

# INSECTA HOUŠKEANA: LEPIDOPTERA

JOSEF MOUCHA

(Přijato pro tisk 24. listopadu 1952.)

## I. Úvod

Laskavostí Prof. Dr. J. Obenbergera, ředitele entomologického oddělení Národního musea v Praze, bylo mně umožněno zpracovati řád *Lepidoptera* ze sběru ředitele konsulární služby J. Houšky, který sbíral hmyz během druhé světové války v Palestině. Jedinečný materiál daroval po svém návratu do vlasti Entomologickému oddělení Národního musea v Praze. Celkové hodnocení sběru Houškova bylo publikováno na jiném místě (MAŘAN, 1947).

Zprávy o území, s hlediska zoogeografického, kde sbíral J. Houška, podává v monografickém zpracování zlatěnek (*Chrysididae*) BALTHASAR (1951). Nerozepisují se proto o zoogeografických poměrech v Palestině a odkazují na citovanou práci a s hlediska ryze lepidopterologického na podrobnou studii AMSELOVU (1933). Lokality ponechány v tom znění, jaké bylo uvedeno u studovaného materiálu. Střediskem Houškovy činnosti bylo právě území, náležející dnes jak k Israeli, tak k Jordanu. Pro srovnání se starší literaturou ponechávám označení tohoto území v původním znění (Palestina). V systematickém sledu druhů přidržuji se BODENHEIMEROVA Prodrumu. Moderní podrobné zpracování lepidopter Libanonu, Israele, Jordanu a poloostrova Sinajského připravuje Dr. Bytinski-Salz. V seznamu literatury uvádím jen ty práce, které se přímo vztahují k současnému temat. Souborně je seznam literatury uveřejněn v již zmíněné publikaci AMSELOVĚ. Z později publikovaných prací cituji jen ty, jež jsou základního významu pro poznání lepidopter Palestiny.

Faunu motýlů Palestiny studovalo mnoho autorů již od poloviny minulého století. Z prvních, kdož se zabývali lepidopterologicky tímto velezájímavým územím, byli na př.: LEDERER, ZELLER, KALCHBERG, STAUDINGER a j. Na tuto tradici navazují práce současných věhlasných lepidopterologů, jako na př. GRAVESOVY, HEMMINGOVY, AMSELOVY a j. Proto můžeme *Lepidoptera* v Palestině považovati za jeden z nejlépe probádaných řádů hmyzu v oblasti Blízkého Východu.

V systematicko-faunistické části uvádím všechny lokality z Houškova sběru u jednotlivých druhů, při čemž je přihlédnuto i k zeměpisnému rozšíření citovaného druhu (příp. poddruhu) v okolních zemích.

II. List of the Lepidoptera collected  
by Mr. J. Houška in Palestine, in 1940—1946

Papilionidae\*)

1. *Pterourus alexanor judaeus* STDGR.
2. *Papilio machaon* L. ssp.
3. *Archon apollinus bellargus* STDGR.
4. *Allancastris cerisyi speciosa* STICH.

Pierididae

5. *Aporia crataegi augustior* GRAY.
6. *Pieris brassicae verna* ZELL.
7. *Pieris rapae leucosoma* SCHAW.
8. *Belenois aurota* FABR.
9. *Pontia daplidice* L. ssp.
10. *Pontia glauconome glauconome* KLUG
11. *Euchloe belemia palaestincensis* RÖB.
12. *Euchloe crameri melisande* FRUHST.
13. *Euchloe charltonia elisabethae* HEMM.
14. *Euchloe cardamines phoenissa* KALCH.
15. *Zegris eupheme uarda* HEMM.
16. *Colotis fausta fausta* OLIV.
17. *Colotis phisadia palaestinensis* STDGR.
18. *Colias croceus* FOURCR.
19. *Gonepteryx cleopatra taurica* STDGR.

Nymphalidae

20. *Melitaea phoebe telona* FRUHST.
21. *Melitaea trivia syriaca* RBL.
22. *Polygonia egea egea* CR.
23. *Vanessa cardui* L.
24. *Limenitis rivularis reducta* STDGR.

Danaidae

25. *Danaus chrysippus* L.

Satyridae

26. *Ypthima asterope asterope* KLUG
27. *Dira maera orientalis* STDGR.
28. *Agapetes titea palaestinensis* STDGR.
29. *Chazara persephone persephone* HÜB.
30. *Pseudochazara telephassa telephassa* HÜB.
31. *Hipparchia fatua sichea* LED.
32. *Maniola telmesia telmesia* ZELL.

---

\*) The sequence of species is left as in BODENHEIMER's Prodrömus (1937).

**Lycaenidae**

- 33. *Apharitis acamas acamas* KLUG
- 34. *Virachola livia livia* KLUG
- 35. *Cosmolyce boeticus boeticus* L.
- 36. *Syntarucus piriethous telicanus* LANG
- 37. *Azanus jesous gamra* LED.
- 38. *Tarucus mediterraneae mediterraneae* B.—B.
- 39. *Tarucus balkanica balkanica* FREYER
- 40. *Chilades trochilus trochilus* FREYER
- 41. *Aricia agestis calida* BELL.
- 42. *Plebeius pylaon cleopatra* HEMM.
- 43. *Polyommatus löewii lockharti* HEMM.
- 44. *Polyommatus icarus lucida* CUL.
- 45. *Zizeeria knysna karsandra* MOORE
- 46. *Philotes vicrama astabene* HEMM.
- 47. *Lycaena thersamon omphale* KLUG
- 48. *Lycaena phlaeas* L. ssp.

**Hesperiidae**

- 49. *Carcharodus alcae alcae* ESP.
- 50. *Carcharodus stauderi ambigua* VTY.
- 51. *Spialia sertorius hilaris* STDGR.
- 52. *Thymelicus lineola lineola* OCHS.
- 53. *Thymelicus sylvestris syriaca* TUTT
- 54. *Thymelicus hyrax* LED.
- 55. *Gegenes pumilio* HFFSGG.
- 56. *Pelopidas thrax thrax* HÜB.

**Lymantriidae**

- 57. *Orgyia dubia judaea* STDGR.

**Lasiocampidae**

- 58. *Lasiocampa grandis* ROG.

**Geometridae**

- 59. *Selidosema brunnearia syriacaria* STDGR.

**Arctiidae**

- 60. *Deiopeia pulchella* L.

**Zygaenidae**

- 61. *Zygaena coryciae amseli* B.—S.
- 62. *Zygaena cilicica* BGFF.

III. A Systematic Study of the *Rhopalocera*  
and *Hesperiidae* collected by Jaroslav Houška  
in Palestine

Papilionidae

1. *Pterourus alexanor judaeus* STAUDINGER 1893

*Pterourus alexanor* ESP. is distributed in the eastern region of the Mediterranean. In Houška's collection there are only 4 specimens, taken in Jerusalem, which locality was known already e. g. to GRAVES (1925). This author reports from Lebanon (Ain Zahalta) ssp. *orientalis* ROM.

Loc.: Jerusalem, 20. IV.—5. VI., 4 specimens.

2. *Papilio machaon* LINNAEUS 1758 ssp.

GRAVES (1925) places the Palestinian specimens to ssp. *sphyrus* HB. ELLER (1936—39) studied the species *Papilio machaon* L. systematically, and designated the Palestinian population by the name ssp. *palaestinensis* (1939). After studying ELLER's works I have to regard this name as a nomen nudum. *Papilio machaon* L. is a very plastic species, as shown by the formation not only of geographical but also of ecological races, whose classification is very difficult. The find of one female in Siwa Oasis (GABRIEL and STEVEN-CORBET, 1949) is surprising. It cannot be excluded that many subspecies belong to taxonomically lower units.

Loc.: Jerusalem: 28. II. 44 e. l., 21. III. 43 e. l., 29. III. 43 e. l., 3. V. 45, 20. VII. 41, 31. VII. 41, 1. IX. 41, 19. X. 41.

Wadi el Kelt: 15. IV. 46, 28. VI. 42 (2 ♂♂).

3. *Archon apollinus bellargus* STAUDINGER 1891

In Houška's collection is a large series of *A. apollinus* ssp. *bellargus* STDGR. This subspecies occurs in Palestine, Transjordan and Lebanon. From Iraq ssp. *apollinaris* STDGR. is known. It is a very variable species. The ground-colour of the hind-wings ranges from intensive yellow to white. Also the intensity of the dark powdering on the fore-wings and the size of the red spots on the hind-wings are very variable. Our collection comprises a total of 47 specimens taken in Jerusalem between 26. XII. and 20. III.

4. *Allancastris cerisyi speciosa* STICHEL 1907

Ssp. *speciosa* STICH. was described from Jerusalem, from where Houška's collection contains a large series. From Palestine and Transjordan ssp. *speciosa* STICH. is recorded; from Lebanon and Iraq ssp. *deyrollei* OB. The species is very variable in the ground-colour as well as in the number and size of the spots on the wings. In our material there are tiny specimens (nanism): 9. III. 46 ♂ (wing 24 mm from base to apex) and 3. IV. 43 ♂ (23 mm). Of more interesting individual forms I ascertained



in Houška's collection f. *subflava* SCHTZ.: 17. III. 42 and 23. III. 46 with an intensively yellow ground-colour. Sexual dichroism is well visible. *A. cerisyi speciosa* STICH. is bound in the vicinity of Jerusalem to the host plant of the caterpillar *Aristolochia parviflora* (SWINTON 1898).

Loc.: Jerusalem: 9. III.—26. IV., 33 ♂♂ and 10 ♀♀.

### Pierididae

#### 5. *Aporia crateagi augustior* GRAVES 1925

The Palestinian specimens are placed to the ssp. *augustior* GRAVES described from Transjordan (for type see Trans. Ent. Soc. London, 1925, pl. V., fig. 10). VERITY (1950) figures a cotype of ssp. *augusta* TRTL., described from Sicily (Tav. 30., fig. 39). I have only three specimens (males) at my disposal from Houška's collection, collected 14.—22. IV. in Jerusalem. These specimens show certain deviations from the two subspecies mentioned above; they stand approximately at the transition between the two subspecies. Though the terminations of the nervules of the anterior wing form triangular spots on its outer margin, yet these spots are not so large as in ssp. *augustior* GRAV. In our specimens these spots do not reach so deep into the wing, and the nervule axillaris has no such spot. The specimens from Jerusalem which I had at my disposal thus represent a transition form between the two subspecies.

#### 6. *Pieris brassicae verna* ZELLER 1847

The nomenclatoric designation of the populations of Anterior Asia is very un-uniform. GRAVES (1925) and BODENHEIMER (1937) record from the area studied ssp. *verna* ZELL., while ELLISON and WILTSHIRE (1939) record from Lebanon ssp. *catoleuca* RÖB. VERITY (1947) acknowledges ssp. *verna* ZELL. I did not find any essential differences between the Palestinian and the South European specimens. I ascertained the following interesting form: in three males of the spring and autumn generations dark scales are visible on the upper side of the fore-wings (at the place of the upper spot on the underside), which is most striking in the male taken on 21. IX. 45. But a normal spot is not developed on the upper side of the anterior wing in these specimens. All specimens from Jerusalem.

gen. vern. 10. II. 46. 3 ♂♂, 1 ♀

gen. aest. 29. VIII. 41. 1 ♀: very light specimen, but spots normally developed (gen. autumn?)

gen. autumnalis: 21. IX. 45. ♂, 11. X. 41. 2 ♂♂, 20. X. 45. ♂.

#### 7. *Pieris rapae leucosoma* SCHAWERDA 1905

The species occurs in the area studied from March till November. Ssp. *leucosoma* SCHAW. was described after summer specimens, whereas for the spring specimens of this subspecies the name *vaga* FRUHST. 1909 was proposed. GRAVES (1925) regards, however, Fruhstorfer's description

as insufficient and described gen. vern. *prima* GRAV. LEMPKE (1924) retained the designation *vaga* FRUHST. *Pieris rapae* L. is a Eurosiberian element with a considerable distribution. It is a very variable species with well distinguishable forms. It reacts strongly to the outer conditions by developing many individual forms. The classification of the subspecies is therefore considerably difficult. GRAVES (1925) gives a more accurate evaluation of the large material from the area studied. Houška's collection contains 9 specimens; the summer generation is smaller and lighter.

Loc.: Jerusalem: 28. IV. 42 ♀, 20. VII. 41 ♂;

Wadi el Kelt: 15. III. 42. ♂, 29. III. 42. ♀, 26. IV. 42. ♀, 28. VI. 42. ♂;

Arnon River: 7. VI. 42. ♂, 2 ♀ ♀.

#### 8. *Belenois aurota* FABRICIUS 1793

Paleotropical element in the fauna of Palestine. *Belenois aurota* FABR. (= *mesentina* auct.) is known by its migration ability. Thus GRAVES (1925) and LEDERER (1941) described interesting migrations. Relatively considerably variable species, but these deviations have only the significance of individual, not geographical forms.

Loc.: Jerusalem: 30. VIII. 41. 1 ♀

Jericho: 7. IX. 42. ♂

Wadi el Kelt: 29. XI. 42. ♂

Arnon River: 17. VIII. 41. 2 ♂♂, 1 ♀

Haifa: 14. XI. 40. ♂.

#### 9. *Pontia daplidice* LINNAEUS 1758 ssp.

Houška's collection contains a large material of this species, whose critical evaluation will be given in a separate paper. Several "subspecies" are recorded from Palestine, but they show an ecological (or directly seasonal) character. Already GRAVES (1925) pointed out this, and one has to agree with some of his arguments. As an example I give the race *albidice* OBTH. described from Algeria, which is present also in our material: 4 ♂♂ 7. VI. 42, Arnon River, det. G. Bernardi. In the Palestinian specimens we have in this case an ecological race inhabiting arid biotops, whose extreme form was called f. *aridissima* HEMM. The subspecies *persica* BIEN. belongs to the related species *P. glauconome* KLUG and not to *P. daplidice* L., to which it was placed by the author. FRUHSTORFER described from Palestine ssp. *laenas*. In our material the nanistic form is most interesting; it was collected in several localities (a total of 15 specimens!). It is a species with a considerable vagility.

Loc.: Jerusalem: 27. III.—18. X., 4 ♂♂, 5 ♀♀

Jericho: 7. II. 43. ♀

Wadi el Kelt: 28. I.—15. III., 6 ♂♂, 3 ♀♀

Valis Jordan: 14. II. 43. ♂.

Tiny forms were collected in the following localities:

Jerusalem: 2. V.—6. IX. 5 ♂♂, 2 ♀♀

Wadi el Kelt: 26. IV. 42. ♂

Arnon River: 7. VI.—17. VIII. 3 ♂♂, 4 ♀♀.

### 10. *Pontia glauconome glauconome* KLUG 1829

The geographical distribution of *Pontia glauconome* KLUG has been very little investigated. According to GABRIEL and STEVEN-CORBET (1949) the area of distribution of this species reaches into the Sudan and Kenya. In Iraq, Iran and Mesopotamia lives ssp. *iranica* BIEN. I place the Palestinian specimens to the nominate form. It cannot be excluded that this species may not have been listed by some authors because it was mistaken for arid forms of *Pontia daplidice* L. Houška's collection contains seven specimens of *P. glauconome* KLUG. They are very well developed and preserved specimens so that in this case a confusion is excluded. WILTSHIRE (1948, 1952) records *P. glauconome* KLUG from Egypt and Arabia and classifies it as a paneremic element. The individual variability is not so developed as in *P. daplidice* L. Loc.: Jericho: 7. IX. 41. ♀

Wadi el Kelt: 22. VII. 47. ♀, 24. VIII. 41. ♂

Arnon River: 7. VI. 42. 2 ♂♂, 17. VIII. 41. ♂.

### 11. *Euchloe belemia palaestinensis* RÖBER 1907

Mediterranean species, distributed from Morocco to Persia, recorded by almost all authors who have dealt with the fauna of this region. From Palestine was described ssp. *palaestinensis* RÖB. GRAVES (1925) dealt with this race in detail and decided to give the name *palaestinensis* f. *prima* to the cold-weather form of *palaestinensis* RÖB. The species occurs fairly abundantly in suitable biotops. The drawing on the underside of the posterior wings is rather variable. Houška's collection contains a large material of this species.

Loc.: Jerusalem: 10. II.—27. III. (5 ex.),

Jericho: 12. I.—7. II. (6 ex.),

Wadi el Kelt: 27. II.—12. III. (5 ex.),

Valis Jordan: 14. II. 43. (14 ex.),

The Jordan (near the French monastery): 21.—28. III. 43. (4 ex.),

Rumanian monastery on the Jordan: 25. II. 42. (2 ex.), 2. XII. 42. (1 ex.),

Palestine without further data: 1 ex.

### 12. *Euchloe crameri melisande* FRUHSTORFER 1908

*Euchloe crameri* BUTLER (1869) is a Euromediterranean element in the fauna of Israel. It is a geographically very plastic species, which forms a series of subspecies. LEDERER (1941) describes an interesting biotop of this species. Two subspecies are listed from the territory of former Palestine: ssp. *melisande* FRUHST. and ssp. *aegyptiaca* VTY. ELLISON and WILTSHIRE (1939) know the nominate form from Lebanon. From Iraq and Mesopotamia is listed ssp. *persica* VTY., from Turkey ssp. *esperii* KRBY. Houška's collection contains 11 specimens of *E. crameri* BUTLER. I place all specimens to ssp. *melisande* FRUHST.; only one specimen forms a transition form to ssp. *aegyptiaca* VTY. (11. II. 42. ♂, Jerusalem). But in this case we are faced with an individual (not geographical) variability, as is proved by the series of specimens collected in the same locality.

Loc.: Jerusalem: 4. III.—16. IV., 3 ♂♂, 2 ♀♀.  
 Wadi el Kelt: 11. III.—18. IV., ♂, 2 ♀♀.  
 Jordan, the place of the Baptism: 22. IV. 45., ♀,  
 Gedera: 14. II. 41., ♂.

### 13. *Euchloe charlonia elisabethae* HEMMING 1932

*Euchloe charlonia* DONZ. is a paneremic element in the fauna of Israel, inhabiting deserts, steppe localities. HEMMING (1932) described from Transjordan and Palestine a striking race — ssp. *elisabethae*, which has two generations. The first lives in November and December and is well distinguishable from the second generation (February to April). The winter generation corresponds to f. *levallanti* LUC. *Euchloe charlonia* DONZ. is a plastic species forming a series of geographical races. In Houška's collection there are five specimens of this magnificent species.

Loc.: Wadi el Kelt: 1. III.—18. IV. (3 ex.); 24. XI. 42. (1 ex.),  
 Jordan n. Syria (monastery): 12. IV. 42. (1 ex.).

### 14. *Euchloe cardamines phoenissa* KALCHBERG 1894

*Euchloe cardamines* L. reaches the southern limit of its distribution in Israel. The population living here is placed to ssp. *phoenissa* KALCH. living in the Eastern Mediterranean (Lebanon, etc.). The specimens from Mesopotamia are placed to ssp. *armeniaca* CHRIST. In Houška's collection there are only 2 ♂♂: Jerusalem, 8. IV. 43. and 14. IV. 45.

### 15. *Zegris eupheme uarda* HEMMING 1929

*Zegris eupheme* ESP. is a zoogeographically very interesting species. AMSEL (1939) designates it as a paneremic element. It is a geographically very plastic species; recently ssp. *marrocana* BERNARDI (1950) has been described. Earlier authors record from Palestine ssp. *dyale* PEILE; BODENHEIMER (1937) and HEMMING (1952, in litt.) place the specimens from Israel to ssp. *uarda* HEMM. Our series shows a considerable individual variability; also an asymmetrical drawing is not rare, especially on the underside of the hind-wings. Also the size of the spot at the apex of the fore-wings is not constant and often this spot is considerably enlarged.

Loc.: Jerusalem: 27. III. 46. (3 ex.),  
 Wadi el Kelt: 1.—28. III. (30 ex.).

### 16. *Colotis fausta fausta* OLIVIER 1801

Israel is the northern region of distribution of this east-eremic species. The genus *Colotis* HB. is distributed in the tropical zone and penetrates the Palearctic region with a few species. *Colotis fausta* OLIV. is bound to arid biotops where *Capparis* grows (LEDERER, 1941). The imago live in favourable places during the whole vegetation period. *Colotis fausta* OLIV. is very variable. Of more remarkable deviations I record from Houška's collection

only 2 ♂♂ (the Arnon, 17. VIII. 41.), which lack the spot in the discoidal area. A geographical variability is not manifest as it is a migrating species. Houška's collection contains a numerous series.

Loc.: Jerusalem: 20. VII.—11. X. (22 ex.),  
 Bet Haherem: 19. VII. 42. (2 ex.),  
 Jericho: 7. IX. 41. (1 ex.),  
 Wadi el Kelt: 4. III.—23. XI. (7 ex.),  
 Ramleh: 31. VIII. 41. (2 ex.).

#### 17. *Colotis phisadia palaestinensis* STAUDINGER 1897

WILTSHIRE classifies this species zoogeographically as a paneremic element inhabiting deserts, steppes and also high mountains. The race *palaestinensis* STDGR. inhabits Israel, Egypt and the Sinai Peninsula. It is a fairly rare species, and thus Houška's collection (65 specimens) is all the more surprising.

The individual variability of this species is interesting. In our material there are two specimens (♂♀) with a yellow ground colour of the wings; the female is lighter: 14. VI. 42. Wadi el Kelt; the dark brown to black border of the wings is in these specimens replaced by a light-brown colour. Another form has the same yellow ground colour with a more or less extensive light brick-red spot on the anterior wings. The deviation has in extreme cases the whole of the anterior wings like the normal form, even though the whole coloration and also the border are somewhat lighter (loc.: Jericho, 17. VI. 45. ♂, Wadi el Kelt, 14—28. VI.) — to this form belong 18 specimens with very frequent transitions. Further we have nine specimens with a normal drawing, but with a lighter coloration (loc.: Arnon River, 7. VI. 42. and Wadi el Kelt 14.—24. VI.). The ground colour of the other specimens is normal, though also here there is a variability in the size and number of spots in the dark border of the fore-wing (loc.: Arnon River, 7. VI. 42., 2 ♂♂, the other specimens Wadi el Kelt, 14.—28.). As Dr. Bytinski-Salz had the kindness to inform me, an individual form ♀ *alba* AUR. is known from the valley of Jericho. I hope to return in another paper to the accurate classification of the forms of this species as this task falls outside the faunistic investigation of the material entrusted to me.

#### 18. *Colias croceus* FOURCROY 1785

Mediterranean element; migrating species which does not form geographical races. BODENHEIMER (1937) reports from Palestine also *Colias myrmidone* f. *alba* STDGR. In Houška's collection there are 3 ♀♀ of f. *pallida* TUTT of the species *Colias croceus* FOURCR. I wish to thank M. G. Bernardi for his kindness in revising these specimens for me.

Loc.: Jerusalem: 31. III. 43. ♂, 27. IV. 43. 2 ♂♂, 12. V. 41. ♂, 23. V. 45. ♂, 20. X. 45. ♂, f. *pallida* TUTT: 12. V. 43. and 16. V. 45.  
 Jericho: 20. V. 45. ♂,  
 Wadi el Kelt: 27. II. 44. ♂; 26. IV. 42. ♂; f. *pallida* TUTT:  
 29. XI. 42.

Arnon River: 7. VI. 42. ♂,  
 Jordan (n. monastery): 22. IV. 45. ♀.  
 Palestine without other data: 2 ♀♀.

#### 19. *Gonepteryx cleopatra taurica* STAUDINGER 1881

In the area of its distribution *Gonepteryx cleopatra* L. forms several geographical races. From the area studied is recorded ssp. *taurica* STDGR., characterised by GRAVES (1925) as follows: "The subspecies differs from the S. European and N. African forms in having a paler, less clear cut and often smaller area of orange-red scaling on the fore-wings of the ♂." In Houška's collection there are ♂♀ from Jerusalem (♂ 9. X. 41., ♀ 21. VI. 45.).

#### Nymphalidae

#### 20. *Melitaea phoebe telona* FRUHSTORFER 1908

Ssp. *telona* FRUHST. was described from Jerusalem from where we have several specimens at our disposal. GRAVES (1925) described from Transjordan ssp. *dorae*. This author lists in his paper the distinguishing characters between *M. phoebe* KNOCH and *M. arduinna* ESP. I have not found the latter species in Houška's collection. The individual variability of *M. phoebe* KNOCH and the ssp. *telona* FRUHST. is considerable. ELLISON-WILTSHIRE (1939) found this subspecies also in Lebanon.

Loc.: Jerusalem: 30. III.—30. V. (11 ex.),  
 Wadi el Charamija: 19. IV. 42. (2 ex.).

#### 21. *Melitaea trivia syriaca* REBEL 1905

We have at our disposal only four specimens of this very variable species which according to reports is very abundant in the area studied. Ssp. *syriaca* RBL., is known from Palestine and Lebanon.

Loc.: Jerusalem: 27. VI.—6. IX. (3 ex.),  
 Bet Hakerem: 19. VII. 42.

#### 22. *Polygonia egea egea* CRAMER 1778

GRAVES (1925) lists from Palestine several localities for the occurrence of this species. *Polygonia egea* CR. passes the winter in the imago-stage.

Loc.: Jerusalem: 30. V.—16. VI. (4 ex.),  
 Wadi el Kelt: 29. I. 45. (1 ex.).

#### 23. *Vanessa cardui* LINNAEUS 1761

Species distributed in abundant number throughout the whole of the area studied. Typical migrating butterfly. It does not form any geographical races.

Loc.: Wadi el Kelt: 26. and 29. IV. 42.



24. *Limenitis rivularis reducta* STAUDINGER 1901

To the ssp. *reducta* STDGR., known from Persia and Armenia, corresponds 1 ♂: 19. IV. 43., Wadi el Charamija, whereas the other specimens show very well developed white spots on the anterior wings. Also the broad white zones on the hind wings are well developed. All these specimens were taken in Jerusalem: 27. IV. 41. ♀, 5. VII. 45. ♂ and 2. VIII. 41. ♂. In Turkey lives ssp. *herculeana* STICH. Though it is not a species widely distributed in the Near East, it is usually nowhere found in large numbers.

## Danaidae

25. *Danaus chrysippus* LINNAEUS 1758

Paleotropical species, famous for its vagility. It is listed in all the faunistic reports of this area which I had at my disposal. Houška's collection contains a magnificent series. GABRIEL and STEVEN-CORBET (1949) record from the Libyan Desert the occurrence of the f. *aegyptiacus* SCHR.

Loc.: Jericho: 24. I. 41. ♂, 7. IX. 41. 7 ♂♂, 2 ♀♀, 12. X. 41. ♂, 5. XII. 42. ♂, e. l.

Wadi el Kelt: 28 IV.—1. V., ♂, 2 ♀♀,

Jordan: 17.—18. XII. 40., 2 ♂♂, 3 ♀♀.

## Satyridae

26. *Ypthima asterope asterope* KLUG 1834

The classical locality of this species is "Syria, Arabia Felix and Arabia Deserta". In Israel *Ypthima asterope* KLUG lives from March till December. WILTSHIRE (1952) records from Arabia a number of localities and characterises the species as follows: "This is a widespread Tropical grass-feeding butterfly, penetrating the Eastern Mediterranean but conspicuously absent from Egypt and Iraq". In Lebanon *Y. asterope* KLUG is one of the commonest butterflies. Houška's collection contains 11 specimens.

Loc.: Jerusalem: 2. VIII.—3. X., 3 ♂♂, 1 ♀,

Jericho: 7. IX. 41., 1 ♀,

Wadi el Kelt: 14. VI.—23. XI., 3 ♂♂, 2 ♀♀.

Wadi el Charamija: 19. IV. 42., 1 ♀.

27. *Dira maera orientalis* STAUDINGER 1901

*Dira maera* ssp. *orientalis* STDGR. is known from Palestine and Lebanon. GRAVES (1925) knows only two generations. ("I have no evidence of the existence of 3<sup>rd</sup> Gen. in Palestine"). But the same author records the third generation from Turkey, and recently it has been confirmed also by de LATTIN (1950), who lists 1 ♂ *Dira maera orientalis* RÜHL from Emirgan, taken 17. X. From Houška's collection it is obvious that the third generation is present also in Palestine. The summer population has brick-

red spots on the fore-wings and the frame around the eyes on the hind-wings is more intensively coloured than in the autumn specimens.

Loc.: gen. vern.: Wadi el Charamija: 19. IV. 42. ♀,  
gen. aest.: Jerusalem: 7. VII.—6. VIII., 2 ♂♂, ♀,  
gen. aut.: Jerusalem, 3 ♂♂: 25. IX. 41., 18. X. 41., 9. XI. 41.

### 28. *Agapetes titea palaestinensis* STAUDINGER 1901

According to GRAVES (1925) *Agapetes titea* KLUG is one of the most abundant butterflies in Palestine. Drawing, ground-colour and number of spots are very variable. Unfortunately I cannot evaluate the material as in our collection there are only three specimens collected in Jerusalem, 12. IV.—1. V.

### 29. *Chazara persephone persephone* HÜBNER 1821

*Chazara persephone* HB. (= *anthe* O.). AMSEL (1933) classifies this species zoogeographically as a "Vorderasiatisch-mediterrane" species. GRAVES (1925) knows of only few records from Palestine. In Lebanon lives ssp. *transiens* ZERNY, which is very common in the Anti-Lebanon in early June (ELLISON-WILTSHIRE 1939). In Houška's collection there are only two specimens: Jerusalem, 5. VII. 45.

### 30. *Pseudochazara telephassa telephassa* HÜBNER 1821

It occurs with *Chazara persephone* HB. in the same localities, but is much more abundant. GRAVES (1925): "Is the commonest and the earliest of the larger Palestine Satyrids". Similarly this species is abundant also in Lebanon.

Loc.: Jerusalem: 15. VI.—22. VIII., 3 ♂♂, 9 ♀♀,  
Wadi el Kelt: 7.—15. IV., 2 ♂♂, 1 ♀.

### 31. *Hipparchia fatua sichea* LEDERER 1857

The ssp. *sichea* LED. was described after specimens from Beirut. In the area studied *H. fatua sichea* LED. lives fairly abundantly. Recently de LATTIN (1950) has described ssp. *kosswigi* (Elaziğ, Sivrice) from Turkey. All Houška's specimens come from Jerusalem, 27. VI.—9. X., 4 ♂♂, 5 ♀♀.

### 32. *Maniola telmessia telmessia* ZELLER 1847

Abundant species in Palestine as well as in Lebanon. I have only the spring generation at my disposal. From Iraq was described ssp. *kurdistanica* RÜHL. Houška's collection contains a series from Jerusalem 12. IV.—15. V., 9 ♂♂ and 3 ♀♀.



## Lycaenidae

33. *Apharitis acamas acamas* KLUG 1829

The genus *Apharitis* RILEY is distributed from Tunisia to the north-eastern region of the Himalaya. Houška's collection contains 14 specimens of the species *A. acamas* KLUG. In this thorough monograph on the genus *Cigaritis* BOISD. RILEY (1925) records from the territory of former Palestine two forms of this species. There occurs here the nominate form inhabiting roughly the following territory: Syria, Palestine (Jerusalem, Akka), Mesopotamia and NW Persia. Besides ssp. *egyptica* RILEY was ascertained in the coastal region of Palestine (Ludd), penetrating here from Egypt (Mokattan Hills, Route de Suez). In the area of its occurrence the species forms several geographical races, which are well distinguishable; the individual variability is on the whole small. I place all specimens in Houška's collection to the nominate form.

Loc.: Jerusalem: 14. VII.—25. IX., 11 ♂♂, 2 ♀♀,  
Wadi el Kelt: 14. VI. 42., 1 ♂.

34. *Virachola livia livia* KLUG 1829

Species described from the area "between Keneh and Assuan". Sudanese element in the fauna of Israel. The imago lives in the winter months in suitable biotops. In Houška's collection most of the specimens are labelled "ex larva". GRAVES (1925) gives the following interesting report of their manner of life: "... in 1918 I discovered pods of *Acacia farnesiana* which seemed to have been barded by the larva".

Loc.: Jerusalem: 7.—12. VII. 45., 2 ♂♂, 1 ♀, e. l.  
Jericho: 20. II. 42. ♂, e. l.; 13.—17. VII. 45. 2 ♀♀, e. l.  
Wadi el Kelt: 26. IV. 42. ♀; 24. VIII. 41., ♀.  
Nahr Rubin: 26. VII. 42. ♂ ♀.  
Tel Aviv (Yarkon): 14. IX. 41. 2 ♂♂, 6 ♀♀.

35. *Cosmolyce boeticus boeticus* LINNAEUS 1767

Paleotropical species, living in Israel during the whole year. GRAVES (1925) did not find any differences between specimens from different localities. From Anterior Asia, where *C. boeticus* L. is abundantly and well known as a migrating species penetrating as far as Central Europe; several finds have been reported also from Czechoslovakia. ELLISON-WILTSHIRE (1939) report that in Lebanon it occurs everywhere irrespective of the altitude above sea level of the localities, and in Iraq it is considered one of the most abundant butterflies (WILTSHIRE 1944). HEMMING's report (1932) is surprising; according to him *C. boeticus* L., "appears to be surprisingly scarce" in Transjordan. On the other hand it is according to WILTSHIRE (1952) not lacking even in the oases of Arabia. Though it is a migrating species, de LATTIN (1950) accepts the ssp. *armeniensis* GERH.,

a race which is well distinguishable from the nominate form (Turkey: Tatvan, Elaziğ, Gaziantep). The males of the summer generation collected in Palestine are intensively violaceous.

Loc.: Jerusalem: 20. IV. 46. ♀; 27.—28. VIII. 41. 2 ♂♂, 2 ♀♀; 15. X. 41. ♂; 15. X. 42. ♂ (f. minor TUTT).

Gedera: 21. XI. 40. ♂ (f. minor TUTT).

Tel Aviv: 14. IX. 41. 2 ♀♀,

Palestine, without other data: 1 ♀.

### 36. *Syntarucus pirithous telicanus* LANG 1789

*Syntarucus pirithous telicanus* LANG is known from Israel, but never occurs so abundantly as *C. boeticus* L. Houška's collection contains only one specimen of this species: Gedera, 21. XI. 40. ♀. From Transjordania HEMMING (1932) reports one male (Sukhi), while in Egypt this species occurs somewhat more frequently, in the oases as well as in the desert itself (WILTSHIRE 1948). In Lebanon *S. pirithous telicanus* LANG occurs on the coast and at medium altitudes (ELLISON and WILTSHIRE 1939). It flies also to Central Europe; STAUDER (1924) published more detailed reports on this distribution. In the Bosphorus region this butterfly is abundant on macchia (de LATTIN 1950).

### 37. *Azanus jesous gamra* LEDERER 1855

GRAVES (1925) gives a list of localities of this interesting species. It is an Ethiopian element in the fauna of Israel; our collection contains only one specimen (♂) labelled "Palestine" without any further data. From Transjordania it is known only since HEMMING's publication (2 ♂♂, Jerash). In Egypt *Azanus jesous* GUÉR. occurs together with *A. ubaldus* CR., while in Lebanon, Israel and Transjordania the latter species does not occur.

### 38. *Tarucus mediterraneae mediterraneae* BETHUNE-BAKER 1918

This species is bound in its occurrence to its host plants of the genus *Zizyphus*. The genus *Tarucus* MOORE is recorded from Israel in three species: *T. mediterraneae*, *T. balkanica* and *T. theophrastus*. All these species are relatively very similar to each other, and their occurrence is reported from different regions of the Near East. Both species collected by Houška (*T. mediterraneae* and *T. balkanica*) Dr. W. Forster had the kindness to determine for me. *Tarucus mediterraneae* B.—B. is a species with Eremian distribution, occurring not only in Israel but also in Egypt, Iraq and elsewhere, mostly together with two related species. WILTSHIRE (1948) records an interesting association of Lepidoptera, bound to *Zizyphus spina christi* in the Arabian oases. The species is fairly variable, especially in the drawing on the underside of the wings. A more interesting

individual form is ♂ without any dark spots in the apical part of the discoidal area of the anterior wings: 26. IV. 42., Wadi el Kelt.

Loc.: Jericho: 5. V.—12. X. (4 ♂♂),  
Wadi el Kelt: 15. III.—26. X. (11 ♂♂, 1 ♀),  
Arnon: 17. VIII. 41. (4 ♂♂, 1 ♀).

#### 39. *Tarucus balkanica balkanica* FREYER 1844

HEMMING (1932) gives good distinguishing characters from the preceding species. *Tarucus balkanica* FR., is according to the reports in the literature and according to the number of specimens taken by Houška much rarer in Palestine than the preceding species, though it is widely distributed. In the adjoining regions it lives in Iraq, in Mesopotamia as ssp. *areshanus* B.—B. From Israel the nominate form (described by FREYER from Turkey) is recorded.

Loc.: Jericho: 5. V. 46. ♂,  
Wadi el Kelt: 1. III. 45. ♂; 12. X. 41. ♀,  
Ramleh: 31. VIII. 41. 2 ♂♂,  
Metulla: 28. VIII. 42. ♂.

#### 40. *Chilades trochilus trochilus* FREYER 1845

Minute tropical East-Mediterranean species, described from the European part of Turkey. In recent times WAGNER (1930) records the locality Akshehir and de LATTIN (1950) Gaziayn tep. In the area studied the species is very wide-spread in Israel, Lebanon, Transjordan, Iraq, Arabia and Egypt. GRAVES (1925) reports from this area 2—3 generations during the vegetation period. Houška's specimens were collected between 26. VI. and 29. IX. in one locality (Jerusalem). The autumn specimen is very minute (the wing from the base to the apex only 5,5 mm.).

#### 41. *Aricia agestis calida* BELLIER 1862

The opinions on the taxonomic position of this butterfly differ greatly. According to different authors it is more abundant in Lebanon than in former Palestine, whence GRAVES (1925) lists only the following localities: Wadi Kabala, Nebi Samwil, Nazareth. In Houška's collection there is only one specimen: Jerusalem, 27. V. 42. ♂.

#### 42. *Plebeius pylaon cleopatra* HEMMING 1934

In Houška's collection there is only one specimen: Jerusalem, 1. V. 46. ♀. The opinions on the taxonomic position of this race are widely divergent. GRAVES (1925) described from Transjordan ssp. *philbyi*, which WILTSHIRE (1948) records also from Egypt. GRAVES (l. c.) transferred this form to the species *P. sephyrus* FRIV. Our specimen has striking orange spots on the outer margin of the wings, especially of the hind ones; blue

scales in an insignificant quantity only at the base of the wings. Orange spots very striking also on the underside of both pairs of wings. This species is still very little known as far as its geographical distribution is concerned. The specimen mentioned was determined by Dr. W. Forster.

#### 43. *Polyommatus loewii lockharti* HEMMING 1929

*Polyommatus loewii* ZELL. is a geographically plastic species. In Houška's collection there is only one specimen: W a d i e l K e l t, 26. IV. 42. GRAVES (1925) reports from this locality ssp. *gigas* STDGR., described from Smyrna. BODENHEIMER (1937) places the Palestinian population to ssp. *lockharti* HEMM., described from Transjordan. In our specimen the length of the wing (from the base to the apex) is 18 mm. On the underside the ground colour is light; the orange spots on the outer margin are on the underside of the hind-wing little conspicuous and light.

#### 44. *Polyommatus icarus lucia* CULOT 1905

The taxonomic and nomenclatoric confusion in connection with ssp. *lucia* CUL. made GRAVES (1925) place the Palestinian specimens to ssp. *zelleri* VTY. According to modern views ssp. *lucia* CUL. occurs in this area, abundantly also in the adjoining Lebanon, but here it meets ssp. *juno* HEMM. *Polyommatus icarus* ROTT. is a Euro-Siberian element with a large area of distribution, reaching also to fairly high altitudes above sea level. WILTSHIRE (1944) records ssp. *persea* BIEN. from Iraq. The individual variability of this species is relatively considerable, especially on the underside of the wings, where it comes to confluences between the different spots. The males collected in Palestine are characterised by the very light ground colour of the underside of the wings. More essential deviation: W a d i e l K e l t, 16. VIII. 42. ♂: small specimen, on the upper side with the normal coloration; on the underside of the hind-wings at their inner margin an elongated spot parallel with the inner margin (confluence of the lower spot from the base of the wing with the last spot belonging to the series of spots running in an arc vertically on the underside of the fore-wing. Analogous forms are given in the literature under different names; the following designations correspond to our specimen: f. *melanotoxa* PINCITORE-MAROTT (1872) = f. *arcuata* WEYMER (1878) = f. *arcua* WHEELER (1902). The females are much more variable than the males. A similar confluence as in the specimen described above occurred also in one female: J e r i c h o, 12. V. 46. The longitudinal spot parallel with the inner margin on the underside of the left fore-wing is interrupted, whereas there is a total confluence on the right side. Thus it is also a case of asymmetrical drawing. The taxonomically important forms are, however, those of females with an enlargement of the blue powdering on the upper side of the wings; already GRAVES (1925) drew attention to this form: "♀♀ suffused to a greater or lesser extent with violet-blue are not infrequent among the 1<sup>st</sup> Gen. at Bir Yakub..." They are mostly large specimens (length of the wing from base

to apex up to 16 mm.). I determined this form f. ♀ *coerulea* FUCHS.: Jerusalem: 30. III. 43.; 3. IV. 43.; 20. IV. 46.; Wadi el Kelt: 11. III. 45.

Loc.: Jerusalem: 30. III.—18. X., 23 ♂♂, 15 ♀♀,  
Jericho: 12. V. 46. ♂,  
Wadi el Kelt: 26. I.—24. VIII.: 6 ♂♂, 1 ♀,  
Tel Aviv: 14. IX. 41., 1 ♂,  
Metulla: 30. VIII. 42. 1 ♂.

#### 45. *Zizeeria knysna karsandra* MOORE 1865

Minute species, distributed everywhere in the eastern part of the Mediterranean, bound to *Trifolium alexandrinum* and other similar low plants (WILTSHIRE 1944). GRAVES (1925) reports from Palestine as well as from Transjordan a fairly great number of localities showing that *Z. knysna karsandra* MOORE is here generally distributed. WILTSHIRE (1952) knows the nominate form *Z. knysna knysna* TRIMEN. from Arabia.

Loc.: Jerusalem: 21. IX. 41. ♂; 2 ♀♀; 15. X. 42. ♂,  
Wadi el Kelt: 17. I. 43. ♂,  
Arnon: 17. VIII. 41., 2 ♂♂, 1 ♀,  
Ramleh: 31. VIII. 41. 3 ♀♀,  
Tel Aviv: 14. IX. 41. ♂.

#### 46. *Philotes vicrama astabene* HEMMING 1934

The Palestinian population is placed to ssp. *astabene* HEMM. (= *clara* CHRIST.). Houška's collection contains 10 specimens; all were collected in one locality (Jerusalem) between 28. III. and 11. X. I am indebted to Dr. W. Forster for his kindness in revising this material. The specimens of the spring generation are strikingly distinguished from the other specimens collected from August till October by the blue coloration of the whole surface of the wings; only a narrow border is dark. Females dark, only with a slight blue powdering at the base of the wings.

#### 47. *Lycaena thersamon omphale* KLUG 1829

The ssp. *omphale* KLUG occurs in Syria, Lebanon, Israel, whereas the populations of Iraq and Turkey belong to ssp. *kurdistanica* RILEY. The spring generation living in the area studied was called by GRAVES (1925) f. *militaris* (type from Bir Yakub). The large series collected by Houška shows the differences between the two generations. According to GRAVES only two generations occur in Palestine; the second is interrupted by the summer pause.

Loc.: Jerusalem: 9. IV.—20. X., 24 ♂♂ and 22 ♀♀,  
Ramleh: 31. VII. 41., ♂ (dwarf specimen of the summer generation).

48. *Lycaena phlaeas* LINNAEUS 1761. ssp.

*Lycaena phlaeas* L., is a Euro-Siberian element with a large area. It forms numerous geographical, seasonal and individual forms. Opinions on the classification of the Palestinian populations are not uniform. Though Houška's collection contains a series of 15 specimens, it is at present not possible for me to determine the subspecies accurately, because of the lack of comparative material from the other areas of the Near East. ELLISON and WILTSHIRE (1939) record from the Lebanon f. *eleus* F., which he designates, however, only as an individual form. Neither has any separate race as yet been reported from Iraq. From Arabia WILTSHIRE (1952) reports the occurrence of ssp. *pseudophloeas* LUCAS. BODENHEIMER (1937) gives in his Prodrum ssp. *timeus* CR. for the territory of Palestine. The spring generation (from 5. III.) is lighter, while the summer and especially the autumn specimens are very dark (f. *fuscata* TUTT).

Loc.: Jerusalem: 15. X. 42. ♂,

Jericho: 5. V. 46. ♂ ♀,

Wadi el Kelt: 5. III.—2. VI., 8 ♂♂,

Jordan (French monastery): 24. V. 42. ♂,

Metulla: 30. VIII. 42., 2 ♂♂,

Palestine, without other data: ♂.

## Hesperiidae

49. *Carcharodus alcae alcae* ESPER 1780

The following two species of the group of *Carcharodus* HB., are deposited in Houška's collection: *C. alcae alcae* ESP. and *C. stauderi ambigua* VTY. Both these species are already known from Israel. GRAVES (1925) places the specimens collected here of *C. alcae* ESP. to ssp. *australis* ZELL. described from Sicily. In EVANS' opinion (1949) they belong, however, to the nominate race, which is distributed over a fairly wide area: Europe, Turkey, Asia Minor, Syria, Israel, Samarkand and Bokhara; nor were any geographical races described from the islands of this region. In Lebanon the species is "common on the coast and at all heights" from the beginning of February (ELLISON and WILTSHIRE 1939); ssp. *insolatrix* LE CERF lives in Iraq and Persia. *Carcharodus alcae* ESP. lives there in suitable biotops (e. g. gardens, Bagdad), fairly abundantly in several generations during the vegetation period. AMSEL (1933) ascertained the species throughout the territory of former Palestine except near the coast. The time of occurrence of *C. alcae* ESP. is here fairly long so that the existence of three generations is possible; the summer specimens are lighter in colour. Houška's collection includes 9 specimens.

Loc.: Jerusalem: 2. III.—29. V. 42., 4 ♂♂, 1 ♀; 25. VI. 42. ♂; 18. X. 41 ♀,

Bet Hakerem: 19. VII. 42. ♀.

Wadi el Charamija: 19. IV. 42. ♂.



### 50. *Carcharodus stauderi ambigua* VERITY 1925

The subspecies *ambigua* VTY. lives in Asia Minor, Syria, Israel, in the Sinai Peninsula and in Persia. In Houška's collection we have eleven specimens of this variable species at our disposal. The ground colour of some specimens passes into reddish brown, which is striking especially on the underside of the fore-wings. The autumn form is smaller and lighter. This variability is, however, not influenced by geographical conditions, for in spite of the fact that all specimens are from one and the same locality (Jerusalem), we find in our series specimens with a fairly deviating ground colour (from light to reddish brown). These reports of earlier authors have to be taken with a certain reserve as the possibility cannot be excluded that there may have been a confusion with some similar species. EVANS (1949) knows from Palestine the following localities: Galilee, Beersheba and Jerusalem. Our series comprises 7 ♂♂ and 4 ♀♀ collected in different years from the end of April to the end of June.

### 51. *Spialia sertorius hilaris* STAUDINGER 1901

BODENHEIMER (1937) records from Palestine three species from the group of *Spialia* SWINHOE 1913: *S. phlomidis* H. SCH., *S. doris amenophis* REV. and *S. sertorius hilaris* STDGR. It is, however, not impossible that the intensive investigation of the fauna of Israel will lead to further species being ascertained. In Houška's collection only one species of this group, *S. sertorius hilaris* STDGR., is represented. Already GRAVES (1925) classified the Palestinian specimens correctly; according to him two generations live in Palestine; the first from the middle of April to the end of May, and the second from the end of June to August. *Ssp. hilaris* STDGR. lives also in Syria, Persia (EVANS 1949) and Lebanon (ELLISON-WILTSHIRE 1939). The classification of the material from Turkey is difficult. EVANS (l. c.) records from this region *ssp. orbifer* HB. and de LATTIN (1950) classifies his finds as "rassenmäßig stehen sie der *hilaris* STDGR. nahe, ohne aber mit ihr identisch zu sein" (p. 326). The individual variability of this species is relatively considerable. Houška's collection comprises 12 specimens, all from the one locality: Jerusalem. 9 specimens were caught in spring, between 6. IV. and 30. V. (the spring generation is larger), only one specimen in summer (4. VI. 41); very interesting is the find of 12. IX. 45. One specimen with the locality Palestine is without date.

### 52. *Thymelicus lineola lienola* OCHSENHEIMER 1808

Very constant species forming in a large area a small number of geographical races. According to EVANS (1949) the nominate race lives in Asia Minor, Syria, Lebanon, Israel, Transjordan, Iraq, Persia etc. GRAVES (1925) reports from Palestine *ssp. major-clara* TUTT, ELLISON-WILTSHIRE (1939) from Lebanon *ssp. melinus* ZERNY (correctly *melissus* ZERNY). AMSEL (1933) knows this species from Israel only from the mountains. The individual variability is slight. There are only 3 specimens in the material studied: 29. IV. 43, 2 ♂♂; 9. V. 46, ♂ (Jerusalem).

53. *Thymelicus sylvestris syriaca* TUTT 1905

Ssp. *syriaca* TUTT lives in the Balkans, Turkey, Asia Minor, Lebanon and Israel. It is more plastic than the preceding species; the nominate form inhabits most of Europe. The individual variability is on the whole small. GRAVES (1925) says that the species "will probably be found to occur fairly generally on this higher Palestinian Plateau". In our collections are 5 ♂♂ and 1 ♀ labelled with the same locality: Wadi el Kelt: 11. III. 45, 3 ♀♀; 7. IV. 46, 1 ♂; 15. IV. 45, ♂; 16. IV. 41 ♀.

54. *Thymelicus hyrax* LEDERER 1861

Houška's characteristic find the ascertaining 1 ♀ *T. hyrax* LED.: Jerusalem, 4. VI. 42. This rare species described from Antiochia lives in Asia Minor, Syria, Israel, Lebanon, Armenia. From the area of former Palestine it was recorded already e. g. by KALCHBERG (1897), who records it from Haifa.

In comparison with the preceding two species *T. hyrax* LED. is characterised by the darker ground colour of all wings, which is the most striking at their inner margin. On the underside the fore-wings are light rust-coloured with a light gray apex and with a darker inner margin, especially at the base. The underside of the hind-wings is grayish-yellow without drawings. The wings, especially the fore ones, are of an elongated shape, relatively considerably narrow, and the obtuse angle formed by the margin of the anterior wing with the border is considerably larger than in the preceding species.

55. *Gegenes pumilio* HOFFMANNSEGG 1804

Of the group of *Gegenes* HB. EVANS (1949) records from Israel only the species *G. pumilio* HFFSGG. The related species *Gegenes nostradamus* FABR. is a Euromediterranean element penetrating Abyssinia, tropical Arabia and India (WILTSHIRE 1952), lacking in Houška's collection. *G. pumilio* HFFSGG. lives in Southern Europe, North Africa, Syria, Israel, Persia, Iraq, Kashmir etc. In Egypt it "has not been certainly taken, but might occur here" (WILTSHIRE 1948). It lives in two generations; in our collections only the summer generation is represented. The species occurs in several localities and is little variable.

Loc.: Jerusalem: 23. IX. 45, 1 ♀

Wadi el Kelt: 24. VII. 41, 2 ♂♂, 1 ♀

Arnon: 17. VIII. 41, 5 ♂♂, 3 ♀♀.

56. *Pelopidas thrax thrax* HÜBNER 1821

Very constant species, occurring more at lower altitudes (GRAVES 1925); from Israel it is known from several localities. Some authors record the East Asiatic species *P. mathias* FABR. from former Palestine; but a confusion with *P. thrax* HB. cannot be excluded, the latter species inhabits



a large part of the Near East. Houška's collection contains ♂ ♀ *P. thrax* HB.:

Benamina, 6. VII. 42. ♂.

Kfar Witkin, 5. VII. 42. ♀.

### Aknowledgement

I submit the systematic and faunistic study of the *Lepidoptera* collected by J. Houška, director of the consular service, during his stay in Palestine during World War II. Houška concentrated especially on collecting *Hymenoptera* (*Chrysididae*), but brought home also a very rich material of other orders of insects as proved by his collection of butterflies. He collected almost all species of *Rhopalocera* listed from this area in BODENHEIMER's Prodrömus. In working this material I give not only the localities of Houška's collection, but tried also to indicate at least briefly (after the literature accessible to me) the geographical distribution of the species and subspecies in the neighbouring countries.

Apart from *Rhopalocera* and *Hesperiidae* the collection contains the following *Lepidoptera*; *Orgyia dubia judaea* STDGR., *Lasiocampa grandis* ROG., *Selidosema brunnearia syriacaria* STDGR., *Detiopeia pulchella* L., *Zygaena coryciae amseli* B.-S. and *Zygaena cilicica* BGFF.

In the bibliography I give only those fundamental works published after the systematic-zoogeographical study of the *Lepidoptera* of Palestine (AMSEL 1933). The localities in which J. Houška collected belong now to two countries: Israel and Jordan. In the data quoted I leave, however, the name Palestine, always used as most of the localities are situated around the border-line of both these political units. More details on these localities are given by BALTHASAR (1951) in his monograph on the Palestinian *Chrysididae*.

I wish to thank here all those who have helped me in any way in studying the material, whether by sending me their reprints on this subject or through the revision or determination of the material studied; these are: Dr. H. G. Amsel, G. Bernardi, Prof. Dr. F. S. Bodenheimer, Dr. H. Bytinski-Salz, Brig. W. H. Evans (*Hesperiidae*), Dr. W. Forster (*Lycaenidae*), V. B. Poláček (literature), N. D. Riley, W. H. T. Tams (*Lymantriidae*, *Lasiocampidae* *Geometridae*), a. o.

### Literature

- AMSEL, H. G., 1933, Die Lepidopteren Palästinas. Eine zoogeographisch-ökologisch-faunistische Studie; Zoogeographica, 2:1—146 (mit 2 Abb.), Jena.
- AMSEL, H. G., 1935, Neue palästinensische Lepidopteren; Mitt. aus dem Zool. Mus. in Berlin, 20:271—319 (Tafel 9—18), Berlin.
- AMSEL, H. G., 1935, Zur Kenntnis der Microlepidopterenfauna des südlichen Toten-Meer-Gebietes, nebst Beschreibung neuer palästinensischer Macro- und Microlepidoptera; Veröffentlichungen aus dem Deutschen Kolonial- und Übersee Museum in Bremen, 1:203—219 (Tafel 11—12), Bremen.
- AMSEL, H. G., 1935, Weitere Mitteilungen über palästinensische Lepidopteren; Ibid., 1:223—277, Bremen.

- AMSEL, H. G., 1940, Über alte und neue Kleinschmetterlinge aus dem Mittelmeer-Gebiet; *Ibid.*, 3:37—56 (mit 11 Tafel u. 4 Textfig.), Bremen.
- AMSEL, H. G., 1942, Die Gattung *Epidola* Stgr. (Lep.: Scythrididae); *Ibid.*, 3:217—223 (mit 1 Tafel), Bremen.
- AMSEL, H. G., 1942, Revision der Gattung *Holcopogon* Stgr. (Lep. Scythridae); *Ibid.*, 3:224—237 (mit 3 Tafeln), Bremen.
- BALTHASAR, V., 1951, Monographie des Chrysidides de Paléatine et des payes limithropes.; *Acta entomologica Musei Nationalis Pragae* 27 (1951), Supplementum 2., Praha.
- BERNARDI, G., 1950, Une nouvelle sous-espèce de *Zegris eupheme* Esp. (Lep. Pierididae); *Bull. Soc. Ent. de Mulhouse*, 1950:1—2, Mulhouse.
- BODENHEIMER, F. S., 1937, *Prodromus faunae Palaestinae*; *Mém. l'Inst. d'Égypte*, 33:1—285 (74—107), Le Caire.
- ELLER, K., 1939, Fragen und Probleme zur Zoogeographie und zur Rassen- und Artbildung in der *Papilio machaon*-Gruppe; *Verh. d. VII. Int. Kongr. f. Entom.*, Bd. I.: 74—101, Berlin.
- ELLISON R. E. and E. P. WILTSHIRE, 1939, The Lepidoptera of the Lebanon: with notes on their season and distribution; *Trans. R. Ent. Soc. London*, 88:1—56 (with 1 Plate), London.
- EVANS, W. H., 1949, A Catalogue of the Hesperidae from Europe, Asia and Australia in the British Museum (Natural History), 502 pp., 52 Plates, London.
- GABRIEL, A. G. & A. STEVEN-CORBET, 1949, Results of the Armstrong College Expedition to Siwa Oasis (Libyan Desert), 1395, under the Leadership of Prof. J. Omer-Cooper; *Bull. Soc. Fouad Ier Entom.*, 33:373—379, Le Caire.
- GRAVES, P. P., 1925, The Rhopalocera and Grypocera of Palestine and Transjordan; *Trans. Ent. Soc., London*, 1925:17—135 (Plates IV.—V.), London.
- HEMMING, F., 1929, A new subspecies of *Zegris eupheme* Esper; *Proc. Ent. Soc. London*, 4:26—29 (2 figs.), London.
- HEMMING, F., 1932, The Butterflies of Transjordan; *Trans. Ent. Soc. London*, 8:269—299 (2 pls.), London.
- HEMMING, F., 1934, Notes on two collections of butterflies made in Palestine, with a note on the occurrence in Transjordan of an unrecorded species.; *Entomologist* 67:1—4, 29—32, 135—137, London.
- KOŽANČIKOV, I. V., 1950, Nasekomýe češujekrylyje: Volňanki (Orgyidae), in: *Fauna SSSR*, 12:1—577 (285—287), Moskva, Leningrad.
- LATTIN de G., 1950, Türkiye Kelebekleri Hakkında I. — Türkische Lepidopteren I.; *Istanbul Üniversitesi Fen Fakültesi Mecmuası*, (Rev. de la Faculté des Sciences de l'Univ. d'Istanbul), Seri B, 15:301—331 (Levha, Tafel I.—II.), Istanbul.
- LEDERER, G., 1939, 1941, Die Naturgeschichte der Tagfalter. Buchreihe des Int. Ent. Ver. e. V., Bd. II.: Tagfalter (Diurna); Teil I.: 1—160 pp., 1939; Teil II.: 161—354 pp., 1941, Frankfurt a. M.
- LEMPKE, B. J., 1934, *Pieris rapae* L. et ses formes; *Lambillionea* 34:pp. sep.: 135—138, Bruxelles.
- MAŘAN, J., 1947, Obohacení sbírek Zoologického oddělení Národního Musea darem Jaroslava Houšky; *Časopis Národního Musea* 116:103—105, Praha.
- RILEY, N. D., 1925, The species usually referred to the Genus *Cigaritis* Bois. (Lepidoptera: Lycaenidae); *Novit. Zoologicae*, 32:70—95 (figs. 1—13), London.
- STAUDER, H., 1924, *Lycaenologisches Allerlei*; *Ent. Anzeiger*, 5:pp. sep. 1—9, Wien.
- STERNECK, J., 1939, Studien über Acidallinae (Sterrhininae). VI. Eine neue Sterrha aus Palästina; *Ztschr. d. Wien. Ent. Ver.*, 24: 165—166, Wien.
- VERITY, R., 1947, *Le Farfalle diurne d'Italia*, 3:1—318 e I.—XVI. pp., Firenze.
- VERITY, R., 1950, id op., *Tavole*; 0—37 Tav., X.—XIV., Firenze.
- WAGNER, F., 1930, Dritter (IV.) Beitrag zur Lepidopteren-Fauna Inner-Anatoliens; *Int. Ent. Ztschr.*, 24:467—474, 475—485, 487—493, Guben.

- WILTSHIRE, E. P., 1940, The Lepidoptera of the Lebanon. Addendum; Proc. R. Ent. Soc. London, 9:79—82, London.
- WILTSHIRE, E. P., 1941, New Lepidoptera from S. W. Iran; Journal of the Bombay Natural Hist. Soc., 42:472—477 (with 11 Plate), Bombay.
- WILTSHIRE, E. P., 1941, Mesopotamian Desert Lepidoptera; *ibid.*, 42:826—842, Bombay.
- WILTSHIRE, E. P., 1944, The Butterflies and Moth (Lepidoptera) of Iraq. Their Distribution, phenology, ecology and importance; Bulletin No. 30., Government of Iraq. pp. 1—101, Baghdad.
- WILTSHIRE, E. P., 1948, The Lepidoptera of the Kingdom of Egypt; Part I.: 32:203—294 (7 Plates, 68 fig.) and Part II.: 33:381—460 (2 Plates, 45 fig.), Bull. Soc. Fouad. Ier Entom., Le Caire.
- WILTSHIRE, E. P., 1950, Some notes on the Shat el Arab Oasis and its insects; Ent. Record and Journ. of Var., 62:45—49, London.
- WILTSHIRE, E. P., 1952, Lepidoptera recently taken in Arabia; Bull. Soc. Fouad. Ier Entom., 36:135—174 (with 5 text figs. and 1 plate), Le Caire.
- ZERKOWITZ, A., 1946, The Lepidoptera of Portugal; Journal of the New York Ent. Society, 54: 51—87, 1 map, New York City.
- A. Sz. [Seitz], 1935, [Rezension: Amsel, H. G., Die Lepidopteren Palästinas (Zoogeographica, 2: 1—146)]; Entom. Rundschau, 52: 39—40, Stuttgart.

### СОДЕРЖАНИЕ

Автор приводит в своей работе обзор *Lepidoptera*, которые собрал во время II мировой войны заведующий консульской службы И. Гоушка в Палестине. Тогда собирал Гоушка прежде всего *Hymenoptera* (*Chrysididae*), привёз богатые трофеи также и остальных насекомых. Чешуекрылых — 62 вида (почти 800 экземпляров). У каждого вида приведена точная локалита и число собранных экземпляров. К тому приведена и область, где обитает приведенный вид. Большая часть материала происходит из окрестностей Иерусалима, находящегося между государствами Израиля и Иордания. По сравнению с остальной литературой было оставлено старое название Палестина.