P 19.

Alexandru-Nicolae STERMIN, Liviu-Răzvan PRIPON – Little crake (*Porzana parva*) juveniles behaviour and interaction with the other bird species in the post-breeding season

Little Crake (*Porzana parva*) juveniles behaviour and interaction with other bird species in the post-breeding season

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Introduction

Little Crake is a species inhabiting emergent vegetation in wetlands (Cramp and Simmons, 1983). Rails and Crakes are territorial during the breeding season and and show clumping (Tyler, Ciach, 2007). They are resistant and other species are driven away (Ciach, 2007).

Material and methods

We choose to evaluate crake activity in a 50 square meters area, along one month, both in morning and afternoon, tracking the presence, abundance, behavior and time spent of each rails species.

Study area

Chiparosani fishing complex (NW Romania - Transylvanian Plain) contains 5 main ponds and other few smaller ponds for fish raising. Chiparosani ponds have no protective status.

The study area is in the NW corner of the pond no 4. It is covered with reed (*Phragmites australis*) and rush (*Typha latifolia*). There are some open areas through vegetation, marked by a 1' and 1'' where bird were observed.

Results

Figure 1. The percentage of use for each open area where *Porzana parva* was observed.

Figure 2. Showing the passerge posture and the cross between 2' to 3 of one *P. parva* juvenile

Figure 3. Distance between *Porzana parva* individuals.

Figure 4. *P. parva* behavior activities

Concerning *P. parva* juveniles, in most of the cases when observed conspecifics they gather close to 20-50 cm apart (Fig. 3). There is another spike for a distance that represents the presence of individuals in different x where they couldn't feel the presence of the others due to the vegetation.

Most of the observations *Porzana parva* last for study are 10-30 sec (Fig. 4). The other behaviors observed occasionally, are probably realized in vegetation where the bird is difficult to see.

Preener posture of *Porzana parva*

Grooming posture of *Porzana parva*

Figure 5. Diurnal vegetation of *Porzana parva* presence

Evaluating the period of day in which we registered *P. parva* presence in the open areas, we concluded that its diurnal activity shows two spikes: one at 9 am o'clock and other at 6 pm o'clock (Fig. 5).

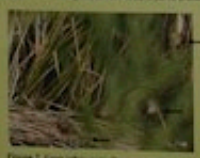

Figure 7. From left to right: *Porzana parva*, *Gallinula chloropus* and *Ixobrychus minutus*

We found out that frequently, *Porzana parva* juveniles forage next to other bird species (Rallidae, Sylviidae, Ardeidae).

Figure 8. Specific and interspecific groups observed

Porzana parva /Acrocephalus schoenobaenus

Juvenile *A. schoenobaenus* next to *P. parva*

Among all rails species, there is an active relationship between *Porzana parva* and *Acrocephalus schoenobaenus*. In 70% of cases observed species *A. schoenobaenus* provides *P. parva* with 16% flap offer (Fig.).

The [illegible] between *P. parva* and *A. schoenobaenus*

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	6	5	[illegible]
[illegible]	[illegible]	[illegible]	80%	[illegible]
[illegible]	[illegible]	37%	18%	[illegible]
[illegible]	[illegible]	37%	8%	[illegible]

The interaction between these two species is more significant for *A. schoenobaenus* than for *Porzana parva* resulting the low aggression specific for juveniles (Tab. 1).

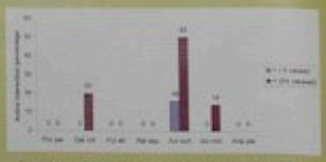

Figure 10. Active relations between *Porzana parva* and other species observed in the study area

Though they gather close to other individuals, *P. parva* juveniles show a low aggression behavior a (Fig. 8).

References

[illegible]

Acknowledgments

I thank **Alin David** for useful suggestions on this study and Prof. **Laszlo Rakosy**, our PhD coordinator.

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OSTEOMETRIC STUDY IN *BOS TAURUS* SAMPLES ASSOCIATED WITH PREHISTORIC COMMUNITIES OF CUCUTENI CULTURE

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Introduction

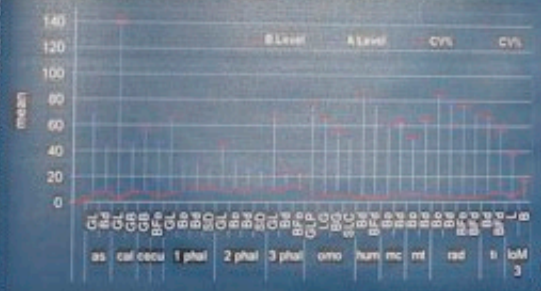
The domestication process is caused mainly, if not completely, by changes in selection, or the differential survival and reproductive success of particular animals, with respect to selection in nature, and one can oppose artificial selection in a broad sense, i.e. selection as occurring in the human econiche, to selection in the wild or natural selection. Implicit in the foregoing circumscription of animal domestication is the fact that all domestic animals have a monophyletic origin. They all have only one wild ancester, but in the domestication process domesticates may acquire markedly different traits (Gautier, 2002). Based on this idea, the main purpose of this work is to compare the populations of cattle (*Bos taurus*) from the Neolithic period - Cucuteni Culture A level with the population of cattle from Cucuteni Culture B level.

Figure 1: Archaeozoologically analysed sites

Material and Method

The osteologic material comes from archaeological sites of Hoisești (Neamț County), Feteşti (Suceava County) and Poduri (Bacau County) belonging to Cucuteni Culture (A and B levels) (Fig. 1). C. Mantu (2005) evaluate Cucuteni Culture between 4600 - 3500 CAL. B.C.

Linear measurements were defined according to von den Driesch (1976). The measurements were made to the nearest 0.5 mm with a caliper rule for following anatomical elements: astragalus calcaneus, centrotarsus, coxal, cubitus, the proximal phalanx, the middle phalanx, the distal phalanx, femur, humerus, metatarsus, metacarpus, lower M3, radius, tibia, scapula. All specimens belong to adult individuals; unfused epphyses and astragalus with spongy were excluded from this study.



Graphic 1: Mean box and coefficient of variation (C%) in cattle bones.
Abbreviations: GL greatest length; Bd breadth of the distal end; BFd breadth of the faces articularis distale; Bp breadth of the proximal end; BFp breadth of the faces articularis proximalis; SD smallest breadth of diaphysis; LM3 length of third molar and BM3 breadth of third molar. A and B levels: Cucuteni Culture A level and B level respectively

Results

Morphometric analysis was summarised in the next graphic and table.

Our statistical analysis emphasize the presence of a higher variability of cattle bones in Cucuteni A level than in B level: e.g. cubitus (BFp), humerus (Bd) and radius (BFp) having the highest values for the coefficient of variation.

In the following table are presented the variables whose means are statistically different ($p<0.05$). Degree of difference is calculated by means Difference Index (Ocal, 2004).

Table 1: Results of the *t* test for variables and ratio and Difference Index

Anatomical Element	Variable	Purport	*T* test	*P* value	Difference Index (%)
Tibia	Bd	B>A	2.09	0.04	4.52
Calcaneus	GL	B>A	2.76	0.01	3.85
Proximal Phalanx	GL	B>A	3.06	0.002	3.67
Distal Phalanx	GL	A>B	2.42	0.01	5.36
	Bd	A>B	5.06	0.00	12.12
	GLB	B>A	4	0.00	8.39
Scapula	LG	B>A	5.81	0.00	14.39
	BG	B>A	4.42	0.00	9.28

Anatomical Element	Variable	Purport	T test	P value	Difference Index (%)
Humerus	Bp/BFd	A>B	5.23	0.01	25.45
Proximal phalanx	Bp/Bd	A>B	2.65	0.01	1.79
	GL/Bd	A>B	2.42	0.01	3.52
Middle phalanx	Bp/Bd	A>B	7.87	0.00	7.63
Third phalanx	GL/Bd	A>B	4.9	0.00	7.33
	GLP/LC	A>B	3.25	0.003	6.96
Scapula	LC/BG	A>B	2.3	0.03	5.22

Conclusions

Starting from the metrical description of the identified specimens, we can conclude that the represented individuals of cattle were probably easy more robust in Cucuteni B than in Cucuteni A, as a result of a possible selection of animals in view to them use for field work.

However, the statistical analysis, achieved based on various osteometrical characteristics of cattle with view to establishing gradients, indicates in reference to the different dimensions a tendency not clear of changing over time.

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P 08.

Simona STAVRI, Nicolae CRĂCIUN, Otilia ZĂRNESCU - Histological and histochemical characterization of caudal fin regeneration in *Carassius auratus gibelio*

HISTOLOGICAL AND HISTOCHEMICAL CHARACTERIZATION OF CAUDAL FIN REGENERATION IN *CARASSIUS AURATUS GIBELIO*

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INTRODUCTION

The caudal fin of teleosts consists of two structural units known as lepidotrichia and actinotrichia [1]. The lepidotrichia, mineralized rays [2], originate from the base of the fin, extend distally and branch dichotomically towards the margin of the fin [1] and the actinotrichia, row of rigid, unmineralized elastoidin fibrils [3], which support the border of the fin, are surrounded by connective tissue containing nerves, blood vessels, pigment cells, fibroblasts and by a multistratified epidermis [1].

Teleost fishes can regenerate their fins by epimorphic regeneration, a process which was lost in the vertebrate evolution [4], and is divided into three stages: wound healing, blastema formation, and regenerative outgrowth [5].

MATERIALS AND METHODS

Twenty two goldfish, *Carasius auratus gibelio*, were used in the experiment. The fish were acclimatised and maintained in glass aquarium with dechlorinated water at 19-21°C, with constant aeration. The caudal fins of the goldfish were amputated transversally (in the dorso-ventral direction) at a distance of 7-8 mm from the tail muscle peduncle. The regenerating fins were excised at intervals of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 and 21 days after amputation and were fixed in Bouin's solution and 4% paraformaldehide in phosphate buffered saline (PBS), dehydrated in ethanol, cleared in toluene and embedded in paraffin.

6 µm longitudinal sections were stained with Hematoxylin-Eosin (H&E)-Alcian Blue, Sirius Red (for collagen detection under Polarized Light Microscopy)-Von Kossa (for identification of mineralised regenerating lepidotrichia).

The microscopic observations were carried out in a Zeiss AxioStar Plus microscope and in a polarized light microscop- MCP300 "Edelweiss", Micros, Austria, equipped with a digital color camera driven by AxioVision 4.6 software (Carl Zeiss, Germany).

The alkaline phosphatase (an hydrolytic enzyme that catalyse the hydrolysis of esters of phosphoric acid) in the regenerated caudal fins was immunohistochemically labeled by the Indoxyl-tetrazolium method.

RESULTS

Fig.1. Caudal fin at 2 days after amputation. A blastema (blue arrow), composed of a homogeneous mass of cell begin to form below the apical epidermal cap (red arrow). H&E-Alcian Blue pH 2,5 staining

Fig.2. Caudal fin at 8 days after amputation. Colagen fibers (white arrow) and blood vessels (yellow arrow) could be observed at the more proximal blastemal region.. Sirius Red-Von Kossa staining

Fig. 3. Caudal fin at 8 days after amputation. The mineralized process could be observed in a proximal distal direction. Sirius Red-Von Kossa staining

Fig. 4. Caudal fin at 8 days after amputation. Centrofugal mineralization of the lepidotrichia (arrows) could be observed. Sirius Red-Von Kossa staining

Fig.5. Caudal fin at 10 days after amputation. The mineralized process takes place in a proximal distal direction (arrows). Sirius Red-Von Kossa staining

Fig.6. Caudal fin at 10 days after amputation.The mineralized collagen fibers (arrow) from distal region of the lepidotrichia could be observed under Polarized Light Microscopy. Sirius Red-Von Kossa staining

Fig.7. Caudal fin at 21 days after amputation. Sirius Red-Von Kossa staining

Fig. 8. Caudal fin at 21 days after amputation. The thinner unmineralized collagen fibers than those at 10 days could be observed under Polarized Light Microscopy.Sirius Red-Von Kossa staining

Fig.9. Caudal fin at 1 days after amputation. The epidermis (black arrow) and the epidermal basal layer showing (yellow arrow) an intense alkaline phosphatase staining.

Fig.10. Caudal fin at 5 days after amputation. The epidermis (white arrow) and the epidermal basal layer (red arrow) showing an intense alkaline phosphatase staining. The blastema is alkaline phosphatase staining.

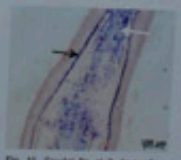

Fig. 11. Caudal fin at 8 days after amputation . The epidermal basal layer (black arrow) and the blastema (white arrow) are alkaline phosphatase staining.

Fig. 12. Caudal fin at 10 days after amputation. The blastema (white arrow) and the most distal epidermal basal layer are alkaline phosphatase staining.

CONCLUSIONS

- Caudal fin regeneration in *Carassius auratus gibelio* requires cell proliferation, cell differentiation, morphogenesis and pattern formation.
- The caudal fin regeneration in *Carasssius auratus gibelio* requires complex tissue remodeling processes that involved epidermal cells, scleroblastrs, fibroblasts and endothelial cells.
- Fin regeneration, deposition of bone matrix, and its mineralization occurs in a proximo-distal direction.
- The epidermis of the regenerated caudal fins is intense stained for alkaline phosphatase in the first 1-5 days of regeneration.

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Mihaela CRISTESCU - Diversity of nocturnal lepidopterofauna (Lepidoptera-Heterocera) in an urban ecosystem - the Botanical Garden Galați

DIVERSITY OF NOCTURNAL LEPIDOPTEROFAUNA (LEPIDOPTERA-HETEROCERA) IN AN URBAN ECOSYSTEM - THE BOTANICAL GARDEN GALAȚI

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Introduction

The Botanical Garden is part of The Natural Sciences Museum Galați. It is situated in the NV of Galați city near The Danube River. From a geological point of view it belongs to the Moldovenesc Plateau. The altitude of the garden land varies from 20 m up to 42 m, and it is crossed over by a sporadically thread of water from N to S.

The climate is steppe typical with some pontic and mediterranean influences.

The atmospheric precipitation has one of the lowest values in the country.

The Botanical Garden is divided into six areas with different types of vegetation and spreads over 18 hectares.

Fig. nr. 1. Localizarea zonei studiate

Material and method

To examine the diversity of nocturnal macrolepidoptera I used 3 fixed light traps identical like size and building. The light source was a 250W bulb emiting UV and visible light. The light traps were situated in 3 areas of the garden: The Rose Garden, the Romanian Flora and in the Medicinal Flora. One trap per site was operated from dusk to dawn, 3 days a week every week from april to octomber.

Results and discussions

Urbanisation is considered to be one of the biggest threats to biodiversity. As urban development increases, green space is often reduced and fragmented. In the context of increasing urbanization, the remnant green spaces or the new ones have the main role in maintaining the biodiversity in an urban area (Byron et al., 2002). The Botanical Garden Galați is an anthropogenic habitat, relatively young. It's beginnings are placed in 1994-1995 when the first trees were cultivated here (Cristescu, 2007-2008). The Lepidoptera species from the surrounding areas (privat or public gardens, parks, Danube Meadow, Siret Meadow, green spaces from the city) found here sources of food and favourable conditions for reproduction.

The present study have been made in a period of 5 years: 2004, 2005, 2008, 2009 and 2010. The increasing plant diversity, and also, the developing of the vegetation every year is correleted with the increasing diversity of the nocturnal lepidopterofauna and with the stabilization of the populations effective of the species.

The biological material was captured with light traps, that had been operated 3 days a week, from dusk till dawn, from March until October, every year.

The purpose of this paper is to bring new data regarding the nocturnal lepidoptera of an urban ecosystem, and to underline that an urban and anthropogenic habitat can be of relatively high conservation value.

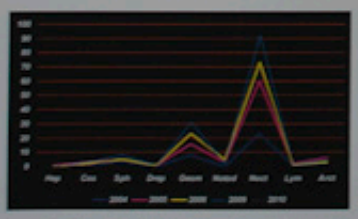

Fig.2. Numerical fluctuation of the nocturnal lepidoptera families during the research period.

Fig.3. The light trap.

Fig.4. The number of species of the lepidoptera families catched in the period of research

Mythimna pallens Rottemburg, 1775. Fam. Sphingidae

Grammodes stolida stolida (Fabricius) 1871. Fam. Geometridae

Eilema griseola griseola Hübner, 1808. Fam. Noctuidae

Micrargiria pentaiaja Boisduval, 1840. Fam. Nocturidae

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DATA ABOUT TRUE BUGS (INSECTA, HEMIPTERA, HETEROPTERA) COLLECTED FROM MEDITERRANEAN EXPEDITIONS [RESULT OF "FOCIDA" 2006, "PUNIA" 2006, "ATLAS" 2007 AND "BOLKAR" 2009 EXPEDITIONS]

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Keywords: Insecta, Heteroptera, Western Turkey, Tunisia, Marocco, distribution.

INTRODUCTION

The paper presents a list of 390 Heteroptera specimens, collected during the expeditions carried out in some Mediterranean countries, part of a science project, "Romanian Contributions on the Mediterranean fauna", research led by the National Museum of Natural History "Grigore Antipa", Bucharest, in collaboration with an NGO, Oceanic Club Oceanographical Society of Exploration and Protection of the Marine Environment of Constanta.

In this study we present the Heteroptera collected during four expeditions, in three countries: Turkey (Focida, in 2006 and Bolkar, in 2009), Tunisia (Punia, in 2006) and Morocco (Atlas, in 2007).

MATERIAL AND METHOD

Heteropterologic material was collected using entomological net from 36 collection sites located in Western Turkey (11 sites), Tunisia (6 sites) and Morocco (19 sites).

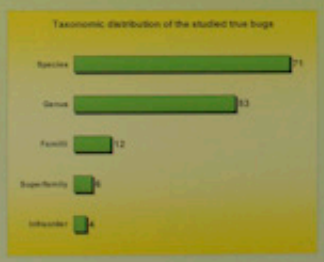
Identification of Heteroptera species and their distribution was made using keys determination made by Kis (1984, 2001), Moulet (1995), Derjanschi & Péricart (2005), Péricart (1998, vol.1, 2, 3), Rabitsch (2005) and Catalogue of Palearctic Heteroptera B. Aukema and Rieger C. (1995,1996, 1998, 2001, 2006).

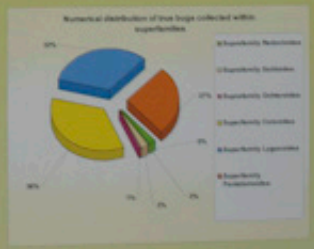
RESULTS AND DISCUSSION

In all mentioned countries, 71 Heteroptera species were identified and grouped in 13 families (Stichel, 1957-1962, Aukema & Rieger 1995, 1996, 2001, 2006, Wagner 1996). In Turkey, 25 species have been identified, 27 species in Tunisia, and for Morocco, 40 species. The paper also presents some distribution data for 71 species.

In a previous study, we presented the results of Focida and Taurus expeditions in Turkey, where it shows a list of 74 species of Heteroptera, framed in 12 families. The list of Heteroptera species collected in Turkey has been expanded to 79.

Heteroptera specimens collected in Turkey, Tunisia and Morocco represents a valuable contribution for the exotic Heteroptera collections that belongs to the National Museum of Natural History "Grigore Antipa", Bucharest.





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P 05.

Alina-Mihaela VLĂDUȚU
Consideration on the benthic invertebrate fauna from the Doamnei River (Romania)

CONSIDERATION ON THE BENTHIC INVERTEBRATE FAUNA FROM THE DOAMNEI RIVER (ROMANIA)

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ABSTRACT:

The paper presents data referring to the comparative structure of the benthic invertebrate fauna of the Doamnei River, in the sector Cerna – Dărmănești.

In all sampling stations are constantly present the main elements specific to unpolluted mountain waters: amphipods, ephemeropterans, plecopterans, trichopterans, simuliids, chironomids, most of them being dominant groups.

On the basis of relative abundance, the dominancy of the invertebrate groups is highlighted. In particular, is analyzed the community structure of the mayflies larvae, group constantly dominant in all studied sites, being presented the list of the taxa, ecological spectrum, relative abundance, frequency and other ecological characteristics of the mayflies fauna.

Key words: *benthic invertebrate fauna, Doamnei River, mayflies*

INTRODUCTION:

Situated in the Meridional Carpathians, in Argeș County, the Doamnei River has its springs in the Făgăraș Mountains, being formed by the union of two mountain streams: Valea Rea and Zănoa, and flows into the Argeș River, near Pitești. A left tributary of the Argeș River, with a length of 126.1 km, this is a typical mountain river especially for its morphodynamic characteristics. (Ujvary, 1972).

In rendering profitable the hydro-electric potential of the Argeș hydrographic basin, they have also included the planning of the Doamnei River whose flow gathered in the Bâclu Lake went through the hydro-electric power station to the Vidraru Lake.

Other perturbing factors that affected the aquatic, geographic and bioceneotic eco-system are:

radical transformation of biotope as a sequence of constructing hydrotechnic centers;
depreciation of the river bed in the process of stone, gravel and sand extraction used in constructions which has a negative effect on the benthonic species;
intensive deforestation and road constructions;
water disturbing by trailing the logs along the river beds;
negative effects caused by Diesel oil leak, use of fertilizers, pesticides washed in the river beds;
accidental release of residues of factories in the area.

Through the research undertaken and presented in the current work we wanted to make an inventory of the important benthic invertebrate taxa from the Doamnei River and to emphasize the dominant groups based on their relative abundance, the identification of the mayfly species from the Doamnei River, the determination of the water quality of the Doamnei River taking into account the distribution of the mayfly species.

Fig. 1 Hydrographical basin of the Doamnei River

MATERIALS AND METHODS:

✓In the period August 2008 – May 2009, zoobenthic samples were taken periodically in August, October and April. Four stations were established to take samples, in the area Cerna – Dărmănești, specifically: Nucșoara, Stănești, Lăpușani and Dărmănești.

✓On each sampling site, the benthos samples were taken using a Surber-sampler, which covered a surface of 0.16 m^2 (mesh-size 200 µm). The stones were washed in the stream and brushed. The samples were preserved on the field in 8% formalin solution. The retained material was separated into groups by a Zeiss stereomicroscope in the Hydrobiology lab of the University of Pitesti and removed in ethanol 70%. European identifications keys were used (Elliott et al., 1988; Bauernfeind et al., 2001; Pescador et al., 2000).

Fig. 2 Sampling site on the Doamnei River

RESULTS AND DISCUSSIONS:

❖As far as the benthic invertebrate fauna is concerned, in the research period, representatives from six taxa groups were identified.

❖Ephemeroptera and Plecoptera, the most reophilous and oxyphilous groups, are well represented in Nucșoara stations (where human impact is low, the water is clean, with a high speed flow and low flow). In other stations, density values decrease progressively from upstream to downstream, under the impact of anthropogenic factors.

❖For the same reasons outlined above, chironomids density increases gradually from upstream to downstream, reaching maximum values in Lăpușani and Dărmănești.

❖Species of Gammaridae, Simuliidae and Trichoptera were only sporadically present in the samples.

❖In the case of mayflies, in the samples taken we identified fourteen species from seven genera belonging to six families from all the three suborders.

❖Taking into account the ecological spectrum, one can observe that at the upstream stations, the Ecdyonuridae family is the best represented, with 50% at Nucșoara, a percentage that decreases progressively to 30% at Dărmănești. The Baetidae family is best represented at Lăpușani, where they are dominant (40%). The other families represent less than 15% at all the stations.

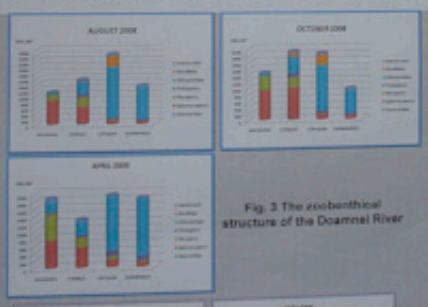

Fig. 3 The zoobenthical structure of the Doamnei River

Fig. 4 The structure of the mayfly fauna of the Doamnei River

Fig. 5 The ecological spectrum of the mayfly fauna (divided by families) on the Doamnei River

CONCLUSION

•From the ecological zonation point of view, the presence of the identified species points at the idea that the river where the research was undertaken is part of the area where the erosion phenomenon is predominant, alternating with small areas of sedimentation.

•From the quality of the water, the identified species are indicators of the waters from the oligosaprobe and β – mezosaprobe categories.

•The zoobenthical structure of the Doamnei River, including the mayfly fauna, gradually change from upstream to downstream due to degradation of water quality under the influence of anthropogenic factors.

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SPECIES DIVERSITY OF AMPHIBIANS AND REPTILES IN THE SPECIAL PROTECTED AREA "PONOR", NORTHWESTERN BULGARIA

G. Popgeorgiev, N. Tzankov, Y. Korniley,
B. Naumov & A. Stojanov

Adequate management of protected areas is amongst the priorities at the European community level and requires detailed and up-to-date knowledge of the area's species diversity, distribution, and ecology. Therefore, the goals of this study were:

- To map the distribution of the herpetofauna in SPA "Ponor" on a 2×2 km UTM grid.
- To calculate an index of distribution (*A*) for each species.
- To locate Important Herpetological Areas (IHA) with high species diversity and abundance.

Materials and Methods: The SPA is situated in the western Balkan mountains (Fig. 1). It comprises of mostly open highlands, pastures, fragmented beech forests, and limestone outcrops. We collected field observations between 1998–2008 and mapped the distribution on UTM 2×2 km grid. The study site encompasses 55 complete and 65 partial 2×2 km squares. We calculated the index of distribution of the species (*A*) as the percent of squares in which the species was encountered from the total number of squares in the study territory. We defined IHAs using 50% boundary, calculated by the kernel density estimator method.

Results and Discussion: We encountered 24 species of amphibians and reptiles (Table 1). The least common amphibian was *I. alpestris* (A = 0.83%) and the most common were *B. variegata* (A = 29.17%), *S. salamandra* (A = 17.50%), and *L. vulgaris* (A = 13.33%). The least common reptiles were *V. berus* (A = 0.83%), *N. tessellata* (A = 2.50%), and *A. kitaibelii* (A = 3.33%). The most common reptiles were *P. muralis* and *L. viridis* (A = 21.67%), *A. fragilis* (A = 13.33%), and *C. austriaca* (A = 12.50%). We identified 9 IHAs situated throughout the SPA (Fig. 1). Although preliminary, these results can suggest future core areas for the protection of reptiles and amphibians.

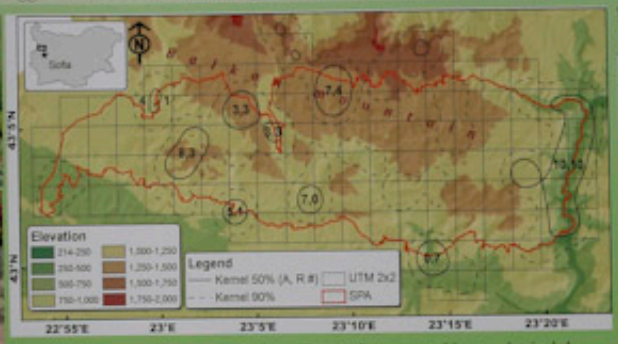


Fig. 1. Count of amphibians and reptiles per Important Herpetological Area.

Table 1. Index of distribution of species found in the SPA (A).

Species (n = 24)	*A*
Class Amphibia (n = 11)	
Order Caudata (n = 4)	
Salamandra salamandra	17.50
Ichthyosaura alpestris	0.83
Lissotriton vulgaris	13.33
Triturus karelinii	5.83
Order Anura (n = 7)	
Bombina variegata	29.17
Bufo bufo	9.17
Epidalea viridis	3.33
Hyla arborea	8.33
Rana dalmatina	8.33
Rana temporaria	11.67
Pelophylax ridibundus	11.67
Class Reptilia (n = 13)	
Suborder Sauria (n = 6)	
Anguis fragilis	13.33
Ablepharus kitaibelii	3.33
Lacerta agilis	9.17
Lacerta viridis	21.67
Podarcis muralis	21.67
Zootoca vivipara	12.50
Suborder Serpentes (n = 7)	
Coronella austriaca	12.50
Dolichophis caspius	8.33
Zamenis longissimus	10.83
Natrix natrix	6.67
Natrix tessellata	2.50
Vipera ammodytes	12.50
Vipera berus	0.83

Correspondent analysis reveals well supported species associations (Fig. 2). Most distinct are those of the species associated with anthropogenic disturbance, and the moisture- and cold tolerant species. The first complex is affiliated with habitats with high human pressure such as complex cultivation pattern, cultivated monoculture coniferous forests, mineral extraction sites and discontinuous urban fabric. The second and third complexes is related to habitats with lower anthropogenic pressure: broad-leaf forests, transitional woodland-shrub, natural grasslands and mixed forests. Those habitats are of prime importance for nature conservation in the study area. The herpetofauna from these habitats is with fragmented distribution all across the Bulgarian mountains, which further define the conservation importance of the protected area SPA "Ponor".

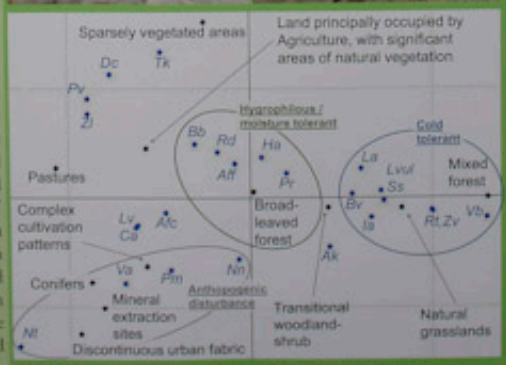
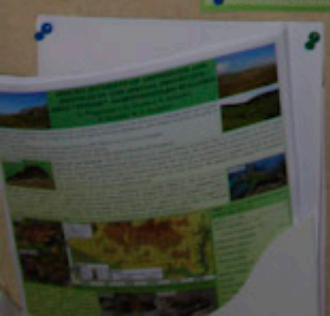


Fig. 2. Correspondent analysis and species associations.

Acknowledgments: Bulgarian Society for the Protection of Birds partially provided financial support through "Conservation of globally important biodiversity in high nature value semi-natural grasslands through support of the traditional local economy". D. Plachiyski and A. Westerström assisted with field work.



P 25.

Adriana CHIOREAN, Laura ALEXANDROV - Proposals for ecological education improvement in natural science museums

GENUS *LUCANUS* SCOPOLII, 1763 (COLEOPTERA: LUCANIDAE) IN THE NATURAL HISTORY MUSEUM COLLECTIONS OF SIBIU (ROMANIA)

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INTRODUCTION

The preserved material is part of "Dr. Eugen Worell", "Dr. Karl Petri", "Rolf Weyrauch", "Heinrich Hannenheim", "Dr. Eckbert Schneider" and "The Transylvanian Society for Natural Sciences" collections from the Natural History Museum of Sibiu heritage.

MATERIAL

The "Dr. Karl Petri" collection consists of more then 46.300 insects, mainly sampled from Transylvania. The "Dr. Eugen Worell" collection counts more then 93.000 specimens, collected from Romania, but also from different areas including Europe, Africa, Asia, North and South America. The "Prof. Rolf Weyrauch" collection consists of 16.436 insects, from Transylvania, mainly from the Sibiu's surroundings. The material from "Heinrich Hannenheim" collections was collected from different regions of Sibiu County. The "Dr. Eckbert Schneider" collection includes over 20.000 pieces of insects, collected from all over the country (Pascu & Schneider, 1998). The "Transylvania Society for Natural Sciences" is another important collection that consists of 71.567 insects. This collections along other entomological collections, from the museum heritage, bring a major contribution to the knowledge of the world insects and particularly of the ones from Transylvania, Romania.

Sampling sites of ***Lucanus tetraodon* Thunberg, 1806** according to the N.H.M of Sibiu collections

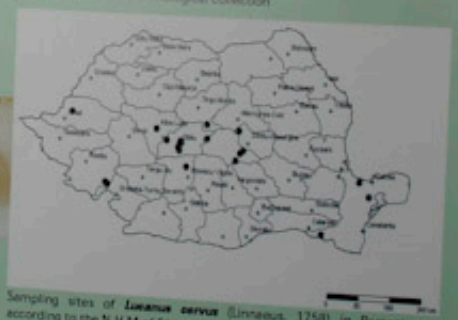
The species appears in the following:
- Palearctic and Exotic Coleoptera Collection of Dr. Karl Petri
- Dr. Eugen Worell Entomological Collection

Sampling sites of ***Lucanus ibericus* Motschulsky, 1845** according to the N.H.M of Sibiu collections

The species appears in the following:
- Palearctic and Exotic Coleoptera Collection of Dr. Karl Petri
- Transylvania Society Collection
- Dr. Eugen Worell Entomological Collection

RESULTS

Sampling sites of ***Lucanus cervus*** (Linnaeus, 1758) according to the N.H.M of Sibiu collections



Sampling sites of ***Lucanus cervus*** (Linnaeus, 1758) in Romania, according to the N.H.M of Sibiu collections

The species appears in the following: Heinrich Hann von Hannenheim Entomological Collection, Palearctic and Exotic Coleoptera Collection of Dr. Karl Petri, Transylvania Society Collection, Prof. Rolf Weyrauch Entomological Collection, Dr. Eugen Worell Entomological Collection and Dr. Eckbert Schneider Entomological Collection.

***Lucanus cervus* conservation status**: Once quite common, the population of the stag beetles, along with that of other species of beetles which feed on wood, is in steep decline, and is now listed as a globally threatened/declining species. It is also listed as a priority species under the UK Biodiversity Action Plan (UK BAP) and is included in English Nature's Species Recovery Programme.

CONCLUSIONS

- 110 specimens of *Lucanus* sp. are present in the Natural History Museum Collection form Sibiu
- 3 *Lucanus* species are present: *Lucanus cervus*, *Lucanus tetraodon* and *Lucanus ibericus*

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LONGHORN BEETLES (COLEOPTERA: CERAMBYCIDAE) FROM „DR. KARL PETRI" COLLECTION OF THE NATURAL HISTORY MUSEUM OF SIBIU (ROMANIA). PART II: CERAMBYCINAE, NECYDALINAE & VESPERINAE SUBFAMILIES

Karl Petri (1852-1932)
Originar from Sighișoara, he studied at Jena as assistent of Haeckel and Strassberger. He worked in Leipzig alongside R. Leuckart and Geigenbauer.

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[3]"Lucian Blaga" University of Sibiu, Faculty of Sciences, Department of Ecology and Environmental Protection, Dr. Rațiu str. 5 - 7, 550012 Sibiu,Romania,e-mail: corneliucsa@yahoo.com

LIST OF SPECIES

Family Cerambycidae Latreille, 1802

Subfamily Necydalinae Latreille, 1825
Necydalis major Linnaeus, 1758

Subfamily Cerambycinae Latreille, 1802
Stenopterus rufus (Linnaeus, 1767)
Stenopterus flavicornis Küster, 1846
Gracilia minuta (Fabricius, 1781)
Nathrus brevipennis (Mulsant, 1836)
Deilus fugax (Olivier, 1790)
Callimus angulatus (Scharank, 1789)
Certallum ebulinum (Linnaeus, 1767)
Obrium brunneum (Fabricius, 1793)
Obrium cantharinum (Linnaeus, 1767
Molorchus minor (Linnaeus, 1758)
Glaphyra umbellatarum (Schreber, 1798)
Glaphyra kiesenwetteri (Mulsant et Rey, 1861)
Brachypteroma ottomanum Heyden, 1863
Hesperophanes sericeus (Fabricius, 1787)
Trichoferus griseus (Fabricius, 1798)
Trichoferus holosericeus (Rossi, 1790)
Stromatium unicolor (Olivier, 1795)
Leiopus kollari Rottenbacher
Phymatodes glabratus (Charpentier, 1825)
Phymatodes testaceus (Linnaeus, 1758)
Phymatodes alni (Linnaeus, 1767)
Phymatodes rufipes (Fabricius, 1776)
Phymatodes fasciatus Villers, 1789
Pyrrhidium sanguineum (Linnaeus, 1758)
Callidium violaceum (Linnaeus, 1758)
Palaeocallidium coriaceum (Paykull, 1800)
Purpuricenus desfontainii (Fabricius, 1793)
Purpuricenus ferrugineus Fairmaire, 1851
Purpuricenus koehleri (Linnaeus, 1758)
Purpuricenus budensis (Götz, 1783)
Aromia moschata (Linnaeus, 1758)
Aphrodisium faldermanni (Saunders, 1850)
Cerambyx cerdo Linnaeus, 1758
Cerambyx miles Bonelli, 1823
Cerambyx scopolii Füssli, 1775
Cerambyx welensii Küster, 1846
Rosalia alpina (Linnaeus, 1758)

Subfamily Vesperinae Mulsant, 1839
Vesperus luridus (Rossi, 1794)
Vesperus strepens (Fabricius, 1793)

INTRODUCTION

The "Dr. Karl Petri" collection consists of more then 46.300 insects. The material, a lifetime work, was collected mainly from Transylvania. Karl Petri exchanges with foreign specialists are to be found in his collections. He donated the collection in 1930, to the Natural History Museum from Sibiu, part of Brukenthal National Museum (Pascu & Schneider, 1998).

Fig. 1 Sampling sites of longhorn beetles, according to "Karl Petri" collection

Fig. 2 Sampling sites of longhorn beetles in Romania, according to "Karl Petri" collection

CONCLUSIONS

- 40 species are present in "Karl Petri" collection
- *Aromia moschata ambrosiaca* occurs in South and South-East Europe, Near East, the Caucasus and Iran.
- *Brachypteroma ottomanum* Heyden, 1863, occurs in the Balkan Peninsula, Italy, Sicily and Near East
- *Purpuricenus ferrugineus* Fairmaire, 1851 is an endemic species for Iberian Peninsula

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TĂUȘAN, I., C. BUCȘA, 2010 – Genus *Cerambyx* L., 1758 (Coleoptera: Cerambycidae) in the Natural History Collections of Sibiu (Romania

FAUNISTIC RESEARCHES ON GAMASID MITES (ACARI: GAMASINA)

FROM SOME HAYFIELD PROTECTED AREA FROM MOLDAVIA (ROMANIA)

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ABSTRACT

The paper discusses the results referring to the mites belonging to Gamasina suborder Leach, 1815 from a series of natural grassland natural reserves from Eastern Romania. The gamasid mites' fauna from these protected areas has not been studied until now. The researches were carried out in five protected areas, three of them placed in the Central Moldavian Plateau (Rupturile slope of Tanacu, Glodeni hayfield, Burcel Hill) and rest in the Suceava Plateau (Ponoare secular hayfield and Calafindeşti secular hayfield). By the features of flora, the meadows taken into study belong to two categories, being with a xerophilous character (Rupturile slope of Tanacu, Glodeni hayfield, Burcel Hill) and a mesophilous one (Ponoare secular hayfield and Calafindeşti secular hayfield). A comparative analysis between these stations indicates for the mesic ecosystems a higher number of species as well as higher densities then in the xeric ones. The faunistic material from selected ecosystems totalized 43 species, 21 genera and 11 families. During the investigations one new genus (*Evimirus*) and two new species – *Evimirus convergens* Berlese, 1913 and *Rhodacarus furmanae* Shcherbak, 1975 in the Romanian fauna has been discovered. The autecological peculiarities and the geographical distribution of the gamasid species were also analyzed. The qualitative and quantitative features of the gamasid mites communities depend to a considerable extent on the biopedoclimatic conditions.

The researches were performed in the frame of Biostar and Biodiv Programme supported by The National Authority for Scientific Research.

Burcel Hill

Gamasid (Acari: Gamasina) mites from a sample (binocular view – 35x magnification)

Calafindeşti secular hayfield

MATERIAL AND METHOD

The invesigations were performed in the following floristic reserves:

•**Rupturile slope of Tanacu** (8 hectares) (Vaslui County) - a steppe meadow, with many rare species, southern and continental, located on a slope strongly affected by erosion and landslides.

•**Glodeni hayfield** (6 hectares) (Vaslui County) - This reserve is a meadow typical for the silvosteppe zone with xerophytic floristic elements and subjected to human impact by scythe and agriculture practiced in the surroundings.

•**Burcel Hill** (12 hectares) (Vaslui County) - Reserve has been under a strong anthropogenic impact (buildings, planting of slopes with acacia); this reserve was important because a relatively small area encompassed many rare species, many of them specific to the Pontic and mainland steppe, as well as some elements submediterranean origin.

•**Ponoare secular hayfield** (24.50 hectares) (Suceava County) - the samples were taken from two different sites: Ponoare Bosanci I (top of the hill) and Ponoare Bosanci II (base of the hill).

•**Calafindeşti secular hayfield** (17.30 hectares) (Suceava County) – surrounded by agricultural lands of the Calafindeşti village, with numerous species characteristic for the xerothermic forest skirts.

In each of these stations 5 soil samples have been taken over. The edaphic mesofauna was extracted from samples by the Tullgren – Berlese method in the Baloigh variant and then sorted out into systematic groups. In the case of gamasid mites determinations was performed up to the level of species, the abundance of each species being recorded on samples and stations; it were calculated the relative density, also.

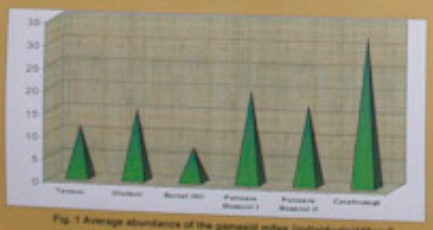

Fig. 1 Average abundance of the gamasid mites (individuals/100cm²)

CONCLUSIONS

The study of the gamasid fauna from the floristic reserves situated in the Central Moldavian Plateau (Rupturile slope of Tanacu, Glodeni hayfield, Burcel Hill) and from the Suceava Plateau (Ponoare secular hayfield and Calafindeşti secular hayfield) gives rise to identify a number of 43 species belonging to 21 genera and 11 families; among them there are two new species and one new genus for the Romanian fauna.

The abundance of the gamasid mites and also the number of species was variable from a station to another in accordance with the concrete bioedaphic conditions (trophic resources, humidity, type of soil, anthropic impact). A comparative analysis of the gamasid taxonomicons from the ecosystems under investigation shows that the mesophilous meadows offered the best conditions of life; here it was observed both the highest number of species and individuals.

Between all families the best represented one is Hypoaspididae, followed by Parasitidae and Phytoseiidae; family Hypoaspididae and Phytoseiidae have a good representation in some others grasslands from Moldavian Plain, too.

As to the autecological peculiarities, the faunistic list includes especially praticolous elements or with preferences for this kind of ecosystem. A good representation have the silvicolous elements this fact proving that sometimes the forests occupied these exurbaces.

From a zoogeographical point it has been identified mostly species with an European distribution.

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Table 1 - Faunistic synopsis

Taxa / Stations	Tanacu	Glodeni	Burcel	Ponoare Bosanci I	Ponoare Bosanci II	Calafindeşti	ecological peculiarities	geographical distribution
Anari Karg, 1962								
Gamasellus Leach, 1815								
Gamasellus Leach, 1815								
Iphi Hypoaspidae Berlese, 1916								
Lelaps Berlese, 1916								
Lelaps (s. l.) Vitzthum, 1918				+		+	synchronic, silvicolous	cosmopolitan
Gen. Scutacarus Duges, 1834								
Cheiroscelus Berlese, 1916								
C. (s. l.) Karg, 1993				+++			preferential praticolous	Canada, North and Central America
Gen. Gamasellus Berlese, 1903								
G. alpicolus (Leach, 1818)				++		+	preferential silvicolous, xerophilous	Europe
G. ancyl Willmann, 1936	+	++	+	+			preferential, accidental	Europe
G. brevicornis Berlese, 1918								
G. Muller (Berlese, 1888)	+		+			+	preferential silvicolous, euxilibrant xerophilous, xero-xerophilous	Europe
Gen. Hypoaspis Canestrini, 1885 (Karg, 1962)								
Hypoaspis Berlese, 1892								
H. (s. l.) Vitzthum, 1923				+	+	+	preferential praticolous	Palearctic
Gen. Parasitidae (s. l.) Vitzthum, 1931								
Dipolaspis Berlese, 1916								
D. aurora Willmann, 1936							silvicolous, euxilibrant	Europe
Parholaspis Berlese, 1906								
P. minus Berlese, 1903				+		+	preferential silvicolous	Asia, Europe
Parholaspis sp.					+++			
Gen. Parasitidae (s. l.) Oudemans, 1902								
Gamasiphis Berlese, 1903								
G. phytoseiid (Berlese, 1903)	+				+			
G. subnudi Bregetova et Koroleva, 1960		+	+	+	+		polyfaunic (of soil or litter), silvicolous, euxilibrantophilous, xerophilous, mesophilous	Europe, Palearctic
Gamasiphis Canestrini, 1885								
G. anthidii (Canestrini, 1885)	+++			+	+	+	euxilibrant, silvicolous, praticolous	Europe
G. phytoseiid (Willmann, 1936)	+			+	+	+	preferential praticolous	Palearctic, Africa
G. stercorarius (Berlese, 1888)			++					
G. hermanni (Berlese, 1903)				+				
G. hermannoides (Willmann, 1936)				+				
G. obscurus (Berlese, 1903)	+			+			euxilibrant, silvicolous (xero-hygrophilous, water)	Europe
Gamasiphis sp.							synchronic	Europe
Lelaps Berlese, 1892								
Lelaps sp.				+				
Gen. Parasitidae Berlese, 1916								
Antennoseius Berlese, 1916								
A. bilobatus (F. C. Keck, 1959)	+			+			preferential, praticolous, xero-hygrophilous	Europe
Antennoseius sp.1	+			+				
Antennoseius sp.2	+			+				
Antennoseius sp.3	+++		+++					
Antennoseius sp.4	+		+					
Antennoseius sp.5					+			
Antennoseius sp.6	+				+			
Antennoseius sp.7	+				+			
Antennoseius sp.8	+				+			
Antennoseius sp.9					+			
Amblyseius Berlese, 1916								
Amblyseius (Amblyseius) Chaninovi (Wagner et Kolodochka, 1967)					+			
Gen. Phytoseiidae Berlese, 1916								
Typhlodromus Berlese, 1916								
T. (Typhlodromus) s. str.								
Typhlodromus sp.								
Gen. Phytoseiidae Berlese, 1916								
Phytoseius Berlese, 1916								
P. (Phytoseius) s. str.								
Phytoseius sp.								
Gen. Rhodacarus Berlese, 1916								
R. (Rhodacarus) s. str.								
R. (Rhodacarus) Shcherbak, 1975								
R. furmanae Shcherbak, 1975								
Rhodacarus sp.								
Gen. Parasitidae Berlese, 1916								
Parasitus Berlese, 1903								
P. (Parasitus) s. str.								
P. (Parasitus) Kontschan, 1997								
P. (Parasitus) Willmann, 1936								
Gen. Parasitidae Oudemans, 1901								
Pergamasus Berlese, 1904								
P. (Pergamasus) s. str.								
P. longicornis (Berlese, 1903)								
Parasitus Berlese, 1903								
P. (Parasitus) s. str.								
Pergamasus sp.1				+				
Pergamasus sp.2				+				
Pergamasus sp.3				+				
Longanalus Vitzthum, 1931				+				
Longanalus sp.				+				
Gen. Trigamasus Oudemans, 1902								
Trigamasus Hirschmann, 1966								
T. kemperi (F. C. Keck, 1959)	+							
T. plumosus (Berlese, 1903)				+				
T. vitzthumi (Karg, 1962)				+				
T. wolfi (Berlese, 1904)				+				
Trigamasus sp.				+				
Gen. Vulgamasus Oudemans, 1902								
Vulgamasus Hirschmann, 1966								
V. remanei (F. C. Keck, 1959)	+			+				
V. remanei (s. l.) Karg, 1993				+				
V. remanei (Karg, 1993)				+				
V. wolfi (Berlese, 1904)				+				
V. wolfi (Karg, 1993)				+				
Vulgamasus sp.				+				
Gen. Vulgamasus Oudemans, 1902								
Cheiroseius Berlese, 1903								
C. (Cheiroseius) s. str.								
Cheiroseius sp.								
Gen. Gamasellus Berlese, 1903								
G. (Gamasellus) s. str.								
G. alpicolus (Berlese, 1903)								
G. alpicolus (Karg, 1993)								
G. angulo-striatus (Berlese, 1903)								
G. brevicornis (Berlese, 1918)								
G. ancyl (Willmann, 1936)								
G. hermanni (Berlese, 1903)								
G. hermannoides (Willmann, 1936)								
G. obscurus (Berlese, 1903)								
G. stercorarius (Berlese, 1888)								
Gen. Gamasellus Berlese, 1903								
Gamasellus Berlese, 1903								
G. (Gamasellus) s. str.								
G. alpicolus (Karg, 1993)								
G. brevicornis (Karg, 1993)								
G. ancyl (Karg, 1993)								
G. hermanni (Karg, 1993)								
Gen. Hypoaspidae Berlese, 1903								
Gamasellus Berlese, 1903								
G. (Gamasellus) s. str.								
Gamasellus sp.								
Gen. Hypoaspis Canestrini, 1885								
Hypoaspis Berlese, 1892								
H. (Hypoaspis) s. str.								
Hypoaspis sp.								

Legend: +++ - very abundant species (with D.r. higher than 5%); ++ - abundant species (with D.r. between 2-5%); + - less abundant species (with D.r. lower than 2%); * - new species for the Romanian fauna

NEW SPECIES AND NEW RECORDS OF OPPIIDS (ACARI, ORIBATIDA, OPPIIDAE) FROM ROMANIA

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The new species have been collected in the frame of researches carried out in two projects (PN II and Grant), supported by the National Authority for Scientific Research.

ABSTRACT

The family Oppiidae Grandjean, 1951 is a large group of oribatid mites, which comprises over 1,000 species, 166 genera and subgenera, 13 subfamilies (Subias, 2004), most of them described in the last 3-4 decades. These mites populate most of terrestrial habitats, often reaching high densities. In Romanian fauna more than 75 species of Oppiidae have been recorded, 18 of which being described as new species (Vasiliu et al., 1993; Ivan et Vasiliu, 1997).

Two new species, namely *Graptoppia* (*Graptoppia*) *baloghi* and *Berninielle* (*Berninielle*) *piratica* are described hereby. The first one is distinctive from the related species mainly by the presence of ta seta and the morphology of prodorsum. The second species is individualized especially by the shape of sensillus and of the prodorsal costulae, also by its short notogastral setae (Subias et Balogh, 1989; Ivan et Vasiliu, 1997).

In addition, two other species recorded for the first time in Romanian fauna are redescribed, with some complementary details on the investigated material. *Ramusella* (*Insculptoppiella*) *alejnicovae* (Krivolutsky et Gatilova, 1974) is a Central and Southern Palaearctic element (Subias, 2004) and it was found in the soil of solaria at Dumbrava (Neamt county); not only this species, but also *Insculptoppiella* subgenus are new records in Romania. Another species included in this paper is *Lauroppia iranica* Akrami et Subias, 2008, described from Iran and later identified by authors in a collection from Chela (Constanta county).

MATERIAL AND METHOD

The faunistic material was collected mostly by the authors, from natural and anthropic ecosystems in the Eastern part of the country. Another material existing in the laboratory collection was used to elaborate this study.

As in other studies of compared morphology, classical methods were used in this case. The material – preserved in ethanol – was clarified in lactic acid 70%, with a view to be examined. The observations and measurements were made using the optical microscope, and the drawings – with camera lucida.

In the description of species was followed the morphological terminology and chaetotaxic notation suggested by Balogh, 1972, Mahunka et Zombori, 1985, and systematic ranking of the new species according to Subias et Balogh, 1989 and Subias, 2004.

RESULTS

Table 1 – Biometric data of the described species (µm)

Species	Body		Prodorsum	Notogaster
	l	b	l	l
Graptoppia (*G.*) *baloghi* n. sp.	240-242	138	75	167
Berninielle (*B.*) *piratica* n. sp.	258	128	89	178
Ramusella (*I.*) *alejnicovae* (Krivolutsky et Gatilova, 1974)	270-277	151-161	86-91	180-186
Lauroppia iranica Akrami et Subias, 2008	370	208	120	250

Legend: l-length; b-breadth

Table 2 - Dimensions of the idiosomal setae (µm)

Species	Prodorsum					Notogaster				Genito-anal region				
	ss	in	la	ro	as	ta	a_1, a_2, m_4	c_1 – f_1	h_1	g_1 –	ag	an	ad
Graptoppia (*G.*) *baloghi* n. sp.	20	10	15	27.5	12.5	5	22.5		7.5		10	10	15
Berninielle (*B.*) *piratica* n. sp.	37.5	7.5	7.5	25	20	12.5 - 15			5	10	15	12.5	15
Ramusella (*I.*) *alejnicovae* (Krivolutsky et Gatilova, 1974)	60	45	37	36	20	-	37						
Lauroppia iranica Akrami et Subias, 2008	55	22.5	10	27.5	20	12.5	20	12.5	10	5	10	7.5	10

Legend: ss – sensillus; in – interlamellar setae; la – lamellar setae; ro – rostral setae; as – exobothridial setae; la, m, f, ms, c, p – notogastral setae; g1, g2,... – genital setae; ag – aggenital setae; an – anal setae; ad – adanal setae

Graptoppia (*G.*) *baloghi* n. sp. – 1 - dorsal view; 2 - ventral view; 3 - lateral view

Diagnosis. Small size species, yellowish to light chestnut in colour. Prodorsum with lamellar lines extended in front of la setae' origin. Translamellar line present, not connected with the lamellar lines. Two pairs of light spots between interlamellar setae. Sensillus fusiform clavate, unilaterally ciliated with 11-12 cilia. Two pairs of notogastral setae; ta reduced, but visible, the other ones longer and finely barbed. 3 pairs of genital setae, g2 being shorter, hardly observable. Genito-anal setae arranged following formula 6:1:2:3. Origins of ag and ad1 setae form a trapezium. Adanal lyrifissure (ad) in paranotal position.

3

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11

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Berninielle (*B.*) *piratica* n. sp. – 4 - dorsal view; 5 - ventral view; 6 - lateral view

9

Ramusella (*I.*) *alejnicovae* (Krivolutsky et Gatilova, 1974) - 7 - dorsal view; 8 - ventral view; 9 – detail of prodorsum in lateral view

Lauroppia iranica Akrami et Subias, 2008 - 10 - dorsal view; 11 – ventral view; 12 – detail of prodorsum in dorsal view

12

Remarks. This species was described recently from Iran, being then identified in a collection from Chela (Constanta county), in a xerophilous grassland. The new record in Romanian fauna is significant especially from zoogeographical point of view.

L. iranica is distinctive from other *Lauroppia* species especially by the long and divergent prodorsal costulae and the shape of sensillus – fusiform elongated and bipectinate. Romanian material evidences the main morphological characters of species, but differs by biometric ones (the body size is bigger). Thus, alongside the original illustration, the biometric data are given with a view to complete the knowledge of species.

Diagnosis. Small size species, yellowish in colour. Rostrum prominent, with a pointed and bare median tooth and wide curved lateral ones. Prodorsal costulae conspicuous, X-shaped, are not reaching lamellar setae' origin; la-la distance approximately equal with la-in. Sensillus recliniate, with relatively long stalk and asymmetrical distal part with 8 cilia. Notogastral crista present, with the shape characteristic for this genus. 10 pairs of short and thin notogastral setae. Genito-anal setae short and thin, placed according to formula 6:1:2:3; ad lyrifissure in paranotal position.

Remarks. This species was found in the soil of solaria at Spataresti (Suceava county) and Dumbrava (Neamt county), being not recorded previously in our country; the subgenus *Insculptoppiella* Subias et Rodriguez, 1988 is also new to Romanian fauna.

After the original description, *R. (I.) alejnicovae* was briefly redescribed by Sitnikova (in Ghilarov et Krivolutsky, 1975); Mahunka (1979) pointed out some complementary data concerning this species, providing an illustration of prodorsum.

The Romanian specimens evidence in the main the characters of species, which is illustrated and redescribed hereby, including ventral side and measurements (missing in the former descriptions).

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P 03.

Otilia IVAN

FIRST RECORD OF *DISCOURELLA RADNAENSIS* (ACARINA: ANACTINOTRICHIDA: UROPODINA) FROM SERBIA

IOANA-CRISTINA CONSTANTINESCU
Muzeul Județean Argeș

Introduction:

◆ The Uropodina fauna of Serbia is very little known, a number of six species (*Polyaspis palavinus*, *Trichouropoda ovalis*, *Urodiaspis stammeri*, *Uropoda splendida*, *Uropoda cassideea* and *Uropoda erlangensis*) being collected by Kontschan from Fruska-Gora region, in N-V of the country (Kontschan, 2005). Two other species (*Urodeius copridis* and *Uropoda willmanni*) were cited by Hirschmann and Wisniewski from the former Yugoslavia, in the summarizing paper "Uropodiden der Erde" (Hirschmann and Wisniewski, 1993).

◆ *Discourella radnaensis* species was described by Willmann in Slovenia, Radna city in 1941, the holotype being female. Since then, the species has not been collected, probably because Uropodina faunal studies in the Balkans were very few. For the first time, in addition to a female individual, protonympha and deutonympha were collected.

◆ *Discourella radnaensis* species is thus recorded for the first time in the fauna of Serbia, and pre-adult stages (protonympha and deutonympha) are described for the first time in literature.

Material and methods

◆ Acarological material was collected in Serbia, Djerdap National Park, Mount Veliki Strbac (768 m altitude). Samples were collected from litter of mixed deciduous forest with beech (*Fagus orientalis*), dogwood (*Cornus mas*), lote tree (*Celtis australis*), maple (*Acer monospessulanum*) and hornbeam (*Carpinus betulus*), and the bark of the decomposing trunk of deciduous tree. For the first time, in addition to a female individual, protonympha and deutonympha were collected.

◆ The mites were extracted in Berlese-Tullgren devices, clarified with lactic acid and identified with the help of a microscope. The drawings were done with a microscope with the help of the camera lucida. All acarological material is stored in alcohol (96%), in the author's personal collection, at Arges County Museum. All measurements are taken in µm, and setal nomenclature is after Hirschmann (1957).

Remarks:

◆ According to the classification made by Hirschmann (Hirschmann, 1972) *Discourella radnaensis* Willman, 1941 belongs to the – cosmogyna species group, that have adults with post - marginal area of the dorsal shield composed of un - chitinised membrane strips bearing pairs of setae, placed on insertion platelets. From this – cosmogyna group other 9 species of the *Discourella* genera have been described so far, spread over Europe (4 species), Canada (1 species) and Japan (4 species) (Hirschmann & Wisniewski, 1993; Kontschan, 2003; Hiramatsu,1979).

◆ Hirschmann believes that *Discourella radnaensis* morphology is most similar to *Discourella miyakawai* Hiramatsu, 1979 but differs from it primarily through body ornamentation and the shape and size of soft skin flap from the anterior margin of female genital operculum (Hirschmann, 1980).

◆ In my opinion, *Discourella randnaensis* is most similar to *Discourella maltensis* Kontschan, 2003, which was described recently in Malta (Kontschan, 2003). The species are similar in form and ornamentation of the female genital operculum, ornamentation of the ventro-anal area, shape and dimensions of the sternal and ventro-anal setae of the adults. Dorsal ornamentation of both species are quite similar, especially on marginal shield.

Fig. 1 *Discourella radnaensis* A- female dorsum; B- female venter

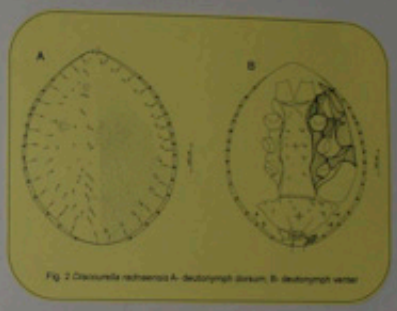

Fig. 2 *Discourella radnaensis* A- deutonymph dorsum; B- deutonymph venter

Fig. 3 *Discourella radnaensis*, deutonymph gnathosoma
A - hypostome; B - tritosternum; C - epistome

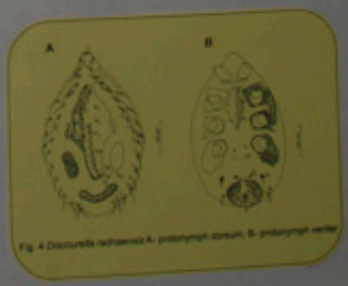

Fig. 4 *Discourella radnaensis* A- protonymph dorsum; B- protonymph venter

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VARIABILITY IN *CEPAEA HORTENSIS* POPULATIONS AT THE EASTERN LIMITS OF ITS RANGE IN ROMANIA

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INTRODUCTION

Cepaea hortensis, the smallest species of *Cepaea* genus, is widely spread in Western and central Europe, including Great Britain, South Scandinavia, Germany, Austria, Poland, Slovakia and Western Hungary. The only report on the presence of the species in Romania was made by Cziki in 1918 (Grossu, 1984), mentioning *C. hortensis* next to Oradea, at Băile Felix. The presence of this species in this area or in any other part of Romania has not been confirmed yet.

Starting 1999 several populations of *C. hortensis* have been found in the gardens and parks from Sibiu (Gheoca, 2005). The presence of *C. hortensis* in Sibiu is explained probably by introduction on purpose, dating back at the beginning of the XXth century, its evolution in a new location (Dreieichenstrasse 7) being followed by M. von Kimakowicz, as it was proved by the series from his collection.

Similar to other species of *Cepaea*, *C. hortensis* is highly polymorphic (Cain and Shepard, 1954,Harvey, 1971). The variability at the morphological and genetic levels was analyzed in different *C. hortensis* populations from Sibiu.

Fig 1. Shell polymorphism in *Cepaea hortensis*

Fig. 2. Morph frequency in different populations of *Cepaea hortensis* from Sibiu. Morph notation: R -pink; G - yellow; B1-B3 - presence of bands.

MATERIAL AND METHODS

The shell polymorphism was tested in seven populations, considering the colour of the shell and the pattern of bands.

The biologic material from *Cepaea hortensis* individuals belonging to five populations from gardens and parks in Sibiu was used for the genetic variability analysis by DS-PCR.

The utilized DS-PCR technique combines the specificity of the microsatelites with the amplification of the RAPD markers. This technique produces co-dominant markers in Drosophila mercatorum (Rosell and Bortolato, 2001). Six combinations were tested: 4C [(CAG)4 and GAACGGACTC], 5C [(GAG)4 and GAACGGACTC], 6C [(AACG)4 and GAACGGACTC], 7C [(ATCG)4 and GAACGGACTC], 10C [(CGGA)4 and GAACGGACTC], 14C [(TTTG)4 and GAACGGACTC].

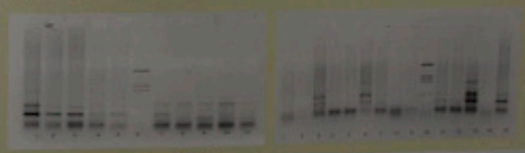
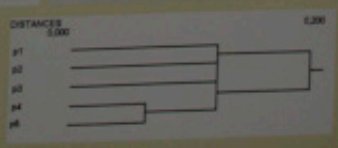


Fig. 3. Genetic variability analysis using DS-PCR 1m combination: 5C[(CAG)4 and GAACGGACTC]; left : P4 Cimitir (1-5) P5 Lazarel (7-11); right: P1 Alba-Iulia (1-5), P2 Cetăților (6-9) P3 Someșului (11-15)



Tree diagramm representing the grouping of analyzed populations on genetic variability basis

RESULTS AND DISCUSSIONS

In *Cepaea hortensis* the polymorphism affects the colour of the shell, the banding, as well as the mantle's pigmentation. The populations identified in Sibiu are highly variable with regard to the morph's frequency and none of them presents the whole polymorphism that characterizes this species. Some populations present both banded and non-banded forms; the latter can be either pink or yellow, while other populations present only non-banded morphs, namely always pink (fig.1, 2).

The differences between populations and the low variability is probably due to a genetic drift process.

The intrapopulational profile of the 6 primer combinations reveals a high degree of genetic variability which allows the analysis of the genetic distance between the studied populations. Among the 6 tested combinations, the 1m and 5m combinations that showed in all the cases high intrapopulational differences, were considered the most suitable for testing the intra- and interpopulational variability (fig. 3,4,5).

At intrapopulational level, the DS-PCR utilizing the 1m primer combination, reveals a genetic polymorphism reflected in the phenotypic variability characteristic for this species. This variability can be used in order to properly compare populations that live in different ecological conditions.

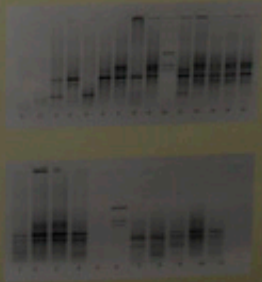


Fig. 5. Genetic variability analysis using DS-PCR 5m combination 10C [(CGGA)4 and GAACGGACTC]
up: P1 Alba-Iulia (1-5), P2 Cetăților (6-9) P3 Someșului (11-15)
down: P4 Cimitir (1-5) P5 Lazarel (7-11)

Fig. 4. Genetic variability analysis using DS-PCR 1m combination; tree diagram representing the intrapopulational genetic variability
(Individual notation: Individual number; population number P1-P5; morph R- pink, G-yellow; GB-yellow banded.

CONCLUSIONS

The populations identified in Sibiu are highly variable with regard to the morph's frequency and none of them presents the whole polymorphism that characterizes this variable species.
The study of genetic variability in *Cepaea hortensis*, using DS – PCR, proved a high degree of polymorphism sustained by the phenotypic variability. But the two aspects of variability are just partially overlapping.

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DATA REGARDING GENUS *PARNASSIUS* LATREILLE, 1804 (LEPIDOPTERA: PAPILIONIDAE) IN THE NATURAL HISTORY MUSEUM COLLECTIONS FROM SIBIU

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This study is based on the Lepidoptera Collection from the Natural History Museum from Sibiu.
The following collections were analyzed:

- **Dr. Daniel Czekelius Lepidoptera Collection from Transylvanian;**
- **Dr. Victor Weindel Lepidoptera Collection from Transylvanian;**
- **Dr. Eugen Worell Lepidoptera Collection;**
- **Heinrich Hann von Hannenheim Lepidoptera Collection;**
- **Prof. Rolf Weyrauch Lepidoptera Collection;**
- **Dr. Eckbert Schneider Entomogical Collection.**

The material we analyzed is represented by 244 specimens that belong to 2 species:
– *Parnassius apollo* (Linnaeus, 1758) with 2 subspecies: *Parnassius apollo jaraensis* Kertész, 1922 and *Parnassius apollo transylvanicus* Schweitzer, 1912;
– *Parnassius mnemosyne* (Linnaeus, 1758) with 2 subspecies: *Parnassius mnemosyne distincta* Bryk & Eisner, 1930 and *Parnassius mnemosyne transsylvanica* Schmidt, 1930 in the Natural History Museum Collection (fig. 3).

• The *Parnassius apollo* (fig. 1) specimens we analyzed are collected between 1909 and 1976. This butterfly is included in *The Red Book of Romanian Lepidoptera*, with the protection status: critically endangered (RÁKOSY, 2003).

• *P. mnemosyne* (fig. 2) specimens were collected in the period between 1904 and 1982. *P. mnemosyne* is included in *The Red Book of Romanian Butterflies* with the protection status: near threatened (RÁKOSY, 2003).

- All presented *Parnassius* subspecies are endemic to Romania.

This study is intended to present the *Parnassius* genus preserved at the Lepidoptera Collection from the Natural History Museum from Sibiu (fig. 3 and fig. 4).

Fig. 3 Genus *Parnassius* preserved in the Natural History Museum Collections of Sibiu.

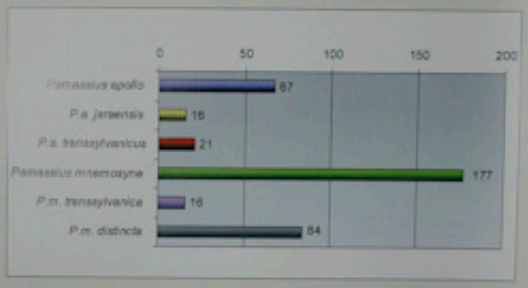

Fig. 4 The number of specimens from the genus *Parnassius* preserved in the Natural History Museum Collections of Sibiu.

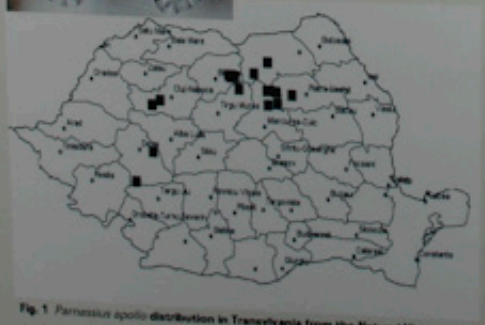

Fig. 1 *Parnassius apollo* **distribution in Transylvania from the Natural History Museum Collections of Sibiu**

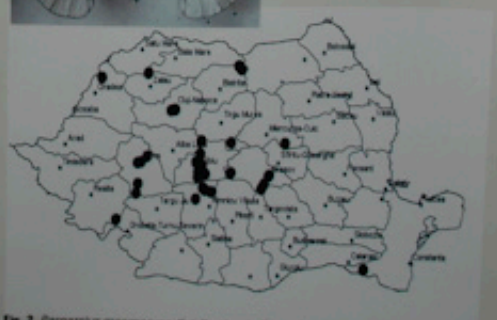

Fig. 2 *Parnassius mnemosyne* **distribution in Transylvania from the Natural History Museum Collections of Sibiu**

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Radu-Ştefan PANĂ, George-Ştefan NĂZĂREANU - Restoring stages of *Manta birostris* (Giant Manta) exhibited in "Grigore Antipa" National Museum of Natural History, Bucharest (Romania)

ETAPELE RESTAURĂRII DIAVOLULUI DE MARE (*MANTA BIROSTRIS*) EXPUS ÎN MNINGA

RADU ŞTEFAN PANĂ, GEORGE - ŞTEFAN NĂZĂREANU
MUZEUL NAŢIONAL DE ISTORIE NATURALĂ "GRIGORE ANTIPA"

Echipa de restaurare a fost compusă din Radu Pană, Camelia Dană, Mircea Ciobanu, George Năzăreanu.

Etapele restaurării:

- pregătirea materialelor necesare restaurării;
- analizarea preparatului şi a părţilor deteriorate.

Partea ventrală:

- curăţarea chitului vechi şi desprinderea pielii de pe corpul artificial original;
- construirea unei baze pe corpul artificial original pentru a putea fixa pielea;
- cercetarea şi analizarea structurii interioare prin efectuarea unei nişe;
- lipirea pielii pe noul corp artificial;
- chituirea rosturilor pielii.

Întoarcerea preparatului pe partea dorsală:

- curăţarea materialului de umplutura veche (parafină);
- fixarea pielii şi chituirea rosturilor;
- vopsirea părţii dorsale ghidându-ne în permanenţă de fotografii.

Ridicarea în poziţie verticală:

- retuşarea părţii ventrale;
- [illegible] părţii ventrale ghidându-ne în permanenţă de fotografii;
- curăţarea ochilor;
- fixarea culorii cu ajutorul unui spray fixativ special.

Fotografii: George Năzăreanu, Radu Pană

P 30.

Radu-Ștefan PANĂ, George-Ștefan NĂZĂREANU - Restoring stages of *Manta birostris* (Giant Manta) exhibited in "Grigore Antipa" National Museum of Natural History, Bucharest (Romania)

ETAPELE RESTAURĂRII DIAVOLULUI DE MARE (*MANTA BIROSTRIS*) EXPUS ÎN MNINGA

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MUZEUL NAȚIONAL DE ISTORIE NATURALĂ "GRIGORE ANTIPA"

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Etapele restaurării:

- pregătirea materialelor necesare restaurării;
- analizarea preparatului și a părților deteriorate.

Partea ventrală:

- curățirea chitului vechi și desprinderea pielii de pe corpul artificial original;
- construirea unei baze pe corpul artificial original pentru a putea fixa pielea;
- cercetarea și analizarea structurii interioare prin efectuarea unei mize;
- lipirea pielii pe noul corp artificial;
- chituirea rosturilor pielii.

Întoarcerea preparatului pe partea dorsală:

- curățirea materialului de umplutura veche (parafină);
- fixarea pielii și chituirea rosturilor;
- vopsirea părții dorsale ghidându-ne în permanență de fotografii.

Ridicarea în poziție verticală:

- retouarea părții ventrale;
- vopsirea părții ventrale ghidându-ne în permanență de fotografii;
- curățirea ochilor;
- fixarea culorii cu ajutorul unui spray fixativ special.

P 29.

Radu-Ștefan PANĂ, George-Ștefan NĂZĂREANU - Restoring stages of *Charcharodon charcharias* (Great White Shark) exhibited in "Grigore Antipa" National Museum of Natural History, Bucharest (Romania)

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