

Data to the Knowledge of Hungarian Macrolepidoptera. I.

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1. *Erebia* Dalm. species and their subspecification in Hungary

Although the problem is not new, a re-discussion is justified by the circumstance that the relevant literature submits but meagre information with respect to the area of the country. The changes effected in the borders of Hungary at the beginning of the century had further aggravated a satisfactory evaluation of the distribution data. This refers, first of all, to the species, respectively subspecies, occurring also at lower elevations. It is a fortunate circumstance that our home lepidopterists had always a marked interest in the *Erebia* species, since this affection gave impetus to the exploration of the usually isolated home localities. We might safely state now that we are cognizant of the most important sites where *Erebias* live today in Hungary, and, in the future, we might count with the discovery of only extremely isolated, refugial breeding places.

Erebia-localities are to be met with mostly in the vicinity of our frontiers, mainly of a montane character; in the foreground of the Alps and the Carpathians. These sites lie preponderantly at medium elevations, whereas no *Erebia* species had as yet been shown from the highest points of our Central Range. This holds equally for the 8—900 m high plateau of the Mts Bükk, the peak over 1000 m a.s.l. of the Mts. Mátra, and the Mts. Börzsöny with its highest point of 939 m. Nor were *Erebia* species found in the extensive areas of the Central Range in the centre of the country, of which the most important are the Dunazug Range, the Mts. Bakony and the Mts. Mecsek.

The regions which *Erebias* inhabit along our borders are, in the west, the zone extending from Sopron to the upper reaches of the river Zala, and in the north, the Borsod Karst, the Cserehát, and the Zemplén Range. There is only a single larger area, far from our borders, sheltering an *Erebia* species. This is the Mts. Vértes visited since long and nearly annually by the collectors as a site of many thermophilous butterfly and moth species. On the other hand, recent investigations failed to substantiate 3 further localities appearing on the labels of one *Erebia aethiops* Esp. specimen each. Though we cannot conclusively state that these are faulty or erroneous labellings, they shall not be discussed in this place.

Three *Erebia* species inhabit Hungary, namely *E. ligea* L., *aethiops* Esp., and *medusa* Schiff. The relevant data were taken mainly from the collection of the Hungarian Natural History Museum. The collection is rich not only in Hungarian materials, it contains most of the Palaearctic species, indeed, subspecies. The material collected within the confines of the country increased especially in the last decades; thus against the 10 *E. aethiops* specimens we have now about 100 from Hungary, and against the 15 *E. medusa* we dispose of about 300 exemplars. For a hopeful solution of subspecific problems, this enrichment was indubitably necessary.

Concerning literature, one has to refer, first of all, to WARREN's well known monography on the genus *Erebia*, submitting the best survey of the group even today. With respect to details, I found especially useful two contributions to our knowledge of the *Erebia* fauna of the Carpathians. One of them is SLABY's paper discussing the subspecific problems of the eastern Slovakian populations of *E. medusa*, the other is POPESCU-GORJ's serial papers on the *Erebias* of the Roumanian Carpathians.

1. *Erebia ligea* L. The first known Hungarian specimens (1 ♂ 1 ♀) had been collected by P. AGÓCSY, in July 1958, on a forest clearing near the forestry rest-

house at Kőkapu in the vicinity of Pálháza, NE Hungary. According to a verbal communication, another specimen had since then been taken in the same place, but I had not seen it. Anyway, the material is much too small to allow an inference as to subspecific state, and the more so as the animals are more or less damaged. True, the band of the fore wing is rather wide, its inner margin indistinct on the underside, and the lighter brownish tint of the band on the underside of the hind wing rather sharply differs from the dark brown basic colour of the wing. We have similar specimens from the environments of Kassa, the Vihorlat Range and the NE Carpathians, — localities beyond the Hungarian border. It is not impossible that the NE Carpathians have a special form of *ligea*, but the problem could be settled only on the basis of a considerably richer material.

2. *Erebia aethiops* ESP. The species occurs as well along our western as the northern borders, in the Borsod Karst and the Zemplén Range (concerning the 3 dubious specimens, cf. above).

a. The localities of the western confines of Hungary are situated more or less near the border. The northernmost site is Sopron, followed by Szakonyfalu, Szalafő, Ispánk, and Nagyménnek, towards the south. In this territory, *aethiops* occurs also at rather low altitudes (about 250 m). Collating literature data and the available specimens from Regensburg, Germany, we arrive at the conclusion that the most important morphological features of our *aethiops* population in western Hungary agree with those of the nominate form. Both are of a medium alar expanse, the band of the fore wing is also similar, wide, sharply defined, the white pupils very marked.

However, there are also some differences. Such, first of all, is the darker basic colour of a stronger blackish shade; the dark brown, hardly rufous band, that is, spots, and the frequent absence of the lower part of the band; furthermore, the

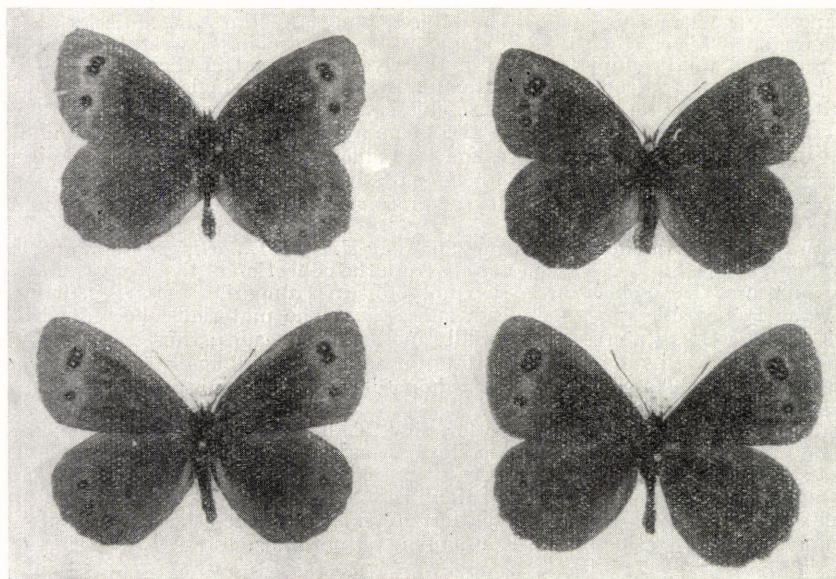


Fig. 1. Upper row: *Erebia aethiops aethiops* ESP. Males (left: Regensburg, right: Ispánk). — Lower row: *Erebia aethiops rubria* FRUHST. (left Juli Alps, right: Zemplén Range)

band of the hind wing becomes frequently disconnected into spots, the pruinose suffusion of the basal field and on the band on the underside is weaker, scarcer, especially on the exterior section and below, in front of the inner corner. These differences are most marked on the specimens originating from Ispánk.

It is worthy of note that, even so, the western Hungarian form stands still nearer to the Bavarian one than to the populations of the intermediate, mainly the Lower Austrian, territories. Though they agree in size, the latter ones are still less dark, the band of their fore wing less uniform — being more or less constricted in the middle — and the white irroration of the underside of the hind wing is also scarcer (the constriction of the band on the fore wing is characteristic in Hungary for the northern group). To sum up, the western Hungarian *aethiops* populations belong to the nominate form, as was stated also by WARREN, respectively they represent a peculiar, southern group of it.

b. In the northern confines of the country, two of the localities of the species, Jósvalfó and Szin, are in the Borsod Karst, the others in the Zemplén Range. Localities abound in this latter area, and rich *aethiops* populations can be encountered also at a greater distance, 20–25 km, to the south of the border. The following sites are represented in the material of the Museum: Nyiri, Tokártető, Telkibánya, Háromhuta, Potácsváza, Füzéradvány, Pálháza-Istvánkút, Kemencevölgy, Rostalló, Senyő, and Nagymilic. The sites lie at elevations 4–800 m. Beyond the border, there are numerous other *aethiops* localities, both in the area of the Borsod Karst and north of the Zemplén Range.

The eastern Hungarian *aethiops* form differs uniformly from the western one. For the most part, the band of the fore wing is short and not uniformly wide in the east, it is constricted in the middle, and only the two ends are more or less expanding. In the Zemplén Range, the uniformly wide band occurs merely as a rare individual aberration; on the other hand, we encounter also specimens with bands disjointed in the middle. Large-sized specimens are rather frequent in the east, though medium-sized exemplars might occur as a local feature, e.g. in Istvánkút. Another important characteristic in this area is the more homogeneous (less mottled) pattern of the underside of the hind wing, the white irroration is scanty on the band, and the margin of the base becomes indistinct, occasionally quite indiscernible. They agree with the western populations at most in the dark basic colour and the dark shade of the bands, and that the spots of the hind wing tend to separation.

Reviewing the available material, it was found that the constriction of the band of the fore wing, mentioned above, occurs in the foreground of the Carpathians also beyond our borders, and appears in two, otherwise different, Formenkreise. In one of them, constriction is moderate, occurring eventually individually only, and the band is wide. This form of the Carpathian foreground resembles the one described by FRUHSTORFER as ssp. *salaria* from the Alps, where it constitutes a connecting form between the nominate form and ssp. *rubria*. In the other Formenkreis, the band is less wide, narrowing medially, and conforms in other respects to the northern Hungarian form discussed above.

These forms seem to be well delimited also territorially. Into the first group belong the specimens from western Slovakia, mainly from the area of the river Vág, as well as those from the upper reaches of the river Garam (I saw only smaller, montane specimens from the higher, northern, mountainous region). The other group comprises of the localities of the Borsod Karst and the eastern Slovakian localities north of the Zemplén Range (Rozsnyó, Jablonca, and Torna, respectively Kassa, Kapi, Hazslin and Homonna), together with the northern Hungarian populations

under discussion. Aside of these, we have 4 specimens, resembling the latter group, only from the valley of the Vág, but it were advisable to verify these latter data before drawing far-reaching conclusions.

The features, discussed in details above, of the second group rather resemble the distinguishing characters of ssp. *rubria* FRUHST. This view is shared and substantiated not only by WARREN who saw the specimens used by the above author for his description, but also by the southern, alpine *rubria* exemplars of our collection, one of which, with its narrow band, might be taken for an original Zemplén specimen.

However, there are also certain differences between the typical *rubria* and the *aethiops* specimens of the Zemplén Range. Among the main features are the varying size of the latter ones; they are not uniformly large, the band of the fore wing is regularly narrow, and the underside of the hind wing rather colourful. But the differences consist not so much of contrasts — they are rather gradational in character. The correct process would be to relegate the northern Hungarian *Erebia aethiops* Formenkreis, together with the neighbouring Slovakian populations, to ssp. *rubria*, as its northernmost members, interconnected with gradual transitions despite the known aberrational features.

Since the occurrence of ssp. *rubria* was shown by POPESCU-GORJ also from a neighbouring territory, namely Transylvania. I have examined our materials deriving from that area, indeed, also those from the Eastern Carpathians, to assess their connections, if any, with the Formenkreis inhabiting Hungary. We have a number of *aethiops* specimens of a *rubria* character from both regions, but they are not wholly identical with ours. The band is wider on their fore wing, less constricted in the middle, and the underside of the hind wing is also darker, thus standing nearer to the *rubria* of the Alps.

3. *Erebia medusa* SCHIFF. In agreement with the preceding species, this taxon occurs most frequently in the western confines of the country, as well as in the north, from the Borsod Karst to the Zemplén Range. However, it has a constant breeding place also in the middle of the country, in the Mts. Vértes.

a. Our western Hungarian specimens originate from 6 different localities. They are, from north to south, Sopron, Kőszeg, Cák, Kám, and Szentgotthárd. The material consists of highly uniform, small, blackish brown specimens. Since of all known subspecies it is ssp. *medusa*, the nominate form described from Vienna, which lives nearest to its area, indeed, according to WARREN, "it appears to be widely spread in Austria, Hungary . . .", one might expect that it is represented by our western populations of the nearby Hungarian borders. This assumption, however, was not validated by the comparison of our specimens with the Viennese exemplars. It was further found that the western Hungarian *medusa* stands nearest to the form of which DR. L. GOZMÁNY captured some two dozen specimens in the Mts. Durmitor and its environs, in Yugoslavia, in the summer of 1958. And these were relegated to the ssp. *narona* FRUHST., a decision based not merely on literature data but also on *narona* specimens deriving from the typical localities.

The characteristic features of *medusa* ssp. *medusa*, and *medusa* ssp. *narona*, as well as the western Hungarian form, might be plotted on the following table:

As is to be seen from the details of the table, the west Hungarian *medusa* form differs from the nominate form not only in generals as regards the most important points, but also in some essential features. I was unable to detect entirely corresponding specimens. On the other hand, it could be stated that it agrees, in the majority of characters, with ssp. *narona*, respectively, with its population living in the

Table I.

	<i>E. medusa medusa</i>	<i>E. medusa narona</i>	<i>E. medusa ex Hung. occ.</i>
Alar expanse:	larger, less varying	smaller, many small specimens	smaller, many small specimens
Wing shape:	wide, rounded	narrow, more pointed	narrow, more pointed
Basic colour:	shiny dark brown	pale dark brown of a blackish shade	pale dark brown of a blackish shade
Band of spots:	spots wider, band rather continuous, with greater disjunctions usually only at m ₂ , 3; spots nearer one another also on hind wing	spots wide only above, narrower below, band more discontinuous; interruptions wide at m ₂ , 3; spots smaller in m ₃ -cu ₁ , below them only a small brown spot (or wanting), spots of hind wing sharper, more removed from one another	spots wide only above, narrower below, band more discontinuous, interruption still more wide in m ₂ , 3; spot only rarely present below m ₃ -cu ₁ ; spots of hind wing less sharp, also more removed from one another
Colour of spots:	mostly yellowish brown, rufous hue rare	yellowish or pure rufous brown	yellowish or pure rufous brown
Number of ocelli:	3-6, mostly 4-5	3-6, mostly 4-5	3-5, mostly 3-4
Underside of hind wing:	ocelli considerably smaller than above, brown ring of pupils narrow	ocelli slightly smaller than, or as large as, above, width of brown ring usually multiple of ocellar diameter	ocelli only slightly smaller than, or as large as, above, width of brown ring usually multiple of ocellar diameter

Durmitor area, and if there are certain differences with respect to two points, there are also wholly corresponding exemplars.

Therefore the west Hungarian populations of *E. medusa* are so nearly related to the subspecies *narona*, described by FRUHSTROFER from the Maklen Pass and Koricna, that their separation does not seem to be justified.

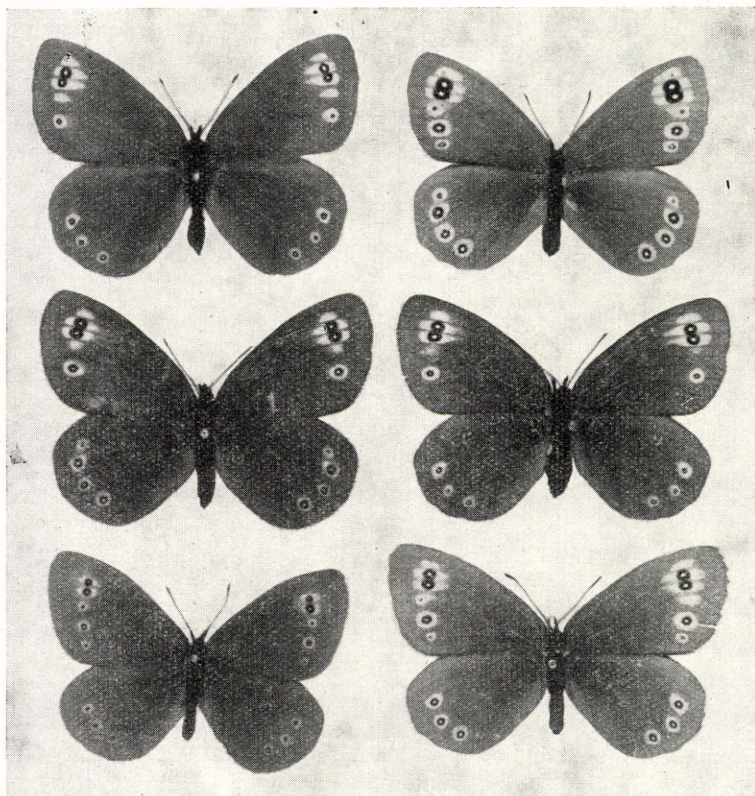


Fig. 2. First pair: *Erebia medusa narona* FRUHST. (left: Durmitor, male, right: same, female). — Second pair: *Erebia medusa narona* FRUHST. (left: Sopronbánfalva, male, right: same, female). — Third pair: *Erebia medusa medusa* SCHIFF. (left: Kaltenleutgeben, Lower Austria, male, right: Mödling, Lower Austria, female)

Erebia medusa ssp. *loricarum* ssp. n.

b. In the Mts. Vértes, *E. medusa* had hitherto been collected in two localities, namely Szár and Csákvár. It can be observed annually in both places, indeed, it is rather frequent in certain years. The Mts. Vértes belong to the lower formations of our Central Range, even its highest points being below 500 m a.s.l., and the known localities of the species lie at rather low elevations. Its occurrence here is especially interesting for its utter isolation: the nearest known localities of *medusa* are 100 km to the west, 85 km to the north, and more than 170 km to the east-northeast. The distance is even greater toward the south and southeast, since the nearest sites of *medusa* in this direction are in Transylvania and the Balkans.

The specimens collected in the Mts. Vértes display an extraordinarily uniform picture, and can be easily distinguished, by their special features, from the known subspecific forms. They are of a medium size, the alar expanse being 39—46 mm. The fore wing is wide, well rounded, densely scaled in both sexes. The basic colour is a warm, dark blackish brown; some specimens appear to be black. The bands

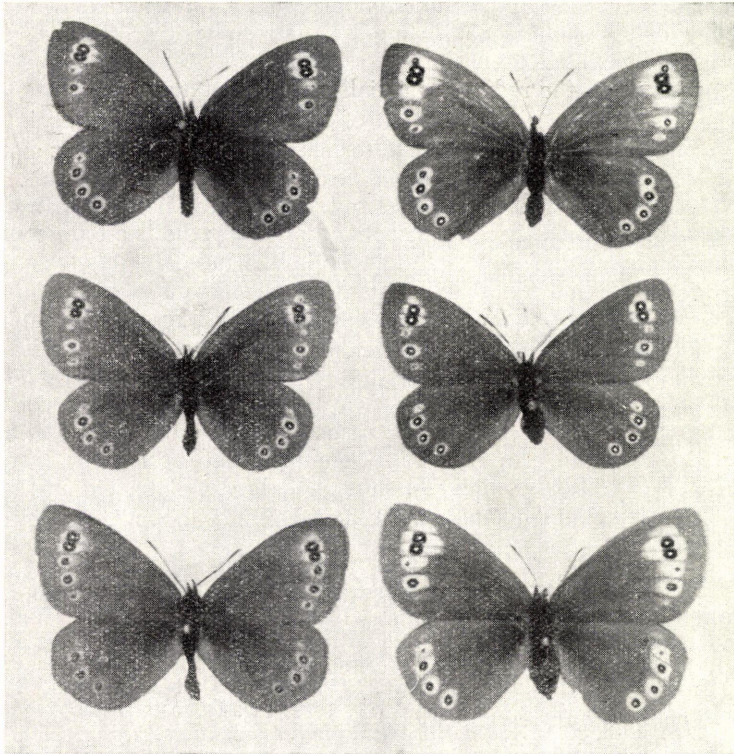


Fig. 3. First pair: *Erebia medusa euphrasia* FRUHST. (left: Rilo monastery, Bulgaria, male; right: Sliven, Bulgaria, female). — Second pair: *Erebia medusa loricarum* ssp. n. (left: Csákvár, male; right: same, female). — Third pair: *Erebia medusa brigobanna* FRUHST. (f. *slovakiana* WARREN) (left: Zemplén Range, male; right: same, female)

of the wings are a vivid brownish red, frequently yellow in the females. The band of the fore wing is short, consisting of two sharply delimited sections. The subapical (upper) part is divided into 4 spots, unusually sharply delimited and separated by the dark veins. These spots are wide, especially the two middle ones which terminate in a sharp point directed toward the base, their points more or less extended toward the disc. The fourth spot leaves widely free the lower intravenal space below vein m_3 . The lower section of the band is usually represented by a single round spot situated between veins cu_{1-2} , and it is only rarely that an indistinct brown spot appears also below vein cu_2 . The ocelli are medium developed, rarely more than 3 in the male, but eventually also 5 in the female. The supernumerary ocelli are without pupils in the male, otherwise, in order of frequency. They occur in spot 4, respectively spot 1. The number of spots of the hind wing is usually 4, exceptionally 3 or 5 (only 3 specimens of this latter configuration were found in our material of

more than 80 exemplars). The third, median ocellus invariably has a white pupil; the upper might have either a point or an ocellus, and the fifth (of the anal corner) a minute, pupillate ocellus. The spots of the hind wing are medium large or small, the three central ones are disjointed.

On the underside of the fore wing, the number of spots, respectively ocelli as well as the size of these latter, agree with those of the upperside. On the underside of the hind wing, the number of spots and ocelli is usually 4, their size as on the upperside. The colour of the spots is a deeper red on the underside.

The features by which even single specimens of the Vértes populations can safely be recognized are the reduced, medially widely interrupted band of the fore wing, and the width of the apical section of the band, being the multiple dimensions of the usually separated lower spot (or section). In this respect, both of the nearest subspecies, namely ssp. *euphrasia* FRUHST, and ssp. *brigobanna* FRUHST., respectively their exemplars of a reduced band, are equally dissimilar. In these subspecies, the brown, respectively rufous, spots constituting the band are considerably narrower, their ocelli smaller, especially on the hind wings. Furthermore, the spots on the underside of the hind wings are smaller than on the upperside, and also annuliform, whereas the spots of the Vértes specimens are as large on the underside as on the upperside, or eventually even bigger, and the brown spot is more an area than a ring around the ocellus. All other differences are easily discernible from the figures.

I introduce the new subspecies by the name ssp. *loricarum* ssp. n. into literature (the name of the mountains, in Hungarian, commemorates a famous battle fought here in early Magyar history; vért = lorica, L. = breast-plate, cuirass).

Holotype male: "Csákvár, 1961. V. 9., leg. DR. Z. KASZAB". Deposited in the Hungarian Natural History Museum.

Paratypes: 1. in Coll. Mus. Nat. Hung. Hist. Nat.: Szár, 26 May, 1898, 2 ♂, leg. L. ABAFI-AIGNER; 1 June, 1899, 1 ♂, 10 June, 1900, 1 ♂, May, 1906, 1 ♂, 1 June, 1913, 1 ♂ 1 ♀, leg. ULBRICH; 18 May, 1911, 1 ♀, leg. RIEDL; 28 May, 1922, 2 ♂, leg. A. SCHMIDT; 12 May, 1941, 1 ♀, leg. J. MAJTHÉNYI; 12 May, 1943, 5 ♂, leg. I. GERGELY; 20 May, 1951, 1 ♂, 3 June, 1954, 7 ♂ 2 ♀, 30 May, 1956, 7 ♂ 1 ♀, leg. L. ISSEKUTZ; 11 June 1955, 1 ♂ 1 ♀, leg. GY. ÉHİK, 20 May, 1951, 1 ♂, leg. IMRE KOVÁCS; 24 May, 1934, 1 ♂, 26 May, 1940, 1 ♂, 20 May, 1951, 1 ♂, 27 May, 1956, 2 ♂, 24 May, 1958, 8 ♂ 3 ♀, leg. GY. LENGYEL; — Csákvár: 16 May, 1961, 1 ♀, 28 May, 1963, 1 ♂, leg. J. SZÖCS; 28 May, 1963, 3 ♂ 2 ♀, leg. GY. ÉHİK; 18 May, 1961, 7 ♂ 4 ♀, leg. GY. LENGYEL; — 2. in Coll. L. KOVÁCS: Szár: 12 May, 1943, 2 ♂, leg. R. SZURDOKY; 20 May, 1951, 4 ♂, leg. L. KOVÁCS.

The new subspecies is also ecologically distinct of both the western and the northern *medusa* populations. The Mts. Vértes is namely a definitely warm and rather dry area, with a number of thermophilous plants and, as was mentioned above, many theriaophilous insects. Such, among the macrolepidoptera, are: *Pieris ergane* HBN., *Euxoa segnilis* DUP., *Pyrrhia purpurina* ESP., and *Erannis ankeraria* STGR. (this latter were also found hardly 200 m away from one of the localities of the new subspecies). The imagoes fly usually in the valleys, but on one occasion I have captured some specimens also in the second growth of a deforested area on a sunny hilltop.

c. In the northeastern confines of the country, our *medusa* specimens derive from the following localities (in a west to east direction): Szin, Jósvalfő, and Tornánádaska on the Borsod Karst, Garadna on the eastern margin of the Mts. Cserehát, and Hejce, Telkibánya, Potácsháza, Istvánkút, and Pálháza in the Zemplén Range. A part of the localities are near the border, while one or two lie about 20–25 km

toward the south. The populations are rich in individuals, and we may expect the discovery of yet a number of sites. Beyond the border, numerous other localities follow one another toward the north, respectively the west. It follows from the close connections of the populations inhabiting the two sides of the state boundaries that the subspecific relegation of the northeast Hungarian populations should be examined together with that of the populations beyond the border. This is advantageous in certain respects, since there are some literature references available for these latter ones. I refer, first of all, to WARREN's monography, who worked up a material originating from the environs of Kassa, and then to SLABY's paper on the medusa problem of east Slovakia, discussing materials from a number of localities. In essentials, both authors drew the same conclusions, showing that ssp. *brigobanna* occurs everywhere in the area under discussion.

This statement is corroborated also by the Slovakian *medusa* material preserved in the collection of the Museum. Furthermore, this very material testifies on the same alliance of the northeast Hungarian populations, since they agree in all essential features with the east Slovakian ones. Similarly for those over the border, our specimens are also characterized by the feature that there occur a great number of specimens — besides those with nearly complete bands — showing a strongly reduced pattern (WARREN's "f. *slovakiana*"). In this respect, WARREN's and SLABY's data need but smaller complementary points. Such, first of all, are their occurrence below 400 m a.s.l. (indeed, the latter case is more frequent); and the smaller size of our home specimens (though there are also larger exemplars, none of them attain the 51 mm alar expanse given by WARREN; being at most 45 mm between the apices and 47 mm at their greatest width). It is not without interest that the material available from the High Tatra differs from the east Hungarian one in its considerably smaller size as well as the lighter tint of the spots, tending to a yellowish hue. However, there are specimens with a reduced band also from the Tatra, even if the reduction is not so extreme as in exemplars from lower altitudes.

But to sum up. The northeast Hungarian *medusa* populations belong, together with the east Slovakian ones, to the subspecies *brigobanna*. The *brigobanna* group of the Carpathian Basin, similarly to the ssp. *euphrasia* FRUHST. of the Balkan Peninsula, constitute a mixed group in which specimens displaying a reduced band, besides those with well developed exemplars characteristic for the subspecies, occur in great numbers, or even appear locally preponderant.

Concerning *Erebia medusa*, the present occasion would seem to be appropriate to decide a dispute, with the aid of the Museum material, over its subspecies inhabiting the foregrounds of the Carpathians. According to WARREN, there occurs in Slovakia, besides ssp. *brigobanna*, also ssp. *hippomedusa*: indeed, he also published a figure of an exemplar of the subspecies collected on the Branyiszškó. SLABY contends that the figure was made of a *brigobanna* specimen with a strongly reduced pattern, hence the identification is erroneous. This latter author insists that no *hippomedusa* was found yet in Slovakia.

We have to state that WARREN really had *hippomedusa* specimens labelled with Slovakian localities in his hand; these animals are still in our possession. They are 4 males, labelled „Branyiszškó”. We have acquired them via the DAHLSTRÖM Collection, together with 2 further males from the Branyiszškó which are, however, true *brigobanna* specimens. There is nothing to indicate that WARREN had ever seen these latter ones.

Unfortunately, the locality data of the DAHLSTRÖM collection cannot withstand critic. This was first perceived by A. SCHMIDT, who doubted the occurrence in Tran-

sylvania of *Melitaea arduinna* Esp., seconded, as is apparent from his correspondence, by CZEKELIUS, well conversant with conditions in Transylvania. It was definitely shown only recently that DAHLSTRÖM's material abounds in similar, incorrect data, being thus faunistically valueless (cf. the introduction to my faunal list, published in 1953, on the critical evaluation of our home data).

WARREN, without doubt through no fault of his own, fell victim to erroneous labelling. SLABY is indubitably right in stating that ssp. *hippomedusa* does not occur in SLOVAKIA, corroborated also by the authentically labelled *medusa* material in our possession. Let us add that there is no *hippomedusa* specimen in the Hungarian material either, — our exemplars with a reduced pattern all belong to "f. *slovakiána*".

There is a noteworthy moral inferable from also the above example. The locality data, preserved with solicitous care, of older collections should be thoroughly criticised and used for basic inferences only if they are beyond reproach.

2. *Melanargia galathea* L. and a new subspecies from Hungary

The Marbled White occurs almost in the entire area of the country, as well in the plains and hilly regions as in the higher Central Range. Its enormous range and high individual numbers had probably equally contributed to its neglect by the collectors; unmerited, due to the richness of forms. The copious material of the Museum shows that there live, within our borders, moderately black, strictly *galathea* populations, and also *procida*-like ones, with a stronger black pattern. Obviously, a thorough examination would result in valuable zoogeographical and faunogenetical considerations.

On the basis of the available material, it seems undisputable that the lighter, *sensu stricto galathea* populations occur mainly west of the Balaton, in the northern Central Range, and in the northeastern sections of the Great Plains. Even within this range, they are not quite uniform. Though the proportions of the black and white elements of the pattern as well as size within the same population might vary, the single populations are in their totality lighter or darker, smaller or larger, than the average. The whitest collected specimens occur, e.g., in the west in Balatonrendes, and in the east in the marshy meadows of Bátorliget, while the smallest ones originate from Magyaróvár — not exceeding the size of our exemplars from Mainz, Germany — but populations of small alar expanse live also in the Mts. Bükk.

Whereas *galathea* s.s. is characterized in Hungary by its great variety and the mosaic distribution of the forms, also another change of a gradually increasing character is encountered from the west to the east and from the south to the north, namely the intensity of the black design element indicating the transition into the *procida*-like forms. We have such specimens from the environs of the Lake Velence, the hilly regions of Buda and Gödöllő, or, further toward the east, from the southern slopes of the Mts. Bükk. The darker, *procida*-like forms become exclusive in the central and southern parts of the country; our materials in this respect derive from Kaposvár, the southern side of the Mts. Mecsek, and generally from the southern sections of the Comitatus Baranya, as well as from Pészér and several adjoining localities between the Danube and the Tisza.

In earlier times, the moderately blackish forms were generally summarized under the name *procida*, while the extremely black ones were further separated as *ab. turcica*. When the great variety, sometimes localized, of the *procida*-like forms have later been recognized, a number of subspecies were delimited within the group. In 1916, FRUHSTROFER described also the Hungarian *procida*, together with Dalma-

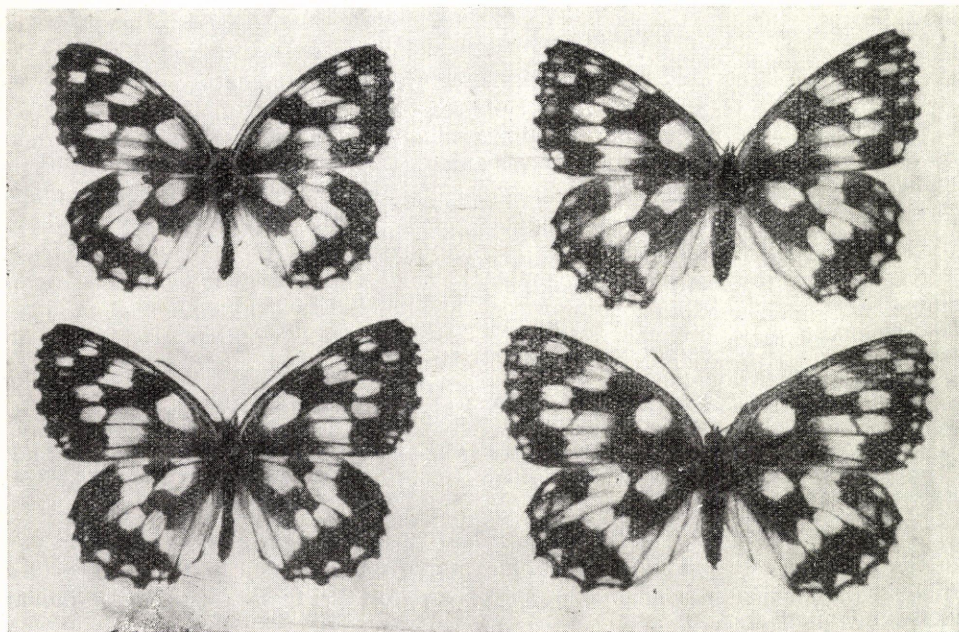


Fig. 4. First pair: *Melanargia galathea* cf. *scolis* FRUHST. (left: Felsőpezér, male; right: same, female). — Second pair: *Melanargia galathea bugacensis* ssp. n. (left: Bugac, male; right: Kelebia, female)

tian and SE Transylvanian populations, under the name ssp. *syntelia*. Later he found further differences between them, and again separated the Transylvanian populations under the name ssp. *scolis*, but, since he had no sufficient material from Hungary, left our race without a name.

Unfortunately, we have but meagre materials from the typical localities of ssp. *scolis* to arrive at a final decision in this problem. Since, however, the two females originating from the locus typicus do not differ in essentials from the females of the Great Plains, the south Hungarian *procida* Formenkreis might for the moment be relegated to ssp. *scolis*.

Thanks to the intensive faunistic investigations of recent years, there became known, from the southern part of the Great Plains between the Danube and the Tisza, a hitherto unknown, unusually large and vividly coloured group of populations belonging to the *procida* Formenkreis, to be described as follows:

***Melanargia galathea* L. ssp. *bugacensis* ssp. n.**

Male alar expanse: 45–51 mm, female expanse: 50–57 mm. The wings are broad. The basic colour is a vivid white, eventually of a pale yellowish hue. The dark elements of the pattern are deep black and not brownish. Due to the intense colours, the animals are considerably more contrasty than e.g. the *scolis* specimens from Pészér further in the north, not only on the upper- but also on the underside of the wings. The proportion of the white and black elements is also slightly different, especially on the hind wing, where certain spots of the white band become constricted. Especially the white spot, between the veins $m_{2,3}$, is conspicuous by its

long, narrow, and pointed shape, occasionally so elongated that it almost reaches the margin of the wing and becoming twice as long as the white spot above it. On the underside of the hind wing, the frame of the ocelli are sharply defined, never tinted by whitish or yellowish scales.

Similarly large forms appear only considerably further to the south, e.g. in south Tyrolian (Castel Tessino), or Albanian (Dzura, Kuci) materials, but their black striae and spots are essentially wider and their basic colour yellowish green instead of white. At any rate, the large spot between the median veins on the hind wing is rather elongated also on the Tyrolian specimens.

I introduce the new subspecies under the name ssp. *bugacensis* ssp.n. into literature (Bugac = one of the first known localities of the new taxon).

Holotype male: "Bugac, 7 July, 1965, leg. P. AGÓCSY". Deposited in the collection of the Hungarian Natural History Museum.

Paratypes: Bugac: 20—22 June, 1950, 4 ♂, leg. BAJÁRI et MÓCZÁR; 7 July, 1965, 1 ♂ 1 ♀, leg. P. AGÓCSY; Kelebia, 12 July, 1965, 1 ♂ 3 ♀, leg. J. JÁRFÁS; Harta, 25 June, 1965, 3 ♂, leg. J. JÁRFÁS. Deposited in the Collection of the Hungarian Natural History Museum. — Tompa: 24 June, 1955, 1 ♂, leg. L. KOVÁCS; deposited in the collection of the author.

The specimens deriving from Bugac had been collected on loose sands, in one of the warmest areas of the country. I captured my specimen in Tompa also in a sandy region, on a wooded sand dune typical for the Plains, with white poplar (*Populus alba*) as the dominant tree species.

A new species of the subfamily Cucullinae from Hungary

The new Noctuid moth was found, for the first time in 1962, in the materials of the nationwide light-trap network whose materials are worked up by the Identification Group in the Hungarian Natural History Museum, to support forest and plant protection research. The animals differed, both in colour and pattern, from its simultaneously appearing nearest ally, *Brachionycha sphinx* HUFN., hence they immediately demanded attention. The description of the new species is as follows:

Brachionycha decipulae sp. n.

Head gray, antennae brownish grey, bilaterally serrate, labial palps short, porrect, terminal joint bare, otherwise densely haired, tongue undeveloped, thorax brownish grey, slightly lighter than basic colour of fore wing, scapulae margined sharply black outside and inside.

Basic colour of fore wing pruinose grey, with more or less blackish suffusion. Pattern consisting of moderately defined ante- and postmedian lines, embracing zigzaggy black praediscal line. Postmedian first widely arcuate outwards, then curving inward, reaching dorsum approximately in middle of wing, where 3 main lines rather converge. Marginal field bisected by a zigzaggy white marginal line, backing black, sagittiform spots in intravenal fields, continuing on other side of marginal line as short, black lines toward termen. A fine, black line decurrent from base toward elbow of antemedian, but not reaching it. Orbicular usually represented by two fine black lines, site of reniform generally appearing as a spot paler than basic colour. Fringe grey, with short, white interruptions. Hind wing white, with grey dots, their number increasing basad but becoming rarer toward outer margin; a narrow stripe left free in front of anal corner. Boundary between alar surface and

fringe with small dark grey triangles, looking toward base, between termination of veins; a continuous black line before anal corner. Discal spot sharply defined, irregular in shape. Fringe spotted with grey.

Underside of fore wing, from base to antemedian, respectively beyond antemedian in apical area, a homogeneous greyish black, with a white stripe (irrorated black) along termen. Costal zone black, either contiguously coalescent with greyish black basic colour of inner wing surface, or separated from this latter by a narrow, occasionally irregularly shaped stripe of lighter hue of marginal area. Black irroration on underside of hind wing more sparse than on upperside, but discal spot more marked.

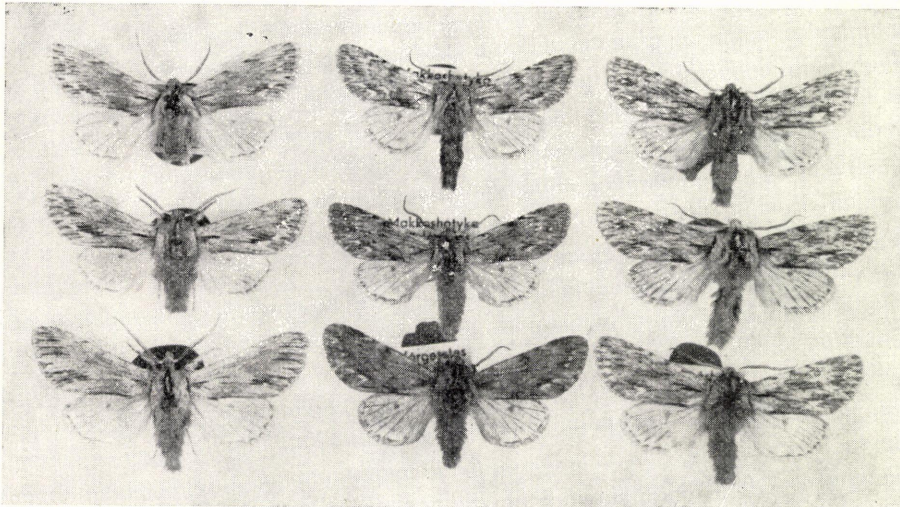


Fig. 5. A: *Brachionycha syriaca* WARREN (Karadja Bey, Asia Minor); B: *Brachionycha decipulae* sp. n. (first two: Makkoshotyka; third: Várgesztes); C: *Brachionycha sphinx* HUFN. (Felsőtárkány, Várgesztes, Répáshuta)

Male genital organ: Valvae rather broad, apically slightly spatulate and expanding, medially constricted by one-fourth width. Base of pulvillus relatively wide, several times wider than high, hence of a low and flattened character. Sacculus resembling a short, wide, thick spine. Aedoeagus short, squat, medially constricted, cornuti rather wide, of equal length, constituting a common batch.

Of the related species, *Brachionycha syriaca* WARREN stands nearest to the new taxon, but the former is considerably larger, stouter, its eyes smaller, and the length of the costa and the termen approximate more one another. The colour of the fore wing is paler, more indistinct and less contrasty. This refers, first of all, to the pattern, entirely missing from the inner field of the fore wing of *syriaca*, and only the beginning of the three transversal lines is discernible below the costa, their continuation entirely disappearing toward the dorsum. The marginal area of the two species is rather similar, but while the white subterminal line of *syriaca* is of a various strength, that of the new species is uniformly strong. In *syriaca*, the black lines touching both sides of the subterminal are often connected, but never in the new species. The basal line of *syriaca* is less fine, and 2–3 times wider; its hind wing more indistinctly dotted, the dots are finer, the marginal and discal spots

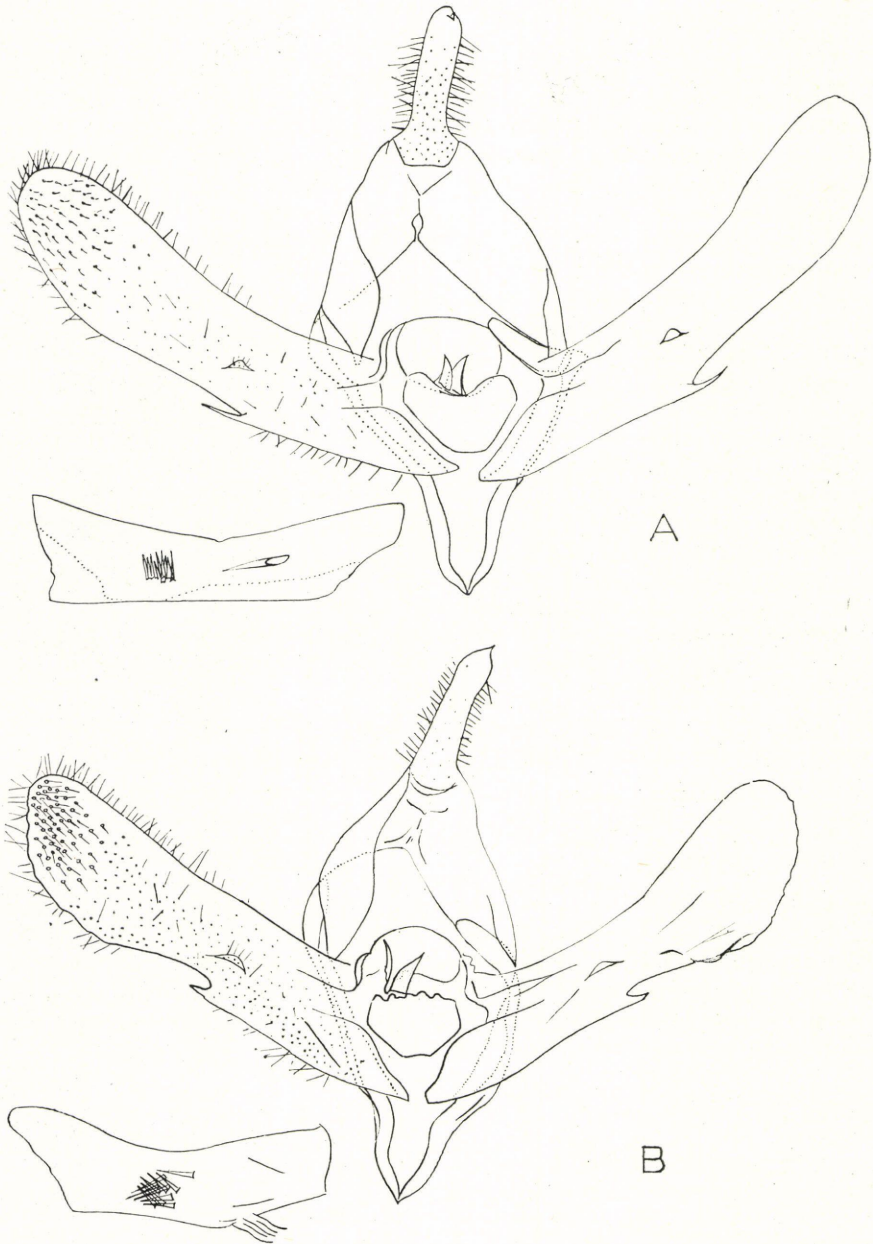


Fig. 6. Male genital organ of A: *Brachionycha syriaca* WARREN, ventrally, Karadja Bey, Asia Minor, gen. prep. 1504; B: *Brachionycha decipulae* sp. n., ventrally, Várgesztes, gen. prep. 1503.

paler. The underside of the fore wing differs in *syriaca* in the light stripe along the termen being wider, and recurving in the apical area toward the costa where it may extend down to the base and thus separating the black edge of the costa from the grey colour of the inner area of the wing.

The new species is well delimited also from *Brachionycha sphinx*. The basic colour of *sphinx* shows an olive hue, that of the new species is pure grey. The former has a more extensive pattern, the frames of the orbicular and reniform spots are more or less well discernible, the same as the beginnings of the transversal lines below the costa, the black plical line bisects the median field, and another line, curving outwards, begins at about the middle of the basal line and extends usually to the middle of the wing. It is also characteristic of *sphinx* that the lowest white spot of the subterminal widens in the fold, becoming rather sagittiform whose branches might, at a smaller or greater rate, occasionally coalesce. The light marginal zone on the underside of the fore wing is narrower, more densely irrorated, hence less sharply delimited from the inner area. Its labial palps are also more densely hairy, almost shaggy.

In the male genital organ of *syriaca*, the valvae are longer, their apices less expanding, without a conspicuous constriction in their middle. The base of the pulvillus is short, but the pulvillus is high and convex. The sacculus is long, acicular, apically slightly recurving. The aedoeagus is widely different, inasmuch as it is longer in *syriaca*, hardly constricted medially, and with a large, single thorn, aside of the batch of fine, spiniform cornuti.

The genital organ of *sphinx* differs so much from both of the above ones that it seems to belong to a special subgroup within the genus.

I introduce the new species by the name *Brachionycha decipulae* sp.n. into literature (decipula = a lure functioning like a trap; all known specimens had namely been captured by light traps).

Holotype male: "Makkoshotyka, 1962 X. 30, light trap", in the light trap collection of L. Kovács, Hungarian Natural History Museum.

Paratypes: Makkoshotyka: 18, 26, 27, 28, Oct., 3, 4, Nov., 1962; 24, 30 Oct., 1 Nov., 1963, 10 ♂, light trap, in the light trap collection of L. Kovács, Hungarian Natural History Museum; — 28 Oct., 1964, 1 ♂, light trap, in the collection of the Hungarian Natural History Museum.

Female unknown.

On 22 October, 1963, and 6 November, 1964, also the light trap in Várgesztes (Mts. Vértes) captured two similar *Brachionycha* males, whose alar expanse, however, is very large (39, respectively 40 mm), their basic colour a darker, fumous grey suppressing the (perceptibly entire) pattern. Any nearer investigation must await the arrival of further material.

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