholidoptera transsylvanica* is an alpine bush-cricket, endemic to the Carpathians, found in Slovakia, Hungary, Ukraine with the most numerous and biggest populations located in Romania. The species is carnivorous, living in xero-mesophytic and mesophytic alpine grasslands, up to 2300 m altitude. We studied 24 specimens from each of the following seven populations: Rarău Mountains, Ceahlău Mountains, Nemira Mountains, Vrancea Mountains, Hășmașul Mare Mountains, Țarcu Mountains and Metaliferi Mountains.

The analysis of the mitochondrial DNA sequence variation in a 778 bp fragment from the cytochrome C oxidase subunit I gene was performed using maximum likelihood (ML), maximum parsimony (MP) and Bayesian analysis methods. The three different phylogenetic inference methods gave very similar tree topologies and showed that *Pholidoptera transsylvanica* from the Romanian Carpathians is monophyletic. The trees showed two well supported major clades: a northern clade (from the Oriental Carpathians) and a southern clade (Apuseni Mountains and Southern Carpathians). The clade from the North exhibits a further substructure between the specimens from Vrancea Mountains, situated more southern, and the rest of the samples from the Eastern Carpathians.

These preliminary results on the phylogeography of *P. transsylvanica* populations are consistent with the biogeographic patterns and genetic structures of other insect species in the Carpathian Mountains.

This work is funded by Romanian UEFISCDI Executive Unit for Financing Education Higher Research Development and Innovation, Grant No. 113/2014, code: PN-II-PT-PCCA-2013-4-1489.

Insights into the climatic niche of a glacial relict (*Pholidoptera transsylvanica*) using species distribution modeling

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Key words: glacial relict, *Pholidoptera transsylvanica*, species distribution model.

Listed in Annex II of the Habitats Directive (Council Directive 92/42/EEC 1992), the Transylvanian bush-cricket, *Pholidoptera transsylvanica* (Fischer, 1853) is endemic to the Carpathian Mountains and occurs mainly in xero-mesophytic mountain meadows, up to 2.300 m altitude.

Occurrence data was gathered from museum (Grigore Antipa National Museum of Natural History, Bucharest, Romania and Hungarian Natural History Museum, Budapest, Hungary) and literature surveys and by the authors personally, during field work, and trimmed to the resolution of the rasters used for modeling. In total, 224 occurrence points were used. Bioclimatic variables corresponding to current conditions (1950-2000), the Last Glacial Maximum (LGM) and Mid Holocene (MH) were downloaded from the WorldClim website (current conditions) and from the Community Climate System Model (CCSM) 4.0 (past conditions). Models were constructed in Maxent 3.3.3k software, using 75% (176 points) of the occurrence points for training and 25% (59 points) for testing. Model accuracy was tested using partial AUC (Area Under the Curve) and through expert's opinion.

Models were statistically significant above the null expectations ($z=22.8$; $p<0.05$) and the authors consider the present models a good representation of the potential species' range, therefore ensuring transferability onto past climatic conditions. Omission rate under the 10% training presence threshold was 28%. Variables with the highest contribution were Max Temperature of Warmest Month, Mean Temperature of Warmest Quarter and Precipitation of Warmest Quarter. Projections onto LGM climatic conditions confirmed the "glacial relict" status of *Pholidoptera transsylvanica*, since the climate available for the species covered the largest area in the region during this period. According to our climatic models, the species suffered a drastic reduction in its distribution during the

Mid Holocene period (approximately 7000-5000 BP) as a result of much milder climate. This reduction, coupled with low dispersal, led to the patchy distribution observed today.

This work is funded by Romanian UEFISCDI Executive Unit for Financing Education Higher Research Development and Innovation, Grant No. 113/2014, code: PN-II-PT-PCCA-2013-4-1489.

Distribution of *Opetiopalpus scutellaris* (Panzer, 1797) and the first record of *O. sabulosus* (Motschoulsky, 1840) (Insecta: Coleoptera: Cleridae) in Romania

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Key words: *Opetiopalpus sabulosus*, *Opetiopalpus scutellaris*, Coleoptera, Cleridae, distribution, Romania.

The genus *Opetiopalpus* Spinola, 1844 counts 28 species, from which 11 are recorded from the Palaearctic region. The eight species which occur in the Western Palaearctic are quite difficult to separate and, due to their scarceness, they are also rarely found.

After the investigation of the Cleridae material conserved in the collections of the Natural History Museum of Sibiu, further specimens belonging to *O. scutellaris* and *O. sabulosus* were identified.

Opetiopalpus scutellaris (Panzer, 1797) was recorded from Central and Western Europe and from the North-Western Africa. In Romania, it was recorded by Petri (1912). On the basis of the three specimens investigated, the presence of this species in Romania is confirmed.

Opetiopalpus sabulosus (Motschoulsky, 1840) has been recorded from Northern Africa and Asia, being no records for Romania. In the consulted specialised Romanian literature, any location for this species has not been found. On the basis of six specimens collected in Southern Moldavia and Dobrogea, I certify the presence of this species in Romania.

As the examined specimens were collected at least 90 years ago, the investigation of the remaining Romanian collections and the intensification of the collecting efforts are required to clarify the distribution of the members of this genus in Romania.

References:

PETRI, K., 1912 - Siebenburgens Käferfauna auf grund ihrer forschung, bis zum jahre 1910, Herausgegeben vom Siebenbürgischen Verein für Naturwissenschaften zu Hermannstadt.

The first recording of the species *Trichodes punctatus* Fischer von Waldheim, 1829 (Insecta: Coleoptera: Cleridae) for Romania

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Key words: *Trichodes punctatus*, Coleoptera, Cleridae, Romania.

The species' *Trichodes punctatus* Fischer von Waldheim, 1829 range given in the speciality literature encompasses all Romania, excepting Banat, Crişana and Maramureş historical provinces (the North-Western part of the country). Gerstmeier (1998) presumed its existence in Romania.

It's a species quite difficult to differentiate from *T. favarius* (Illiger, 1802), due to their similarity. The discreetness and the variability of the diagnostic characters, as well as the rareness of the species have let it unidentified (or mistaken for *T. favarius*) until now in Romania.

Based on a single specimen (previously mislabelled as *T. favarius*) held in the collection of the Departmental Museum from Tîrgu Mureş, Nature Sciences Section, I identified for the first time the presence of this species in Romania and have confirmed its range limits given in the literature. The species' identity (with the exception of one diagnostic character which was not found) was kindly confirmed by Dr. Roland Gerstmeier.

As the examined specimen was collected 45 years ago, it's quite probable that further specimens belonging to these species are held in Romanian collections. The differential diagnosis (provided in the poster) of the two species (including the *T. punctatus* ab. *viridifasciatus* Chevrolat 1843) could help the identification of those ones, or of the ones which will be collected in the future.

References:

GERSTMEIER, R., 1998 - Checkered beetles, Illustrated Key to the Cleridae and Thanerocleridae of the Western Palaearctic. Margraf Verlag, 241 pp. + 8 plates.

A preliminary list of the ant fauna (Hymenoptera: Formicidae) from Parâng Mountains (Romania)

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Key words: ants, faunistics, checklist, Natura 2000, new records.

Knowledge regarding qualitative-quantitative composition of the local fauna and the distribution of species among different habitat types can serve as basis for future complex studies treating the relationship between local and regional biodiversity patterns (Agosti et al., 2000). In Romania, in the case of ant communities, there is a need for complete faunistic datasets on specific areas, as the data currently available is mostly scattered or even lacking.

In the frame of this study we investigated ants from different habitats, such as grasslands and forests from the Natura 2000 site ROSCI0188 Parâng. Ants were sampled by hand collecting from June to August 2014.

We identified 16 ant species belonging to two subfamilies: Formicinae (10 species) and Myrmicinae (6 species). Most of the species are common for the ant fauna of Romania. The species covered a wide spectrum ranging from open habitat species, such as *Myrmica scabrinodis* Nylander, 1846 *Lasius flavus* (Fabricius, 1781), to forests species (*Myrmica ruginodis* Nylander, 1846*, Lasius platythorax* Seifert 1991) and ubiquistic species, such as *Myrmica rubra, Lasius niger* (Linnaeus 1758), *Formica cinerea* Mayr 1853 and *Tetramorium* cf. *caespitum*. We also recorded typical mountain species: *Manica rubida* (Latreille 1802), *Formica lemani* Bondroit 1917 and *Leptothorax acervorum* (Fabricius 1793). A particular interesting record was *Lasius mixtus* (Nylander, 1846), which has not been reported from Romania for almost 50 years.

As expected, our preliminary results show that the ant fauna of Parâng Mountains is represented by a low number of species. However, all species are first mentioned for the investigated area, improving our knowledge regarding the ant fauna composition from mountain regions.

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AGOSTI, D., J. D. MAJER, L. E. ALONSO, T. E. SCHULTZ (eds.), 2000 - Ants. Standard methods for measuring andmonitoring biodiversity. Smithsonian Institution Press, Washington and London, U.S.A.

Butterfly (Insecta: Lepidoptera) hot spots in Sibiu County (Transylvania, Romania)

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Keywords: Lepidoptera, threatened butterflies, IUCN, distribution data, Sibiu County.

In the present paper, we provide a first IUCN checklist of the butterfly species of Sibiu County. Using literature data, personal records and the collections deposited in the Natural History Museum from Sibiu, we have identified 102 red list species, including four critically endangered species: *Lycaena helle* ([Denis & Schiffermüller], 1775), *Phengaris nausithous* (Bergsträsser, 1779), *Nymphalis xanthomelas* (Esper, 1781) and *Nymphalis vaualbum* (Denis &Schiffermüller, 1775). In addition, in Sibiu County, we found six data deficient taxa, 41 near threatened, 34 vulnerable and two erratic species.

Leptotes pirithous (Linnaeus, 1767), *Lampides boeticus* (Linnaeus, 1767), *Pieris balcana* (Lorkovic, 1970), *Arethusana arethusa* (Denis &Schiffermüller, 1775), *Hipparchia statilinus* (Hufnagel, 1766), *Satyrium ilicis* (Esper, 1779), *Lycaena helle*, *Leptidea juvernica* (Williams, 1946), *Phengaris rebeli* (Hirschke, 1904), *Polyommatus amandus* (Schneider, 1792), *Erebia sudetica radnaensis* (Rebel, 1915) and *Hyponephele lycaon* (Rottemburg, 1775) have very old or questionable records and their presence in Sibiu County requires confirmation. A species with possible occurrence in Sibiu County is *Erebia oeme* (Hübner, 1804), captured near county's limit, at Capra chalet (Argeş County) (Rákosy *et al*., 2011).

Guşteriţa (52 species), Dumbrava Sibiului (50 species), Cisnădioara (27 species), Şura Mică (26 species) and Padina Goală (near Guşteriţa Hill) (24 species) have the highest abundance of red list species from Sibiu County.

References:

RÁKOSY, L., S. THOMAS, Z. VARGA, 2011 - *Erebia oeme* (Hübner, 1804) (Lepidoptera, Nymphalidae) in the Făgăraş Mountains (Southern Carpathians). Entomologica Romanica, 16: 19-22.

First contribution to the study of lepidopteran fauna (Insecta: Lepidoptera) from Stânca, Iaşi and new or scarcely known species from Moldova region (Romania)

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Key words: Lepidoptera, new records, distribution, faunistic, Romania.

With this papers the authors present a first contribution to the knowledge of lepidopteran fauna (Insecta: Lepidoptera) from Stânca, Comarna, Iaşi County. Data regarding new or scarcely known species for Moldova region (Romania) are also presented. Data from Stânca, Comarna, Iaşi County were gathered in 2014 and the locality is situated in North-East of Romania near Prut River, in the Moldavian Plain and is part of Continental biogeographical region. Here data were collected using light traps (several voltages from 12 to 160 W were used) and in this first phase almost 300 species of mainly Macrolepidoptera were recorded (3 of them being new for Moldova region).

Other data that are referring to other places from Moldova region were collected between 2010 and 2014.

The following species have been recorded for the first time in Moldova region: *Cucullia* (*Cucullia*) *gnaphalii* (Hübner, 1813), *Cucullia* (*Cucullia*) *xeranthemi* Boisduval, 1840, *Cleoceris scoriacea* (Esper, 1789), *Cucullia* (*Cucullia*) *pustulata fraterna* Butler, 1878, *Schinia cognata* (Freyer,1833) and *Cydalima perspectalis* (Walker, 1859).

For several species new collecting places and new records are added in Moldova (Romania) some being know only from historical records, such as *Cucullia* (*Calocucullia*) *celsiae* Herrich-Schäffer, 1850, *Paracossulus thrips* (Hübner, 1818), *Eublemma amoena* (Hübner, 1803), *Omphalophana antirrhinii* (Hübner, 1803), *Cosmia* (*Umia*) *affinis* (Linnaeus, 1767), *Calamia tridens* (Hufnagel, 1766), *Anarta* (*Calocestra*) *stigmosa* (Christoph, 1887), *Mesogona acetosellae* (Denis & Schiffermüller, 1775), *Chelis maculosa* (Gerning, 1780), *Hyphoraia aulica* (Linnaeus, 1758), *Pheosia gnoma* (Fabricius, 1776), *Dolbina elegans* A. Bang-Haas, 1912, *Hyles hippophaes* (Esper, 1789), *Eriogaster* (*Eriogaster*) *lanestris* (Linnaeus, 1758), *Lemonia dumi* (Linnaeus, 1761), *Gnopharmia stevenaria* (Boisduval 1840), *Eilicrinia cordiaria* (Hübner, 1790) and others.

Cydalima perspectalis (Walker, 1859) appears to rapidly spreading in Romania, this species being captured for now from 2 areas in Iaşi city.

Biometric data on 4 fish (Actinopterygii) species from the western coast of the Black Sea

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Key words: fish, Black Sea, biometric, Romania.

Length-weight relationships parameters represent an important part in fish stock assessment studies and for population fitness studies. Four fish species (Actinopterygii) were collected and measured from the Romanian coast of the Black Sea, mainly from the Constanta harbor. The study was undertaken between April 2013 and September 2014. The fish were caught using baited lines and, after capture, they were kept on ice until the identification and measurements were performed. Total length, standard length, head length, height and width, body height and width, tail height and width, mouth height and width, preocular, eye diameter and postocular distances and weight measures were measured with a precision of 0.01 mm and the weight with a precision of 0.1 grams.

The four fish species studied are: Pontic shad (*Alosa immaculata*), Long-finned grey mullet (*Liza aurata*), Mediterranean horse mackerel (*Trachurus mediterraneus*) and Round goby (*Neogobius melanostomus*).

In the case of the *Neogobius melanostomus* it was also possible to identify the sex of the specimens and thus to analyze sexual dimorphism. From *Alosa immaculata* it was possible to identify the age of some individuals and to correlate with the biometric data, but this was not possible for *Liza aurata* due to the lack of visible rings on the scales of the studied individuals.

Carassius gibelio - Life history and evolution

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Key words: mtDNA, invasive routes, natural spread, gene flow.

Hydrographic basins connection allowed the spread of many fish species from their native areas to adjacent territories. They most likely, became the dominant invasive species in that area. Prussian carp (*Carassius gibelio* Bloch) is probably the dominant invasive species of the last decades in south-eastern Europe and in some cases it has become the native species in many lakes across the Balkan Peninsula and Turkey. Regarding its origin, *C. gibelio* is considered to be native in an area between East-Central Europe and Siberia or heavily introduced from eastern Asia since the 17th century. The invasive expansion of Prussian carp in Europe is commonly considered to have taken place through the lower basin of the Danube, in 1912. From here, through the network of its tributaries and adjacent hydrographic basins it reached Loire Basin. The aim of this study is to infer the life history of *Carassius gibelio* in Eurasia. Mitochondrial marker, the cytochrome b gene, was used to detect population structure, genetic diversity and its evolution. Also, the migration pattern in Asia and the invasive route in Europe were predicted using a combined matrix that contains two geographical traces and the population's genetic signature. Our results suggest a natural spread process in Asia starting from three native basins. In Europe, we observed multiple points of anthropic introduction in Eastern Europe, from where it adopted a fast invasive behaviour. The main point of invasion for Western Europe seems to be the Danube basin, which presents the highest genetic diversity within Eurasia.

First complete observations of the avifauna for the Natura 2000 site ROSPA 0140 Scroviștea (Romania)

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Key words: birds, biodiversity, Natura 2000, ROSPA 0140 Scroviștea.

Scroviștea (ROSPA0140) is designated as a Natura 2000 SPA site for 19 species of birds of which 14 are listed in Annex I of the Birds Directive. In the same time it is a SCI site (ROSCI0224) designated for one species of fish (*Umbra krameri*), a species of amphibian (*Triturus cristatus*), a reptile (*Emys orbicularis*), two insects (*Lucanus cervus*, *Euphydryas maturna*) and two plant species (*Aldrovanda vesiculosa*, *Marsilea quadrifolia*). The SPA is located in southern Romania and has a surface of 356 ha. The main habitat of the site is the forest, occupying 95 % of the surface, the rest being represented by lakes, vineyards and orchards.

The aim of the study was to obtain data about the presence and numbers of all the 19 species of birds (*Ardeola ralloides*, *Aythya nyroca*, *Nycticorax nycticorax*, *Egretta garzetta*, *Cygnus cygnus*, *Phalacrocorax* (*Microcarbo*) *pygmeus*, *Porzana porzana*, *Porzana parva*, *Dendrocopos syriacus*, *Accipiter brevipes*, *Ixobrychus minutus*, *Ardea purpurea*, *Sylvia nisoria*, *Dendrocopos medius*, *Oriolus oriolus*, *Dendrocopos minor*, *Ardea cinerea*, *Scolopax rusticola* and *Strix aluco*) from the SPA standard data form. The inventory started from the begining of May 2013 and it lasted until April 2014, covering all type of habitats. Aquatic species were observed from vantage points and transects along the wetlands. For the raptor species, woodpeckers and passerines there were used randomly chosen points across the surface of specific habitats.

From the 19 species of birds that were mentioned in the SPA form, only 12 were registered in the site (the species that weren't seen are *Ardeola ralloides*, *Egretta garzetta*, *Cygnus cygnus*, *Porzana porzana*, *Porzana parva*, *Ardea purpurea*, and *Scolopax rusticola*). Besides these, another 87 species were recorded in the area, resulting a total of 99 bird species. From this total number, 27 are in the Annex I of the Birds Directive (19 new species should be included in the SPA form), 7 on Annex 2A, 14 on Annex 2B and 51 are not listet in the Directive.

Ornithological characterization of biotopes from the perimeter of the International Airport Craiova (Romania) and its surroundings (0-13 km)

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Key words: bird fauna, International Airport Craiova.

In our study we present aspects of the avifauna reported in the International Airport Craiova (I.A.C.) perimeter and the adjacent areas (0-13 km), comprising the distribution of bird species in the biotopes of the examined area, their relation with the living environment and the risk degree that birds constitute for the air traffic.

Best represented in the investigated territory are bird communities typical for forest habitats (67 species), aquatic and semi-aquatic habitats (47 species are typical, and about 16 species are accessory). In the biotopes of agro-ecosystems and of semi-natural or artificial grasslands, preponderant in the area of I.A.C. and on large areas of the adjacent sector (0-13 km), we identified a total of 33 species, of which 8 species were typical (birds that feed and reproduce in these types of habitats) and 25 species were accessory (birds that come in the biotopes only for feeding).

The biggest threat for air traffic is caused by birds which are stationed in large groups in the area of the I.A.C. or transit the sector in big flocks (*Columba livia domestica*, *Sturnus vulgaris*, *Corvus frugilegus*, *C. monedula* etc.). A particular risk is also derived from large and/or medium birds (*Ardea cinerea*, *Buteo buteo*, *Falco tinnuculus*), which fly solitary or in small groups (2-5 individuals) over the I.A.C. or in its immediate vicinity.

Bird surveys and new distribution records in Jaintia Hills, Meghalaya, India

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Key words: Meghalaya, Jaintia Hills, bird survey, distribution.

From the total Indian avifauna consisting of 78 families with 405 genera and 2110 bird species and subspecies reported so far, a number of 57 families with 232 genera and 540 species and subspecies were reported from Meghalaya from about 27 precise localities spread all around the state (Alfred, 1995). Some other authors consider that the avian fauna of Meghalaya consists of about 644 species (Lepage, 2013 using Clements et al., 2013). Due to the insufficient precise distribution data are available for many of these species, future studies are required.

Our study was conducted in three field campaigns in Jaintia Hills, between February 2013 and October 2014. Birds were counted by direct observation in the field or were captured using special ornithological nets placed in their natural environment. After a proper identification, all bird specimens were released. A total number of 214 birds were captured. These birds belong to 58 species, 19 families (Accipitridae, Strigidae, Alcedinidae, Megalaimidae, Picidae, Columbidae, Dicruridae, Laniidae, Motacillidae, Muscicapidae, Nectariniidae, Paridae, Pittidae, Pycnonotidae, Rhipiduridae, Sittidae, Sylviidae, Timaliidae and Turdidae) and 6 orders (Falconiformes, Strigiformes, Coraciiformes, Columbiformes, Piciformes, Passeriformes).

Three new localities from Jaintia Hills were investigated and added to the general distribution maps of different bird species. We performed bird surveys in the vicinity of the localities. We identified 28 species around Khahnar village, 30 species for Shnongrim village and 13 species for Kharkhana village.

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Ethological aspects regarding the breeding of the long-eared owl (*Asio otus* L.)

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Key words: territory, nest, calls, parents, adoption, flight.

This study aims to present some breeding aspects in the long-eared owl (*Asio otus* L.) based on preliminary ethological observations made on five pairs of long-eared owls established in the Tătăraşi neighbourhood (Iaşi) during the 2010-2013 period. A first aspect taken into consideration concerns the relationship between this species and the corvids at the beginning of the breeding season, respectively in March, when it occupies the latter's nests in order to lay eggs.

In spring 2014 we investigated the relations within the family group in the long-eared owl in the Tătăraşi Park while running an experiment of rehabilitation of a hand-reared juvenile. Separated accidentally from its family (which was nesting in the Copou neighbourhood), on the 22nd of May 2014, the above mentioned juvenile acquired gradually the begging behaviour at meeting another family of long-eared owls in their nesting territory. The adequacy of the response to the new situation arising after fledging in this species occurred after five days, as the bird had relied on its hand-reared initially. Our experiment resulted in mediating the adoption of the hand-reared juvenile by the local pair of long-eared owls. Its activity in the nesting area has been noticed for a long time, including the month of August. Once rehabilitated, the hand-reared juvenile followed its foster parents and their offspring in their foraging areas, the group occasionally returning to the Tătăraşi Park, where it was spotted by the specific calls.

Usually the young would stay in the nesting area for 30 days, after which they would follow their parents out of the nesting territory. During the activity period at their nesting territory we recorded the food-begging calls of the fledged young both in Tătăraşi and in Copou (where the hand-reared juvenile came from).

Bat distribution in the Dobrogea area, Romania

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Key words: bat distribution, Dobrogea, literature review, ultrasound monitoring.

Due to its diverse landscapes, Dobrogea area presents a high abundance of bat species, having 27 of the potential 33 species identified in Romania. A literature review of bat observations revealed a study period of 110 years, competed with data added from certain environmental impact assessments, which helped build a clearer image of the species distribution and abundance in the area.

The distribution was built using a 10 km ETRS grid, which shows that high species diversity is found in areas where researchers tended to concentrate their efforts, such as the Letea forest (17), Cheile Dobrogei – Recifii Jurasici (16), Canaraua Fetii (16) and Limanu cave – Hagieni Tunnel area (12). The highest abundance of contacts was recorded for *Pipistrellus nathusii*, *Nyctalus noctula* and *P. pipistrellus*, mostly from ultrasound transects, while accidental findings were mentioned for all of the *Myotis* species, with less than 10 cases. Excluding a few *Myotis oxygnatnus* colonies in part of the above mentioned research hot-spots, no large colonies of *Myotis* were discovered in the area, also being scarce in ultrasound transects, with less than 1% occurrence rate. *Myotis* was found closer to complex natural landscapes, which include sections of forests with old trees, limestone outcrops and large water bodies. *Rhinolophus ferrumequinum*, *R. hipposideros*, *R. mehelyi*, *Miniopterus schreibersii* and *Plecotus* were found close to the limestone outcrop areas, while *Nyctalus*, *Pipistrellus*, *Eptesicus serotinus* and *Vespertilio murinus* presented a very high ecological plasticity, being found from agricultural land and artificial areas to natural landscapes. Their high abundance in ultrasound records and relatively large roosts, located in loess or limestone cliffs and some artificial areas, indicate that these species are dominant, and use the area for maternity and hibernation, but also as a migration route for population in the north east, due to its close proximity to the sea.

New data regarding distribution of bats (Mammalia: Chiroptera) from Piatra Craiului Natural Park area, Romania

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Keywords: bat species, caves, Piatra Craiului National Park.

The present paper is part of a study started in November 2012, which will continue until November 2015. Up to the moment, bats species were studied in Piatra Craiului National Park, using various methods: direct observations in underground shelters, captures using chiropterologic net at the cave entrances and recording ultrasounds along transects and fixed points using bat detector. Thus, we made observations and identified bat species, in caves and artificial tunnels located between 770 m and 1650 m altitude (Colțul Surpat Cave, Stanciului Cave, Bear's cave under Pietricica, Bats cave from Peștera village, Arșiței Cave, Uluce Cave, Cave from Cheii Valley, Tunnel with cables, Tunnel with bats from Zărnești quarry tunnel).

In all, we identified 18 species: *Rhinolophus hipposideros, Rhinolophus ferrumequinum, Barbastella barbastellus, Myotis daubentonii, Myotis myotis, Myotis nattereri, Myotis mystacinus, Myotis blythii, Myotis emarginatus, Myotis bechsteinii, Miniopterus schreibersii, Pipistrellus pipistrellus, Pipistrellus pygmaeus, Pipistrellus nathusii, Plecotus auritus, Eptesicus serotinus, Nyctalus noctula, Vespertilio murinus.* The transects were made between 749-1219 m altitude.

After 10 years since the last published data on bats species in Piatra Craiului Natural Park (Murariu, 2003; Răduleț, 2005; Gheroghiu & Murariu, 2004), we offer new data regarding their distribution and specific composition.

The species *M. daubentonii, M. nattereri, M. emarginatus, M. bechsteinii, B. barbastellus, P. auritus*, are newly identified species for the mentioned shelters from Piatra Craiului Natural Park, therefore the study improves the list of shelters in the park, with two caves investigated for the first time in chiropterologic terms: Bear's cave under Pietrcica (Săticul de Jos, Argeș county) and Arșiței Cave (Rucăr, Argeș county), situated at the outer limit of the park.

The importance of this study is also justified by the mapping of bat populations establishments and their constant presence in some underground shelters, having a role in the biological monitoring of species.

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Observation points of species *Nyctalus noctula* (Mammalia: Chiroptera) migration routes in East Romania

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Key words: bats, *Nyctalus noctula,* observation points, migration, zoogeography.

Bats migrate on learned and established routes, both between winter and summer shelters and also on daily routes in their hunting territories. Migration routes can range between a few tens of kilometers and several hundred kilometers, depending on the species.

In recent years, new info regarding bats migration along Europe haven't been published, routes being still unknown. The latest publication in this regard is that of Hutterer et al. (2005), where migration routes of different species as *Nyctalus notula, Pipistrellus pipistrellus, Pipsitrellus nathusii, Vespertilio murinus* are traced on the map of Romania, after the recapture of ringed specimens from Estonia, Hungary and Russia. The migration route for the Common noctule (*Nyctalus noctula*) is being route traced in the South of Dobrogea region. All the routes are established according to both literature data and recaptures made by specialists.

In 2010, Chachula et al. (2012) reported a spring migration route in Dobrogea region (Pietreni-Abrud, Constanţa county), based on visual observations at dusk, when hundreds of specimens were crossing the air. Other recent migration route in Romania was reported by Oana Mirela Chachula (unpublished), who observed in Dobrogea region (Issacea, Tulcea county), in 2011, migrating speciemens belonging to the same species, *Nyctalus noctula*.

In the present paper we want to report another location, where more than 200 specimens of *Nyctalus noctula* have been observed in Moldova region on October 9, 2012 (Stolniceni-Prăjescu, Iaşi county).

It is known that *Nyctalus noctula* migrates on long and very long distances in Europe, up to 1546 km (Dietz et al., 2009) using mountain ranges that cross Europe as flight paths, such as the Alps (Bontadina et al., 2014). Every recorded observation point of migrating bats is very important for the understanding of bat zoogeographic orientations and the establishment of migration routes.

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Estimation of gene flow and genetic variability in two Romanian populations of European bison *Bison bonasus*

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Key words: *Bison bonasus*, genetic diversity.

At the beginning of the 20th century *B. bonasus* was threatened with total extinction. The restauration of the European bison in captive breed centers started in 1929 with only 12 animals. The individuals included in this study came from the bison from Vânători Neamţ Natural Park and Neagra Bucşani Rezervations.

To describe genetic structure and genetic variability we used analisys of the mithochondrial cytochrome b (1140 pb), cytochrome oxidase subunit I (1470 bp) and control region (850 bp) genes sequences determined for a total of 20 individuals. The sampling proces refers to blood. The samples was loaded in Queen's Lysis buffer and stored in 98% ethanol for the DNA isolation and purification using the DNA IQ kit (Promega). The total DNA was resuspended in 50 µl Tris EDTA and was quantitatively and qualitatively determined by spectophotometry and electroforesys in 1% agarose gel. PCR was performed in 25 µl reaction volume containing GoTaq Green Master Mix , direct and reverse primers, DNA and nuclease free water. The sequencing process was performed using the Beckman Coulter CEQ 8000 Genetic Analysis System. Gene flow was tested using Bayesian assignment algorithms inferred in STRUCTURE v2.3.4 software (Hubisz et al., 2009) and it was observed the presence of 3 genetic clusters with unbalanced contributions. The total number of haplotypes was analysed in the ARLEQUIN v. 3.5 program (Excoffier et al., 2010) and was observed a total number of 16 haplotypes, two of them shared between populations. The haplotype diversity was 0.9476 and it was observed 33 polymorphic sites. It was observed 9 transitions, 12 transversions, 21 substitutions and 12 indels. Based on this studies we can conclude that the Vânători Neamţ populations present a high level of variability with 12 haplotypes, comparative Neagra Bucşani populations where was found only 6 haplotypes.

This work was supported by the strategic grant POSDRU/159/1.5/S/133652, co-financed by the European Social Fund within the Sectorial Operational Program Human Resources Development 2007 – 2013.

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On the occurrence of *Erinaceus concolor* in the Republic of Moldova

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Key words: *Erinaceus concolor*, morphology, biometry, Republic of Moldova.

In previous studies the hedgehog species from the territory of the Republic of Moldova was considered as *Erinaceus europaeus* (Cuciuc, 1969; Lozan & Scramtai, 1972; Lozan, 1975; Averin et al., 1979, 1984; Munteanu & Lozanu, 2004; Cozari, 2011 etc.). Lozan (1975) mentioned that the hedgehog from Moldova belong to subspecies *Erinaceus europaeus roumanicus* Barr.-Ham., widely spread in southern part of European USSR. Only in one paper the hedgehog is identified as *Erinaceus concolor* (Mihailenco, 1996).

In the last years a detailed study of the hedgehogs from Moldova was performed. It was studied according to external features, body and skull morphology and byometry. The material was collected all over the territory of R. Moldova. The live caught animals were measured, their sex, age and reproductive status was assessed,while for craniometric investigation the dead animals were collected, found in woods, gardens, but mostly on roads, hit by cars.

After analizing all data, it was concluded that the hedgehog individuals inhabiting the territory of the R. Moldova belong to the species *Erinaceus concolor.* After external aspect and body size it is similar to *E. europaeus*, but all the individuals had a white spot of various shape on the brest and upper part of abdomen. The analysis of cranial bones, especially of mandibula confirm our conclusion: the temporal-mandibular articulation is almost flat, coronoid process of the mandible is high and strongly curved, and between the angular and horizontal ramus of the mandible there is well pronounced dent (Wolf, 1976).

Variability in the development of some skull bones in Grass Snake

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Key words: skull, embryogenesis, variability, bones, snake.

The snake skull is of great interest due to the fact that there is loss of skull bones in the phylogeny, and snakes have the most advanced kinetic skull among vertebrates. The features of appearance and development of the snake skull bones in embryogenesis may be useful for understanding the ways of hyperkinetic skull formation. We have studied the variability of the mineralization of the skull bones primordia in the Grass snake, *Natrix natrix* Linnaeus, 1758 at successive stages of embryogenesis.

The Grass snake embryos were simultaneously removed from the clutches laid by one female, 6 to 10 in one series. If the number of eggs in the clutch was more than 10, the clutch was divided into 2 series. Embryos in one series morphologically corresponded to the same developmental stage (Zehr, 1962). We investigated 11 series (89 embryos) at developmental stages 32 to 37 (including interjacent stages +). Double stained embryos were made.

There were 3 types of variability noted in the mineralization of some bones during Grass snake skull embryogenesis. We observed the heterochrony in appearance of exo-occipital, prefrontal (stage 32), basi-occipital, (stage 32++), quadrate, basisphenoid (stage 33) bones. The embryos of the same series had different number of separate mineralization centres in vomer (stages 32++ and 33), maxillary (stages 32+ and 32++), postorbital (stage 32+), prefrontal (stage 32++), septomaxillary (stages 32++, 33 and 34+), parietal (stages 34+, 35, 35+) bones. In individual embryos there was asymmetry of the number of mineralization centers in postorbital, prefrontal, septomaxillary and maxillary bones at some developmental stages.

We assume, it's a mistake to consider that some bones in the snake skull are completely reduced. The obtained data support the fact that the primordia of the "lost" bony elements become the parts of the adjacent bones, which probably contributed to the hyperkinetic skull formation.

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Post Pleistocene radiation in *Vipera ursinii* complex inferred by mitochondrial DNA analysis

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Key words: *Vipera ursinii*, mitochondrial DNA, microsatellite, phylogeny, divergence time.

The meadow viper (*Vipera ursinii*) is a small (40 – 60 cm), mildly venomous snake with a distribution spanning across Southern Europe and spreading eastward to the steppes of China. It prefers open grassland areas and due to the anthropogenic reduction and deterioration of its habitat, it has a very fragmented distribution.

The aim of this study is to assess the intraspecific variability of the *Vipera ursinii* complex, including new microsatellite and mitochondrial DNA data sampled from populations in Eastern Romania, and to establish the possible routes for radiation after the last ice age. During the Quaternary glaciations in Europe, most species survived in Southern refugia, mainly the Iberian, Italian and Balkan Peninsulas. In each glacial period, populations diverged through selection, genetic drift and local adaptation within the isolated refugia. Radiation occurred northward during inter-glacial periods and the repeated cycles of population contraction and expansion left traces in the gene pools of local populations that can be used for historical reconstruction.

Scale samples were collected and preserved in absolute ethanol. Total DNA was isolated and the amplification of the cytochrome b gene and microsatellite locus L3 was performed in a 25 µl volume using the GoTaq Green Master Mix (Promega) and one pair of primers for each marker. The PCR products were sequenced and the sequences were included in the analysis alongside sequences downloaded from GenBank. The phylogeny and divergence time of the *Vipera ursinii* complex was inferred in BEAST v.1.7.5. The evolution of the *Vipera ursinii* complex began in the Early Pliocene (4.85 – 6.74 mya) in Central Europe, North of the Alps then spread in Eastern Europe.

This work was supported by the strategic grant POSDRU/159/1.5/S/133652, co-financed by the European Social Fund within the Sectorial Operational Program Human Resources Development 2007-2013.

CHD-Z gene as a new reliable nuclear marker used in passerine birds' phylogeny

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Key words: CHD genes, cytochrome b, myoglobin, *Sylvioidea*.

The CHD genes are widely used markers for sex determination in birds, which represent a rapid and low cost method, with applicability for a large number of taxa. The highly conserved domains and the slow evolution, make a gene, a good phylogenetic marker, property that CHD genes seems to have, and this is the reason why we ask ourselves: Is the CHD-Z gene a reliable marker for bird phylogenetic analysis? For the superfamily *Sylvioidea*, beyond the mitochondrial gene, like cytochrome b, control region or ND2 (NADH-ubiquinone oxidoreductase chain 2), a number of nuclear genes are used for molecular phylogeny, genes like: fibrinogen beta chain intron 5 (FGB), glyceraldehyd–3–phosphat dehydrogenase (GAPDH), lactate-dehydrogenase B intron 3 (LDHB), ornithine-decarboxylase exon 6–8, intron 7 (ODC1), recombination activation gene 1 (RAG1) and the mostly used myoglobin intron 2 (myo). Considering all this, the aim of this study is to test if the CHD-Z gene is a reliable tool for molecular phylogeny and population's analysis of the superfamily *Sylvioidea*. The corrected HKY distance between taxa for each gene (cytb, myo and CHD-Z) was conducted to identify the dynamics of the evolutionary rate for CHD-Z gene and its optimal substitution model was determinate to infer the evolutionary pattern. The reliability as a phylogenetic tool hypothesis was tested in terms of two criteria: the tree topology and clock rate using Bayesian Inference analysis. Our result reveal that the CHD-Z gene is a good marker for phylogenetic analysis, even better than myoglobin.

This work was supported by the strategic grant POSDRU/159/1.5/S/133391, Project "Doctoral and Post-doctoral programs of excellence for highly qualified human resources training for research in the field of Life sciences, Environment and Earth Science" cofinanced by the European Social Found within the Sectorial Operational Program Human Resources Development 2007 – 2013", University of Bucharest, Romania.

The cranial variation within genus *Erinaceus* in Turkey

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Key words: *Erinaceus*, skull, morphotype, geometric morphometrics, PCA, Turkey.

Two different hedgehog species within genus *Erinaceus* (*E. concolor* and *E. roumanicus*) are known in Turkey. *E. concolor*shows is distributed in all Anatolia, except North-West part, while *E. roumanicus* shows distribution only in North-West Anatolia and Thrace (Filippucci & Simson, 1996). They are morphologically indistinguishable however *E. roumanicus* shows uniform morphotype whereas *E. concolor* shows different morphotypes in terms of naso-maxillar suture in the skull (Kryštufek, 2002).

In this study, the skull variations of hedgehog samples (13 *E. roumanicus* and 79 *E. concolor*) from 58 localities in Anatolia and Thrace were examined. The ages of all samples were estimated from their skull shape and tooth wear. The skull variations were evaluated with morphotype analysis and geometric morphometrics.

Inskull morphotype analysis, the distribution of morphotypes for two species was shown. Furthermore, landmark technique was used for geometric morphometrics. The landmarks were digitalized from lateral, dorsal, ventral directions (view) of the skull and mandibula. The landmarks were compared with Procrustes ANOVA between two species for each direction in MorphoJ. The shape variations were observed in PCA and regression analysis.

As a result, themorphotypes were identified for both species, shape differences between species were indicated using PCA and size-dependent shape change are expressed graphically. Accordingly, there was significant difference in lateral (view) of the skull and mandibula between the two species.

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Fossil insect eggs from the Maastrichtian of the Haţeg Basin (Romania) - employment of morphometrics in taxonomical assessement

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Key words: insect eggs, reproduction trace fossils, morphometrics, Late Cretaceous.

Besides the microvertebrate remains that were sought for, screen-washing of fine-grained sediment from the Maastrichtian continental deposits of the Haţeg Basin also yielded various other mesofossils, such as angiosperm fruits or insect coprolites. Among these subordinate by-products of the microvertebrate search, some small ovoidal structures (0.8-1.3 mm long) were also recovered. These peculiar structures have pointed ends and are covered by longitudinal ridges on the outer surface. Initially considered to represent possible plant seeds, the recognition of certain features, such as a multi-layered wall and a smooth inner surface separated into a rectangular pattern, identifies these structures as insect eggs, with features closely resembling those of *Knoblochia cretacea* Hermanova et al., 2013, a Late Cretaceous – Early Paleogene Central European ichnotaxon.

Since the outer morphology of the insect eggs shows some variability, numerical methods were employed in order to verify the limits of this variability and to check wheter all specimens belong to the same ichnotaxon. Seven quantitative parameters were measured on 100 specimens, including the number of ribs, the length and width of the egg, and two dimensions for both the basal and apical projections each, identified as representing the micropyle and the operculum of the egg, respectively. The multivariate statistical methods (cluster analysis, discriminant analysis and principal component analysis) show that there are two separate groups, suggesting the presence of two different ichnotaxa: a possible new species of *Knoblochia*, and another possibly new genus. For the *Knoblochia* specimens, the statistical analysis also pointed out the existence of several morphogroups, interpreted different developmental stages of eggs belonging to the same taxon.

Tracing fossil fishes in the Lower Triassic of Poland

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Key words: fish trace, fossil, vertebrates, freshwater, Triassic, Holy Cross Mountains.

The trace fossils indicate presence of an animal even if body fossils are lacking. In the Holy Cross Mountains, Central Poland, fish traces dated back to the Early Triassic were recently found. This region yields numerous trace fossils of land vertebrates (earliest tetrapods, amphibians, archosaurs and dinosaurs) from across Devonian, Permian, Triassic and Jurassic.

All the fish traces come from the Middle Buntsandstein rocks dated back to Early Olenekian. At that time, the studied area of the Holy Cross Mountains was an alluvial plain with large meandering river systems.

Two traces come from Zalezianka and one is from Koszary site. They show features diagnostic for the ichnogenus *Undichna* Anderson, 1976. They are continuous trails of sinusoidal wave shape (interpreted as being left by caudal fin of a fish). One of the Zalezianka trails has several additional short, discontinuous side traces (probably traces of paired fins). It is difficult to recognise the certain fish tracemaker in this type of trail preservation. The other Zalezianka trail is comprised of a main sinusoidal trace intertwined by a wave of lower amplitude (probably the trace of an anal fin). It could be left by a small actinopterygian fish. In Koszary site a set of at least three distinct trails - one wavy and two straight lines, accompanied by some discontinuous traces on their sides is observed. These may come from differences in fish activity (e.g., speed, or distance from the bottom). They remain unassigned to any particular producer.

There is a limited record of fish fossils from this region and traces, though impossible to diagnose the exact producer, well document fish presence in the Early Triassic of the Holly Cross Mountains. Ichnogenus *Undichnia* is rarely found in the Triassic and the trace fossils presented here are the first fish trails described from Poland.

The pycnodont *Phacodus* Dixon, 1850, in the Late Eocene of the fossil area Turnu Roşu (Romania)

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Key words: teeth, *Phacodus punctatus*, Eocene, Turnu Roşu, Romania.

The present paper focuses on the study of fossil teeth of "pycnodont" type. The studied teeth belong to the paleontological collections - Richard Breckner Collection - from the Sibiu Natural History Museum and were collected from the Eocene limestone of Turnu Roşu.

In the present paperwork, 73 teeth are presented that show a clear ornamentation specific to the genera: "fine pits" on the occlusal surface. The *punctatus* species was previously described in the Cretaceous deposits from Morocco, Brazil, South-eastern United States and England. The identification to genera or species level is difficult when the studied material is formed only of isolated teeth.

Among the studied and illustrated teeth, some specimens present ornamentations/protrusions at the crown/root boundary about which existence we could not find any references in the consulted studies.

The specimens described in the Eocene limestones from Turnu Roşu are the first report of this genus for Romania and for the European Eocene. As regards the identification, they belong without a doubt to the *Phacodus* genus, but because this study is the first report of an Eocene species and taking into account that we only have isolated teeth, we cannot assert certainly that they belong to the *punctatus* species.

The pycnodont fish existed from late Triasic to late Eocene time. They populated shallow waters, close to the shore in subtropical and tropical seas, including the Tethys Sea. This type of environment has been reconstructed for the coastal area of the Eocene sea in Turnu Roşu area as well. In terms of biogeographical characteristics, the fish fauna from Turnu Roşu and throughout Transylvania presents tropical Indo-Pacific features.

New records of true seals *Cryptophoca* (Carnivora, Phocidae) from the Late Miocene of Moldova

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Key words: seals, Phocidae, Miocene, morphological variation, sexual dimorphism.

Moldova is the region with high diversity of Miocene true seals, mostly from the Bessarabian age, early Late Miocene) of Kishinev and nearby localities: at least, six species have been identified at present (Alekseev, 1924; Simionescu, 1925; Koretsky, 2001; Koretsky & Grigorescu, 2002). *Cryptophoca maeotica* (Nordmann, 1860) is among the best known of them. It can be easily recognized from its humerus (Koretsky and Ray, 1994). *Cryptophoca maeotica* was also recorded from other localities north to the Black Sea (Koretsky, 2001; Gol'din et al., 2012). However, the records referred to only humerus and femur, which were the most diagnosable.

We examined the collections of the Natural Museum of Ethnography and Natural History of Moldova (NMENH) and Institute of Zoology of Academy of Sciences of Moldova (IZ) originating from Bessarabian localities within Chişinău, mostly from Hulbocica. The most complete of them is the sub-complete postcranial skeleton from Mileştii Mici, which is on display in the NMENH. In addition, a partial skeleton including the skull was collected by T.O. in Mârzeşti district Orhei (collection of IZ).

The postcranial skeleton in the NMENH includes vertebrae (C7Th14L6S5Ca9), ribs, both forelimbs (partially preserved scapulae, humeri, radii and ulnae) and hind limbs (including pes).

The skeleton in the IZ includes sub-complete skull, mandible, both forelimbs (partially preserved scapulae, humeri, radii and other bones, including carpalia and digits), thoracic vertebrae, ribs and a partial hind limb. Thus, both skeletons included humerus which makes it possible to compare them with the holotype.

The preliminary conclusions of the study: *Cryptophoca* is the phocine seal, possibly related to other seals of the Eastern Paratethys; it shows morphological diversity and sexual dimorphism in body size, bone anatomy and proportions and rib structure. The skeleton in the NMENH possibly belonged to the adult female, whereas the skeleton in the IZ, to the adult male.

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Osteological analysis of the fossil megafauna from the "Paul Păltânea" Collection, History Museum of Galați County

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Key words: Neogene, Quaternary,Proboscidea, Artiodactyla.

The "Paul Păltânea" collection of History Museum of Galați County holds various unstudied specimens that belong to the Neogene–Quaternary megafaunal assemblages. Due to the information provided by the persons who found the fossil material or the donors, it was possible to accurately locate the fossiliferous sites. Most remains were assigned to members of the order Proboscidea and a few to members of order Artiodactyla.

The osteological analysis and the latest dentognathic morphometrical methodologies applied to the material from the museum collection revealed the taxonomical diversity of the fossils collected from the Neogene–Quaternary deposits from Galați County.The new information emerged from the present study shows that the analysed specimens belong to the proboscidean species *Deinotherium giganteum* and *Mammuthus meridionalis* and to the artiodactyl *Bison priscus*. One molar fragment presents morphological and morphodimensional features that might classify it as *M. rumanus*. If so, this specimen indicated the area was inhabited by two successive species of the *Mammuthus* monophyletic lineage – the basal *M. rumanus* and the more derived *M. meridionalis* – evidence supporting a continuous continental sedimentation in the area for the range of the two taxa.

This study contributes to the assessement of Neogene–Quaternary megafaunal biodiversity in the area of Galați County, adding new members to the existent taxon list (Apostol & Vicoveanu, 1970; Ilie, 2013).

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European admixture analysis inferred by Early Bronze Age human bones amtDNA sequencing

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Key words: amtDNA, Early Bronze Age, admixture, human bones.

Several ancient settlements and bone remains dated to the Early Bronze Age (EBA) were found in Eastern Romania during the latest surveys. The archaeological content of these new sites designated these remains to Yamnaya Culture. The content of discovery and the opportunities for investigating the funeral fashions offered the possibility of integrating new investigation methods and methodological approaches with appliance in Archaeology. Our goal is to provide a communication bridge between the sciences involved in such analysis. In recent years, the need to illustrate the genetic population structure at different moments in time in a certain geographic space with dynamic demographics (population movement, diverse ethnic interactions, and ranked societies) has increased. The aim of this study is to illustrate the Eastern Romanian population structure from Early Bronze Age, its dynamics and admixture process with neighbour cultures. The amtDNA isoloted from bone remains was used to infer the population structure, admixture degree and haplogroups appartenance. Hypervariable region 2 (HV2), with a total length of 304 base pairs, a widely used marker in human archeogenetics analysis was successfully sequenced. Our results assign the analysed samples to Yamnaya Culture, 2800 – 2600 BC, similar to a Bulgarian population identified in Golyamata Mogila site.

The financial support for this study was provided by the PCCA 1153/2011 Nr. 227/01.10.2012 Genetic Evolution: New Evidences for the Study of Interconnected Structures. A Biomolecular Journey around the Carpathians from Ancient to Medieval Times GENESIS.

Study on biological characteristics of *Bryobia rubrioculus* Scheuten (Acari: Tetranychidae) concerning the physiological aspects of sour-cherry

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Key words: sour-cherry, *Bryobia rubrioculus*, biology, host physiology.

Sour-cherry is economically considered the consequential fruit tree, providing a valuable and delicious fruit across the world. Recently, *Bryobia rubrioculus* Scheuten (Acari: Tetranychidae) has been increased on orchards in Hamedan, Iran. In 2013, the biological studies on this mite was conducted on the two cultivars in the laboratory and constant condition (26 ± 0.5) ºC, (L: D) (16:8), and (60 ± 5) RH, at Bu Ali-Sina university. The findings depicted that in the two sour-cherry cultivars: BG5150 and BN5148 pre-imaginal development time was 22.39 and 24.55 days, gross fecundity rate 11.55 and 8.69 eggs, and r_m assumed 0.019 and 0.017 day^{-1} respectively. Few biological parameters of the brown mite had a correlation with physiological aspects of the sour-cherry. The results would provide significant data of this mite on integrate pest management.

Prey selection and capture behavior of the Carpathian scorpion – *Euscorpius carpathicus* (Scorpiones: Euscorpiidae)

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Key words: *Euscorpius*, ethogram, prey acceptance, prey selection.

This is the first study to focus on the feeding ethology of a species belonging to Euscorpius genus. Prey selection and capture behavior of the Carpathian scorpion *Euscorpius carpathicus* (Scorpiones: Euscorpiidae) was observed in the lab over a period of 12 weeks.

Specimens were kept individually in terraria (22x12 cm) with substrate gathered from the collecting site. Natural habitat conditions (daylight period, humidity and temperature) were simulated. The behavioral components involved in prey capture were identified and an ethogram was generated. We analyzed the occurrence of prey acceptance in three different types of prey. The occurrence of different prey capture components used by each scorpion after the acceptance phase were recorded and analyzed.

The Carpathian scorpion, like most scorpions, is nocturnal and hunts the prey by using a sit and wait strategy, in which the prey is either located in the opening of the scorpion's burrow/hiding place or, on some occasions, actually bumps into the scorpion. Like most members of the *Euscorpius* genus, the Carpathian scorpion relies mostly on its strong pedipalps to capture the prey, whereas the sting is seldom used for defense purposes. Its preferred food type is comprised of Isopoda individuals, although if hungry or threatened it can attack and consume larger and more aggressive types of prey.

Changes in the Trichoptera communities from the streams and springs complex of Corbii Ciungi (Romanian Plain), between 1962 and present

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Key words: caddyflies, biodiversity, stenothermic, springs.

The paper presents a comparative analysis of the present day caddisfly communities structure with that of the previous structure of the same communities recorded about 45 years ago in several ecosystems of plain springs of the Romanian Plain, such as Valea Izvorului (Spring Valley, Corbii Ciungi) Motaş et al. (1962). Several structural parameters such as species richness, species diversity (H'), frequency of occurrence and sex ratio of some populations of adult Trichoptera were considered. Forty two taxa belonging to nine families of Trichoptera were presently identified in comparison with only sixteen taxa (adults and larvae) recorded in the paper by Motaş *et al*. (1962). Out of the forty two taxa, two are recorded for the first time in the Romanian fauna (*Hydropsyche contubernalis* McL ssp. *iranica* Mal. and *Liumnephilus tauricus* Schm.), while other six disappeared completely from the spring ecosystems studied (*Halesus digitatus* Schr., *Lithax obscurus* Hag., *Notidobia ciliaris* L., *Triaenodes bicolor* Curt., *Adicella syriaca* Ulm. and *Adicella filicornis* Pict.). In fact, only eight species of those recorded about fifty years ago were refound by us (*Beraea pullata* Curt., *Orthotrichia costalis* Curt., *Lype reducta* Hag., *Plectrocnemia conspersa* Curt., *Helicopsyche bacescui* Orgh. & Bots., *Hydropsyche bulgaromanorum* Mal. (initially recorded as *H. guttata*), *Limnephilus lunatus* Curt. and *L. flavospinosus* Stein). The disappearance of the six species from the ecosystems studied and the occurrence of many species unrecorded by the previous studies which are not characteristic to the mountainous waters, are a clear indication of the deterioration of the quality of those ecosystems, which led to a new structure of the Trichoptera communities. One of the main factors of this deterioration could have been deforestation.

It should be mentioned that few microhabitats of the cold water, characteristic of the altitudes of over eight hundred meters, remained pristine. This is proved by the occurrence of two crenobiont-stenothermal species (*Ernodes articularis* Pict. and *Beraea pullata* Curt.), which are characteristic of this type of ecosystems. The occurrence of a relatively high number of Trichoptera taxa, as environmental indicators, and the high diversity (H') of those communities which sometimes exceeded the value of three, suggest the need for those ecosystems to be protected, even if their surface area is not very large.

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Ephemeroptera, Plecoptera and Trichoptera assemblages, of the Upper Prahova River Basin (Prahova, Romania): notes on composition, structure and distribution

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Key words: Ephemeroptera, Plecoptera, Trichoptera, composition, structure , distribution.

Lotic freshwater habitats in temperate regions exist along a gradient, from small streams to large rivers. This environmental continuum is a useful axis for understanding how attributes of individuals ultimately generate structure at the level of the community (Covich, 2004). Community structure and distribution across the gradient is determined by physico-chemical factors and biotic effects mediated by ecological interactions (Gore *et al.*, 2001).

We qualitatively and quantitativeley evaluated the community structure of imature stages (Ephemeroptera, Plecoptera and Trichoptera) in 7 sampling sites in upper, middle and lower section of Upper Prahova river basin. The number of genera and taxonomic composition were compared at spatial (at hydrographic stream level) and temporal level (benthic samples were collected monthly between octomber 2011-octomber 2012, with surber sampler, 250 µm mesh size). The influence of environmental factors (dissolved oxygen, temperature, pH, total suspended solids, conductivity, current and substrate typology) in richness and abundace of EPT, were also assessed.

During the survey period we recorded 48 taxa belonging to 31 genera and 17 families of EPT orders. *Rhitrogena semicolorata* (Heptageniidae family, Ephemeroptera order), *Brachyptera risi* (Taeniopterygidae family, Plecoptera order), *Stenophylax permistus* (Limnephilidae family, Trichoptera order) were the dominant taxa in all sites. The results of canonical correspondance analysis suggested that EPT select their habitats on the basis of a factor combinations rather than isolated factors; in this interpretation dissolved oxygen, temperature and sediment types were found to have a dominant influence on the distribution mechanism.

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Ant communities (Hymenoptera: Formicidae) from old growth forests. A case study from "Izvoarele Nerei" Nature Reserve (Banat, Romania)

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Key words: ant communities, old-growth forests, *Fagus sylvatica*, The Semenic-Cheile Caraşului National Park.

Old-growth forests have attained great age without significant disturbance and, thereby, exhibit unique ecological features and might be classified as climax communities.

In Romania, there are still some old-growth forest patches, most of them found in the Southern Carpathians.

We investigated three types of habitats within the old-growth *Fagus sylvatica* forest "Izvoarele Nerei" (more than 350 years old): forest edges, forest patches and inner grasslands. Five pitfall traps were placed in each habitat. The sampling design consisted of five replications per habitat. One sampling campaign (10 days) was carried out between 27th July and 7th August 2013. The ant material was identified to species level.

Overall we identified six ant species belonging to two subfamilies: Myrmicinae (*Myrmica ruginodis* and *M. scabrinodis*) and Formicinae (*Formica lemani, F. cunicularia, F. sanguinea* and *F. rufibarbis*).

We recorded the highest number of ant species in the inner grassland sites (5 species), whereas in the forest patches we did not collect any ant species. *M. scabrinodis* was the most abundant ant species in the inner grassland sites, whereas at the forest edges *M. ruginodis* was the most abundant. The latter species and *F. lemani* were common in both habitats types. Despite the presence of ant communities at the forest edge and in the inner grasslands, it appears that the forest patches lack any ant communities.

Our preliminary results indicate that due to lack of suitable microhabitats the ant communities cannot colonize the beech forest patches.

Fish as bioindicators of the state of the environment

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Key words: fish, bioindication, tissue, specimen, population, ichthyocenosis.

Fish are used in bioindication due to their capacity to manifest different responses in dependence of the nature and intensity of environmental factors both at the sub-individual levels of integration (cell, tissue, organ, body) and at the level of population or even ichthyocenosis.

Carried out investigations revealed that in the case of sporadic and low intensive pollution, as rule, a range of reactions may appear at the sub-individual levels of integration. The changes are reversible if the impact factor is removed. Opposite, in the case of systematic pollution, which has a long time effect, the most eloquent and lasting changes are observed at higher levels of organization: populational and ichthyocenotic.

Under these circumstances, the decrease of species diversity, production potential, and the number of age groups occur. The sex structure of populations is modified, determined (usually) by the increase of share of females and the growth rate of individuals is switched into a low one (e.g. *Carassius gibelio* (Bloch, 1782), *Rutilus rutilus* (Linnaeus, 1758), *Perca fluviatilis* Linnaeus, 1758, *Abramis brama* (Linnaeus, 1758), *Cyprinus carpio* Linnaeus, 1758). Also, in the case of unstable ecological conditions the share of interspecific hybrids goes up, as was registered in Dniester River.

The pollution of aquatic ecosystems can cause multiple significant dysfunctions of the fish reproductive systems (Fulga et al., 2012). The most common disorders of reproductive function are: asymmetric development of female and male gonads, modification of their shape till an abnormal one, early sexual maturation, modification of length of oogenesis and spermatogenesis, shifting of the terms of reproductive period, mass resorption of gametes at different stages, reduction of fecundation capacity and of the share of individuals capable to reproduce, abortion of eggs accompanied by the lyses of follicular membranes, etc.

In order to assess the water quality it is very informative to combine the bioindication with biomonitoring, for example with bioaccumulation of pollutants in the organs and tissues of fish from different aquatic ecosystems.

The analysis of the content of heavy metals in the muscle tissue of fish from the Dniester and Prut rivers revealed concentrations, which are not dangerous for nutrition and functional state of fish. Thus, we may conclude that, despite of the intensification of anthropogenic pressure, these ecosystems are placed within acceptable limits regarding the concentration of heavy metals (Zubcov et al., 2013).

The study was performed within the national project 11.817.08.15A, and international projects MIS ETC 1150 and MIS ETC 1676.

Research regarding the fish communities in Drincea, Balasan, and Desnățui rivers (Danube tributaries, Romania)

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Key words: fish communities, biodiversity, stock, resemblance, Danube tributaries.

The study was carried out in three Danube tributaries, namely Drincea, Balasan, and Desnățui. The aim of this study was to assess the state of fish communities in this area and also to highlight significant ecological aspects regarding the fish communities, such as species frequency, numerical stock (N/100 m^2), weight stock (g/100 m^2), diversity and similarity of fish communities.

The biological material was sampled by electrofishing from 15 sampling sites in accordance to the European standards. After species identification, the fish individuals were biometrically processed and then released.

The species frequency ranged between 93.33% and 6.66%. The highest frequency value (93.33%) was recorded for *Cobitis taenia*, followed by *Alburnus alburnus* (86.66%) and then by *Squalius cephalus* (80%) and *Carassius gibelio* (73.33%). Regarding to the fish stocks, we found that the numerical stock in sampling sites ranged between 0.14 and 302.77 ind./100^2 the highest value being recorded for *Rhodeus amarus*. The weight stock ranged between 0.17 and 3483.33 g/100^2, the highest value being recorded for *Squalius cephalus*.

The biodiversity is quite high, as during the study period 25 fish species were identified, which amounts to 3233 individuals and 25698.6 g. Only two of the 25 fish species are non-native (*Pseudorasbora parva* and *Lepomis gibbosus*) while the rest of 23 fish species are native. The biodiversity indices reveal that the species richness is highest in three of the sampling sites placed on Drincea River. Regarding the resemblance of the fish communities we found that it has the highest value for the sampling sites 13-15 (placed on Desnățui River) and 2-3 (placed on Drincea River).

Ethological features of the amphibious feeding in the Balkan-Anatolian crested newt (*Triturus ivanbureschi* Arntzen & Wielstra, 2013)

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Key words: feeding, *Triturusivanbureschi*, food manipulation, killing move.

We used high-speed cinematography (420 fps) to quantitatively analyze the aquatic and terrestrial prey capture in 18 specimens of *Triturus ivanbureschi* (5 females, 13 males). For prey items in both experiments, we used common earthworms (*Lumbricus terrestris*) of similar size. The great differences between aquatic and terrestrial environments reflect on the prey capture mechanism. In water, newts use suction to capture and transport their prey, while on land a tongue-projection is employed. In some cases, the food manipulation was accompanied by the so-called killing moves – rapid lateral movements of the front part of the body, which serve to weaken the prey and to facilitate its transport. Our results indicated that killing moves were significantly more frequent during the aquatic feeding, compared to the terrestrial. Furthermore, in water the number of killing moves performed per single prey capture was greater than 2 (up to 4), while on land there usually was a single killing move. A suitable explanation could be that newts move with less effort under water than on land and performing killing moves on land requires considerably more energy. This could also account for the fact that animals with lower SVL/body weight ratio (e.g. heavier animals with respect to their size) were more likely to perform a killing move than those with higher ratio. There was no difference in the number of killing moves between males and females during the aquatic feeding; however, during terrestrial feeding, females performed killing moves more frequently than males, possibly because of their sturdier Bauplan.

Crowding effect in *Pelobates syriacus* tadpoles

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Key words: crowding effect, *Pelobates syriacus*, tadpole development, trigger factor.

A high risk of pond desiccation impacts tadpole development in various ways: higher temperatures, decrease in water quality and crowding effect. A previous study on *Pelobates syriacus* tadpole's response to desiccation (Szekely et al., 2010) indicated that tadpoles development and age at metamorphosis was not influenced by water level, but by water level decrease rate, and the smallest body size values related to the constant low water level could be induced by the crowding effect.

The goal of our study was to investigate the effect of tadpole density on survival and development by using different density levels.

We tested for differences in larval and metamorphs body length, larval survival rate to metamorphosis, larval partial growth rate and age at metamorphosis by varying tadpole's density levels. We found significant differences between density treatments, regarding tadpoles average length values, partial growth rate, age at metamorphosis and survival rate, with lowest values related to the high density treatment. There was no significant difference between length at metamorphosis for all density treatments. We specify the fact that from the high density treatment (n=40) only two tadpoles reached metamorphosis, and both with spinal malformations. Our results suggest that high density levels can be considered a trigger factor for developmental rate adjustments.

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Salinity tolerance in early-developmental stages in *Pelobates fuscus* (Laurenti, 1768) and *Pelobates syriacus* (Boettger, 1889) (Anura: Pelobatidae)

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Key words: salinity, embryo, larvae, spadefoots, survival, tolerance.

We tested the survival thresholds under different salinity conditions in early-developmental stages of two syntopic species of spadefoots (genus *Pelobates*) from the Black Sea coast, Romania. Water salinity of breeding and potential breeding ponds ranges from 0.5 to over 10 ‰ in the study area. We used an experimental design with three salinity treatments (moderate – 3 ‰, high – 6 ‰ and extreme – 9 ‰ NaCl), and a control (dechlorinated tap water – 0.3 ‰ NaCl). Portions of freshly deposited egg clutches were collected from the natural habitats and randomly introduced in five to nine replicates per treatment. The experiment lasted until all embryos achieved Gosner stage 25. We expressed survival as the percentage of living larvae from the initial number of eggs in each replicate.

No embryos survived in the extreme salinity treatment. Both species showed similar tolerance thresholds under moderate salinity conditions, which is in accordance with our observations in natural breeding ponds. We found differences between the species' survival in the high salinity treatment ($W=15$, $p<0.01$), with a significant lower survival in *P. fuscus* embryos. *P. syriacus* seems to cope better with high osmotic stress in early-development stages (mean survival±SD: 43.8±17.2) compared to *P. fuscus* (mean survival±SD: 3.2±2.2). We suggest that the increased salinity tolerance of *P. syriacus* explains its higher abundance in the coastal areas.

Ethological aspects of the biology of *Hyla arborea* in Republic of Moldova

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Key words: *Hyla arborea*, reproductive cycle, mating behaviour, sex ratio, r-selected species.

The reproduction is one of the life`s phase of any animal, on which depends all the initial effective of populations. For *Hyla arborea* the reproductive process is connected with individual passage from land to water medium. The reproductive cycle entails a breeding period in late spring. *Hyla arborea* breeds once a year. It begins to spawn between mid-April and the end of June. *Hyla arborea* mates with variable intensity, depending on the temperature. During the hight, maximum calling activity was registered from 10 p.m. to 3 a.m., with a peak at 12 a.m., in the meantime temperature varied between 10-15 ° C. The number of calling males is positively correlated with air temperature. The breeding population is characterized by a sex ratio biased towards males and by a high turnover rate. The development of larvae into juveniles takes 2.0/2.5 months. Juvenile mortality can be as high as 95-99%. *Hyla arborea* is characterized by axillary amplexus and aquatic oviposition. Amplexus occurs only after females have approached and made physical contact with calling males. Bigger males have a higher probability of mating (89%) than medium sized (68%) and smaller males (5%). Fertilization and oviposition are accompanied by synchronized movements of the two partners. Vocalizations play an important role both in intermale competition and in female choice. Males may use vocalizations to provide information about their size and females may use call parameters to recognize male size. The mating system follows the pattern of a typical hylid prolonged breeder with a lek mating system. *Hyla arborea* can be considered one of the most r-selected species among European anurans since population survival depends more on increased productivity than on efficiecy.

The status of *Testudo graeca* and *T. hermanni* populations in southeastern Romania

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Key words: tortoise, sympatry, abundance, sex ratio, range limit.

Recent studies found that Dobrudja region, SE Romania, hosts the northernmost sympatric populations of *Testudo graeca* and *T. hermanni*. The species were assessed as "vulnerable" and "near threatened" respectively, by the International Union for Conservation of Nature. Still, little is known about the regional conservation status and even little concerning their biotic interactions under limiting environmental factors at the edge of their ranges.

We investigated the status of *Testudo graeca* and *T. hermanni* populations from 10 sites in southern Dobrudja: Hagieni-Cotu Văii, Oltina, Pădurea Canlia, Pădurea Talaşman, Canaraua Fetei, Urluia, Şipotele, Lacul Plopeni, Dumbrăveni, Fântâna Mare. We captured a total of 391 individuals and measured their weight and carapace length. Sex and age ratios were also determined.

The overall results showed disproportions between adults and juveniles, i.e., 84.14% to 15.86%. Population of Lacul Plopeni has the lowest ratio while Oltina population, highest ratio. Sex ratio is biased towards males, i.e., 71.43% to 28.57%. Population Fântâna Mare has the highest proportion of males while population Dumbrăveni was equilibrated. *Testudo hermanni's* presence is confirmed by 7 individuals (i.e. 1.79% of all captured tortoises), found in 3 out of 10 populations: Canaraua Fetei, Urluia and Şipotele. We found the highest abundance in Hagieni-Cotu Văii site: 154 individuals, and the smallest in Lacul Plopeni: 9 individuals.

The results of our study can be used in national conservation status assesment. Furthermore, these results may represent the beginning of studies related to biotic interactions between the two species in Southern Dobrudja.

Spring passage of the birds of prey and storks in the South Dobrogea (Romania, 2013 – 2014, new data)

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Key words: birds of prey, storks, Dobrogea, migration.

The birds of prey and the storks are one of the most endegered and vulnerable species. For this reason any information concerning this species is important for their conservation.

We made many field trips in the spring of the 2013 -2014 in south Dobrogea, trying to see the migration of this species of birds. We had the chance to observe these species migrating, in high number, only in two days (one in 2013, one in 2014).

On 10.04.2013, 13.30–15.00 h, in Canaraua Fetii – Dumbrăveni, we have seen in flight (from south to north) 400 white storks (*Ciconia ciconia*) and 259 birds of prey (*Circus aeruginosus*, *Circus pygargus*, *Accipiter nisus*, *Buteo buteo*, *Buteo rufinus*, *Aquila pomarina*, *Aquila clanga*, *Hieraateus pennatus*, *Falco tinnunculus*), all together 659 birds.

On 05.04.2014, 09.20–11.00 h, in Canaraua Fetii – Băneasa, we have seen in flight (from south to north) 686 black storks (*Ciconia nigra*) and 703 birds of prey (*Circus aeruginosus*, *Circus pygargus*, *Accipiter nisus*, *Buteo buteo*, *Buteo rufinus*, *Aquila pomarina*, *Aquila clanga*, *Hieraateus pennatus*, *Falco tinnunculus*, *Pandion haliaetus*), all together 1389 birds.

Is the first time we had the chance to see so many black storks in migration in this region. It was very interesting, also, that the eagles and the storks were flying together without any problem.

These birds seem to use the canyons (Dumbrăveni and Băneasa) for their passage and are flying in high number in concetrated flocks. Both times, all birds flew in about one hour and a half, in a small amount of time.

Next years we shall try to do more observations in this area for a better knowdlege of the biology of these beautifull birds.

Stopover ecology of some migratory passerines at the Black Sea coast, north of Turkey

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Key words: migration, stopover, Kızılırmak Delta, Black Sea, passerine.

This study was conducted in the Kızılırmak Delta during autumn migration seasons between 2005–2010, in order to determine the stopover ecology of nocturnal migrating passerines. As stopover ecology is a part of migration strategies stopover duration, body mass and fat change of *Sylvia atricapilla*, *Sylvia borin*, *Phoenicurus phoenicurus*, *Muscicapa striata* and *Phylloscopus trochilus* were evaluated and analyzed to compare migration strategies in different age and sex classes.

The minimum stopover duration was calculated according to capture-recapture method. The recapture rate of studied species was as *S. borin* 5%, *S. atricapilla* 4%, *P. phoenicurus* 2%, *M. striata* 2% and *P. trochilus* 1%. The recapture rate was higher in immature birds. In sex determined species the recapture rate was higher in males. *S. borin*'s stopover duration was the longest, with 7.2 days, and the shortest in *P. phoenicurus,* with 4.2 days. The daily body mass change was highest in *S. borin* (0.19 gr/day) and lowest in *M. striata* (-0.18 gr/day).

Stopover duration and weight change differed among frugivorous and insectivorous birds. Contrarily to the literature, stopover duration of insectivorous birds' stopover lasts longer than frugivorous birds'. In autumn migration season Kızılırmak Delta serves as an important stopover for migratory birds after they have crossed the Black Sea.

We would like to thank all the ringers and volunteers taking part in ringing activities. This study was financially supported by the Ondokuz Mayıs University Project Management Office (project number F-475).

Wintering waterbird populations in Turkey and their distribution sites

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Key words: wetland, waterbird, mid-winter waterbird census, population dynamics.

Turkey's wetlands and waterbirds are unique in terms our wetlands host very important bird populations all over Europe. Being aware of this, since the '60s waterbird counts were carried out at wetlands in Turkey to reveal wintering waterbird populations. This study aims to document population dynamics and important wintering sites for waterbirds.

Data from 27 mid-winter waterbird census performed between 1967-2014 is used for evaluation.

So far, a total of 268 wetlands were counted. 177 wetlands were counted up to 5 times, while 31 are monitored regularly. Since 1990, 23 wetlands were not counted again because of drainage or degradation problems. Within the 14 Ramsar sites in Turkey Akyatan Lake, Burdur Lake, Uluabat Lake, Kızılırmak Delta and Göksu Delta were monitored regularly. Each year approximately 32% of total counted waterbirds were recorded at Ramsar sites.

Some of the important findings are: in 1968 at 35 sites about 4 million waterbirds were counted-the highest record ever; between 1986-1988 while number of counted sites increased, waterbirds showed a decrease of about 1 million. At its most important wintering area, Burdur Lake, the number of *Oxyura leucocephala* decreased significantly for the last four years, whereas increase was noted at Manyas Lake. Most important wintering area for *Grus grus* is Çukurova Delta. Since 2012 there is a significant increase of *Anas strepera* population, the reason of this increase is the increase of the population in the Kızılırmak Delta.

Since 2011 the methodology is standardized for each year and site. The standardization will allow us to have more comparable results and more accurately analysis.

Peculiarities of rodent communities and their external parasites in Balta Mică a Brăilei Nature Park

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Key words: Rodentia, community structure, fleas, mites, ectoparasite prevalence, flood.

Balta Mică a Brăilei Nature Park comprises seven isles of different sizes and vegetation cover, as well as the stripe of land to the dykes bordering both riverbanks of the Danube, dykes that favour extreme water level fluctuations.

Live traps were set in several habitats from the park. On Vărsătura (the southernmost isle) traps were placed in a mixed forest, with *Populus*, *Fraxinus*, *Salix* and *Gleditsia*, with relatively dense canopy and abundant herbaceous layer. On the Insula Mică a Brăilei (the largest island) we researched several habitats (pasture, white and black poplar plantations, riverbank, *Tamarix* shrubs). Traps were set also on Insula Mare a Brăilei, on the Danube bank, in 2013 shortly after the retreat of the flood waters.

In all were captured 80 specimens belonging to five species: *Microtus arvalis, Apodemus agrarius, A. uralensis, A. sylvaticus* and *Mus musculus.* Among the parasite taxa Siphonaptera had the highest prevalence, followed by Acarina. The habitat heterogeneity, the profound changes occurred during the last decades in the park area (building of the dykes, drainage, deforestation, extension of cultivated fields, reforestation), as well as the present fluctuations of the environmental conditions driven by the alternation of flood and drought, cause a series of peculiarities of the fauna, including the rodent communities. Thus, total densities are generally low; *Microtus arvalis* is not only dominant in the poplar plantations, but also abundant in the mixed forest, and in open areas seems to be favoured by the presence of *Tamarix* shrubs; *Apodemus uralensis* is dominant in areas affected by floods, proving itself to be more adaptable to high humidity than considered before; the prevalence of external parasites on rodents records high fluctuations, varying between 0 and 100%; ticks were found on only one specimen, having a total prevalence of 1.25%.

Influence of climate change upon dynamics of *Microtus arvalis* population

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Key words: *Microtus arvalis*, dynamics, climatic conditions, hydrothermic index, prognosis, modelling.

The studies accomplished in agrocenoses during almost four decades allow to establish than the species *Microtus arvalis* doesn't have a strict cyclicity of population dynamics and the peak phases, with the highest density, coincide in great measure with those from other zones of its spreading area. Based on a large material gathered during many years in natural and agricultural ecosystems we tried to establish how the influence of climatic factors upon the dynamics of this species in previous period and in future according to scenarios of climatic changes after the models CSIRO MK3, ECHAM5 and HadCM3.

In order to evaluate the correlation between the density of *M. arvalis* colonies per hectare and parameters of temperature and humidity the hydrothermic index (I_{ht}) was used, after Seleaninov. The index was calculated according to the formula $I_{ht} = R/0,1*\Sigma t$, where R is precipitation quantity (mm) in the period with temperatures over 10°C, Σt – sum of temperatures in degrees for the same period, I_{ht} - complex characteristics of territory humidity. Data on temperature and humidity from the past years (National Hydrometeorologic Service) and scenarios of climate change for the future (Țăranu, 2012) were used. Also, the regression analysis was made, that reflects the correlation between I_{ht} and modification of *M.arvalis* colonies density in the period 1973-2010. Regression equation is r=0,41, p=0,01.

It was established a growth of *M.arvalis* colonies density per hectare along with the increasing of I_{ht}. When calculating the density for the prognosis the regression equation mentioned above was used, as well as the data on I_{ht} in the models of climate change. It was recorded an insignificant increase of species density from 1973-1990 till 1991-2010 and a decrease of density for the future periods with an interval of 30 years each till 2099. This fact is explained by the reduction of I_{ht} caused by the minimal precipitation quantity and the increasing of temperature for the next periods. In all three variants A2, A1B and B1 the prognosis models CSIRO MK3, ECHAM5, HadCM3 prove a varios decreasing of colony density in the periods 2010-2039, 2040-2069, 2070-2099. The highest indexes of species density was registered in the model ECHAM5 in variants A2 and A1B during 2010-2039, while in the variant B1 this model shows a decrease of species density. In all the variants of model HadCM3 during the three periods the density of the species is lower than prognosis of models CSIRO MK3 and ECHAM5.

Meteorological factors and West Nile virus epidemics

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Key words: WNV epidemics, meteorological factors, mosquito abundance.

Climatic and other environmental changes intensified the endemic circulation of West Nile virus (WNV) in Romania in the last years. The main meteorological factors, temperature and precipitations, during the periods and in the areas where previous WNV human outbreaks registered in Romania were analysed. The mean monthly values of precipitations and temperatures during one year before outbreak and the year of the outbreak have been analysed and compared with the mean reference values of these parameters calculated for around 50 years in every area. Periods with higher temperatures and/or precipitations than the mean reference values of these parameters were present in every area before WNV outbreak including the year prior to this. It seems that the main meteorological factors, temperature and precipitations, with higher values during the pre-epidemic period than their multi-annual media, are significant among the causes involved in the occurrence of WNV epidemics. The values of these meteorological factors are essentially involved in the appearance of abundant mosquito vector populations registered in all the epidemic situations. The abundant mosquito populations increase the virus amplification and transmission. The global warming leads to the high abundance of the mosquito vector populations and the extension of their spread range.

Ecological aspects and anophelism after malaria eradication in Romania

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Key words: environmental changes, risk of malaria re-emergence, stratification of the risk areas.

Malaria was eradicated in Romania since 1962. The presence of the abundant local populations of anopheline vectors is the most important element of the maintenance of the risk of malaria re-emergence in Romania in the context of the increasing number of imported malaria cases. The evolution of the anophelism after malaria eradication was in accordance to the local environmental and social-economical factors leading to the evolution of the risk of malaria re-emergence after 1962. Several periods with different levels of this risk in the former endemic areas have been detected. The stratification of the present risk areas of malaria re-emergence in Romania shows that they generally overlap the former malaria stratification areas. The new aspects are linked to the environmental changes in the last years. *A. daciae* Linton, Nicolescu & Harbach 2004, nova sp. and possibly malaria vector has now an extended and dominant distribution in all the former malaria endemic areas. *A. atroparvus*, the most important vector in Romania, has high abundant populations and its presence extended over all the risk areas. The present stratification of the risk areas of malaria re-emergence in Romania shows maintenance of the general risk of re-emergence with different levels in different areas at risk in accordance to the distribution and abundance of different vector species under the influence of the present climatic and other environmental changes.

Ground mesofauna of orchards with different levels of pesticide pollution of Chernivtsi region

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Key words: ground mesofauna, pesticides, apple orchards, dynamic density, pitfall traps.

In Ukraine, apple and other fruit orchards are widespread. The most extensive orchards in Chernivtsi region are apple orchards. The most extensive areas of commercial fruit marketing are located within Novoselytsia, Khotyn, Kelmentsi, and Sokyriany districts. These areas are routinely treated with pesticides and other chemicals during their agricultural lifetimes.

Pesticide use raises a number of environmental concerns. Over 98% of sprayed insecticides and 95% of herbicides reach a destination other than their target species, including non-target species, air, water and soil (Miller, 2004).

We collected the material using pitfall traps in June-July 2013 in seven orchards containing apple trees on the territory of Chernivtsi region. The traps, with a diameter of 7 cm, were placed in a line, about 6 meters apart from each other and contained ethylene glycol as a preservative.

Ground living mesofauna of the studied orchards with different levels of pesticide pollution of Chernivtsi region is represented by four phyla, ten classes and twenty one orders. The most abundant and constant components of ground mesofauna were Formicidae, Aranea, and Coleoptera.

More taxa of high rank are recorded on the territory of the conditionally control orchards. Representatives of 20 orders were collected on the territory of the conditionally control orchards. Representatives of 15 orders were collected on the territory of the orchards with significant pesticide pollution. It is lower than on the territory of ecosystems with different level of anthropogenic pollution in the cities of Chernivtsi and Uzhgorod (Fedoriak et al., 2008; Fedoriak et al., 2013).

In the orchards with significant pesticide pollution representatives of Opiliones, Acariformes, Parasitiformes, Juliformia, Dermaptera were not collected although they are a part of ground mesofauna of the conditionally control orchards. Qualitative and quantitative impoverishment of ground mesofauna of orchards with significant pesticide pollution is shown. We observed the reduction of dynamic density of ground mesofauna of orchards with significant pesticide pollution in 5.6 times. The average total dynamic density of ground mesofauna of orchards with significant pesticide pollution was 21.4 ind./10 pitfall days, of conditional control orchards – 119.5 ind./10 pitfall days.

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Provisioning service evaluation in the Lower Danube Wetland Systems

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Key words: ecosystem services, landscape, spatial analysis, provisioning, benefits, mapping.

The development of socio-economic systems is dependent on natural resources. Resources are provided by natural and semi-natural ecosystems and often affected by human activities. The current work is located in Brăila Islands, a long term socio-ecological research site of approximately 2600 km^2, using the approach of assessing landscape potential to provide different ecosystem services. The study was focused on comparing provisioning services generated by the biophysical structure existing at the reference period (prior to human induced changes) and the present structure. The current land cover classes highlighted in the study area, based on the Corine classification, were aggregated into 6 large ecosystem classes: urban and industrial areas (4.2%), agricultural ecosystems (74.8%), forests (10.7%), natural grasslands (2.3%), wetlands (3.3%), water bodies (4.7%), and were compared to the structural configuration of the reference state. The results showed an increase of urban areas with 3.4% and of agricultural land with 71.5% due to drainage, in detriment of natural or semi-natural flooded systems. Thus the area covered by wetlands decreased nine times, freshwater ecosystems reduced their surface with 340 km^2 and natural grasslands with 1021 km^2, while forested areas increased with 78 km^2. For each ecosystem type, we assessed the past and current potential of delivering different provisioning services (e.g. fish, timber, crops). The mapping process highlighted the pattern of the supplied goods and allowed us to understand the trade-offs between individual ecosystem services or within bundles of ecosystem services for the two structural configurations. Understanding the spatial distribution of provisioning services in a certain area is very important for decision making processes and management actions.

An example of the co-occurrence of native unionid mussels and the invasive Chinese pond mussel *Sinanodonta woodiana* in Poland

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Key words: invasive species, Chinese pond mussel, Unionidae.

The Chinese pond mussel *Sinanodonta woodiana* (Lea, 1834) is a freshwater bivalve alien to Europe. The continuously growing number of new localities where *S. woodiana* has been discovered, as well as its biology and ecology, indicate that this species easily spreads in European freshwater habitats and it is currently considered to be a significant threat for native unionid mussels.

We determined the co-occurrence of *S. woodiana* and two native species of unionid mussels: *Anodonta anatina* and *A. cygnea* at a site in northern Poland (E 17.1817°, N 54.6111°). The mussels inhabit a former fishpond which was used for carp production in the 1980's. Actually the reservoir is shallow, with a wide macrophytes zone, as well as diverse in trophic level and type of bottom which in fragments is sandy, muddy or graveled. These features lead to the occurrence of the three above-mentioned species together.

In 2014, *S. woodiana* was the most numerous species constituting 46% of the unionid mussels present in the pond, while *A. anatina* and *A. cygnea* constituted 28% and 26%, respectively. For all three species the age structure was diverse, with a significant share of young individuals. *S. woodiana*'s shell length ranged from 70 to 226 mm (median 104 mm). For *A. anatina* and *A. cygnea* the shells ranged from 57 to 157 mm (median 110 mm) and from 56 to 142 mm (median 127 mm), respectively. This indicates a good condition for these populations and suggests that their long term co-occurrence is possible.

Anodonta woodiana (Lea, 1834) – an updated review of its European distribution

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Key words: invasive species, *Anodonta woodiana*, *Sinanodonta*, Europe, distribution.

The freshwater mussel *Anodonta woodiana* (Lea, 1834) (Chinese Huge Mussel) is one of the largest invasive Unionid species present in the European Fauna. The species is native to South Eastern Asia, Indochina, China, Korea, Japan, Taiwan and the Amur Basin in Eastern Russia. Zhadin classified the species in the *Anodonta* genus, while Falkner assigned the species to the *Sinanodonta* genus. *A. woodiana* was collected for the first time in Europe in Romania in 1979 from fish farms at Cefa-Oradea. Its presence was linked with a 1960 import of Chinese Carp infested with the glochidia of the mussel, from the Yangtze Stream Basin (China). Other infested fish stocks were brought to Romania at Nucet fish farm, from the Amur River, between 1963 and 1965.

A. woodiana spread rapidly across Europe over the last few decades and is invasive also in other parts of the world. This species has large tolerance climate limits which make it the most widely distributed freshwater mussel on Earth (Watters & Coltro, 2014).

This study investigates the historic and current biogeographic range of this invasive species based on 60 citations collected from the scientific literature. The mussel was reported from the following European countries: Austria (2011), Belgium (2009), Bulgaria (2006), Croatia (2006), Czech Republic (1997), France (1989), Germany (2011), Greece (2008), Hungary (1984), Italy (1998), Moldova (2011), Poland (1993), Romania (1979), Serbia (2005), Slovakia (1999), Slovenia (2012), Spain (2009), Sweden (2008), The Netherlands (2008) and Ukraine (2005).

A. woodiana invaded European waters rapidly, with major consequences like competition for food and for host fish species with native mussels.

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Notes on a new alien invasive species in Romania: *Phyllocnistis vitegenella* Clemens (Lepidoptera: Gracillariidae)

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Key words: alien invasive species, grapevine, leafminer, *Phyllocnistis vitegenella*.

Phyllocnistis vitegenella is a potential alien invasive species in Europe. It is a leafminer moth belonging to Gracillariidae family (Lepidoptera). It is a monophagous species, its host plant being the grapevine (*Vitis vinifera*). The mine made by the larval stage is a long, slender, wavy, upper-surface corridor with a broad, dark, cloudy frass line. There are often several mines in a leaf. Pupation occurs within the mine in the widened terminal section of the corridor.

The origin of the species is North America. In Europe it was first reported from Northern Italy in 1994 in Province of Vicenza. In the following years, it spread to other Italian regions. Its presence was also noted in 2004, in Slovenia (EPPO RS 2006/160), and in 2009 in Switzerland. No economic damage has been reported yet in European vineyards. In Italy it develops four generations per year, starting with the very young foliage. In Romania *Phyllocnistis vitegenella*, was observed for the first time on *Vitis vinifera* leaves in October, 2013 in Bacau county (Racaciuni, Petresti – Pancesti) (Ureche C., unpublished data).

Studies carried out in Italy, and in Switzerland showed that several native species of parasitoids are able to limit its populations.

The aim of this paper is to provide some biological data about this new alien invasive species. Although this species is known to be monophagous, in 2014 we found it mining the leaves of *Parthenocissus quinquefolia*. We expect that in the next few years the distribution of *P. vitegenella* could further increase.

Cydalima perspectalis (Lepidoptera: Crambidae) – new invasive species in Constanţa

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Key words: *Cydalima perspectalis,* invasive species, Constanţa.

Cydalima perspectalis (Walker, 1859) is one of the last "newcomers" in Europe, being one of the latest invasive species that arrived from Asia. The native habitat of this species includes continental China, the eastern part of Siberia, India, Korea and Japan. Caterpillars of this species feed on *Buxus sempervirens*, the effect being the total destruction of the leaves of the plant. In 2006, this species appeared for the first time in Germany, and after that, it spread rapidly southwards and westwards – in 2007 it is mentioned for the first time in Switzerland and The Netherlands, and in 2009 it arrived in France, Great Britain and Austria. After that, in 2011 it is mentioned from Hungary, Slovakia and Romania (near Bucharest) in the east, from Croatia in the south and from Belgium in the west. Even in Turkey, this species arrived in the same year. In 2013, *Cydalima perspectalis* was mentioned in Denmark. In the summer of 2014 (late august) the larvae of this species were observed on the Black Sea shore, in Constanta. The effect of the caterpillars was noticed on *Buxus* in some areas – parks, boulevards. The impact of this species on *Buxus sempervirens* shrubs was very visible in the entire city, but not all areas with *Buxus* were affected. The presence of the species in Mihail Kogălniceanu (in the central park of the city) and near Danube, in Hârşova area, complete the situation observed in Dobrogea this year. In this way, we expect that in the next years, the impact of this species in urban ecosystems to grow, *Cydalima perspectalis* becoming, along with *Cameraria ohridella* and *Hypanthria cunea*, one of the most important pest of ornamental plants.

Oviposition preference of tomato leafminer, *Tuta absoluta* (Lepidoptera: Gelechiidae) on twelve tomato cultivars

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Key words: antixenosis, host plant resistance, oviposition rate.

Tuta absoluta (Meyrick) (Lepidoptera: Gelechiidae) is one of the most important and devastating pest of tomato crops throughout South and Central America and Europe. Though it has recently invaded Iran, it has caused heavy damages to tomato crop in greenhouses and fields. Since lower pest oviposition rate results from existence of resistance factors in host plants, oviposition preferences of *T. absoluta* on different parts of 12 cultivars of tomato, *Lycopersicon esculentum* Mill., were evaluated in greenhouses with daily temperature fluctuations of 18–27 °C during November 2013. Tomato cultivars (Petomech, Mobil, superstain-B, kingstone, Redstone, Early urbana-Y, Early urbana, Riogrande, Cal-J-N3, Primo early, Falat-111 and Dehghan) were provided by the Seed and Plant Improvement Institute in Karaj. This study was carried out in a randomized complete design with 3 replications and different population densities of adults of tomato leafminer within four days. The results showed that with increasing adult density, the rate of oviposition was significantly increased on the under-side of tomato leaves compared with the other parts of plant (upper-side of leaf, petiole, and stem). On the fourth day of the experiment, the higher and lower ovposition rates were observed on Falat-111 (30 ± 16.093 eggs) and Kingstone (5.33 ± 3.215 eggs) during eight hours of ovipositing. The factors involving resistance or susceptibility of those cultivars can be explored in future studies.

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New data on the presence of *Drosophila suzukii* (Matsumura) in the southern part of Romania in 2014

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Key words: invasive species, the spotted wing drosophila, first record.

Drosophila suzukii Matsumura (known as the spotted wing drosophila) is an exotic fruit fly native to Asia which was introduced in the United States as well as in Europe in 2008. Its attack to small and stone fruits in many parts of the world causes important economic losses. In 2013, the presence of *D. suzukii* adults was detected in Romania in a Tephri trap set up on wild blackberry bushes in the Southern part of Romania (Bucharest city area). The present paper presents new data on *D. suzukii* based on the insect captures in bottle traps baited with red wine in 2014. Abundance and activity of adults were monitored in the area above mentioned and the first data on the adult population dynamics in wine baited traps is shown in present paper. New records of the insect spreading were reported. Our results show also that adults of the spotted wing drosophila were captured in wine baited traps set up in vines (*Vitis vinifera*) and in figs (*Ficus carica*) in private gardens from two locations from Southern Romania.

Macroinvertebrate and algae alien species identified in aquatic ecosystems from the Republic of Moldova

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Key words: alien species, native species, macroinvertebrates, algae.

The problem of invasive species is today of the utmost importance for natural heritage conservation. The number of invasive species is growing in Europe and the DAISIE inventory lists include 10,822 non-native species. The alien species in Moldova cause ecological, economic and social harm, which may occur very quickly in the context of climate change and the geographical position of the country. The main threat to aquatic ecosystems of Moldova is represented by edificatory invasive species and native species competitors. Invasive bivalve mollusks have a negative impact on the diversity of native species and structural and functional peculiarities of the components.

In the composition of hydro-biocenoses 16 alien species of benthic macroinvertebrates were identified: Oligochaetes – 1 (*Branchiura sowerbyi* (Beddard, 1892)); Bivalvia – 5 (*Corbicula fluminea* (Müller, 1774), *Corbicula fluminalis* (Müller, 1774), *Dreissena bugensis* (Andrusov, 1897), *Dreissena* polymorpha (Pallas, 1771), *Sinanodonta woodiana* (Lea, 1834)); Gastropoda - 2 (*Ferrissia fragilis* (Tryon, 1863), *Potamopyrgus antipodarum* (Gray, 1843)); Amphipoda – 7 (*Corophium curvispinum* (Sars, 1895), *Corophium maeoticum* (Sowinsky, 1898), *Gmelina pusilla* (Sars, 1863), Gmelina costata (Sars, 1863), Dikerogammarus haemobaphes (Eichwald, 1841), *Dikerogammarus villosus* (Sowinsky, 1894), *Pontogammarus robustoides* (Sars, 1894)); Decapoda –1 (*Macrobrachium nipponense* (de Haan, 1849)); Cumacea – 3 (*Pterocuma pectinata* (Sowinsky, 1893), *Stenocuma cercaroides*(Sars, 1894), Caspiocuma *campylaspoides* (Sars, 1897)); Mysids – 4 (Paramysis baeri bispinosa (Czerniavsky, 1882), *Paramysis lacustris* (Czerniavsky, 1882), *Limnomysis benedeni* (Czerniavsky, 1882), *Katamysis warpachowskyi* (Sars, 1893)).

In the composition of phytoplankton 3 species were identified, which can be viewed as exotic: *Amphora veneta* Kützing, *Nitzshia kuetzingiana* Hilse and *Surirella robusta* Ehr. var. *robusta* from Bacillariophyta algae.

Invasive species can compete with native species, reproduce simultaneously and destroy their habitat, thus affecting them. Out of the 100 most dangerous invasive species in the world, 55 are animal species, of which in Moldova 14 species (25%) identified. Among these only one aquatic macroinvertebrate species was found – *Dreissena polymorpha*.

The research was performed within the Institutional projects 11.817.08.13F and 11.817.08.15A, financed by the Supreme Council for Science and Technological Development of the Academy of Sciences of Moldova and project nr. 2/3056-4373 financed by the National Environmental Fund of Moldova.

Alien and intervenient fish species from the natural aquatic ecosystems of the Republic of Moldova

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Key words: fish, aquatic ecosystem, bioinvasion, autoexpansion, naturalisation.

The problem of bioinvasion, which demonstrated dramatic effects on the functionality of natural ecosystems, became currently extremely important. In the most of cases the bioinvasion represents a negative consequence of indirect anthropic activities. By degrading the habitats of native fish species, humans facilitate unconsciously the autoexpansion and proliferation of alien species.

Due to the multiple fragmentations of biotope of riverine ecosystems of the Republic of Moldova, their systematic pollution and drainage of wetlands, the processes of eutrophication, silting, hyperthermophication, salinization, etc. have intensified. The high pressure of illicit selective fishing, intensification of natural calamities, which contributes to the interpenetration of pisciculous zones and interaction between ichthyofauna of different hydrographic basins are among factors, which induce the biological progression of fish species with small body size and short life cycle (e.g. *Alburnus alburnus* (Linnaeus, 1758); *Rhodeus amarus* (Bloch, 1782)*; Syngnathus abaster* Risso, 1827; *Gasterosteus aculeatus,* Linnaeus,1758; *Pungitius platygaster* (Kessler,1859); some species of *loaches* and *gobies,* etc.) and of those with middle life cycle, but with an expressed phenotipical variability and an exceptional hydrobiotopic potential (e.g. *Carassius gibelio* (Bloch, 1782); *Rutilus rutilus* (Linnaeus, 1758); *Blicca bjoerkna* (Linnaeus, 1758); *Perca fluviatilis* Linnaeus,1758; *Lepomis gibbosus* (Linnaeus, 1758), etc.).

According to our estimations, 30 alien species have been reported to be found in the natural aquatic ecosystems of Republic of Moldova during the last two centuries, but only 4 of them are considered to be true invaders: *Carassius gibelio* (Bloch, 1782) with 41 points estimated according to FISK (Fish Invasiveness Screening Kit) protocol, *Perccotus glenii* Dybowski, 1877, with 38 points, respectively, *Pseudorasbora parva* (Temminck et Schlegel, 1844) and *Lepomis gibbosus* (Linnaeus, 1758), with 34 point each.

Moreover, in the case of basin of the Dniester River (and less for that of the Prut River) it was recorded the advancement and proliferation of such estuarine and brackish fish species as *Neogobius fluviatilis* (Pallas, 1814); *Babka gymnotrachelus* (Kessler, 1857); *Neogobius melanostomus* (Pallas, 1814); *Proterorhinus semilunaris* (Heckel, 1837); *Gasterosteus aculeatus* Linnaeus, 1758; *Pungitius platygaster* (Kessler, 1859); *Atherina boyeri* Risso, 1810; *Clupeonella cultriventris* (Nordmann, 1840) etc., which lead actively to the process of "pontisation" of freshwater ichthyofauna.

The study was performed within the national project 11.817.08.13F**,** scientific contract no. 2/3056-4373 and international projects MIS ETC 1150 and MIS ETC 1676.

Reproductive biology of sunfish females (*Lepomis gibbosus)* from Cuchurgan cooling reservoir

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Key words: oocyte, eggs, gonads, resorption, vitellogenesis, vacuolization.

Sunny perch (*Lepomis gibbosus* (Linnaeus, 1758)) is a member of the family Centrarchidae, order Perciformes. The natural habitats of sunfish are the fresh waters of North America from the Great Lakes to Florida. In Moldova it can be found in the basin of the lower Dniester (from Dubasari EPS to Purcari village and from the village of Palanca to the mouth of the river Dniester as well as in the lower portion of the Prut River, Beleu Lake and Cuchurgan reservoir. We investigated the mature females of Cuchurgan reservoir. A histological analysis of gonad development during the annual reproductive cycle was performed.

Lepomis gibbosus from Cuciurgan cooling reservoir is portion spawning fish with asynchronous development of germ cells throughout the reproductive cycle. Spawning season begins with the third decade of May and ends in mid-July, the first spawn the five years old females, whereas the ovaries of four years old individuals continue to be on the IVth completed and on IV-Vth stages of maturity. Before the third spawning in the current year, females with degenerating sexual products have been identified. On histological preparations the destructive changes in the vitellogenic oocytes are expressed in the absence of cells' turgor disappearance of nuclei and partial homogenization of the yolk. The oocytes from the reserve fund in the phases cytoplasm vacuolization are also subjected to resorption, which is accompanied by the destruction of vacuoles and merging their contents into a homogeneous mass. Among caught females was discovered a *Lepomis gibbosus* specimen of 11 cm length and weighing 45 g with sterile ovaries, which is a consequence of the deepest disturbances of the reproductive system. The generative tissue is replaced by loose conjunctive tissue, among which there are placed solitary degenerating oocytes of protoplasmic growth and in the initial phase of vacuolization.

A molecular view upon the adaptability mechanisms of *Perccottus glenii* invasive populations in the Siret River

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Key words: *Perccottusglenii*, Siret, D-Loop, cytochrome b, adaptability.

In spite of their great impact on biodiversity and the economic loss they may cause for humans, invasive species have been poorly subjected to DNA analysis so far. *Perccottus glenii* is one of the invasive fish which became a real threat for the fresh-water ecosystems during the last decade, but no data regarding its molecular mechanism of adaptability in the new habitats is available yet. This study aims at describing the genetic profile of twenty *Perccottus glenii* individuals from an invaded area, the Siret River, with the purpose of emphasising the changes appeared in the DNA sequences as a consequence of the acclimatisation and naturalisation processes. The target DNA to be analysed was represented by the D-loop region and the cytochrome b gene, two molecular markers often used in the phylogenetic studies for their high variability within populations. All samples were subjected to DNA extraction, using the phenol: chloroform: isoamyl alcohol (25:24:1) protocol, further amplified through the polymerase chain reaction and later sequenced. Four different haplotypes were identified for the cytochrome b gene, and only two for the D-loop region. This showed an overall low genetic variability level for the invasive individuals of *Perccottus glenii* in the Siret River, but the higher variability for the cytochrome b gene compared to the D-loop region suggests a possible adaptability potential of *Perccottus glenii* to different respiratory conditions in the new habitat.

This work was supported by the strategic grant POSDRU/159/1.5/S/133652, co-financed by the European Social Fund within the Sectorial Operational Program Human Resources Development 2007 – 2013.

Competition on microhabitat quality between the pond slider (*Trachemys scripta)* and European pond turtle (*Emys orbicularis*). A case study in two quasi isolated water bodies in Constanta city

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Key words: alien species, *Trachemys scripta*, invasion, exotic turtles, *Emys orbicularis,* Testudines.

The massive pet trade of pond sliders (*Trachemys scripta*), followed by the release of many of these turtles into natural habitats, has led to nominating the species among 100 of the "World's Worst" invaders. The interaction between the introduced and the native turtle species has a strong competitive nature, causing rivalry for basking places, trophic resources and nesting sites. Studies have shown that *Trachemys scripta* is outcompeting the endangered European pond turtle (*Emys orbicularis*), affecting the latter's survival rates (Cadi & Joly, 2004). In Romania, the data regarding the pond slider populations are scarce and the impact on the local ecosystems and on the native European pond turtle is unknown. This study aims to assess the population status of *Trachemys scripta* and *Emys orbicularis* in two water bodies in Constanta city, a small pond and Lake Tăbăcărie. The data were collected through direct observations of the individuals, over a period of three months. Considering their overlapping ecological requirements, *Trachemys scripta* is inducing changes in the basking behavior of *Emys orbicularis*, causing its retreat to lower quality microhabitats (shoreline vegetation), while the pond slider is mostly occupying high quality microhabitats (rafts, vegetation islands). The age structure of the identified turtles sugests mature, well established populations for both species, in both study areas, that include all three age groups. In Lake Tăbăcărie the distribution of the two species in the habitat was homogeneous, but it differed in the small pond where *Emys orbicularis* individuals were observed forming clusters localized in certain areas of the pond, while *Trachemys scripta* was spread evenly throughout the habitat. Our study is the first one in Romania that documents the interaction between the two species and confirms the negative impact that the alien species *Trachemys scripta* is having on the endangered native turtle *Emys orbicularis*.

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Current state of invasive species of mammals, reptiles and amphibians in the Republic of Moldova

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Key words: invasive species, mammals, reptiles, amphibians.

The studies were performed in 2013 – 2014 all over the territory of the R. Moldova in various types of natural and anthropized ecosystems, as well as in agrocenoses. The assessment of mammal, reptile and amphibian species was performed, the species composition of animal communities in the studied ecosystem was established, the abundance and dominance of the species was evaluated and the alien species were identified. On the whole, there were recorded 57 mammal species, 13 reptile and 11 amphibian species. Among the representatives of mammals there were emphasized two alien invasive species (*Rattus norvegicus*, *Canis aureus*), 5 acclimatized species (*Ondatra zibethicus*, *Nictereutes procyonoides*, *Cervus nippon*, *C. dama*, *Ovis ammon*) and one alien accidental species – the wolf (*Canis lupus*), which periodically appears on the republic territory.

The wild rat populations have low densities and don't have significant impact upon natural ecosystems. But the synanthropic population is represented by over one million individuals and has a negative impact in economy, agriculture and public health. The golden jackal was recorded for the first time in 2001-2002 in lower Prut meadow. At present, the species reached „Pădurea Domnească" reserve in the north-western part of the country and have negative impact upon the local fauna.

As to the alien reptile species, some representatives of family Lacertidae (*Eremias arguta*, *Podarcis taurica*) have been recorded on territory of the republic only at the beginning of '50s of the past century. At present the Steppe runner (*E. arguta*) was recorded in Transnistria and in south-eastern part of the republic. The spreading area of Balkan wall lizard (*P. taurica*) have extended to north-west and reached the central part of R. Moldova. Other reptile species as potential alien is the Wall lizard (*Podarcis muralis*), which was registered for the first time near Cahul Lake (southern part). From ecological point of view the mentioned species don't represent any threat for the local fauna and flora.

High frequency and abundance of *Hyalomma marginatum* on spur thighed tortoise (*Testudo graeca ibera*) from Dobrudja (Romania)

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Key words: *Testudo graeca ibera*, *Hyalomma marginatum*, ticks, Dobrudja, Romania.

Ectoparasites (such as ticks) are good indicators of the health status of Chelonian populations. Ticks are vectors that are well known to carry pathogens such as viruses, bacteria and other microorganism. Hence, knowing the status of tick's infestation in endangered species, that is an important tool for assessing the health of the wild populations.

The spur-thighed tortoise (*Testudo graeca* Linnaeus, 1758) is an endangered species that can be found in the Mediterranean Europe with a highly fragmented range. The species is protected by the European and Romanian laws. In Romania, this species was reported only in Dobrudja (south-eastern Romania) and several studies have indicated a decreasing population trend.

This study was carried out over a 2 month period (April to May 2014) and we used the frequency and abundance of ticks as a proxy of studying the health status of three different populations of spur-thighed tortoise from Dobrudja (Măcin, Babadag and Bugeac). Turtles were actively sought using diurnal transects. Tortoises were captured by hand and inspected for ticks. Ticks collected with forceps on the tortoises were immediately placed into Eppendorf tubes containing 75% alcohol.

A total of 30 tortoises were analyzed from all three location and the result indicated that 12 tortoise were infected with ticks (5/10 Măcin, 7/13 Babadag, 0/7 Bugeac). A total of 117 ticks were collected from infested animals, the maximum infestation was 51 of ticks/ a turtle. All ticks were identified as being *Hyalomma marginatum*.

The presence of this tick species in such a high density should be a warning sign for both conservation biologists and physicians since, it is known to be a vector for Crimean-Congo Hemorrhagic Fever virus, West Nile virus (lineage 2) and bacteria: *Coxiella burnetti*, *Theilleria sp.* and the protozoan: *Babesia caballi.*

Multipurpose, urban pond as a habitat of endangered Swan mussel (*Anodonta cygnea*) in Poland

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Key words: protected species, Unionidae, artificial lake, Swan mussel.

We investigated Unionidae species in an artificial lake located in a city of over 700000 inhabitants. Every four years the lake is drained. Nowadays Lake Malta is used extensively for water sports and there is an open-air swimming pool too. Unionidae specimens for this research were collected in spring 2013 when the lake was drained for a short period for maintenance work. In the transect area, divided into sectors and partitions, we explored 420 m^2 and found 102 specimens – *Unio tumidus* (49), *Anodonta anatina* (33) and *Anodonta cygnea* (20). Moreover the examination of remaining parts of the lake allowed us to find 193 specimens – *Unio tumidus* (50), *Anodonta anatine* (77) and *Anodonta cygnea* (66).

In the transect area the abundance was 0.08 specimens per m^2 for *Anodonta anatina*, 0.05 specimens per m^2 for *Anodonta cygnea* and 0.12 specimens per m^2 for *Unio tumidus*. Among the swan mussels there were no individuals at age 1 + and 2 +. Dominant individuals were of age 3 +. The sample was dominated by individuals of age 2 + (swollen river mussel) and 3 + (swan mussel and duck mussel). There were no individuals older than 5 +.

The current data is different than that obtained four years before (in 2008), when *Anodonta cygnea* averaged 6.6 specimens and 153.0 g body weight per m^2.

Greater *Anodonta anatina* shells were found closer to the water source that flows into the lake. The river that flows into the lake ensures better oxygenation and carries more biomass that constitutes the food for bivalves. The further from the river Cybina, the worse water conditions can affect mussels of this species.

Road investments as an impulse to the discovery of new sites of *Vertigo moulinsiana* and their monitoring

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Key words: *Vertigo moulinsiana*, road investment, Natura 2000, Habitat Directive, population monitoring.

The rules of highways construction require natural evaluation done in natural valuable sites to determine their optimal location. Such studies were also carried out during construction works of ring roads for a large Polish city - Poznań. As a result, a new, very large population of *Vertigo moulinsiana* was discovered. *Vertigo moulisiana* is a small, poorly known vertiginid snail occurring in the Atlantic – Mediterranean region in wet areas. It is very rare in Europe and, as such, it is listed in the Annex II of the Habitats Directive.

Due to conflict as a result of the presence of protected species within the planned investment area, decisions were made by the province authorities to inventory and regularly monitor this population in order to provide a possible response in the event of negative changes. The idea to translocate the whole population has also been proposed but ultimately discharged due to high costs and small likelihood of success. However, some specimens were moved to a new site. Population monitoring was extended to measurements of water quality, soil composition and groundwater level. Results based on a three-year study do not show negative impact of the investment on the population.

It has been shown that the average density in the following years (2011-2014) was very large. Taking into account the percentage of juveniles, it has been stated that the population is viable. The study of groundwater level in conjunction with abundance of *V. moulinsiana* measured on each habitat section indicated that this is an important factor affecting the density of snails.

During the search for suitable habitats to carry out the translocation procedure, new sites with *V. moulinsiana* populations were found, which are already located in protected areas.

First record of *Saga pedo* (Orthoptera: Tettigoniidae) in Muntenia (Romania)

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Key words: *Saga pedo*, Muntenia, Romania, faunistics.

Saga pedo (Pallas, 1771) is a species of bush-cricket (Tettigoniidae: Saginae) with Mediterranean origins, spread in Europe from Spain and France to Germany and from Bulgaria to Russia and up to China. Although having a vast range, its' areal is fragmented and the populations are small, severely threatened by habitat destruction and pollution. *Saga pedo* is listed as vulnerable in the IUCN Red List and is also included in Annex IV of the Habitat Directive. The species has many interesting vernacular names, including: "the predatory bush-cricket" or "the Matriarchal katydid". A carnivore and parthenogenetic bush-cricket, it lives in many habitat types and has large vertical amplitude, from sea level up to 1500 m altitude. In Romania, the species is localized, especially in dry and semi-dry grasslands with tall grasses from Dobrogea, Eastern Moldavia, Transylvania and Banat.

During a short trip in late June 2014, we found three nymphs of *Saga pedo* at Berca Mud Volcanoes, in the historical region Muntenia (Southern Romania). Along *Saga pedo* we found some other interesting xerophytic species in the orthoptera communities, such as: *Isophya rectipennis*, *Conocephalus hastatus*, *Platycleis striata*, *Onconotus servillei* etc.

Berca Mud Volcanoes is a geological and biodiversity reserve (ROSCI0272 "Vulcanii noroioşi de la Pâclele Mari şi Pâclele Mici"), located near Berca village, in Buzău County. Mud volcanoes are formed by the eruption of mud and natural gases. As the soil is very salty, only few plants can survive, such as *Nitraria schoberi*, located here at the western border of its distribution area. A sylvosteppic vegetation developed around the volcanoes, with Pontic and Submediterranean elements: *Stipa stenophylla*, *Agropyron intermedium*, *Festuca valesiaca*, *Adonis vernalis*, *Inula ensifolia* etc. The human impact in the area is minimal and further studies on Orthoptera communities should yield interesting results.

Diversity of saproxylic beetles (Coleoptera) in the Republic of Moldova

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Key words: beetles,saproxylic, Republic of Moldova.

The forest biome offers many different habitats for several types of organisms among which beetles are the most numerous and diversified within the group of insects. A large part of beetle fauna in forest ecosystems is saproxylic, beetles being dependent upon dead wood in their life cycle. Nowadays, deforestation is the major cause of biodiversity loss, threatening the survival of many species, especially saproxylic ones.

The objective of this study was to present the first comprehensive review and evaluation of the saproxylic beetles in the Republic of Moldova.

As a result of this survey 232 species of saproxylic beetles from 35 families and 142 genera were revealed to occur in the Republic of Moldova. Family Cerambycidae (59 species and 37 genera) is the most abundant, followed by Curculionidae including Scolytinae (40 species and 15 genera) and Elateridae (26 species and 12 genera). Families Cetoniidaeand Buprestidaealso occurred with relatively high abundance, counting 11 species and 5 genera. The other 30 coleopteran families contain less than 10 species each. Revealed saproxylic beetles fauna contains 26.72% European species, 21.55% West-Palearctic species, 19.39% Palearctic species, 6.89% Holarctic species, by 6.46% Euro-Siberian and Trans-Palearctic species, 4.31% Euro-Mediterranean species, 3.01% Palearctic and Oriental, 1.72% Cosmopolitan, by 0.86% Mediterranean, Euro-Asian and East-Palearctic species and by 0.43% species are spread through Holarctic-Oriental and Holarctic-Australian regions. Among highlighted saproxylic beetles 11 species were evaluated as critically endangered, 17 endangered and 15 vulnerable. However, the Red Book of the Republic of Moldova (2002) contains only 11 threatened beetle species including 9 saproxylic beetles. Knowledge of saproxylic beetles, their ecological peculiarities and number of threatened species may be essential during forest management and biodiversity conservation.

Serum biochemical parameters of the *Acipenser stellatus* genitors from the Danube River

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Key words: *A. stellatus*, biochemical parameters, hematology, sturgeon.

The screening of serum biochemical parameters are regarded as a useful tool for assessing the health status of fish species. The objective of the study was to analyzing the biochemical parameters in the blood of genitors of the *A. stellatus, fishing from the Danube River,* for assessing the health status. Individual *A. stellatus* were anesthetized with MS222 and 5 ml of blood was sampling from each fish by caudal venous puncture. The serum samples for each specimen were analyzed for the following biochemical parameters: ALB Albumin (g/dl), ALKP Alkaline Phosphatase (U/L), ALT Alanine Aminotrasferase (U/L), AMYL Amylase (U/L), AST Aspartate Aminotransferase, BUN Urea (mg/dl), Ca Calciu (mg/dl), CHOL Cholesterol (mg/dl), CREA Creatinine (mg/dl), GGT Glutamyl Transferase (U/L), GLU Glucose (mg/dl), LDH Lactate Dehydrogenase, LIPA Lipase (U/L), MG2+ Magnesium (mg/dl), NH3 Amonia (umol/L), PHOS Inorganic Phosphate (mg/dl), TBIL Total Bilirubin (mg/dl), TP Total Protein (g/dl), TRIG Triglycerides (mg/dl), URIC Uric Acid (mg/dl), GLOB (g/dl). All analyses were performed using a blood chemistry autoanalyser (Model VETTEST 8000) based upon dry chemical technology and colorimetric reaction. According to the present results, some biochemical parameters were higher in males than in females fish including: ALKP, BUN, MG2+, NH3, TP, GLOB. The other biochemical parameters were higher in female: ALT, Ca, CHOL, PHOS, between female and male respectively. Serum biochemical values reported in this study will be used as reference for the monitoring of phisiological status of *A. stellatus* from the Danube River.

Assessing the genetic diversity of *Acipenser stellatus* aquaculture strains using nuclear markers

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Key words: stellate sturgeon, aquaculture, genetic diversity, DNA markers, microsatellites.

Since Stellate sturgeon (*Acipenser stellatus*) is considered a critically endangered species because of the continuous decreasing of wild stocks, efforts have been made in order to repopulate the natural habitats with individuals raised in aquaculture conditions. A crucial part of the aquaculture consists of assessing the genetic diversity of the broodstock to be released. Microsatellites are short DNA sequences which represent nuclear markers useful in evaluating genetic diversity.

DNA isolation was accomplished using a classical protocol with phenol–chloroform on small fins from individuals belonging to six aquaculture strains reared in Romanian fish farms. DNA extraction was followed by PCR amplification of seven microsatellites loci with fluorescent labeled primers (Spl106, LS34, Acig198, AnacE4, LS54, AnacC11, and LS39). The PCR products were separated through capillary electrophoresis in the ABI Prism 310 Genetic Analyzer. The resulting data were statistically analyzed with GENETIX and FSTAT software in order to assess the genetic diversity within and between populations.

The analysis of the allelic richness of the loci indicated that Spl106 locus presented the highest degree of polymorphism, while the LS39 the lowest. Overall, all the loci, excepting LS39 locus, possess a moderate polymorphism degree which is informative for assessing the genetic diversity.

Using the allelic frequencies of the microsatellites loci, the values of the observed and estimated heterozigosity and the inbreeding coefficient F_{is} were determined. The results showed that there is a moderate degree of genetic variability within populations, with the exception of strain three which also proved to be slightly inbred. The rest of the strains were not affected by the inbreeding. F_{st} value indicated a moderate genetic diversity between the acquaculture strains.

In conclusion, the assessed aquaculture strains are different genetically and can be used in selective breeding programs, excepting strain three which is inbred.

The effect of vitamin E and thyme (*Thymus vulgaris*) on growth performance and body composition of *Acipenser stellatus* (Pallas, 1771)

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Key words: aquaculture, phytobiotics, sturgeons, recirculating systems.

Improvement of fish growth performance and feed efficiency by using natural feed additives, as phytobiotics, has been widely used. One of the phytobiotics used in aquaculture is represented by thyme (*Thymus vulgaris*), a well known aromatic plant with strong antimicrobial and antioxidant activity. These properties, already demonstrated for terrestrial animal husbandry, recommend thyme for aquaculture industry where could be successfully used instead of commercial antibiotics.

The present study's aim was to investigate the effects of thyme (1% thyme/kg feed) in association with vitamin E (500 mg/kg) on growth performance and body composition of different sterlet fingerling cohorts obtained by cross breeding of genitors with different origins (the Danube and aquaculture). The experiment was carried out for 5 weeks, in a recirculating aquaculture system (RAS) from Aquaculture, Environmental Science and Cadastre Department, "Dunărea de Jos" University of Galați. In order to emphasise the influence of the above mentioned immunostimulants on young sturgeons with different genetic background, four experimental groups from different genitors (V1: ♀$_2$ Danube x ♂$_1$ aquaculture, V$_2$: ♀$_1$ Danube x ♂$_1$ Danube, V$_3$: ♀$_1$ Danube x ♂$_2$ aquaculture and V$_4$: ♀$_2$ Danube x ♂$_2$ Danube) have been used. The results showed that thyme combined with vitamin C, induced different responses, in terms of growth performance and nutrient utilisation, in the offspring obtained from wild and aquaculture sturgeons.

Effect of dietary administration of thyme (*Thymus vulgaris*) and Vitamin E on biochemical and hematological parameters of juvenile *Acipenser stellatus* (Pallas, 1771)

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Key words: hematological profile, serum biochemical parameters, *A. stellatus*, Recirculating Aquaculture System (RAS).

The aim of this study was to evaluate the physiological state of juvenile *Acipenser stellatus*, in condition of administration of Vitamin E and Thyme in feed. Researches were conducted between 16th of December 2013 and 21st of January 2014, in the recirculating system of Aquaculture, Environmental Science and Cadastre Department, University of Galați. We used four experimental groups, represented by *A. stellatus* juveniles aged 7 months, provided from different genitors: V1 (♀2 Danube x ♂1 Aquaculture), V2 (♀1 Danube x ♂1 Danube), V3 (♀1 Danube x ♂2 Aquaculture) and V4 (♀2 Danube x ♂2 Danube).

At the end of the experiment, Red blood cell counts (RBC), packed cell volume (Hct), hemoglobin concentration (Hb), mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH) and mean corpuscular hemoglobin concentration (MCHC) were measured and analysed, with routine methods used in fish hematology. Regarding the serum biochemical parameters the identifications were made using VetTest®Chemistry Analyser, using IDEXX VetTest kits, the result interpretation being made in comparison with the reference values from the literature. No significant changes were registered ($p>0.05$) in number of erythrocytes, hemoglobin concentration, VEM, HEM and CHEM while the packed cell volume registered significant differences ($p<0.05$) between the four experimental variants. Also, statistical analysis showed that there are no significant differences ($p<0.05$) between the experimental variants about biochemical parameters including Calcium, Magnesium, Albumin, Globulins, Total protein, Glucose, Cholesterol, Triglyceride and Blood urea nitrogen and about Ammonia there was significant difference ($p<0.05$). Although the sevruga provided from aquaculture genitors presented a better physiological state it can be said that its welfare was influenced by the addition of vitamin E and thyme in diet or by the genetic heritage.

Morphological analyses of embryonic development in Danube stellate sturgeon (*Acipenser stellatus* Pallas, 1771)

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Key words: *Acipenser stellatus*, embryonic development, morphology.

Danube is one of the few habitats in Europe where wild sturgeons still reproduce in its waters. Among those 4 sturgeon species that are still naturally reproduce, Stellate sturgeon population shows a long term shift in the population structure being listed as an endangered species in the IUCN Red List. As protective measure, supportive stocking programs by hatchery-produced juveniles were initiated. In consequence, further responsible breeding programs in Stellate sturgeon domestication must preserve genetic diversity otherwise unwanted effects could appear. Furthermore, the genetic aspects of the reproductive units (broodstocks) and their progenies must be known in correlation with the phenotype expression during the ontogenetic development.

The aim of this study was to assess the developmental morphology during early life stage in stellate progeny from four mating combinations of spawners in the particular eco-technological conditions of the Romanian aquaculture facilities (21 ^{o}C). For evaluating the developmental progress, histological observations were performed using T. A. Detlaff et al. (1993) and P. Chulhong et al. (2013) descriptions. Developmental processes as growth, tissue differentiation and physiological changes were recorded, in the relationship with time (hours, minute) post-fertilization. Typical pattern of uneven cleavages continued for 7 h post-fertilization (HPF), blastulation began at 9 h HPF, gastrulation appeared at 16.30 h HPF, neurulation was initiated at 28.30 h HPF, heart in s-shape beat after 55.30 h HPF. A mass hatching was observed at 84.30 h HPF. The results will be integrated into a large study conducted in order to obtain superior sturgeon offspring for domestication.

This work was supported by the National Authority for Scientific Research PN- II-PT-PCCA 116/2012 “Genetic evaluation and monitoring of molecular and biotechnological factors that influence productive performance of Danube sturgeon species bred in intensive recirculating systems”, and the authors thank for the support.

The genetic diversity of four brown trout (*Salmo trutta fario)* populations from Făgăraș Mountains area

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Key words: brown trout, *Salmo trutta fario,* genetic diversity, microsatellites, mitochondrial DNA.

The brown trout (*Salmo trutta* morpha *fario* Linnaeus, 1758) is a member of Salmonidae fish family and has a wide distribution in Romanian mountain rivers. Its natural habitat is disrupted by human activities, among which hidropowerplant constructions have the biggest negative impact on rivers from Făgăraș Mountains. Given this context, our study aims to analyze the genetic diversity of four Romanian brown trout populations from the Northern side of Făgăraș Mountains using mitochondrial (D-loop region) and nuclear markers (microsatellites) in order to determine whether restocking strategies were applied in the targeted area.

The DNA was isolated from small fin fragments from 102 individuals. The molecular methods comprised of PCR amplification and Sanger sequencing for the mitochondrial DNA analysis and amplification of nine microsatellite loci, followed by capillary electrophoresis for the nuclear DNA assay. The analysis of mitochondrial data was performed by using the BioEdit, DnaSP and MEGA software, while the genotypic data were analyzed with Genetix and FSTAT software.

We identified 13 haplotypes for N1, 11 for N2, 10 for N4 and 10 for N4, with a haplotype diversity greater than 0.82. The statistic results revealed no gene flow between the populations. The phylogenetic tree topology showed that individuals chosen for this study were placed in the Danubian clade as the other Danubian sequences selected from GenBank.

The microsatellite analysis revealed that the mean inbreeding coefficient F_{is} was 0.165 +/-0.050 and the fixation index F_{st} was 0.212 +/-0.027. The values for the observed heterozigosity (Ho) were lower than those for the estimated heterozigosity (He) for each population.

This study proved that the four brown trout analyzed populations were genetically distinct, with a moderate genetic diversity within population and that in Romania there still are pure Danubian brown trout populations.

The indicatory role of the amphibians in the monitoring of primary and disturbed forest ecosystems in Vietnam

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Key words: amphibians, biodiversity, bio-indicator, Southeast Asia, Vietnam.

The indicatory value of amphibians in assessing anthropogenic influence on natural habitats is widely supported by modern studies. Amphibians are highly sensitive to changes of their environment because of their low migratory activity, complex biphasic life cycle and strong physiological limitations. The comparative field study performed in diverse national parks and forested areas in Vietnam during 1999-2001 and 2009-2014 shows that the species diversity, abundance and breeding activity of amphibians inhabiting the lowland and mountain tropical forests are greatly affected by the degree of habitat disturbance caused by forest fragmentation, deforestation and modification of river systems. Moreover, human activities related to agriculture, road construction and pisciculture contribute to the interpenetration of diverse herpetofaunistic complexes. As a consequence, the expansion of more tolerant ubiquist species into disturbed ecosystems may affect the ecological welfare of the stenotopic species inhabiting primary habitats. In disturbed forests the proportion of forest-dwelling species decrease in favor of species with high ecological plasticity. The deforestation in mountainous areas cause also the impoverishment of the highly specialized amphibian fauna associated with cascade forest streams. However, the abundance of forest amphibian species which breed in tree holes (e.g., *Microhyla arboricola*, *Theloderma* spp., *Rhacophorus vampyrus*) was observed to increase in the forested areas subjected to moderate selective logging or tapping.

Do tortoises take advantage of archeological diggings in a man-modified habitat?

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Key words: hibernation, man-made habitat, archaeological diggings, Histria Archaeological Complex, *Testudo graeca*.

The Histria Archaeological Complex has an area of 32 ha with archaeological activities taking place every year since 1914. Despite intense archaeological activities, the area houses a large population of the vulnerable Spur-tighted Tortoise, estimated at more than 250 individuals. We hypothesize that tortoises benefit on the diggings to create proper hibernation sites. We evaluated the spatial relation between tortoises' abundance and the distance towards archeological diggings, for each month of activity in 2013 and 2014. The abundance was significantly correlated with mean Euclidean distance towards diggings in March, right after hibernation, and November when the animals were preparing to hibernate (Spearman's $Rho_{March} = -0.510$, $p < 0.001$; Spearman's $Rho_{November} = -0.513$, $p < 0.001$). No significant correlation was found for the period April/ September. These results support the hypotheses that the animals stay close to archaeological diggings in early spring, disperse in summer in search for food and to breed, and finally return to the archeological diggings when temperature goes down in late autumn.

Our results have implication in the tortoises' conservation. They help to understand the usefulness of conservation measures like avoiding disturbing the hibernation sites located in the archeological diggings, or even creating additional hibernacula during routine archeological activities.

Preliminary data regarding habitat availability - habitat use for an isolated population of *Ablepharus kitaibelii* ssp. *stepaneky*

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Key words: Dobrudja, Natural Reserve "Fantanita-Murfatlar Forest", herpetofauna, habitat use, habitat availability.

The ongoing study aims to characterize the habitats used by an extremely small and strictly localized population of the species *Ablepharus kitaibelii*.

The chosen species is a scincid lizard of maximum 13cm, also known as "The European snake-eyed skink". This ground dwelling lizard is usually found in oak woods from forest steppes, in dry leaves or grass.

The population selected for the research resides in "Fantanita-Murfatlar Forest" Natural Reserve (ROSCI0083). The reserve, localized in southern Dobrudja, Constanța County has a surface of 65ha and consists of three major types of habitats: 60% Ponto-Sarmatic steppes, 30% Ponto-Sarmatic steppe with downy oak woods and 10% Ponto-Sarmatic deciduous thickets.

Data regarding the specific habitats availability and their layout have been collected and analyzed, all being further correlated with microhabitat data, food availability and the presence or absence of the targeted species.

Preliminary data show that the species is strictly localized in the site and that it uses less than 30% of the available habitats, despite the fact that all the habitats indexed show remarkable similarities and correspond to the optimal interval for the target species of this study.

Data collecting and interpretation is ongoing until the summer of 2015, for a better understanding of the European snake-eyed skink's patterns.

Preliminary data regarding the natural history, biology and ecology of *Ablepharus kitaibelii* ssp. *stepaneki* in "Fântânița-Murfatlar Forest" Nature Reserve

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Key words: Dobrudja, "Fântânița-Murfatlar Forest" Nature Reserve, Natura 2000 species, lizards.

"Fântânița-Murfatlar Forest" Nature Reserve is situated in southern Dobrudja, Constanța County. The 65ha were declared a nature reserve for over 500 species of plants characteristic to the southern part of Dobrudja. The area consists of three major habitat types: 60% ponto-sarmatic steppes, 30% ponto-sarmatic steppes with downy oak woods and 10% ponto-sarmatic deciduous thickets.

Ablepharus kitaibelii, the species targeted by the current study, is a scincid lizard with a maximum length of 13cm. It prefers oak woods from the forest steppe, being found usually in dry areas, in wilted leaves or in grass (Fuhn, 1961).

Ablepharus kitaibelii was mentioned in the Fântânița-Murfatlar reserve by Fuhn & Vancea (1961), Fuhn (1969) and Tudor (2010), but this species is missing from the Natura 2000 Standard Data Form for the site which overlaps this nature reserve.

The study undertaken sets out to complete the existing data about the biology and ecology of this species by using as model an extremely small and strictly localized population which manages, however, to maintain itself despite anthropogenic pressure.

The results obtained show that the studied population is comprised of a maximum of 80 to 100 adults; the detection probability for the species is very low, while from the temporal point of view, it is restricted to the first months of spring. Also, the analysis of the trophic spectrum shows the predominance of Colembola, Acarina and Hymenoptera (Aculeata) over other invertebrates.

The study will continue until at least July 2015 for a better understanding of the situation of the analyzed *A. kitaibelii* population.

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Impact of climate change on the distribution of the Caspian whip snake (*Dolichophis caspius*): a new method for refining ENM projections

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Key words: *Dolichophis caspius*, climate change, distribution modeling, Maxent, GARP, maximum dispersal range.

Global climate change is fast becoming one of the most important threats to biodiversity, but the resulting impact is still under debate and very difficult cu predict. One of the most popular tools employed to try and foresee possible outcomes is environmental niche modeling (ENM), but the procedure ignores one very important variable that shapes the distribution of organisms – dispersal.

Among animals, reptiles have a large number of species under threat of extinction and snakes populations around the globe have shown a sharp decline in recent times, as a result of their physiological constrains and low dispersal rate.

The Caspian whip snake (*Dolichophis caspius* Gmelin, 1789) is a xerophilous snake species whose habitats (steppes, forest-steppes and xeric forests) are extremely fragile and prone to land use changes. We employed distribution modeling using two presence-background techniques – Maxent and GARP, in order to evaluate the impact of climate change on the species. Furthermore, dispersal was quantified in post-analysis in order to obtain a better image of the changes involved. Occurrence records were extracted from literature surveys and the authors' personal database and climatic variables were downloaded from the WorldClim website (www.wordclim.org) for present and future (2020, 2050 and 2080) conditions. Models were evaluated based on partial ROC, omission error and the opinion of the experts involved. Post-modelling analysis involved a cost distance analysis in ArcGIS 10.2 using geomorphological, ecological and anthropogenic variables not included in the modeling phase.

Models developed were significant above the null expectations and the authors considered they are a good representation of the species' current range. Future projections based on Maxent showed a twofold increase in climatic niche available for the species by 2080, while GARP showed a more conservative expansion. Both modeling algorithms predicted increased climatic space north of its current distribution range and a small reduction in habitable space at the southern distribution limit.

When factoring in dispersal, the Maximum Dispersal Range (MDR) for *D. caspius* was equivalent to only a third of the original Maxent projection and about 20% of the GARP model, greatly reduced from the initial expectations.

The Moldavian meadow viper (*Vipera ursinii moldavica*) conservation project

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Key words: reptiles, steppic grasslands, habitat loss, agriculture, education.

The Moldavian meadow viper (Vipera ursinii moldavica) is a subspecies of the Orsini's viper endemic to eastern Romania. The subspecies currently persists in two distinct regions of the country: in the Danube Delta of south-eastern Romania (three known populations) and in steppe habitats near Iaşi city in north-eastern Romania (3-4 known populations). Previous records for this subspecies exist from Bulgaria and the Republic of Moldova, but these are presumed extinct. The Moldavian meadow viper is labelled as Critically Endangered (CR) by the IUCN Red List, the main threat to the taxon's persistence being habitat loss.

The goals of the current project, funded by the Mohamed bin Zayed Species Conservation Fund, are (i) to establish a solid scientific background for the conservation of the Moldavian meadow viper and (ii) to conduct an awareness campaign in the local community. Thus, we aimed to assess the current distribution of the subspecies in Romania by modelling the bioclimatic niche; conduct field surveys in previously-recorded as well as potential habitats; assess the status of the populations' size, density, age and sex structure; investigate variations in activity patterns, habitat use, feeding ecology and life history traits; collect tissue samples for future population genetics studies; monitor and record human activities that might represent threats, and communicate with the responsible environmental authorities; and promote the need to protect the subspecies by communicating to the media and the local communities.

Future projects will focus on conducting the first detailed study on the genetic diversity of Moldavian Meadow Viper populations and the first radio-telemetric studies for a better understanding of the subspecies' spatial ecology.

The ornithofauna of "Fântânița-Murfatlar Forest" Nature Reserve, Constanța, Romania

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Key words: Dobrudja, "Fântânița-Murfatlar Forest" Nature Reserve, Natura 2000, ornithofauna.

The "Fântânița-Murfatlar Forest" Nature Reserve is located in Southern Dobrudja, Constanța County. With an area of 65 ha, it was declared a nature reserve for more than 500 plant species characteristic to this geographical region.

Although the Natura 2000 standard data form for the site (ROSCI0083) overlapping the nature reserve states its strictly conservative status due to, not only the flora, invertebrate, reptile and mammalian species, but also to the globally protected ornithofauna, this area is not included in any existing SPA, nor are any bird species mentioned in the SCI's standard data form.

These being considered, recurrent monitoring sessions were undertaken between August 2013 and September 2014 in order to observe, identify and photograph the birds included in OUG 57/2007 (Annex III and IV). Annex III of emergency ordinance 57/2007 lists the species of plants and animals for which it is necessary to designate special conservation areas, while Annex IV lists the species that are under strict protection. The emergency ordinance 57/2007 was adopted as a result of the European Union Habitat Directive 92/43/EEC and Birds Directive 79/409/EEC.

So far, 47 species have been found, 17 of which are part of the conservation interest species (Annex III and IV).

Also, according to the IUCN, two of the species are Near Threatened: *Falco vespertinus* and *Coracias garrulus.*

This study proposes to highlight the high value of this area in terms of species and the need to include it in a SPA protected area.

The ornithofauna of Lake Tăbăcărie (ROSPA0057), Constanța, Romania

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Key words: Dobrudja, Constanta, Siutghiol lake, lake Tabacarie, Natura 2000, ornithofauna.

Lake Siutghiol and Lake Tăbăcărie (ROSPA0057) are situated in the northern part of Constanța; they are connected through their evolution and through a sluicegate. Lake Tăbăcărie is located within the city limits and has a surface of 99 ha. It is heavily affected by anthropic activities: tourism, traffic, human inhabitance (Constanța city, Mamaia touristic resort), fishing etc., being polluted not only chemically, but also through noise and light. Nonetheless, Lake Tăbăcărie, along with the park surrounding it, represents an important refuge for protected birds.

Recurrent monitoring sessions were undertaken at the location between March and November 2014 in order to observe and photograph the ornithofauna. A total of 37 species were found as a result, 15 of which are included in Annex III and IVB, and seven are included in Annex V of OUG 57/2007.

Annex III of the OUG lists the species of plants and animals for which special conservation areas are designated, Annex IV lists the species that are under strict protection and Annex V lists the species which are subject for management work.

The following observed species are not included in the Natura 2000 standard data form: *Nycticorax nycticorax*, *Ardeola ralloides*, *Falco tinnunculus*, *Remiz pendulnus*, *Miliaria calandra*, *Chloris chloris* and *Carduelis carduelis.*

The monitoring will continue in the cold season in order to observe the winter species that take shelter as a temporary stop or permanent refuge in Tăbăcărie park and on the lake.

New bird species recorded in Republic of Moldova during 2011-2014

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Key words: birds, Republic of Moldova, new records.

The Republic of Moldova is a South-eastern European country with a mosaic of natural and artificial habitats which are traditionally managed. This structure of habitats maintains a high biodiversity and ensures suitable condition for species conservation. In this area 285 bird species were recorded, until 2010. This number of species was influenced by the low number of observers and surveys. During the last 4 years, we found 11 new bird species. This data was recorded due to an increasing number of field surveys which were developed in the last four years. Regarding their phenology for Republic of Moldova, 5 species are observed in passage (*Phalaropus lobatus*, *Larus ichthyaetus*, *Calidris temminckii*, *Motacilla citreola*, *Arenaria interpresis*), 5 species are breeding (*Passer hispaniolensis*, *Luscinia svecica*, *Lanius excubitor*, *Buteo rufinus*, *Emberiza melanocephala*), and one species (*Cygnus columbianus*) has the wintering territories in this area. The large number of new species for the Republic of Moldova does not indicate a change in the environment or in species ecology, but rather, a greater field effort in the last years. Also, these bird species are common for the neighboring countries. We are expecting to an increase of species number in the future years, due to an increase of regularly field surveys

This work was supported by the strategic grant POSDRU/159/1.5/S/133652, co-financed by the European Social Fund within the Sectorial Operational Program Human Resources Development 2007-2013.

Overview of Ferruginous duck, *Aythya nyroca*, in the Iron Gates Natural Park

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Key words: water bird, Ferruginous duck, Natural Park Iron Gates, Romania.

The first notes on the presence of the Ferruginous duck in the Iron Gates Natural Park belong to Linţia, who, at the beginning of the 20th century , noted in his notebooks two specimens observed at Ostrovul Moldova Veche, in October 1905 and March 1907 (Kiss, 2004).

Detailed studies on the avifauna of the area began in 1990 when Chişamera (2003) research the avifauna of Ostrov Moldova Veche some subsequent years. Kiss (2005) followed the wintering of the bird populations on the Danube, between Orşova and Baziaş continuously, for ten years, and underlined that between 60 and 1000 specimens of *Aythya nyroca* spent the most difficult months of the year in this area.

Along our study, during 2012-2013-2014, we monitored the Ferruginous duck populations from the Iron Gates Natural Park in seven select6ed areas, according to the species optimum habitat: Area I Baziaş - Gurile Nerei; Area II Ostrovul Calinovăţ; Area III Divici – Pojejena; Area IV Coronini – Ostrovul Moldova Veche; Area V Măceşti; Area VI Liubcova; Area VII Golful Orşova. We observed Ferruginous duck, *Aythya nyroca,* during migration and wintering periods, but also during the reproduction one. In the first half of July, along all years, we observed 7-10 pairs each which nested in the Area IV Coronini – Ostrovul Moldova Veche and upstream the village Pojejena, in a bay, strongly eutrophicated, surrounded by willows and reed. On the surface of the shallow waters, real living islands float, of water lilies, on which several pairs of *Chlidonias hybridus* (50-100) nestle. In this habitat preferred by the Ferruginous duck, we saw females with their chickens, of around 10 days old, this aspect meaning that the nestling period was in June, and the hatching one, at the end of June and beginning of July. We haven't found too much data on the egg laying and breeding of chickens.

In the Iron Gates Natural Park, the Ferruginous duck nestles in the Area III Divici – Pojejena and Area IV Coronini – Ostrovul Moldova Veche.

This study was conducted within the Project *LIFE10 NAT/RO/740 – Improving the conservation status for the priority species and habitats in the Iron Gates wetlands* and it is financed by the European Committee, by the General Environmental Directorate.

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The shorebird dynamics in the Razelm-Sinoe lagoon area of the Danube Delta Biosphere Reserve

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Key words: shorebirds, wetlands, the Danube Delta Biosphere Reserve, dynamics.

The Danube Delta Biosphere Reserve is a hotspot for biodiversity in Europe. This wetland, which is located in Southeastern Romania, has a big diversity of habitats: reed beds, marshland, lagoons, brackish water areas and sand banks.

Between 2008 and 2013 we have conducted shorebird surveys in the Razelm-Sinoe lagoon area (part of Danube Delta Biosphere Reserve) using fixed observation points and transect methods.Through these surveys 37shorebird species were observed. Out of them, 9 species are breeding and the rest of 28 species are passage birds. The most abundant shorebirds in the lagoon area there are Black-tailed Godwits (*Limosa limosa*) with groups of up to 5.000 individuals and Ruffs (*Philomachus pugnax*) with groups of up to 2.000 individuals. Other species with high numbers are Sanderlings (*Calidris alba*), Avocets (*Recurvirostra avosetta*), Collared Pratincoles (*Glareola pratincola*), Golden Plovers (*Pluvialis apricaria*), Lapwings (*Vanellus vanellus*), Dunlins (*Calidris alpina*), Little Stints (*Calidris minuta*), Wood Sandpipers (*Tringa glareola*) and Marsh Sandpipers (*Tringa stagnatilis*) with groups over 200 individuals. The best sites for shorebirds from this studied lagoon area, according to our data are Grindul Chituc-Vadu area, Lake Plopu-Beibugeac, Grindul Lupilor, Sarinasuf and Istria (over 200 individuals for each survey). In these five areas the numbers of shorebirds are high because they offer food resources and good roosting places, due to the shallow water with a very stable level. Our study gives us new data on shorebirds migration in the Razelm-Sinoe lagoon area of the Danube Delta Biosphere Reserve emphasizing the importance of this site for bird migration.

Rediscovery at breeding the White-tailed Eagle (*Haliaeetus albicilla*) in Republic of Moldova

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Key words: White-tailed Eagle, breeding, population, Prut River.

The White-tailed Eagle (*Haliaeetus albicilla)* as a breeding bird is distributed in the northern Palaearctic, European population is roughly divided into a north-eastern (foremost Norway, Sweden, Finland, Russia, Poland, and Germany) and a south-eastern subpopulation (Danube river basin countries) (Probst & Gaborik, 2012). The White-tailed Eagle enjoys high ranking protection statuses in most international conventions, in our country species has a status of critically endangered. In the middle of last century in Moldova about 15 pairs of the White-tailed Eagle were nesting. However, the number of the species has continued to decline in our and neighboring countries, and in the early 1970s', in our territory only 3 pairs were nesting (Ganya & Zubkov, 1989). In following years it has ceased to nest in our country, but in early 2000s' the number of Eagles began to increase in the South-Western Europe. During our field studies, in the last five years, White-tailed Eagle was re-discovered at breeding. We recovered a nest with 2 chicks in 2011 and in 2012 – with one chick within the reserve Pădurea Domnească, however during the nesting period the tree with the nest was cut down at the end of the year. In 2013 the White-tailed Eagle was nesting again on the Prut flood-lands below the dam on the Costești water storage. Within the Reserve "Prutul de Jos" 2 nests of the White-tailed Eagle were recorded (Munteanu et al., 2012). This is due to redirection the tributary Camenca, thus creating and enlarging wetlands of the medial Prut River. Another factor we assume that is to increase the number of nesting pairs in neighboring countries. The number increase of breeding pairs is observed in Ukraine, in the delta of the Dniester River in 2011, 4 pairs of this species were nesting (Rusev et al., 2011). In Romania, around 25-30 pairs are nesting, mainly in the south, in the valley and the delta of the Danube River (Probst, Gaborik. 2012). In spite of the effort of White-tailed Eagle, old habitats are cruelly disturbed by people. In the spring of 2013 the tree with nest of White-tailed Eagle were cut near Costești Lake.

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Spatial and temporal evaluation of birds with help of KusBank Database

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Key words: KusBank, birdwatch, distribution, phenology, citizen science.

KusBank is a citizen science project database which serves as an important tool to collect birdwatchers records across Turkey to contribute bird conservation, population estimates and distribution. This study aims to document species' distribution, status and phenology with KusBank data.

480.200 birdwatch data from 1931-2014 were used to evaluate at species and site level. 477 bird species have been recorded in Turkey and of these, there is an entry for 438 (92%) at KusBank. According to the data at KusBank, the most commonly reported species in Turkey are *Passer domesticus*, *Corvus cornix*, *Fringilla coelebs, Pica pica*, *Parus major*, *Turdus merula*, *Carduelis carduelis*, *Hirundo rustica*, *Galerida cristata*, *Fulica atra*.

The highest data entry is during spring and autumn migrations, where April and May dominates because of the singing breeding birds. The most visited 5 sites are as Kızılırmak Delta, Gediz Delta, Mogan Lake, Güllük Delta, Göksu Delta. The most monitored Important Bird Areas (IBAs) are Kızılırmak and Gediz Delta.

Observation records provide also information about species distribution and phenology. Migratory *Ficedula parva* is distributed predominantly through the northern half of the country, *Luscinia svecica* has a passage period in spring and in autumn in two weeks, *Lanius nubicus* arrives as early as March whereas *L. collurio,* in the beginning of April. *Clamator glandarius* arrives in February and departs in September, *Sylvia nisoria* finishes autumn migration on late August while the autumn passage of other *Sylvia* species are later.

There is in entry to KusBank from previous and present years and since 2012 on average yearly 50.000 data entry is done. Increasing data entry and quality of data will allow us to make more detailed analysis.

Assessment of ecosystems supporting service for colonial birds in Small Island of Brăila

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Key words: ecosystem services, habitat, birds, distribution maps.

Ecosystems supply a various range of goods and services, including the provision of supporting habitats for biological diversity. In this paper we examine the habitats from Small Island of Brăila Natural Park as support for nine colonial bird species: Great Cormorant (*Phalacrocorax carbo*), Pygmy Cormorant (*Phalacrocorax pygmeus*), Night Heron (*Nycticorax nycticorax*), Squacco Heron (*Ardeola ralloides*), Little Egret (*Egretta garzetta*), Grey Heron (*Ardea cinerea*), Great Egret (*Ardea alba*), Spoonbill (*Platalea leucorodia*) and Glossy Ibis (*Plegadis falcinellus*). Bird - habitat association was evaluated according to the species nesting, resting and foraging needs. Distribution maps for species - specific and community level habitat associations were created for the study area. Willow (*Salix* sp.) dominated forests are nesting habitat for all species. The maximum specific diversity for resting areas is found in marshes and in littoral zone of the shallow lakes. Based on the high species diversity recorded in, the preferred foraging habitats are marshes, littoral zone of the shallow lakes, natural grasslands and riparian areas. Only the two cormorant species are using the open river water and the shallow lakes limnetic zone, when present, as foraging habitats. Important bird nesting, resting and foraging habitat clusters are highlighted. The management implication of supporting habitats - bird association patterns are presented on the distribution maps in relation to the internal zonation of the park.

Recent ring recoveries from the Romanian Ornithological Centre database

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Key words: bird ringing, migration, recoveries, Romanian Ornithological Centre.

Romanian Ornithological Centre (COR) is an organization with tradition in bird ringing and bird migration studies in Europe, being active since 1939. As member of European Union for Bird Ringing (EURING), COR is responsible for coordinating bird ringing activities all over the country and centralizing all ringing and recoveries. Further we present recent ring recoveries reported for 2013-2014 by Romanian Ornithological Centre's licensed ringers and volunteers.

There are 83 ring recoveries for the mention period consisting in 78 foreign rings from 11 countries and 5 Romanian rings. Most of the data came from observation and distance reading of colour rings, from casualties like road kill (n=2) or collision with power lines (n=4) and from recaptures (n=3). All together 17 bird species have been reported. Among them *Ciconia ciconia* is the most abundant (n=55). Other recovered species were *Ciconia nigra*, *Cygnus olor*, *Falco tinnunculus*, *Falco vespertinus*, *Hippolais icterina*, *Larus argentatus*, *Larus cachinnans*, *Larus michahellis*, *Larus ridibundus*, *Loxia curvirostra*, *Phoenicurus ochruros*, *Serinus serinus*, *Sterna caspia*, *Sterna hirundo*, *Sylvia atricapilla*.

Although in the last years ringers from Romania had focused in most important *hot spots* for bird migration in Romania, the small number of Romanian recoveries must be considered a signal from Romanian ringers to be more involved in projects and studies related to bird migration and conservation.

Spatial data collection in bat research and conservation: Bat Mobile

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Key words: android application, field data collection, central database, bats.

Collecting a standard format of data in the field has always been a critical step in the environmental sciences, due to the fact that they rely on a large number of observations in order to denounce objective theories, such as the biological sciences. As new research methods are devised by specialists, the quantity of information collected in the field is increasing. A common data collection platform can be a solution for groups of researchers who will want to process a sample using different approaches, from complex spatial dispersal models of rabies in bats, to a simple species distribution model generated using only the presence of a given species of interest. Using one central database it can help reduce user biases related to data transfer from the field to the laboratory.

The datasets contained in the platform were generated for the West Palearctic bat fauna, in relation to certain field and laboratory data collection methods, such as wind farm mortality studies, mist netting, virusology, toxicology, stable isotopes, genetic samples, necropsy results, injuries and rehabilitation attempts. Data can be added both in the field, using an Android device, preferably with access to GPS and camera, and via a browser interface. Another important use for the application will be public participation, allowing non researchers to get involved and to help protect bats by spotting out injured individuals via their smartphone or contacting specialists in the area if they will want to safely relocate a bat colony from their home. Also, they can observe the evolution of an injured bat in a given rehabilitation center. Data extraction from the application will be compatible with the ArcGIS platform.. In time, this can generate important datasets that can lay the foundations for a comprehensive study using species distribution models, and can facilitate collaboration between chiropterologists in Europe.

New data on Horseshoe bat (Genus *Rhinolophus*) colonies in Romanian anthropic roosts and implications for conservation

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Key words: *Rhinolophus*, anthropic roosts, Romania, conservation, new colonies.

During 2013-2014, we have surveyed seven important colonies of *Rhinolophus* species in six anthropic roosts of Romania. Out of these, five colonies and four sites were unknown to the Romanian bat fauna. The Lesser horseshoe bat (*Rhinolophus hipposideros*) nursery colony in the Crișul Repede Gorge is monitored since 2010, with the number of bats being between 110-170. Similarly, the Mediterranean horseshoe bat (*Rhinolophus euryale*) nursery colony from the Unitarian Church of Moldovenești is monitored since 2012, with the number of bats being around 160 bats. However, recent field work has identified five large *Rhinolophus* colonies in four anthropic roosts of Romania. Out of these, the Greater horseshoe bat (*Rhinolophus ferrumequinum*) nursery colony, located in an abandoned building of Sasca Montană locality is the largest, with some 300 bats forming the main colony, together with 150 Geoffroy's bats (*Myotis emarginatus*) and 50 middle sized *Rhinolophus* bats. Two other significant nursery colonies were identified in Gilău and Săcueni. The colony from Gilău is located in a disused refrigerator warehouse, numbering 150 Greater horseshoe bats and 60 Geoffroy's bats. The site is threatened with demolition. The colony from Săcueni is located in the Stubenberg Castle, and includes 220 Greater horseshoe bats and 60 Geoffroy's bats. The site is currently being restored, threatening the presence of the colony. The Călugăreni Monastery harbours a hibernation and nursery colony of the Lsser horseshoe bat (40-45 bats), together with 100 Geoffroy's bats during the nursery period. Locals are aware of the colonies present, however the restoration of the site could threaten the presence of bats. In case of all sites presented, urgent conservation actions are needed. These actions should include raising awareness in local communities, cleaning accumulated guano, maintaining site specific aspects (e.g. entry point for bats) or more complex interventions inside buildings.

Assessment of non-invasive methods for surveying wolves in Sasso di Simone e Simoncello Natural Park

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Key words: wolf, *Canis lupus*, non-invasive methods, Italy.

Several methods are used for ascertaining the presence and the abundance of wolves, but their combination allows getting the best results. However, the choice of the appropriate methodology depends on many factors, such as: environmental features, costs, manpower, time restrictions, and also on the kind of questions that are being addressed. This study was carried out within the Programme for the Conservation of the Wolves and other Wild Carnivores in the Region of Marche from November 2010 to December 2011and it tries to show advantages and disadvantages of four non-invasive methods applied in an area located in Central Apennine (Sasso di Simone e Simoncello Natural Park).

Methods performed in this study were: camera trapping (C.T.), snow-tracking (S.T.), wolf-howling (W.H.), and scat surveys associated to genetic analysis (S.S.G.). Genetic analysis were carried out by Genetic Laboratory of Istituto Superiore per la Protezione e Ricerca Ambientale (ISPRA), Ozzano dell'Emilia (BO).

S.T. was the best method to quickly discover the wolf presence, but at the same time, the less appropriate to estimate wolf pack size. On the contrary, C.T. and S.S.G. permitted to collect more reliable information about number of wolves in the pack, but with higher effort than other techniques. Moreover C.T., W.H., and S.S.G. permitted to evaluate breeding success of wolf pack.

Considering costs and benefits of the different methods applied in this study, we suggest the adoption of S.S.G., due to focused field effort only during winter season. This approach allows lowering the total costs of the project by 50%, and at the same time to collect information about wolf pack size and structure.

This study is carried out within the Programme for the Conservation of the Wolves and other Wild Carnivores in the Marche Region. We are grateful to Regione Marche – Assessorato Ambiente for financial support; Parco del Sasso di Simone e Simoncello, Provincia di Pesaro e Urbino, DREAm. Italia Soc. Coop, Consorzio Terre Alte - Soc. Coop. for logistic support.

The catalogue of Romanian Sphecidae (Hymenoptera: Apoidea) from the Collection of "Grigore Antipa" National Museum of Natural History (Bucharest)

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Key words: Sphecidae, *sensu stricto*, collection, catalogue.

This catalogue presents the Hymenopteran Sphecidae material from Romania in the collection of the "Grigore Antipa" National Museum of Natural History.

Sphecid wasps represent a group of solitary insects, with a diverse ecology and behaviour. The traditional classification included all sphecoid wasps in the Sphecidae family. Phylogenetic analyses indicated this group to be paraphyletic and divided the former Sphecidae family (*sensu lato*) into four families: Heterogynaidae, Ampulicidae, Crabronidae and Sphecidae (*sensu stricto*) (Shayestehfar, 2014). In the present paper we focused only on the Sphecidae family (*sensu stricto*), according to Pulawski's clasiffication (Pulawski, 2009).

The Sphecidae from the Romanian fauna of the "Grigore Antipa" National Museum of Natural History collections consists of 318 specimens from 15 species. The species within this collection are grouped in 7 genera and 3 subfamilies - Ammophilinae, Sphecinae, Sceliphrinae. The material was collected between 1932 and 1995, from 92 collection points in 31 counties. The majority of specimens are from Transylvania and Dobrogea regions. Part of the specimens belonged originally to Dr. Eugen Worell Collection. Most of the species' identifications were made by Dr. Xenia Scobiola-Palade, which studied this group.

In order to elaborate the catalogue of Sphecidae Collection, we have updated the species' classification, the scientific names, the names of localities (collection spots) and we have verified and determined the sex of the specimens. For every individual we have specified the sex, collection point, date of collection and collector's name. Comments regarding species' frequency and distribution in Romania are also made.

The elaboration of the present catalogue can be the beginning for further research of the other families of sphecoid wasps from Hymenoptera Collection of the "Grigore Antipa" Museum.

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On the species of *Brachinus* Weber (Coleoptera: Carabidae: Brachininae: Brachinini) in the collections of Natural History Museum Sibiu (Romania)

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Key words: *Brachinus*, collections, Natural History Museum Sibiu.

The *Brachinus* genus has been very poorly studied in Romania. There are old faunistical lists, such as Fleck (1905), Montandon (1906), Jonesco (1911), Petri (1912, 1925-1926), Negru (1957), Săvulescu & Popescu-Gorj (1964), Negru & Roşca (1967), Ieniştea (1968, 1974, 1975). Besides these papers, there are few articles dealing with ecological and zoogeographical aspects, which record *Brachinus explodens* Dufts., 1812 and *B. crepitans* (L., 1758), the most frequent species in Romanian fauna. A checklist of Brachinini tribe with seven species was published by Nitzu (2007).

I have studied 356 specimens preserved in the following collections of the Natural History Museum Sibiu: *Transylvanian Society*, *Karl Petri*, *Eugen Worell*, *Rolf Weyrauch* and *Eckbert Schneider*. The specimens came from Romania, Austria, Croatia, France, Germany, Greece, Italy, Kazakhstan, Portugal, Republic of Moldova, Spain, Ukraine, Algeria and Egypt. Part of the material mentions the collecting site, but the rest only has generic information: Frankreich, Österreich, Siebenbürgen. The specimens were collected between 1858 (*Transylvanian Society* collection) and 1971 (*Eckbert Schneider* collection).

The identification was made on the basis of both outer and inner morphological features using Hurka's (1996) and Baehr's (2004) identification keys.

There are seventeen species of *Brachinus* in the collections of the Natural History Museum, six of them being present in Romania fauna: *B. crepitans* (Linnaeus), *B. ejaculans* Fischer von Waldheim, *B. elegans* Chaudoir, *B. plagiatus* Reiche, *B. explodens* Duftschmid and *B. bipustulatus* Quensel. A few specimens identified as *Brachinus crepitans* (L.) collected from Canaraua Fetii (southeastern part of Romania) belong to *Brachinus elegans* (Chaud.). All the specimens identified as *Brachinus psophia* A.-Serv. belong to *Brachinus elegans* (Chaud.). The specimens identified as *Brachinus immaculicornis* Dej. (Pola, Croatia and Banat, Romania, 1895) belong to *Brachinus crepitans* (L.).

Additional foreign species such as: *Brachinus andalusiacus* Rambur, *B. boeticus* Rambur, *B. pygmaeus* Dejean (Spain), *B. bellicosus* L. Dufour (Portugal), *B. italicus* Dejean (Italy), *B. sclopeta* (Fabricius), *B. exhalans* (P. Rossi), *B. humeralis* Ahrens (France), *B. quadriguttatus* Gebler (southern Russia), *B. lethierryi* Reiche (Algeria) and *B. oblongus* (Dejean) (Egypt) - 58 specimens, are also present in the Museum collections.

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The catalogue of "Bănărescu-Nalbant" ichthyological collection (Cyprinidae: Barbinae) from the "Grigore Antipa" National Museum of Natural History (Bucharest, Romania)

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Key words: fish, ichthyological collection, zoogeography, Barbinae, Cyprinidae, museum patrimony.

The scientific ichthyological collection "Bănărescu-Nalbant" was accomplished by Acad. Petre Bănărescu Ph.D. doc. (1921-2009) and researcher Theodor Nalbant Ph.D. (1933-2011) at the Institute of Biology of the Romanian Academy (Bucharest) until 1999, when it was donated at „Grigore Antipa" National Museum of Natural History. The collection was completed by the authors in the following years at its new location until they passed away.

The collection contains over 15.000 specimens, preserved in alcohol and formalin, collected from almost all the rivers in Romania, but also from other European waters and different continents, such as: Africa, Asia and America. The specimens are either collected by the authors, either obtained by exchange of material with other ichthyologists.

The collection's content is represented by common species and also by endangered and endemic species, mostly collected in the second half of the 20th century, among them being recorded even older specimens such as *Barbus goktschaicus* Kessler, 1877, collected in 1909 (endemic species, Lake Sevan, Armenia). The collection also contains type specimens such as *Luciobarbus microcephalus* (Almaça, 1967), collected in 1962 (Rio Guadiana, Portugal).

Barbinae Subfamily (Cyprinidae) from "Bănărescu-Nalbant" ichthyological collection sums up to 75 species (genera: *Acrossocheilus, Barbus, Caecobarbus, Carasobarbus, Labeobarbus, Luciobarbus, Pseudobarbus*), with 1318 specimens contained in 354 recipients. The specimens are collected on 3 continents (Africa, Asia and Europe), from 30 countries (Angola, Armenia, Azerbaijan, Botswana, Bulgaria, China, D. R. Congo, France, Georgia, Ghana, Greece, Hungary, Iran, Israel, Italy, Lesotho, Macedonia, Moldova, Mozambique, Nigeria, Portugal, Romania, Russia, Spain, South Africa, Taiwan, Turkey, Ukraine, Zambia and Zimbabwe).

Even though its uncertainty of placement (*incertae sedis*) in the Cyprinidae Family, at the end of the catalogue is included 1 specimen of *Barbichthys laevis* (Valenciennes, 1842) collected from Thailand.

"Bănărescu-Nalbant" ichthyological collection from the "Grigore Antipa" National Museum of Natural History (Bucharest, Romania) is a collection of reference for Romania's freshwater fish fauna. It is the largest ichthyological collection in Romania and, at least for the Cyprinidae family, one of the richest in the world.

The hereby collection doesn't represent only a mass of preserved fish, it's in fact a valuable biological archive of worldwide ichthyological biodivestity and also a very important part of historical zoogeographic proof.

Ghika Comăneşti expeditions and the Museum of Zoology from Bucharest

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Key words: expeditions, Africa-Somalia, Canada, donations, collections.

Dimitrie and Nicolae Ghika Comăneşti's expedition in Africa, in 1895 remained forgotten for more than 110 years. The two volumes, published in 1897 "*O espediţie română în Africa*" ["A Romanian Expedition in Africa"] by Dimitrie N. Ghika- Comăneşti, in Bucharest and "*Cinq mois au pays des Somalies -suivie de la faune de Somalie et d'une liste de plantes decrites par G. Schwinfurth et G. Volkens*" by Nicolae D. Ghika-Comăneşti, remind us the remarkable scientific results of this travel, initially thought as a hunting expedition. They include: weather observations made three times a day, in all day and night stations, noted in a table enclosed to the work; daily measurements on the atmospheric pressure made with the barometer; drawing a detailed map of the route, mentioning some geographic results, unknown yet, with Professor Philipp Paulitscke's help; collecting and conservation of 55 plant species, out of which only 52 could be identified up to the species levels, with 16 species and a genus new to science, *Ghikea* (Scrophulariaceae); valuable observations on the fauna and behavior of 24 large mammal species.

"Together with my son, I got the following hunting results: 16 Pelzelni and Spekei gazelles; 3 wild donkeys, 24 Walleri gazelles, 55 Soenmerringi gazelles, 25 *Oryx beisa*, 8 warthogs, 1 lion and 3 lionesses, 5 elephants, 2 panthers, 11 Kudu, 8 Hartbeest (*Bubalis swaynei*), 4 crocodiles, 7 rhinos, 11 Kudu of the small species, 2 Kudu of the large speciesd, 5 spotted hyenas, and 2 stripped hyenas, 15 zebras, 4 waterbucks (*Cobus ellipsiprymnus*) and a giraffe. Two of each most beautiful heads were prepared by Rowland Ward, the well-known naturalist of London, out of which one of each species as well as the giraffe were given to the Museum and the others are sheltered in the castle of Comăneşti".

Indeed, in the "Grigore Antipa" Museum archive we found the donation document of 14th of October 1896, when the Museum of Natural History of Bucharest received from the princes Dimitrie and Nicolae Ghika-Comăneşti their donation with items from their expdition in Somalia.

Other two expeditions in North America and Alaska, made in 1910 and 1911 by Nicolae Ghika- Comăneşti remained unknown. They are reminded in the article "*O călătorie în pădurile Americii de Nord*" ["A Trip in the Woods of North America"], published in the Magazin of Forests, XXVI, 1912, in which the main moments of the two expeditions made in two subsequent years in North America and Alaska, in very difficult areas, are reminded. The results of these two trips are materialized in the over 30 specimens of bird species donated to the museum.

With this study, we proposed ourselves the research of these donations and the completion of their catalogue.

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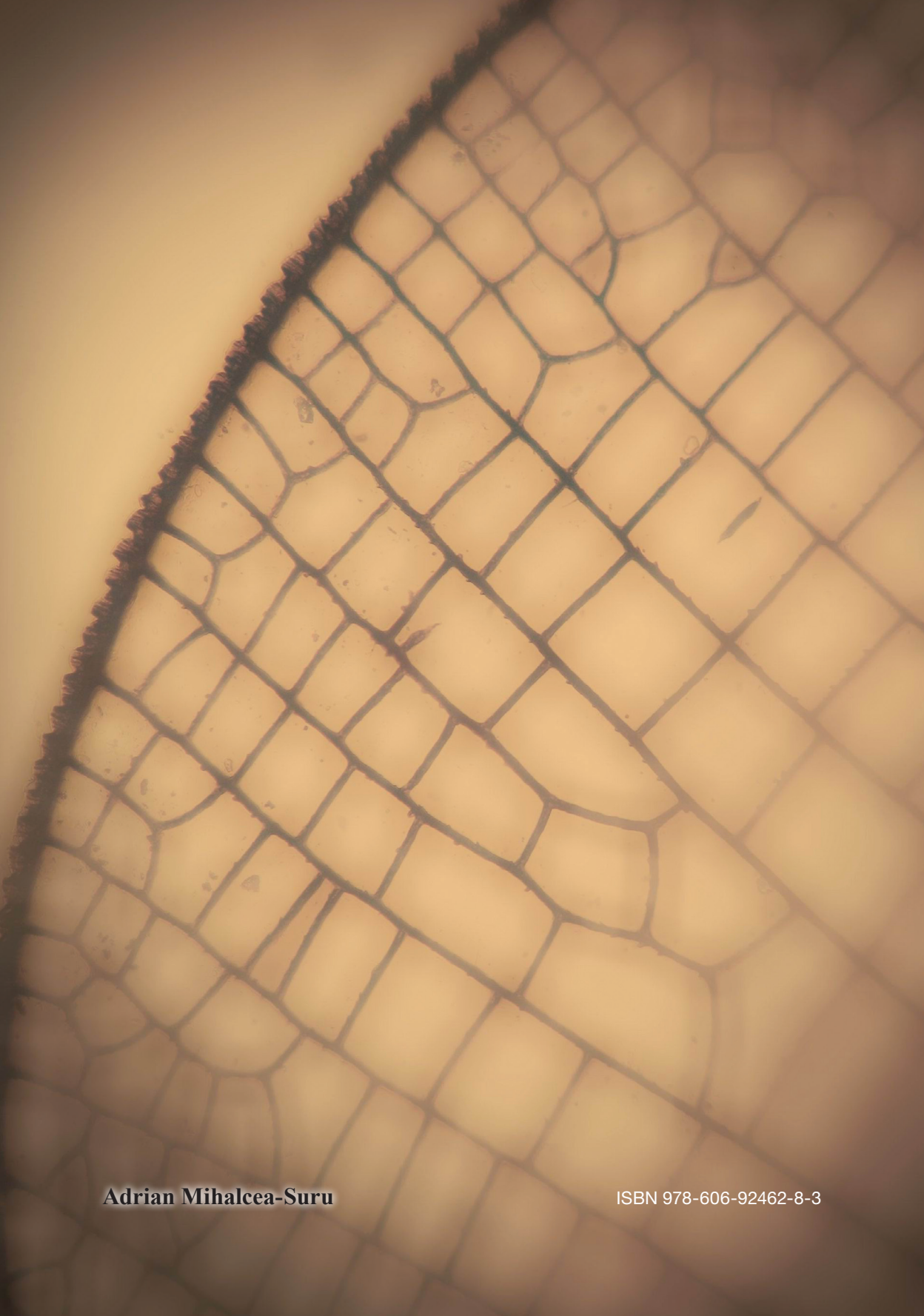

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ISBN 978-606-92462-8-3