

New Lepidoptera from Turkey V

by

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In the present paper, which is a companion to the previous parts, two new sub-species, *Melanargia larissa wagneri* (subsp. n.) and *Coenonympha leander dierli* (subsp. n.) (*Satyridae*) are described, and *Melanargia syriaca* (OBERTHÜR) (*Satyridae*) is proposed as distinct species, finally a number of species and subspecies which are new for Turkish fauna, are mentioned. Apart from these, general remarks on some little known Turkish butterflies are briefly indicated.

This paper is based upon collections made by me during the recent years. All specimens including some types are preserved in the collection of Systematic Zoology in Ankara.

I sincerely thank to Mr. U. EITSCHBERGER for editing this paper.

Pieridae

Euchloe charlonia DONZEL

A series of *charlonia* were unexpectedly caught from the lower parts of alpine zone in SW-Turkey. This species usually inhabits in lowlands and middle heights of the mountains. Turkish *charlonia* in the author's collection were noted below:

- 10 ♂♂: Antalya Prov. (SW-Turkey), Kohu mts., Bölükkatran 1900–2000 m,
6.VI.1976
1 ♂: Isparta Prov. (SW-Turkey), vicinity of Eğirdir 1000 m, 2.V.1973
1 ♂, 1 ♀: Tunceli Prov. (E-Turkey), Munzur valley 1200 m, 25.V.1973

After using the criteria which appear in recent publication on this group (BACK & EITSCHBERGER, 1976), I feel no hesitation in identifying the Turkish *charlonia* with subsp. *penia* FREYER.

Synchlœ callidice ESPER

So far to the present knowledge, this species, which is indicated by MANI (1968) as a boreo-alpine element, was only known from the alpine zone of the mountains. In Turkey, it is represented by *chrysidice* H.SCH., and is frequently seen at the peaks in sunny days of July and August. But contrary to all expectations, some specimens were caught by the author at arid mountain steppes in the vicinity of Darende (Malatya Prov., E-Turkey) at 1100 m height in May. Further investigations are needed on this ecological peculiarity of *callidice* before getting a reasonable declaration.

Specimens and the localities are indicated below:

- 8 ♂♂, 1 ♀: Konya Prov. (C-Turkey) Sultandağı, Kiziltepe 2200 m, 21.VII.1976

- 1 ♂, 1 ♀: Niğde Prov. (S-Turkey) Aladağlar, Demirkazik 2400–2700 m, 19.VIII.1976
 2 ♂♂, 1 ♀: Malatya Prov. (E-Turkey) Darende 1100 m, 9.V.1972
 1 ♀: Tunceli Prov. (E-Turkey) Pülümür 1800 m, 16.VII.1973
 1 ♀: Tunceli Prov. (E-Turkey) Ovacik, Munzur mts. 2000 m, 15.VI.72
 6 ♂♂, 2 ♀♀: Gümüşhane Prov. (NE-Turkey) Kop pass, Bahtili hill 2950 m, 19.VII.1973
 1 ♂: Hakkari Prov. (SE-Turkey), Karadağ 27.VII.1972

Gonepteryx cleopatra italica (GERHARD)

Material: 5 ♂♂, 2 ♀♀ Çanakkale Prov. (NW-Turkey) vicinity of Eceabat (Gelibolu peninsula in Europa-in-Turkey) in littoral zone, 28.III.1974

This subspecies is new for Turkish fauna, and is the second subspecies of *cleopatra* occurring in Turkey. This capture confirms KUDRNAS estimate on the presence of *italica* in W-Turkey. Although females of this subspecies hardly distinguishable from those of *taurica* STAUDINGER (S-Turkey), males are easily recognizable by more developed orange patch on the forewing.

Nymphalidae

Brenthis hecate (?) *modifii* WYATT (figs. 2–10)

Brenthis hecate modifii WYATT, 1968 Z.Wien.Ent.Ges. vol. 53, p. 29–30

Brenthis modifii KUDRNA, 1974 Ent.Ges. 25, p. 93–94

A single male (figs. 2, 3, 8), which was caught from vicinity of Şemdinli ca. 1600 m (Hakkari Prov., SE-Turkey) in 3.VII.1972, is referable to *modifii* WYATT (N-Iran), but 1 ♂, 2 ♀♀ which were collected from nearly the same locality, are superficially similar to *hecate*. The latter specimens may be distinguishable from *B. hecate caucasica* STGR. (figs. 6, 7, 10 male) (widespread in NE-Turkey), but its darker and more vivid ground colouration on the wings, comparatively larger black spots and more developed black marginal and antemarginal lines of underside wings, and its male genitalia (cf. figs. 8–10). These differences appear to be significant and perhaps to reflect geographical raciation. It is to be hoped that more additional collecting in the region can settle this problem.

Euphydryas aurinia jungei GROSS & EBERT

1975 J.Ent.Soc. Iran, suppl. I (Sept.), p. 34, figs. 40, 41
 „Elburs S-Seite, Fascham N-Teheran“.

This subspecies is new for Turkey.

3 ♂♂ (fw. 21 mm) and 2 ♀♀ (fw. 25–27 mm) were collected from vicinity of Şemdinli ca. 1650 m (Hakkari Prov., SE-Turkey) in 3.VII.1972.

Satyridae

Melanargia syriaca (OBERTHÜR)

Arge galathea syriaca OBERTHÜR, 1894 Et. d'Ent. XIX, p. 18–19

Pl. VIII, f. 6–8

Melanargia larissa syriaca STAUDINGER, 1901 Cat. Lep. Pal.

III. ed., p. 42 „syn. *taurica* ROEB., 1896“

Melanargia galathea syriaca SEITZ, 1907 Großschmett. Pal. Faunengeb. I, p. 115

Melanargia larissa syriaca REBEL, 1917 Sitz.Akad.Wiss.Wien.math.-natur-wiss.Klass.126, p. 254–255

Melanargia larissa syriaca PFEIFFER, 1939 Mitt.Münch.Ent.Ges. 29, p. 80

Type locality: Akbes (situated on eastern slopes of Amanos mountains in Antakya Province, S-Turkey).

M. syriaca, living actually at a very restricted area in Amanos mountains, described by OBERTHÜR as a subspecies of *Melanargia galathea* LINNÉ. Within recent literatures, it has been accepted either a distinct subspecies of *M. larissa* HBN. or *M. galathea* LINNÉ. For some reason or other, taxonomical status of this form was suspended indistinctly for a long period. Without going into detail, taking the morphological characters of *syriaca* into account, we can explain that it is possibly originated in *galathea*, instead of *larissa*. The shape of discoidal markings in underside hindwing of *syriaca* resemble to *galathea* contrarily to *larissa*'s (fig. 11–13). At the same time, *syriaca* resemble to *galathea* by black scales extremely suffused at basal area of (1a, b) in underside forewing (fig. 11, 12). On the other hand, in spite of these similarities mentioned above, *galathea* and *syriaca* have remarkable differences in their male genitalia. *M. syriaca*, in this respect, is closer to *larissa* and *titea* than in *galathea*. Separately, having regard to the preference of habitat, *syriaca* appears to be a marked survivor of *galathea*. In fact, *syriaca* occurs at scrubby places (*Quercus* sp.) in glades at middle heights, instead of steppe areas as *larissa* and *titea* (figs. 14–16), and this extant preference of *syriaca* probably originated in *galathea* than in *larissa* and *titea*. According to our present distributional knowledge, there is no where a zone of intergradation between *syriaca* and *galathea*, *larissa* or *titea*, so this situation allows me to propose *syriaca* as a distinct species, isolated as a relict during the ice-age. It is hoped that this proposal will stimulate further research on this little known species of Turkish butterflies.

Melanargia syriaca (OBERTHÜR) is figured and shortly redescribed in the following way:

22 ♂♂: forewing 25–28 mm, av. 26.40 (SD) \pm 1.05 (SE) \pm 0.22 (figs. 12, 17)

Upperside of wings: Ground colour blackish brown, creamy colouration at fw. cell slightly developed (72%), or completely absent; basal parts of wings densely covered with creamy hairs; postdiscal cream spots well developed, but apical ones of fw. reduced; antemarginal cream spots completely absent on fw., hardly visible only at anal part of hw.; purplish pupils pronounced (58 %) at submarginal area of hw. or absent; creamy ciliae chequered with blackish hairs. Underside of wings: Basal parts dull greyish cream, postdiscal band pure cream, apical area of fw. and

cream antemarginal spots of hw. slightly tinged to greyish; blackish brown area very well marked at lower part of fw. cell; discoidal area of hw. to some extent similar to those of *galathea* as in fig. area between discoidal lines either heavily suffused with black scales (72 %) or cream scales are in the majority (28 %) at that area; ground colour of submarginal area of hw. dark brown, penetrated inwards along veins especially Cubital ones; brown ocelli in spaces of 1c, 2, 3, 5, 6 roundish, with pronounced purplish pupils and ringed by dirty yellowish scales; antemarginal lunules of fw. less developed than those of hw., and at anal area concealed by blackish scales; marginal line more pronounced at hw. and somewhat thickened by veins.

1 ♀: forewing 30 mm. (fig. 18)

General appearance similar to male, but creamy basal hairs on upperside of wings highly reduced, submarginal ground colour of underside hw. wanting in space of 4, although ocelli better developed.

Melanargia larissa wagneri subsp. n.

Holotype ♂: fw. 25 mm

Upperside of wings (fig. 19): — General appearance is somewhat similar to *taurica*, but basal area of both wings less suffused with dark brown scales which are not entirely and densely cover cells of fore — and hindwing; creamy post-discal bands on both wings slightly wider than that of *taurica*, but on hindwing dark brown submarginal band complete and significantly narrower than *taurica*; submarginal ocelli distinct at anal angle of hindwing; antemarginal creamy lunules reduced on forewing, while almost complete in number on hindwing as in *taurica*; ciliae creamy, chequered with dark brown.

Underside of wings (fig. 20): — General appearance of forewing similar to *taurica*, only ring-like process at fw.-cell end, which is well marked in *taurica* (fig. 29), filled up with dark brown scales; characters of hindwing different from *taurica*, but it seems to be somewhat related with *larissa* (fig. 23) by the character of discoidal lines which run to some extent close to each other, the outer one without a lobe projected outwardly at base of M3-Cul; area between discoidal lines somewhat suffused with dark brown scales; ground colour of submarginal area dark brown; dark brown ocelli small, with purplish pupils and pale yellowish-cream ringed.

Allotype (♀): fw. 27 mm (figs. 21, 22)

General appearance is similar to holotype, but underside of hindwing, basal area more yellowish in tone, and submarginal ocelli better developed.

Paratypes: (fig. 24, 25, 26 ♂; 30 ♀)

11 ♂♂, fw. 22–25 mm, av. 23.36 (SD) \pm 1.02 (SE) \pm 0.30

Size of wings are variable but remarkably smaller than *taurica* (compare the following values of the populations from various parts of Taurus mountains, which would be allocated as *taurica*).

Akşehir (figs. 13, 27): 41 ♂♂ fw. 25–29 mm av. 27.12 (SD) \pm 1.06 (SE) \pm 0.16;
 Eğridir, 5 ♂♂ fw. 25–27 mm, av. 26 mm (SD) \pm 0.70 (SE) \pm 0.31;
 Beyşehir, 15 ♂♂ fw. 25–29 mm av. 27.13 (SD) \pm 1.12 (SE) \pm 0.28;
 Kuyucak, 39 ♂♂ fw. 24–29 mm av. 26.30 (SD) \pm 1.21 (SE) \pm 0.19;
 Murtçi (fig. 28), 3 ♂♂ 28–30 mm, av. 28.66 mm;
 Bozkiş, 4 ♂♂ 25–27 mm av. 26 mm;
 Üçpınar, 10 ♂♂ fw. 24–27 mm av. 25.35 (SD) \pm 0.97 (SE) \pm 0.30;
 Taşkent, 8 ♂♂ fw. 24–28 mm av. 25.75 (SD) \pm 1.28 (SE) \pm 0.45;
 Hadim, 1 ♂ fw. 25 mm
 Ermenek (fig. 37); 1 ♂ fw. 24 mm
 Karadağ, 12 ♂♂ fw. 24–28 mm av. 25.66 (SD) \pm 1.23 (SE) \pm 0.35.

Upperside of hindwing dark brown submarginal band significantly narrower than those of neighbour populations (cf. figs. 31–35, submarginal band of hw. was measured in space 5 from inner border to termen); underside of wings, ring-like process at forewing cell-end less developed than that of *taurica*, generally reduced (72,7 %) or blind as holotype (27,3%); outer discoidal line of hindwing without projection (63,6%) or with highly reduced one (36,4), discoidal lines run closer to each other as in holotype (63,6 %) or normally developed (36,4 %), discoidal area rarely suffused with dark brown scales (18 %); submarginal band completely filled up with dark brown scales (91 %) (figs. 25, 26) or rarely less densely covered with such scales, submarginal area in space 4 either almost entirely darkened (54,5 %) or less suffused with dark brown.

7 ♀♀, fw. 24–29 mm av. 26.71 (SD) \pm 2.06 (SE) \pm 0.78.

Forewing sizes are not significant, but slightly smaller from other populations of *taurica*. Values of forewing size of populations from Taurus mountains are mentioned below:

Akşehir, 2 ♀♀: fw. 28–29 mm av. 28.5 mm;
 Eğridir, 4 ♀♀: fw. 25–28 mm av. 26.12 (SD) \pm 1.31 (SE) \pm 0.65;
 Kuyucak, 7 ♀♀: fw. 27–29 mm av. 27.71 (SD) \pm 0.75 (SE) \pm 0.28;
 Bozkiş, 2 ♀♀: fw. 25–28 mm av. 26.5 mm;
 Üçpınar, 5 ♀♀: fw. 25–30 mm av. 26.40 (SD) \pm 2.07 (SE) \pm 0.92;
 Taşkent, 1 ♀: fw. 26 mm;
 Ermenek, 2 ♀♀: fw. 25–27 mm av. 26.5 mm;
 Akseki, 1 ♀: fw. 26 mm;
 Beyşehir, 9 ♀♀: fw. 26–30 mm av. 27.88 (SD) \pm 1.05 (SE) \pm 0.35;
 Karadağ, 5 ♀♀: fw. 26–29 mm av. 27.40 (SD) \pm 1.14 (SE) \pm 0.51;
 Çiftahan, 1 ♀: fw. 28 mm

Underside of wings: -Ring-like process at forewing better developed (85 %), lobe of outer discoidal line on hindwing well marked (43 %) as in *taurica*, or reduced; discoidal area more or less suffused with dark brown (57 %); dark colouration of submarginal area complete and well developed (57 %) (fig. 30), or somewhat faint especially in spaces 4 and 5.

This new subspecies is easily distinguishable from *taurica* by his remarkably smaller

wing-size; especially on upperside of hindwing broader creamy postdiscal band; remarkably less suffused with dark brown scales on upperside wing bases; narrower dark brown submarginal band on upperside hindwing (cf. figs. 31–35); well developed dark brown ground colour of submarginal area and the features of irregular discoidal lines of underside hindwing.

This subspecies inhabits on Kohu mountain (SW Turkey) and perhaps originally related to the northern populations of *larissa* than *taurica*.

Type series:

Holotype (♂), Allotype (♀) and 11 ♂♂, 7 ♀♀ (Paratypes): SW Turkey, Antalya Prov., northern slopes of Kohu mountain (fig. 36) ca. 15–1600 m at glades in reforestation area (locality of Incebel), 22.VII.1976 A. KOÇAK leg.

3 ♂♂, 1 ♀ (Paratypes) in coll. Dr. P.S. WAGENER (Bocholt, Germany), other types, including holotype are preserved in the collection of Systematic Zoology, University of Ankara.

I dedicate this new subspecies of *Melanargia larissa* to my friend Dr. P.S. WAGENER, who has valuable works on this genus.

Although it was opportune here to indicate some localities and features of *Melanargia larissa* populations from western parts of Taurus mountain range (Map.2), our distributional knowledge of sp. *taurica* ROEB. in this region is full of gaps. After taking the wing characters of some western populations of *larissa* into consideration (viz. localities of Eğirdir, Akşehir, Beyşehir, Kuyucak, Akseki and Murtiği), they seem different from eastern patterns, that is from Cilician populations where the type-series of *taurica* came from. As a matter of fact, specimens which were caught from central parts of Taurus mountains, like Hadim, Bozkir, Üçpınar, Taşkent, Ermenek and Karadağ (isolated volcanic zone) are relatively smaller in size and their wing characters to some extent are closer to Central Anatolian populations of *M. larissa*. Furthermore, a single male (fig. 37) which was taken from the vicinity of Ermenek, carries some unusual external characters on blackish submarginal band of upperside hindwing, etc.

It is to be hoped that adequate works will soon indicate whether these morphological values mentioned above are to be significant enough for subspecific level or not.

Coenonympha leander dierli subsp. n.

Holotype (♂): fw. 16 mm

Upperside of wings (fig. 38): Ground colour dark greyish brown, outer parts slightly more darker in tone; dorsal area of hindwing dirty creamy; dark brown submarginal ocelli of hindwing distinct in spaces 1c-4, all of them ringed by dirty yellowish scales; ciliae creamy.

Underside of wings (fig. 39): Ground colour of forewing light brown tinged with

buff colour, of hindwing darker brown but less suffused with yellowish-greenish scales; apical ocelli of forewing normally developed; black submarginal ocelli replaced outwardly, complete in number, round in shape and metallic whitish pupilled, creamy rings surrounding them fused each other; orangebuff antemarginal band highly reduced or completely absent; metallic antemarginal line on hindwing better developed than forewing, creamy and brownish marginal lines less marked than nominate subspecies.

Allotype (♀): fw. 19 mm

Upperside of wings (fig. 40): Ground colour of forewing orangebuff, less vivid than other populations of *leander*, of hindwing reddish brown; on forewing marginal band reddish brown (ca. 2 mm in width) slightly extends internally along veins; apical area with a well marked and highly reduced blind ocelli; on hindwing orangebuff submarginal marks do not expand into a band, only partly surround ocelli in spaces of 1c, 2 and 3; ciliae creamy.

Underside of wings (fig. 41): General appearance similar to holotype but ground colour of forewing clean orange buff in colour, of hindwing with a suffusion of yellowish green scales; on forewing, apical ocelli, creamy and metallic marginal lines well marked; on hindwing submarginal ocelli developed as in holotype, but antemarginal orange band slightly better developed than in holotype; metallic, creamy and greyish marginal bands well marked.

Paratypes: 33 ♂♂, fw. 16–18 mm av. 16.78 (SD) \pm 0.69 (SE) \pm 0.12.

Orange buff suffusion slightly developed only at base of upperside forewing (48 %); submarginal ocelli on upperside hindwing completely absent (60 %), or distinct in spaces of 1c-4; orange submarginal marks at anal party of upperside hindwing weakly developed (57 %) or absent; underside of hindwing orange antemarginal band, except one specimen (1 mm), less than 0.5 mm in width; submarginal ocelli more or less developed, always complete in number; ground colour of underside forewing in few specimens tinged buff colour.

9 ♀♀: fw. 17–19 mm av. 18.22 (SD) \pm 0.83 (SE) \pm 0.27.

Upperside of wings: Ground colour darker in tone (55 %); submarginal ocelli well marked (55 %) or reduced, otherwise similar to allotype.

This fine subspecies is probably restricted to alpine zone of Aladağ mountains (fig. 42) in South Turkey. He flies on grassy places among the rock communities at high elevations between 1900–2500 m.

Ssp. *dierli* is easily distinguishable from other subspecies by his ground colouration, remarkably reduced antemarginal orange buff band on underside hindwing, and reduced or absence of orange submarginal marks on upperside hindwing.

I dedicate this subspecies to Dr. W. DIERL (Munich), who has valuable works on Lepidoptera.

All specimens were collected by the author from northern slopes of Demirkazik (Aladağ mountains) in 6.VII.1976.

3 ♂♂, 1 ♀ (Paratypes) in Zoologische Staatssammlung (Munich), 3 ♂♂, 1 ♀ (Paratypes) in Landessammlungen für Naturkunde (Karlsruhe), the rest of the types, including holotype are preserved in the Department of Systematic Zoology in Ankara.

Coenonympha leander wagneri GROSS & EBERT

1975 J. Ent. Soc. Iran, suppl. I (sept.), p. 26–27, fig. 28, 29 „Ost-Azerbaidjan/ Gilan: Paß der Straße Firuz-Abad-Hashtpar, 2300 m“.

This subspecies is new for Turkish fauna.

Material: 6 ♂♂, 1 ♀: Van Prov., Çuh pass ca. 2500 m. 30.VI.1972, 1 ♂ Hakkari Prov. vicinity of Esendere 2000 m. 3.VII.1972 leg. A. KOÇAK.

Lasiommata petropolitana (FABRICIUS)

Although KINDERMANNs record on the presence of this species from Amasya and Tokat had been firstly stated by STAUDINGER (1879 p. 287), he himself was in doubt about the truth of this capture. According to my knowledge, until now any confirmative attempt was made on this matter, so the present record may be accepted as the first one. This species, which is almost certainly a relict form, flies in the outskirts of woodland in NW-Turkey.

Material: Bolu Prov. (NW-Turkey), vicinity of Abant lake ca. 1400 m. 4 ♂♂ 25.V.1968, 1 ♂ 28.VI.1972, 5 ♂♂ 27.V.1975, 3 ♂♂ 30.V.1976; Kastamonu Prov. (N-Turkey), Ilgaz mountains ca. 1600 m, 3 ♂♂, 1 ♀ 16.VI.1974 A. KOÇAK leg.

Lycaenidae

Everes alcetas (HFFMGG.)

4 ♂♂ were collected by the author from the roadside of Abant-Bolu, ca. 900–1000 m at the outskirts of deciduous forest in May–June of 1974/76. This species is new for Turkish fauna.

Plebejus (Lycaeides) idas balcanica (ZULLICH)

This subspecies of *P. idas* is new for Turkish fauna. It is easily distinguishable from ssp. *altarmena* FORST. by its darker violet-blue colouration, its remarkably broader black marginal band on upperside wings of male, and absence of violet-blue suffusion on upperside wings of female.

Material for both subspecies is given below:

1) Ssp. *balcanica* ZULLICH:

Bursa Prov., Uludağ ca. 1200 m. 15.–16.VII.1971 4 ♂♂; Bolu Prov., Abant ca.

1400–1500 m. 30.VII.1967 1 ♂, 15.VII.1971 1 ♂, 15.VII.1976 20 ♂♂, 11 ♀♀;
Çankiri Prov., Ilgaz dağı ca. 1900–2000 m. 14.VIII.1976 7 ♂♂, 2 ♀♀;
Çorum Prov., Iskilip 1700 m. 1.VII.1969 1 ♂; Amasya Prov., Akdağ 1200 m.
7.VII.1976 5 ♂♂, 3 ♀♀.

2) *Sp. altarmena* FORSTER:

Kars Prov., Ağrı dağı, Serdarbulak 2500 m 26.VII.1973 3 ♂♂; Kulp (Tuzluca)
800–1400 m 19.–21.VI.1972 4 ♂♂, 4 ♀♀, 19.V.1976 18 ♂♂, 8 ♀♀ A. KOÇAK
leg.

Lasiocampidae

Lasiocampa quercus vassilini SHELJUZHKO

1943 Zeitschr. Wien. Ent. Ges. 28. p. 247–248, Taf. XIII, f. 1, 2
„Mahindzhauri bei Batum (im Süden der West-Küste Transkaukasiens“.

This subspecies is new for Turkey.

Material: Rize Prov. (NE-Turkey), Güneyce ca. 300 m. 31.VII.1972 4 ♂♂,
Kalkandere 31.VII.–1.VIII.1972 3 ♂♂ A. KOÇAK leg.

Saturniidae

Neoris sp. (fig. 43)

A very interesting capture of Saturniid moth was made by my friend Dr. A. DEMIRSOY from East-Turkey. A single male (fw. ca. 62 mm) has been labelled as „18.X.1971, Kemaliye“ by him. It is closer morphologically to *huttoni* MOORE (NW-India) and *stoliczkana* FELDER (Ladak, Yarkand) than *galerope* PÜNGELER (N-Iran) and *schenki* STAUDINGER (Saisan, Ferghana). As a matter of fact, we have insufficient knowledge on the exact taxonomical status of these forms in the genus *Neoris*. For that reason and the lack of more material from Turkey, the problem will keep in an undecided state for a time

Noctuidae

Zethes narghisa BRANDT (fig. 44)

1938 Ent. Rundschau 55, p. 568, figs. 149–151 „Fort Sine-Sefid, Mian Kotal“
(S-Iran).

This species is new for Turkish fauna.

Material: Maraş Prov. (S-Turkey) Üngüt ca. 600 m, 9.VII.1972 1 ♂; Mardin

Prov. (SE-Turkey) Mardin 1200 m 9.VII.1974 2 ♂♂, 2 ♀♀ A. KOÇAK leg.

***Zethes nemea* BRANDT (fig. 45)**

1938 Ent. Rundschau 55, p. 568–9, figs. 144–148 „Fort Sine Sefid, Mian Kotal“.

This species is also new for Turkey.

Material: Hakkari Prov. (SE-Turkey) vicinity of Zap station ca. 1400 m 14.V. 1976 2 ♂♂ A. KOÇAK leg.

Geometridae

***Anaitis uniformata* URBAHN (fig. 47)**

1971 Ent. Zeitschr. 81, p. 244–247, Abb. „Transcaucasia“.

This species is new for Turkey.

Material: Hakkari Prov. (SE-Turkey), Yüksekova 1900 m 4.VII.1972 1 ♂, Kars Prov. (NE-Turkey) Sarıkamış 2100 m. 8.VIII.1972 1 ♀, Gümüşhane Prov. (NE-Turkey) Zigana pass 2000 m. 28.VII.1972 1 ♂, Tunceli Prov. (E-Turkey), southern slopes of Munzur mountains 1800–1900 m. 14.–16.VI.1972 2 ♂♂ A. KOÇAK leg.

***Xanthoroe ferrugata* (CLERCK) (fig. 46)**

New for Turkish fauna.

Material: 2 ♂♂, 1 ♀ were collected by the author from Meryemana 1100 m (Trabzon Prov., NE-Turkey) in 31.VII.1972. It flies with *X. rectifasciaria rector* which is recently described by WILTSHIRE (1976 Z. Arbeitsgem. Österr. Ent. 27. Jg. 3/4, p. 80, Pls. 1,11) from north of Zigana pass (Trabzon Prov.)

Axiidae

***Axia olga* (STAUDINGER)**

1899 Deut. Ent. Zeitschr. Iris 12. p. 398

This species was only known from eastern parts of Black Sea, and this capture is new for Turkish fauna.

Material: Bolu Prov. (NW-Turkey), vicinity of Abant 1400 m. 30.V.1976 1 ♂ A. KOÇAK leg.

Zygaenidae

It is supposed that the following subspecies are new for Turkish fauna.

***Zygaena Ionicerae achalcea* BURGEFF**

1926 Mitt. Münch. Ent. Ges. 16, p. 70 „Achaltzych“

Material: Kars Prov. (NE-Turkey), Posof, 1400–1500 m. 21.–22.VII.1973
21 ♂♂, 9 ♀♀ A. KOÇAK leg.

***Zygaena dorycnii korbiana* REISS**

1935 Int. Ent. Zeitschr. 29, p. 230 „Achalzich“.

Material: Kars Prov. (NE-Turkey), Posof 1500–1800 m. 5.VIII.1972 1 ♂,
3 ♀♀, 22.VII.1973 1 ♀; Artvin Prov., Ardanuç 1300–1900 m. 2.VIII.1972
4 ♀♀, Kars Prov., Ardahan 2000 m. 3.VIII.1972 1 ♂ A. KOÇAK leg.

Literature

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Explanations of the figures and maps:

- Fig. 1) Type locality of *A. caucasica abanti* (KOÇAK)
- Fig. 2) *Brenthis hecate modifii* WYATT upperside of male from Şemdinli
- Fig. 3) ditto, underside
- Fig. 4) *B. hecate* subsp. upperside of male from Bağışli
- Fig. 5) ditto, underside
- Fig. 6) *B. hecate caucasica* (STAUDINGER) upperside of male from Georgia
- Fig. 7) ditto, underside
- Fig. 8) *B. hecate modifii*, male genitalia
- Fig. 9) *B. hecate* subsp., male genitalia
- Fig. 10) *B. hecate caucasica*, male genitalia
- Fig. 11) *Melanargia galathea* (LINN.), underside of male from Abant
- Fig. 12) *M. syriaca* (OBTH.), underside of male from Daz Dağı

Abb. 8

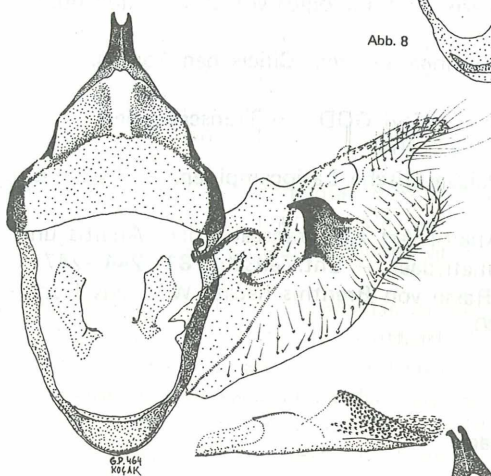
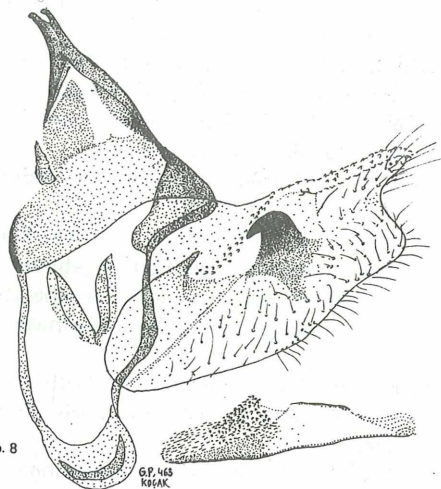


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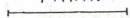
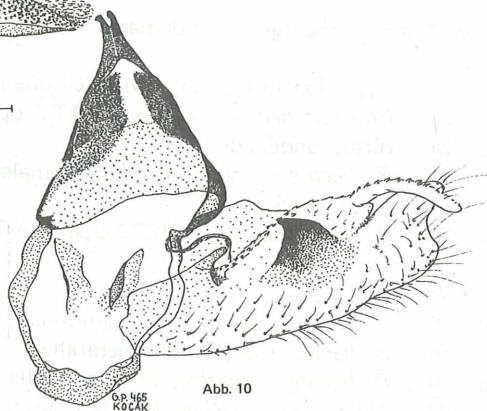


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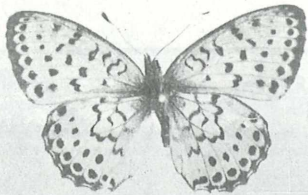


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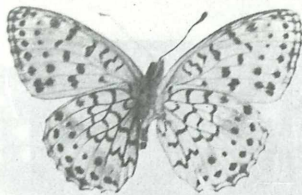


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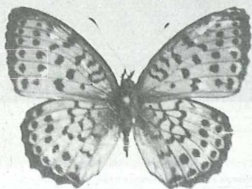


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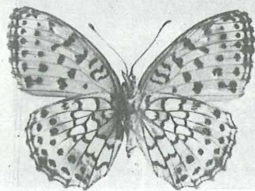


Abb. 5



Abb. 6



Abb. 7



Abb. 11



Abb. 12



Abb. 13



Abb. 1



Abb. 14

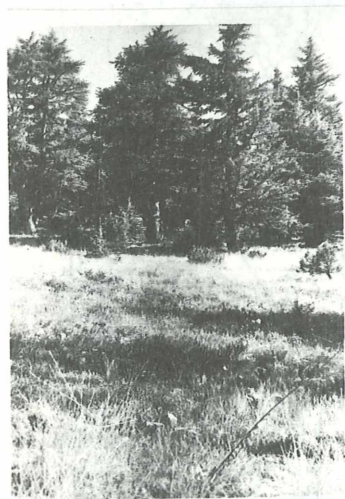


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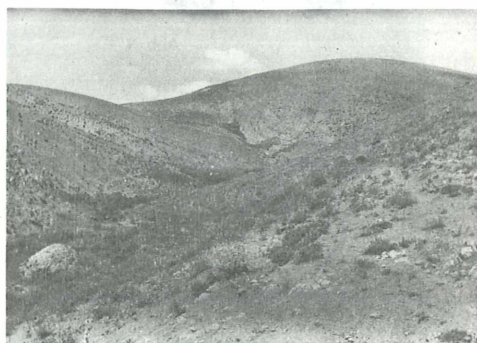


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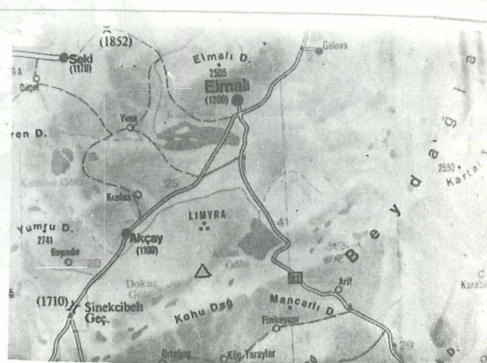


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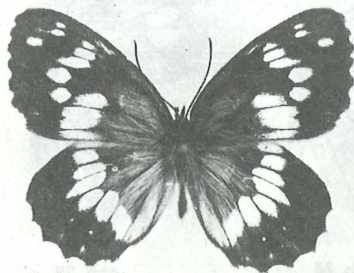


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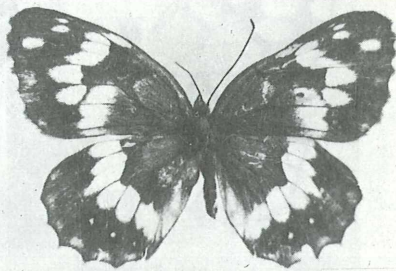


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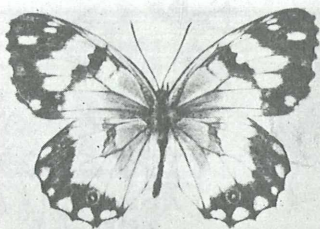


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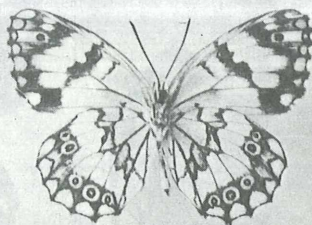


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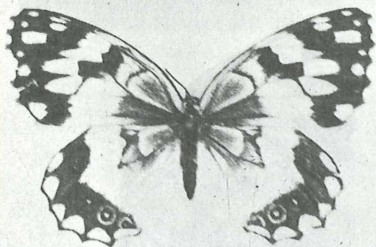


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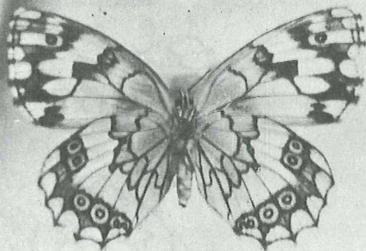


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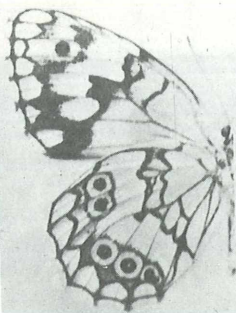


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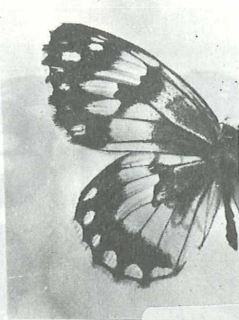


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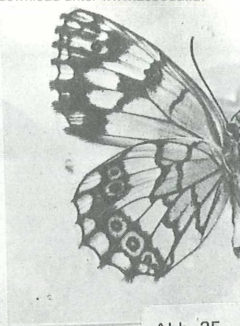


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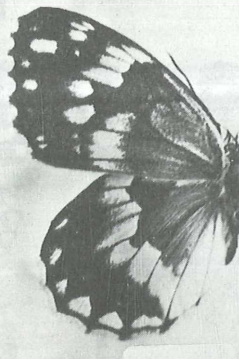


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Abb. 28

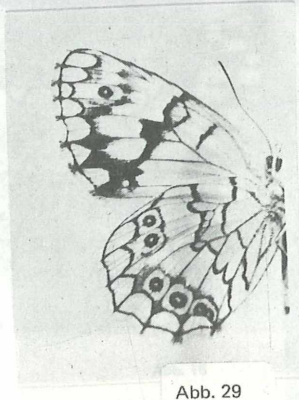


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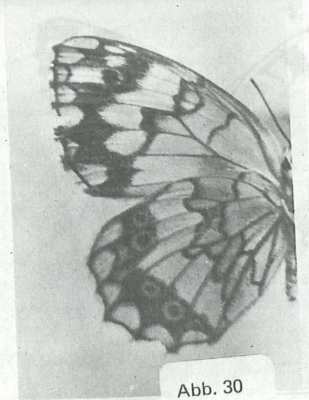


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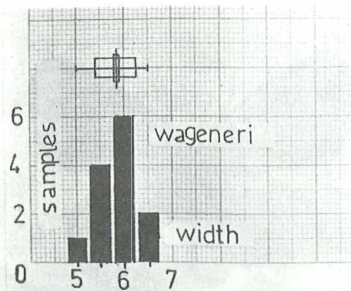


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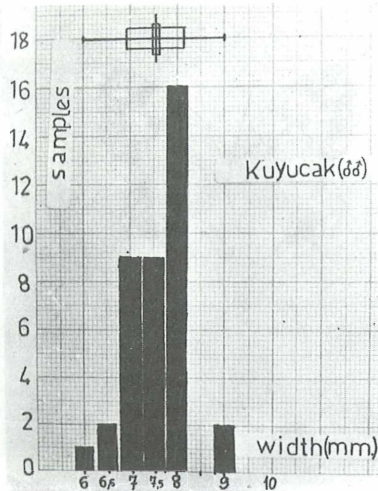


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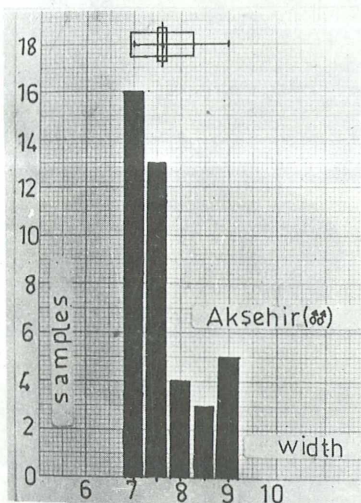


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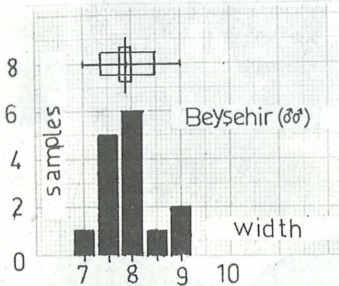


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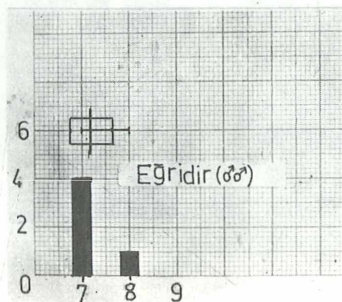


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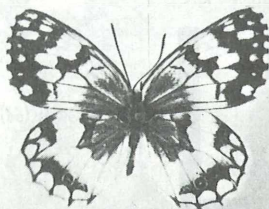


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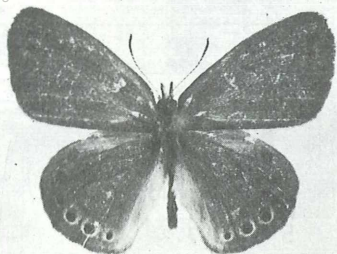


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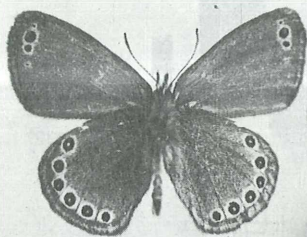


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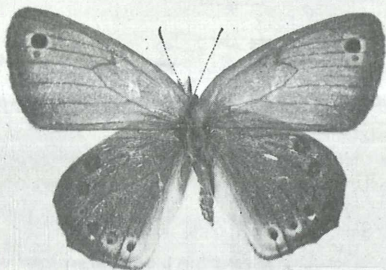


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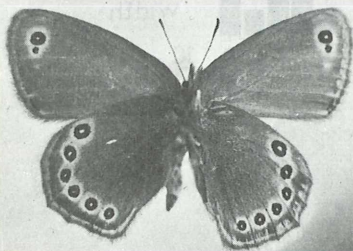


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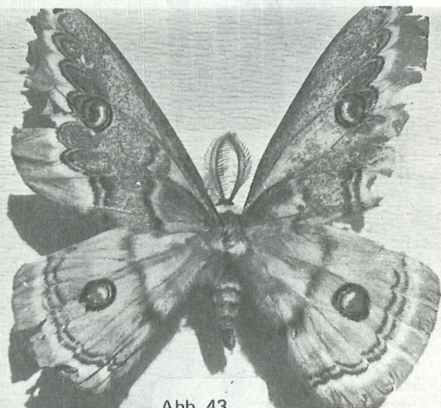


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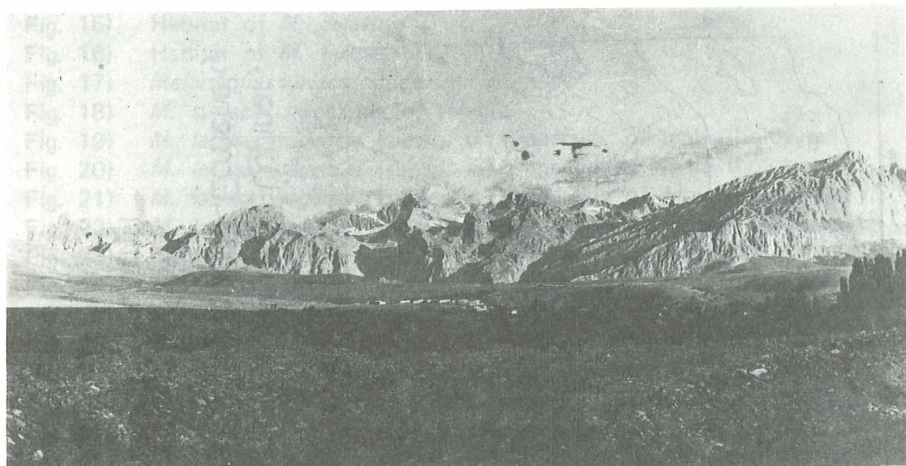


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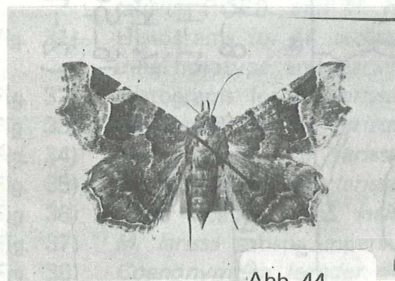


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Abb. 45

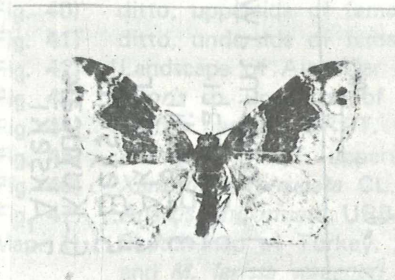


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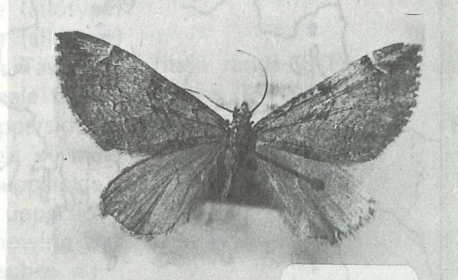
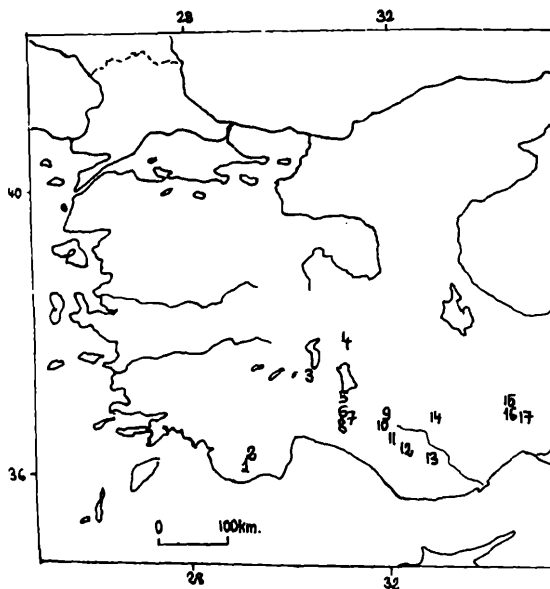
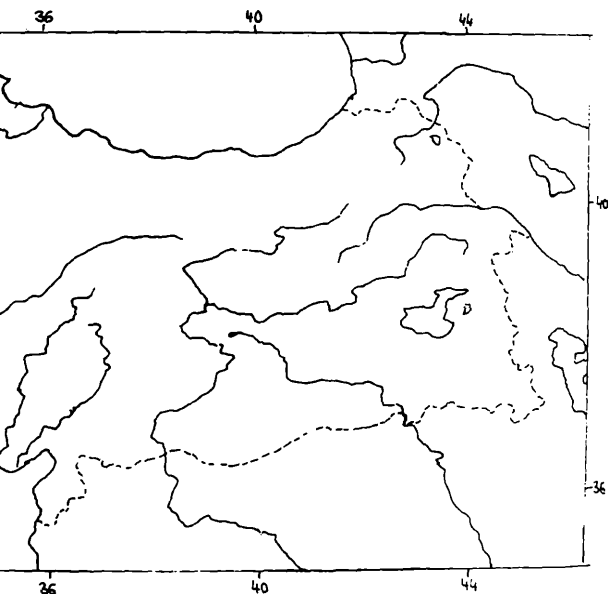


Abb. 47



- 1- Kolu mt. (wageneri)
- 2- Elmalı
- 3- Eğridir
- 4- Akşehir
- 5- Beyşehir
- 6- Kuyucak
- 7- Akseki



8-Murtiçi, 9-Bozkır,10-Üçpınar,
 11-Hadim,12-Taşkent,13-Ermenek,
 14-Karadağ,15-Çiftehane,
 16-Şekerpınar,17-Pozantı
 (2-17 taurica)

- Fig. 13) *M. larissa* HBN., underside of male from Akşehir
 Fig. 14) Habitat of *M. syriaca*
 Fig. 15) Habitat of *M. galathea*
 Fig. 16) Habitat of *M. larissa*
 Fig. 17) *Melanargia syriaca*, upperside of male
 Fig. 18) *M. syriaca*, upperside of female
 Fig. 19) *M. larissa wagneri* (subsp. n.) upperside of male (holotype)
 Fig. 20) *M. larissa wagneri* (subsp. n.) underside of male (holotype)
 Fig. 21) *M. larissa wagneri* (subsp. n.) upperside of female (allotype)
 Fig. 22) *M. larissa wagneri* (subsp. n.) underside of female (allotype)
 Fig. 23) *Melanargia larissa*, male from Katalanova (Macedonie) Yougoslavia
 Fig. 24) *M. larissa wagneri* (subsp. n.) upperside of male (paratype)
 Fig. 25) *M. larissa wagneri* (subsp. n.) underside of male (paratype)
 Fig. 26) *M. larissa wagneri* (subsp. n.) underside of male (paratype)
 Fig. 27) *M. larissa* (?) *taurica* ROEB. upperside of male from Akşehir
 Fig. 28) *M. larissa* (?) *taurica* ROEB. underside of male from Murtiçi
 Fig. 29) *M. larissa taurica* ROEBn. underside of male from Pozanti
 Fig. 30) *M. larissa wagneri* (subsp. n.) underside of female (paratype)
 Fig. 31–35) Variation of width (in mm) of submarginal blackish band on upperside hindwing in various populations of *M. larissa* (?) *taurica* ROEB. and *M. larissa wagneri* (subsp. n.)
 Fig. 31) Histograms for *M. larissa wagneri* (subsp. n.) population (including holotype and paratypes (♂♂)).
 Fig. 32) Histograms for *M. larissa* (?) *taurica* from Kuyucak
 Fig. 33) Histograms for *M. larissa* (?) *taurica* from Akşehir
 Fig. 34) Histograms for *M. larissa* (?) *taurica* from Beyşehir
 Fig. 35) Histograms for *M. larissa* (?) *taurica* from Eğirdir
 Fig. 36) Type locality of *M. larissa wagneri* (subsp. n.) (marked with Δ)
 Fig. 37) *M. larissa* subsp. upperside of male from Ermenek
 Fig. 38) *Coenonympha leander dierli* (subsp. n.) upperside of male (holotype)
 Fig. 39) ditto, underside of male (holotype)
 Fig. 40) ditto, upperside of female (allotype)
 Fig. 41) ditto, underside of female (allotype)
 Fig. 42) Landscape of Aladağlar in Taurus mountain range (S-Turkey)
 Fig. 43) *Neoris* sp. upperside of male from Kemaliye (E-Turkey)
 Fig. 44) *Zethes narghisa* BRDT. upperside of male
 Fig. 45) *Z. nemea* BRDT. upperside of male
 Fig. 46) *Xanthoroe ferrugata* CL. upperside of male
 Fig. 47) *Anaitis uniformata* URB. upperside of male
 Map. 1) Sketch-map of Turkey, showing the localities of *M. larissa taurica* and *M. larissa wagneri* (subsp. n.)

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