

PRELIMINARY DATA ON BUTTERFLY FAUNA (RHOPALOCERA: LEPIDOPTERA) FROM CĂLIMANI NATIONAL PARK, ROMANIA

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ABSTRACT. The paper presents a check list of the butterfly fauna (Rhopalocera: Lepidoptera) from Călimani National Park. The systematic list made after the actual key for identification, is accompanied by the frequency data from the investigated habitats and by the biogeographically characterization of species. The list compounds 50 species, included in 5 families: HesperIIDae, Pieridae, Lycaenidae, Nymphalidae and Papilionidae. The species diversity varies according to the type of investigated habitats. 11 species protected by national and international legislation were identified. Species *Lycaena dispar* was identified as protected species of Community interest under the Habitats Directive 92/43/EEC.

Keywords: butterfly, habitat, distribution, conservation, transect.

INTRODUCTION

According to the Emergency Ordinance no. 57/2007 concerning conservation of natural habitats and of wide fauna and flora, approved with modifications and additions through law no 49/2011, Călimani National Park is included in category II IUCN, but also in European network Nature 2000. Due to its conservation status, this protected area is ruled after a management plan. According to the first management plan, only few groups of invertebrates were inventoried (Acarina, Collembola, Plecoptera and Coleoptera). After many years this management plan must be revised. Taking account of the European legislation, in 2013 a new inventory of the protected invertebrates groups were accomplished. One of these groups was butterflies (Rhopalocera: Lepidoptera).

Călimani National Park is situated in four administrative territories of the following counties: Harghita, Bistrița-Năsăud, Mureș from Transilvania region and Suceava from Moldavia. More recently studies from the three administrative regions from Transilvania, connected to the Călimani National Park (Harghita, Mureș, Bistrița- Năsăud) had been developed from 1960 till present, by Romanian specialists, being signaled 153 species of butterflies (Popescu-Gorj 1960, 1987; Vicol 1992; Peregovits, 1995, Rakosy, 2000; Vizauer 2000, 2001, Rakosy, 1982; Szekeley 2008).

In Harghita, Bistrița – Năsăud and Mureș counties, researches on the butterfly and moth fauna were focused in the following localities, adjacent to the Călimani National Park: Bilbor, Bistrița, Bistrița Burgăului, Prundu Bârgăului, Colibița, Lunca Bradului, Sovata (Fântânele), Stânceni and Toplița (Popescu-Gorj, 1987; Vicol 1986; Ruști 1982; 1987; Peregovits, 1995, Rakosy 1996; Cuvelier & Dincă, 2007; Szekeley 2008).

In Moldavia, in 1895, the butterfly fauna had been investigated by Aristide Caradja published the first catalogue of Romanian butterflies. In the next century the researches continued with others counties from

Moldavia, as Suceava, especially in the Poiana Stampei and Șaru Dornei localities (Nemeș & Lungoci, 1972, 1973; Nemeș & Voicu 1973a, b). In Moldavia region, 121 butterfly species were identified.

The present study offer current information concerning the inventory and distribution of the butterfly fauna in seven types of habitats from Călimani National Park.

MATERIALS AND METHODS

Călimani National Park it is situated in Northern Romania, encompassing the main volcanic zone of the Eastern Carpathian (Fig. 1). The protected area is situated between 47°1'49.17"N- 47°14'51.70"N and between 25°0'19.92" E - 25°19'47.11" E. It has an area of 24555.6 ha.

The Călimani Mountains is the highest volcanic range in the Carpathians. The central part is characterized by a northward opened caldera. Steep slopes ascend from the inner depression to the rim of the caldera, while gentle slopes descend towards the pediment. The highest peaks are the mounds on the rim. The range culminates at the Pietrosu Peak (2102 m a.s.l.). Glacial landforms are situated at the inner, steep side of the central caldera (Kern *et al.*, 2006).

The southern slopes, exposed to solar radiation, receive on their upper parts, smaller amounts of precipitation (1200 mm) than on the northern slopes which are more cloudy and humid (rainfall over 1300 mm). The average annual temperature in most high areas is below zero degrees Celsius. Absolute maximum temperature reached 28 °C, while the minimum dropped to -24.5 °C (Pandi *et al.*, 2011).

According to the management plan from 2008, the Călimani National Park is divided in:

- three scientifically reservations: reservation of *Pinus mugo* and *Pinus cembra* category I IUCN (384.2 ha); Iezer lake – category IV IUCN (322 ha) and geological reservation "12 Apostoli"- category IV IUCN (200 ha);
- strictly protected area (1128 ha), with natural or seminatural spruce forests or mixed with *Pinus mugo* and juniper shrubs;

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- integral protected area (15727.01/15698.6 ha) with forest ecosystems and mountain meadows.
- sustainable conservation area (7700.99/7729.1 ha) which is the transit area from the integral protected areas to those with sustainable development as forests or meadows affected by the anthropical activities.

The type of ecosystems from the Călimani National Park is very various. The identified ecosystems were: spruce forests with *Picea abies* (L.) H. Karst., mixed forest with *Picea abies*, *Abies alba* Mill., *Fagus sylvatica* L., but sometimes with *Acer pseudoplatanus* L., *Acer platanoides* L., *Tilia cordata* Mill. And

Fraxinus excelsior L.; dwarf pine bushes and juniper shrubs; shrubs with *Alnus viridis* (Chaix.) D. C.; subalpine and alpine meadows; spruce forest with *Pinus cembra* L.; riparian areas, cliff areas and mobile scree.

In order to make an inventory of butterfly fauna (Rhopalocera: Lepidoptera) from Călimani National Park, 55 transect were investigated. These transects had varied distribution (Fig. 1).

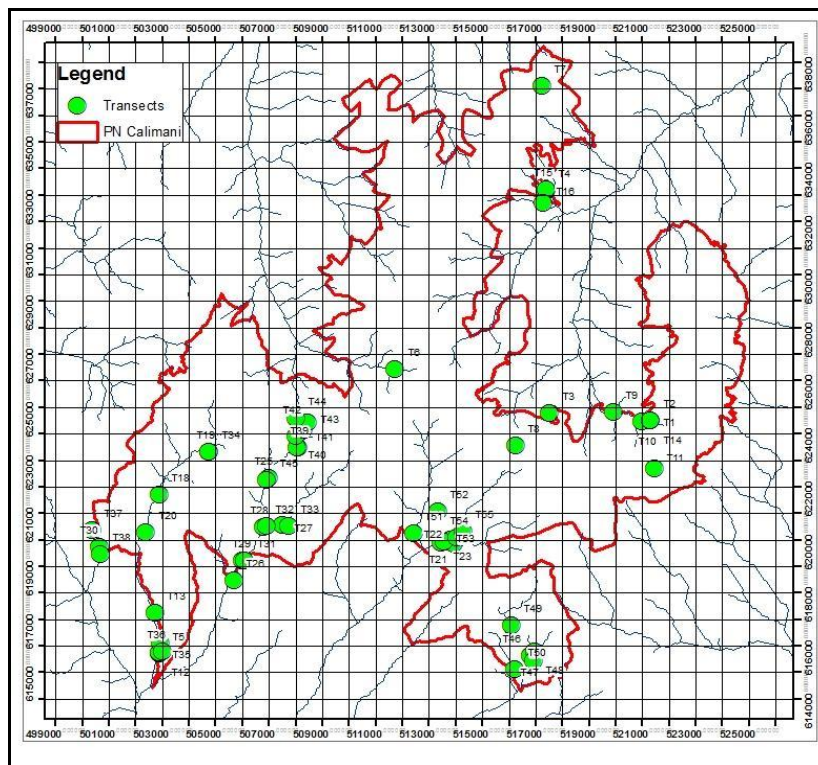


Fig. 1 Investigated transects from Călimani National Park.

The material was collected in four field trips from 55 transects from National Park Călimani, carried out in the following periods: 5-12 June; 1-7 July; 5-10 August and 3-8 September, 2013. The inventory of the butterfly fauna was made using the transect method (an imaginary space by 2.5 meters in lateral sides and 5 meters forward and above the head). The length of the one transect is 500 meters (Van Swaay *et al.*, 2012).

The following abiotic factors were analyzed: air temperature ($T^{\circ}C$) and humidity (Rh %), nebulosity (Neb.) And wind speed (W). The air temperature and humidity were measured with wireless thermohygrometer HTS55 Irox. The wind speed was quantified after Beaufort scale (the numbers 0 to 12 to indicate the strength of the wind from calm - force 0 to hurricane - force 12). The percentage of sky covered by clouds is another environmental variable which was taken into consideration (van Swaay *et al.* 2002; 2008; Wikstrom *et al.*, 2009).

The maximum altitude of the transect was 1800 meters and the minimum was 796 meters. Six types of habitats were investigated: riparian (R); forest edge (Fed); forest edge and riparian (fedr); wet meadows (WM); alpine shrubs mainly composed from *Pinus mugo* and *Rhododendron myrtifolium* (AS) and mountain subalpine meadows (MSM) (Table 1).

Table 1.
The types of investigated habitats from Călimani National Park

| Ht | Tr | Alt | T | Rh | N | W | Ht | Tr | Alt | T | Rh | N | W |
|------|-----|--------|------|----|----|---|------|-----|--------|------|------|----|---|
| R | T1 | 1400 | 29 | 42 | 20 | 1 | R | T29 | 968.2 | 34.2 | 47 | 25 | 0 |
| MSM | T2 | 1430 | 29.5 | 41 | 0 | 1 | FedR | T30 | 1070 | 29.4 | 49 | 95 | 1 |
| AS | T3 | 1633 | 26 | 64 | 0 | 3 | FedR | T31 | 970 | 19.3 | 56 | 98 | 1 |
| WM | T4 | 1159 | 28.7 | 67 | 25 | 1 | FedR | T32 | 993.7 | 18.3 | 64 | 98 | 2 |
| R | T5 | 1004 | 29.2 | 43 | 0 | 0 | R | T33 | 905 | 18.7 | 64 | 98 | 2 |
| Fed | T6 | 1440 | 26.2 | 63 | 98 | 4 | FedR | T34 | 1202.9 | 22.4 | 62,5 | 98 | 2 |
| MSM | T7 | 1600 | 24.7 | 62 | 75 | 4 | FedR | T35 | 930.65 | 23.6 | 51 | 85 | 1 |
| AS | T8 | 1713 | 22.5 | 62 | 30 | 1 | R | T36 | 799.96 | 22.5 | 57 | 80 | 0 |
| Fed | T9 | 1400 | 22.5 | 63 | 35 | 1 | R | T37 | 796.13 | 21.5 | 64 | 75 | 2 |
| Fed | T10 | 1461 | 23.5 | 64 | 35 | 3 | Fed | T38 | 1064.1 | 21.7 | 57 | 80 | 1 |
| MSM | T11 | 1800 | 20.5 | 70 | 80 | 1 | Fed | T39 | 1246.3 | 11.4 | 60 | 10 | 1 |
| R | T12 | 963 | 28 | 47 | 0 | 0 | FedR | T40 | 1304.9 | 13.1 | 60 | 10 | 1 |
| R | T13 | 1000 | 28 | 57 | 0 | 0 | FedR | T41 | 1489.4 | 12 | 65 | 20 | 1 |
| R | T14 | 1400 | 27.5 | 51 | 45 | 2 | Fed | T42 | 1508.3 | 16.7 | 83 | 5 | 2 |
| WM | T15 | 1165.5 | 31.7 | 44 | 25 | 4 | MSM | T43 | 1539.2 | 19.1 | 75 | 10 | 2 |
| Fed | T16 | 1248 | 31.4 | 43 | 20 | 3 | Fed | T44 | 1614.8 | 18.5 | 54 | 10 | 2 |
| Fed | T17 | 1004 | 29.7 | 57 | 0 | 0 | FedR | T45 | 980.3 | 17.6 | 63 | 40 | 2 |
| R | T18 | 1077.4 | 30 | 50 | 40 | 1 | FedR | T46 | 1330 | 16.5 | 59 | 35 | 0 |
| FedR | T19 | 1202.7 | 28.5 | 49 | 95 | 1 | FedR | T47 | 1095.5 | 16.7 | 74 | 35 | 0 |
| Fed | T20 | 1157.8 | 29.5 | 49 | 75 | 0 | FedR | T48 | 1092.8 | 19.9 | 71 | 60 | 1 |
| Fed | T21 | 1119.9 | 34.9 | 72 | 10 | 0 | FedR | T49 | 1087.4 | 23.7 | 57 | 60 | 0 |
| Fed | T22 | 1152.6 | 24.5 | 70 | 25 | 1 | FedR | T50 | 1062.7 | 24 | 59 | 50 | 2 |
| MSM | T23 | 1101.1 | 28.2 | 45 | 73 | 1 | FedR | T51 | 1110 | 10 | 57 | 0 | 0 |
| Fed | T24 | 1339.2 | 28.7 | 50 | 75 | 1 | FedR | T52 | 1055 | 9.5 | 59 | 0 | 0 |
| Fed | T25 | 1225.4 | 28.5 | 43 | 80 | 1 | FedR | T53 | 1114.4 | 19 | 47 | 0 | 0 |
| Fed | T26 | 901.6 | 27.5 | 57 | 10 | 0 | FedR | T54 | 1149.4 | 23.5 | 50 | 0 | 0 |
| FedR | T27 | 913 | 27.6 | 67 | 0 | 0 | FedR | T55 | 1254.1 | 17 | 62 | 0 | 0 |
| R | T28 | 1005 | 29.5 | 57 | 45 | 2 | | | | | | | |

(Ht = habitat; Tr = transect; Alt. = altitude; T = air temperature (⁰C); Rh = air humidity (%); N = nebulosity (%); W= wind)

The butterflies have been collected with the entomological net. Another non-destructive used method (from the conservation point of view) was photos, with a performance device (Sony, full HD 1080). This method provides protection for butterflies' species and for their habitats. The taxonomical identification was made after determination keys (Niculescu 1961, 1963, 1965; Lafranchais, 2004; Tolman & Lewington, 2009).

The general distribution of the species is presented according to Rakòsy, 2013.

The conservation status for each species was established taking account of the criteria evaluated by the Rakosy 2003, 2005; national legislation – O. U 57/20.06.2007; European legislation – Directive Habitats 92/43 EEC and Red Data Book of European Butterflies (RDBEB) (van Swaay & Warren, 1999).

Detrended correspondence analysis was performed with PAST software (Hammer, 2001).

RESULTS AND DISCUSSIONS

50 species were identified, included in 5 families: Hesperidae (3.70%), Pieridae (20.37%), Lycaenidae (11.11%), Nymphalidae (62.96%) and Papilionidae (1.85%). If we take into consideration the total number of butterfly species recorded by Szekely in 2008, in Romania (202 species), in Călimani National Park were recorded 26.73% from them (Table 2). If we make a comparison with the number of butterflies from eastern Carpathians (114-120), in this national park, were identified 45% from them (Rakòsy *et al.*, 2012).

If we compare the number of species from each family identified in Călimani National Park to the total number of species recorded on national level, we observe that the highest values were obtained by species from Pieridae (47.82%) and Nymphalidae (38.88%) families. On the opposite are species from Papilionidae (16.66%), Lycaenidae (10.16%) and Hesperidae (8.33%) families (Fig. 2).

The classified butterflies after their biogeographical distribution revealed a net dominance of Siberian-

European species 24,52%, followed by transpalearctic species (15,09%) and by palearctic and holarctic ones (11,32%) (Table 2).

Taking account of the type of habitats, in forest edges were identified the most increased number of species (41 species), followed by riparian area (38 species), wet meadows (30 species), mixed habitat between forest edges and riparian area (30 species), and mountain-subalpine meadows (29 species). The most decreased number of species were recorded in alpine shrubs (16 species) (Fig. 4).

In some of the investigated habitats, some exclusive species were identified. *Colias croceus* was recorded in mixed forest edge and riparian habitat, being a mesoxerothermophilous and migratory species, identified even on 1600 m altitude. Mesohygrophilous species *Lycaena virgaureae* was described in forest edges (Szekely, 1994, 2008; Mihoci *et al.*, 2012) (Fig. 4).

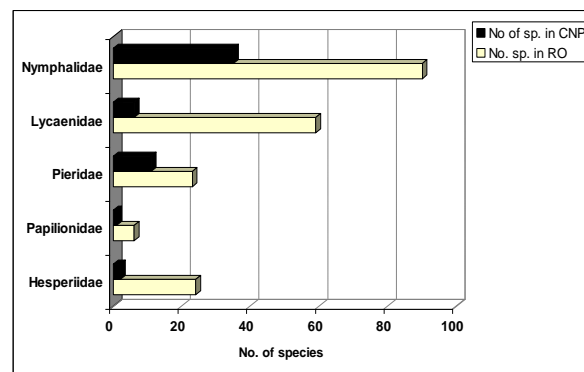


Fig. 2 The comparison between number of species identified in Călimani National Park (CNP) and that from Romania (RO)

Table 2.

Butterfly species (Rhopalocera: Lepidoptera) identified in Călimani National Park.

| No | Species | R | MSM | WM | AS | Fed | Fed R | B.d. |
|---------------------------|---|----|-----|----|----|-----|-------|-----------|
| Family HESPERIIDAE | | | | | | | | |
| 1 | <i>Pyrgus alveus</i> (Hubner, 1803) | F | | | | | R | Pal. |
| 2 | <i>Ochlodes sylvanus</i> (Esper, 1777) | F | F | RF | | RF | | As.-Eur. |
| Family PIERIDAE | | | | | | | | |
| 3 | <i>Anthocharis cardamines</i> (Linnaeus, 1758) | RF | | | | | | Pal. |
| 4 | <i>Pieris brassicae</i> (Linnaeus, 1758) | R | R | R | R | R | R | Sib.-Eur. |
| 5 | <i>Pieris bryoniae carpathensis</i> Moucha, 1956 | | RF | | | RF | RF | WPal. |
| 6 | <i>Pieris napi</i> (Linnaeus, 1758) | F | F | RF | RF | F | F | Hol. |
| 7 | <i>Pieris rapae</i> (Linnaeus, 1758) | F | RF | RF | F | F | F | Pal. |
| 8 | <i>Aporia crataegi</i> (Linnaeus, 1758) | R | | | | | | Pal. |
| 9 | <i>Pontia edusa</i> (Fabricius, 1777) | R | | R | | R | R | WAs.-Med. |
| 10 | <i>Gonepteryx rhamni</i> (Linnaeus, 1758) | VF | | | RF | F | RF | Pal. |
| 11 | <i>Leptidea sinapis</i> (Linnaeus, 1758) | C | | | | F | C | Eur.-As. |
| 12 | <i>Colias croceus</i> (Fourcroy, 1785) | | | | | | R | WAs.-Eur. |
| Family LYCAENIDAE | | | | | | | | |
| 13 | <i>Lycaena dispar</i> (Haworth, 1802) | R | VR | | | | | Sib.-Eur. |
| 14 | <i>Lycaena virgaureae</i> (Linnaeus, 1758) | | | | | VR | | Sib.-Eur. |
| 15 | <i>Plebejus idas</i> (Linnaeus, 1761) | | | R | | R | | Hol. |
| 16 | <i>Polyommatus bellargus</i> (Rottemburg, 1775) | | | R | | R | | Eur.-WAs |
| 17 | <i>Polyommatus icarus</i> (Rottemburg, 1775) | | F | | RF | | | Pal. |
| Family NYMPHALIDAE | | | | | | | | |
| 18 | <i>Aglais urticae</i> (Linnaeus, 1758) | VF | VF | VF | F | VF | F | As.-Eur. |
| 19 | <i>Aphantopus hyperantus</i> (Linnaeus, 1758) | VF | RF | VF | | VF | RF | Sib.-Eur. |
| 20 | <i>Araschnia levana</i> (Linnaeus, 1758) | VF | RF | RF | | FV | RF | Tpal. |
| 21 | <i>Argynnis aglaja</i> (Linnaeus, 1758) | | RF | RF | | VF | | Tpal. |
| 22 | <i>Argynnis paphia</i> (Linnaeus, 1758) | VF | F | VF | F | VF | VF | Tpal. |
| 23 | <i>Argynnis niobe</i> (Linnaeus, 1758) | R | R | | | R | | Tpal. |
| 24 | <i>Argynnis adippe</i> (Denis & Schiffermuller, 1775) | | RF | RF | | F | F | Tpal. |
| 25 | <i>Boloria euphrosyne</i> (Linnaeus, 1758) | VR | | VR | | VR | | Sib.-Eur. |
| 26 | <i>Boloria selene</i> (Denis & Schiffermuller, 1775) | F | F | F | | F | RF | Hol. |
| 27 | <i>Brenthis daphne</i> (Denis & Schiffermuller, 1775) | | | RF | | RF | | Sib.-Eur. |
| 28 | <i>Brenthis ino</i> (Rottemburg, 1775) | VF | | VF | | VF | VF | Sib.-Eur. |
| 29 | <i>Coenonympha glycerion</i> (Borkhausen, 1788) | RF | | F | RF | RF | RF | Wpal. |

| | | | | | | | | |
|----------------------------|--|----|----|----|----|----|----|------------|
| 30 | <i>Coenonymphia pamphilus</i> (Linnaeus, 1758) | VF | VF | VF | F | VF | F | Tpal. |
| 31 | <i>Erebia ligea nikostrate</i> Fruhstorfer, 1909 | VF | VF | VF | | VF | VF | Sib.-Eur. |
| 32 | <i>Erebia euryale sirmia</i> Fruhstorfer, 1909 | F | VF | F | VF | VF | F | C.S. Eur. |
| 33 | <i>Inachis io</i> (Linnaeus, 1758) | VF | F | RF | F | RF | RF | Sib.-Eur. |
| 34 | <i>Issoria lathonia</i> (Linnaeus, 1758) | F | RF | F | | F | F | Eu.-As. |
| 35 | <i>Lasiommata maera</i> (Linnaeus, 1758) | F | RF | F | RF | F | | Tpal. |
| 36 | <i>Limenitis camilla</i> (Linnaeus, 1764) | VF | VF | VF | | VF | VF | Sib.-Eur. |
| 37 | <i>Limenitis populi</i> (Linnaeus, 1758) | R | | | | R | R | Sib.-Eur. |
| 38 | <i>Neptis rivularis</i> (Scopoli, 1763) | VF | VF | | | | | Sib.-Eur. |
| 39 | <i>Nymphalis polychloros</i> (Linnaeus, 1758) | R | | | | R | | Wpal. |
| 40 | <i>Nymphalis antiopa</i> (Linnaeus, 1758) | VR | | | | | VR | Hol. |
| 41 | <i>Pararge aegeria tircis</i> Butler, 1867) | F | RF | RF | RF | RF | RF | WPal. |
| 42 | <i>Polygonia c-album</i> (Linnaeus, 1758) | VF | VF | | | F | F | Tpal. |
| 43 | <i>Apatura iris</i> (Linnaeus, 1758) | R | | VR | VR | VR | VR | As.-Eur. |
| 44 | <i>Melitaea britomartis</i> Assmann, 1847 | | VR | VR | | | | SSib-EEur. |
| 45 | <i>Vanessa atalanta</i> (Linnaeus, 1758) | VF | VF | F | VF | VF | VF | Hol. |
| 46 | <i>Minois dryas</i> (Scopoli, 1763) | RF | | | | RF | RF | Sib.-Eur. |
| 47 | <i>Maniola jurtina</i> (Linnaeus, 1758) | RF | | | | RF | | Wpal. |
| 48 | <i>Melanargia galathea</i> (Linnaeus, 1758) | RF | RF | | | RF | | Eur.-Was. |
| 49 | <i>Vanessa cardui</i> (Linnaeus, 1758) | F | RF | F | | RF | RF | Cosm. |
| Family PAPILIONIDAE | | | | | | | | |
| 50 | <i>Iphiclides podalirius</i> (Linnaeus, 1758) | | | | RF | RF | | C.As-Eur. |

Legend: The biogeographical distribution (B.g.) of the species: cosmopolite (Cosm.), palearctic (Pal.); transpalearctic (Tpal), West-palearctic (Wpal.), holarctic (Hol.), Asia-Europe (As.-Eur.), Siberia-Europe (Sib.-Eur.), Central South Europe (CSEur.), West Asia - Mediteranea (WAs.-Med.), Siberia-East Europe (Sib.-EEur.), West Asia-Europe (Was.-Eur.); South Siberia –East Europe (SSib-EEur.), central Asia-Europe (CAs-Eur.).

Frequency: very rare (VR) = 1-4 individuals/habitat; rare (R) = 5-10 individuals / habitat; relatively frequent (RF)= 1-5 individuals / day; frequent (F) = 6-15 individuals / day; very frequent (VF)= >15 individuals / day.

The detrended correspondence analysis revealed that the riparian areas, forest edges, mountain-subalpine meadows, mixed habitats between riparian and forest edges were the most favorable ecosystems for the identified butterflies from Călimani National Park. The majority of them were grouping closed to these investigated habitats (Fig. 3).

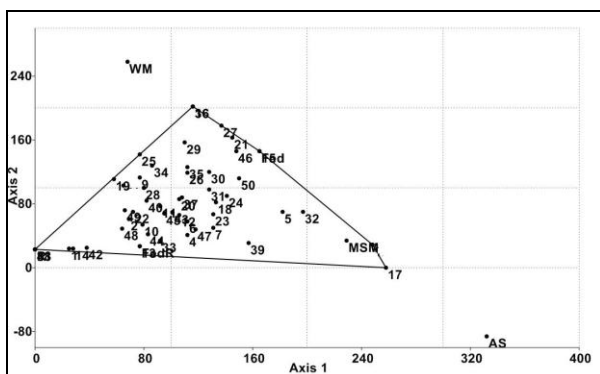


Fig. 3 Detrended correspondence analysis of the identified butterfly species from instigated habitats in Călimani National Park .

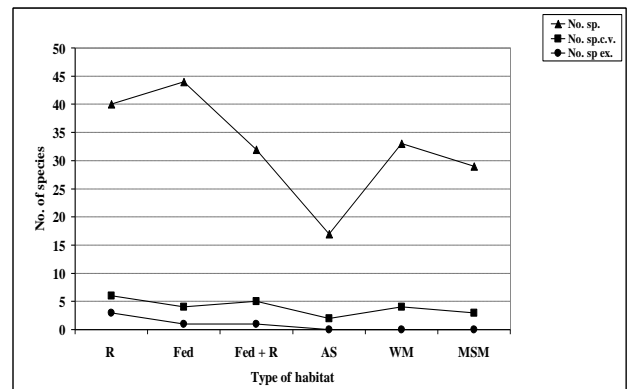


Fig. 4 Distribution of butterfly species in the investigated habitats in Călimani National Park (sp.c.v = species with conservative value; sp. Ex. = exclusive species).

If we take into consideration the conservation status, we found 9 species protected by national and European legislation. The riparian and forest edges areas were the most favorable habitats for these protected species, but they were also identified in wet meadows and mountain-subalpine meadows too (Figure 4). Species vulnerable on national level were: *Pieris bryoniae carpathensis*; *Brenthis daphne*; *Brenthis ino*; *Limenitis populi*; *Nymphalis polychloros*; *Apatura iris*. Only one near threatened species were identified: *Iphiclides podalirius* (Rakosy 2003, 2005; Szekely, 2008).

According to the Red Data Book of European Butterflies *Melitaea britomartis* is considered threatened in Europe, in our country having a present distribution class between 5% and 15%.

Photos with some rare species and their habitats were presented in Fig. 5.

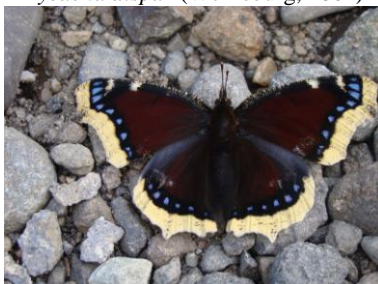
Lycaena dispar is listed in both Annex II and Annex IV of the EU Habitats Directive 92/43 EEC and protected by national legislation O. U. 57/20.06.2007 and H. G. 49/ 7.04.2011.



Apatura iris (Linnaeus, 1758)



Lycaena dispar (Werneburg, 1864)



Nymphalis antiopa (Linnaeus, 1758)



Pieris brassicae (Linnaeus, 1758)



Forest edge (Fed)



Riparian area (R)



Forest edges+Riparian area (FedR)



Forest edges+Riparian area (FedR)

Fig.5 Rare butterfly species and their habitats from Călimani National Park.

The characteristically environmental condition for each type of habitats (as humidity, temperature, altitude and vegetation) determines variation of species diversity. In the same time, these variations are due to the various number of investigated transects from each habitats. The alpine shrubs were poorly represented by

the Lepidoptera fauna, while in riparian and forest edges habitats the butterfly species are abundant (due to abundance vegetation with flowering plants, to the higher humidity and the more increased number of sunny areas).

CONCLUSIONS

In Călimani National Park, 50 species were identified, included in five families: Hesperidae, Pieridae, Lycaenidae, Nymphalidae and Papilionidae. These represent 26.73% from the total number of butterfly from Romania.

Six type of habitats were investigated in Călimani National Park. The forest edges and riparian habitats offered the most favorable condition for a high species diversity. On the opposite were alpine shrub habitats where the number of identified species was the lowest.

Taking account the geographical distribution, species with transpalearctic, holarctic, palearctic and Siberian-European distributions were dominant.

19% from the total number of investigated species from Călimani National Park are protected by national and European legislation. The riparian areas and forest edges were the most favorable habitats for these protected species, but they were also identified in wet meadows and mountain-subalpine meadows too.

Due to the presence of protected species of European Community interest a proper conservation measures are requested strongly connected with their habitats.

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