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CATALOGUE OF THE „NATURA 2000" PROTECTED COLEOPTERA SPECIES FROM THE „ARION-PANIN" ENTOMOLOGICAL COLLECTION OF THE RESEARCH-DEVELOPMENT INSTITUTE FOR PLANT PROTECTION

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Abstract: In the „Arion-Panin" entomological collection of the Research-Development Institute for Plant Protection (RDIPP) a number of 215 pieces belonging to 8 (from a total of 38) protected Coleoptera „Natura2000" species (*Carabus variolosus*, *Cerambyx cerdo*, C*ucujus cinnaberinus*, *Lucanus cervus*, *Morimus funereus*, *Osmoderma barnabita* and *Rosalia alpina*) are conserved. The pieces have been collected from various areas, from which 10 of them are presently included in the Romanian Natura 2000 protected areas network. The zoogeographical value of the specimens is considerable, due to the fact they represent historical Romanian fauna records. Some species are now unknown in the places they were collected, as in the case of the *Rosalia alpina* specimen collected from a house wall in Bucharest.

Key words: *Coleoptera, Natura 2000, Arion-Panin entomological collection*

INTRODUCTION

The collectors are: Sergius Panin, George Arion, Franz Salay, and also others of which identity couldn't been established until this date based on visual characteristics (label type, writing analysis). Even if the pieces are old and some of them have incomplete data, their importance must be emphasized because they represent zoogeographical documents of the Romanian biodiversity, because: i) now some of the species can't be found in the areas from which they have been collected and ii) because the actual biodiversity and environment protection laws do not permit some species collecting. As an example, we can quote the case of one *Rosalia alpina* specimen „collected from a house wall" (sic!). From the 30 collecting data, only 11 of them are localized inside or in the vicinity of Natura 2000 sites. Also, 7 of the 38 coleopteran protected species from the Natura 2000 list are preserved in the collection, so 18.4% of them.

MATERIALS AND METHODS

The entomological pieces were investigated with a Carl Zeiss SteREO V12 stereomicroscope with ×80 magnification. The collecting locations were cross-checked with the Natura 2000 Romanian Network Database (http://natura2000.ro) and the UTM distribution map was generated using the UTM codes for localities as provided by Lehrer and Lehrer (Lehrer & Lehrer, 1990).

According to the most recent data available concerning the nomenclature and distribution as stated by Maurizi et al. (2017), the material previously collected and identified in south-eastern Europe (thus including Romania) as *Osmoderma eremita* (Scopoli, 1763) is

to be considered as misidentified, the accepted species name becoming then *Osmoderma barnabita*.

RESULTS

Class: Insecta
Order: Coleoptera

Family: Carabidae

***Carabus variolosus* Fabricius 1787**

1 spec., Prahova, Omul (sic!), VII.1934; 1 spec., Bacău, VII.1934; 1 spec., Sinaia, Cumpătul (sic!) (PH), 8.VIII.1946; 1 spec., Prahova, *leg.* Salay.

Family: Cerambycidae

***Cerambyx cerdo* Linnaeus, 1758**

1spec., Căldăruşani (IF), 25. V. 1898, *leg.* F. Salay; 1 spec., Comana (IF), 26.VI.1910, *leg.* F. Salay; 1 spec., Stoeneşti (GR), VII.1928; 1 spec., Ceala (AR), IV.1932; 4 specs, Ceala, VII.1932; 1 spec., Nucet (DB), 4.VI.1932; 1 spec., Nucet, 10.VII.1932; 1 spec., Ecrene (Bulgaria), VII.1935; 2 specs, Băile Herculane (CS), 1942; 1 spec., Agapia, *leg.* F. Salay; 1 spec., Căldăruşani, *leg.* F. Salay; 1 spec., Batova Valley (Bulgaria), near the sea.

***Morimus funereus* Mulsant, 1863**

1 spec., Căldăruşani (IF), 26.V.1898, *leg.* F. Salay; 1 spec., Bolteşti, 6.V.1908 (*leg.* Salay); 1 spec., Goleşti (Muscel) (VL), V.1931; 1 spec., Cernica (IF), 26.VII.1931; 5 specs, Nucet (DB), 20.V.1932; 6 specs, Nucet, 21.V.1932; 5 specs, Ceala (AR), V.1932; 2 specs, Ceala VII.1932; 2 specs, Nucet, 22.V.1932; 2 specs, Nucet, 23.V.1932; 4 specs, Nucet, 24.V.1932; 1 spec., Nucet, 27.V.1932; 1 spec., Nucet, 31.V.1932; 1 spec., Nucet, V.1933; 3 specs, Bulboci, leg. F. Salay; 2 specs, Gorj, IV.1935; 2 specs, Ilfov, IX. 1936; 1 spec., Ilfov, V. 1937; 1 spec., Gorj, VII.1937; 3 specs, Băile Herculane (CS), VI.1942; 1 spec., Sandărei (sic!), com. Kogălniceanu (IL), VI.1949.

***Rosalia alpina* (Linnaeus, 1758)**

1 spec., Comana (IF), 27.VII.1902, *leg.* F. Salay; 1 spec., Slănic Moldova, VII.1933; 3 specs, Comana, 9.VI.1935, 1 spec., Comana, 27.VI.1935; 1 spec., Bucureşti (IF), 26.V.1951, (on a house wall).

Family: Cucujidae

***Cucujus cinnaberinus* (Scopoli, 1763)**

1 spec., Sinaia (PH), 19. VIII.1945.

Family: Lucanidae

***Lucanus cervus* Linnaeus, 1758**

1 spec., Comana (IF), 1900, *leg.* Salay; 1 spec., Cocioc, 1.VII.1906, *leg*. Salay; 2 specs, Cociocu (sic!), 2.VII.1906, *leg*. Salay; 1 spec., Roman, 26.VI.1910, *leg.* Salay; 1 spec., Stoeneşti (GR), 29.VI.1928; 2 specs, Stoeneşti, 2.VII.1928; 1 spec., Soroca, 7.IX.1928; 2 specs, Moreni (DB), VI.1928; 1 spec., Stoeneşti, VII. 1928; 1 spec., Soroca, VI.1929; 3 specs, Soroca, VII.1929; 1 spec., Soroca, 12.VII.1929; 1 spec., Nucet (DB), 20.IV.1932; 9 specs, Nucet., 30.IV.1932; 1 spec., Nucet., 2.V.1932; 3 specs, Nucet, 9.V.1932; 1 spec., Nucet., 19.V.1932; 2 specs, Nucet., 21.V.1932; 1 spec., Nucet., 22.V.1932; 1 spec., Nucet,

24.V.1932; 1 spec., Nucet., 28.V.1932; 1 spec., Nucet, 29.V.1932; 1 spec., Nucet, 2.VI.1932; 8 specs, Nucet., 4.VI.1932; 1 spec., Nucet., 10.VI.1932; 1 spec., Nucet, 11.VI.1932; 4 specs, Nucet, 14.VI.1932; 1 spec., Ciuc, [Remetea], 18.VI.1932; 1 spec., Bucureşti, 21.VI.1932; 1 spec., Nucet, 16.VI.1932; 1 spec., Nucet, 21.VI.1932; 16 specs, Nucet., 22.VI.1932; 3 specs, Nucet., 27.VI.1932; 1 spec., Nucet., VI.1932; 8 specs, Nucet., 10.VII.1932; 3 specs., Nucet. 16.VII.1932; 2 specs, Ceala (AR), 19.VII.1932; 1 spec., Nucet, 19.VII.1932; 1 spec., Nucet., VII.1932; 15 specs, Ceala, VII.1932; 4 specs, Nucet., VIII.1932; 3 specs, Alexandria (TR), 1932; 1 spec., Roman, V. 1933; 1 spec., jud. Tulcea, VII.1933; 1 spec., Ceala, VII.1933; 1 spec., Ceala, VIII.1933; 1 spec., Prahova, VIII.1933; 2 specs, Roman, 1933; 1 spec., Ecrene, VI. 1935; 1 spec., Ilfov, VI. 1935; 2 specs, Ilfov, VI. 1937; 1 spec., Ilfov, VII.1937; 1 spec., Constanţa, 1937; 1 spec., Ilfov, 1938; 1 spec., 13. VII.1938, Băneasa; 1 spec., Herculane (CS), VI.1942; 1 spec., Herculane, 1942; 1 spec., Câmpulung, 19.VI.1945; 1 spec., Comana, VI.1945;

Family: Scarabaeidae

***Osmoderma barnabita* Motschulsky, 1845**

1 spec., 1.VIII.1898, Căldăruşani (IF), *leg.* F. Salay; 1spec., Nucet (DB), 21.VII.1932; 1 spec., Comana (IF), VII.1934; 1 spec., 7.VII.1938, Făgăraş (BV); 1 spec., Curtea de Argeş (VL).

DISCUSSIONS

The conservation status of the material is above the media (some specimens need to be cleaned). The disposition of the material inside the boxes is original (arranged in horizontal rows, each genus and species labels being pinned at the top of each species' series. The material is pinned on standard black enameled entomological pins (nr. 1 and 2, some bigger pieces being pinned on nr. 3 or 4 pins). The labels are printed and bear partial handwritten data in black China ink, most of them presenting complete identification data. Some of them lack the day and/or the collecting month, some others have only indicated the name of the collecting department).

As in the case of the examined specimens of *L. cervus*, most of them were collected in one year, from a single location. As at that time the implications of over-collecting and the impact of those actions upon the structure and the vitality of the populations were not sufficiently known (or not at all), what today appears as an outrageous act of zoological selfishness, in those days was not uncommon, nor considered as a prejudice against the biodiversity. So, the said collected specimens are witnessing a strong and well-established local population of *L. cervus* near Nucet.

The collecting range of the studied specimens is comprised between 1898 – 1951, in those 53 years 200 pieces were collected (between 1 and 6 pieces/year), with a peak in 1932, year from which a number of 128 pieces have been identified (Figure 1).

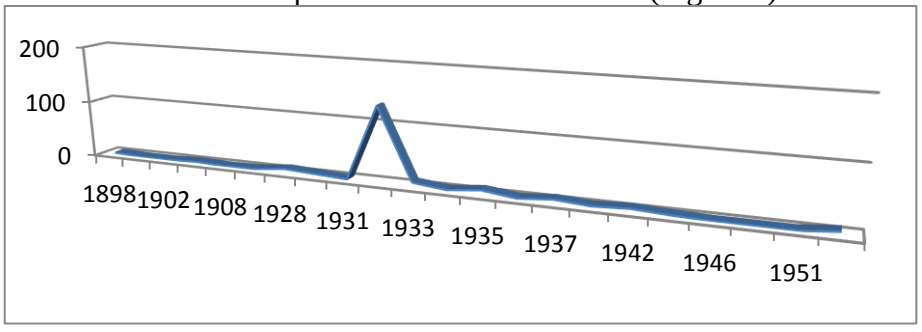

Figure 1. The collecting records per year

From the 30 collecting records, only 11 of the locations were located inside or in the vicinity of Natura 2000 sites (Table 1).

Table 1. Collecting locations in relation to the Natura 2000 sites

Nr.	Location (county)	Situated in (I) or in the vicinity of (V) the Natura 2000 site	
1	Cumpătu (Prahova)	V	Bucegi
2	Omu peak (Prahova)	I	
3	Stoeneşti (Giurgiu)	V	Lunca mijlocie a Argeşului
			Pădurea Bolintin
4	Ceala (Arad)	V	Lunca Mureşului inferior
5	Agapia (Neamț)	I	Vânători-Neamț
6	Slănic-Moldova (Bacău)	I	Slănic
7	Roman (Neamț)	V	Moldova river between Tupilați and Roman
8	Alexandria (Teleorman)	V	Vedea river
9	Tulcea (Tulcea)	V	Danube Delta
10	Cernica (Ilfov)	V	Cernica lake and forest

The presence of a protected species inside or in the vicinity of a Natura 2000 site can contribute to their future conservation, due to the existence of natural habitats which are little or even non-affected by anthropization or anthropic impact. The superposition of 11 records analyzed here with those protected areas can support the hypothesis that the original populations from which those specimens were collected long ago survived until today.
The analyzed distribution data can be represented as a UTM coordinates map (Figure 2).

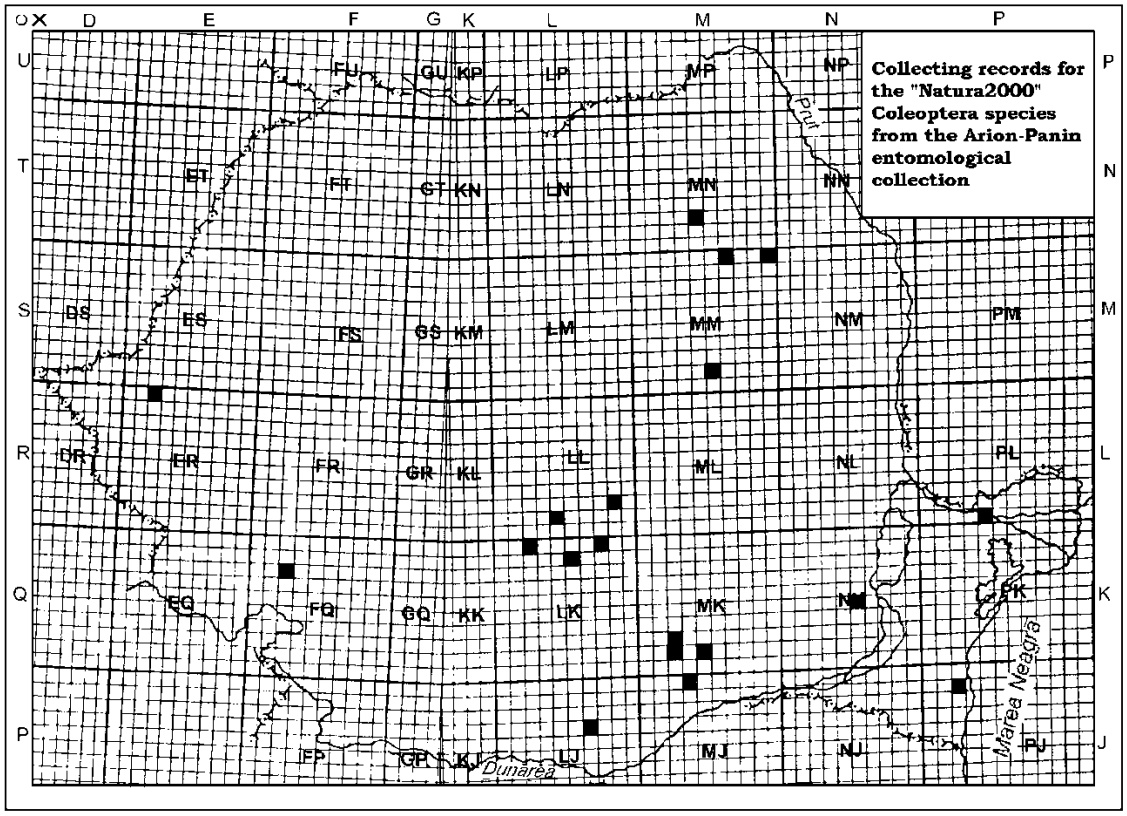

Figure 2. The UTM distribution map of the Natura 2000 Coleoptera species from the "Arion-Panin" entomological collection records

CONCLUSIONS

A total number of 7 from the 38 Natura 2000 Romanian Coleoptera species are represented in the „Arion-Panin" entomological collection of the RDIPP, collected from 10 areas (represented as UTM coordinates) which now are included in the Romanian Natura 2000 network.

The collecting date range from 1898 to 1951, in these 53 years, 195 specimens were collected, with a peak in 1932, where 129 of came from.

Even if they are old and some of them bear incomplete data, they are still important as zoogeographical documents of the Romanian biodiversity, as some species are now unknown in the places they were collected, as in the case of the *Rosalia alpina* specimen collected from a house wall in Bucharest.

The zoogeographical value of the specimens is considerable, due to the fact they represent historical Romanian fauna records.

The museological value of the specimens is also considerable since the disposition of the material inside the entomological boxes is the original one and their conservation status is good.

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