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The Geometrid Moths of various entomological collections in Israel ¹ (Lepidoptera, Geometridae)

Axel HAUSMANN

Abstract

Data on 112 Geometridae species (1819 specimens) stored in five entomological collections of Israel are given. Nine species are new for the fauna of Israel. 1 new species and 2 new subspecies are described: *Ennomos freidbergi* sp. nov., *Scopula beckeraria hermonicola* ssp. nov. and *Timandra griseata palmonii* ssp. nov. *Idaea affinitata* (BANG-HAAS, 1907) stat. rev. is raised to species rank from synonymy of *I. inquinata* (SCOPOLI, 1763). *Scopula beckeraria rebeli* (PROUT, 1913) stat. nov. is established as the correct name for the *S. beckeraria*-populations from the Balcan, Turkey and Armenia. The descriptions of some further new species will be given in subsequent publications.

Key words: Macrolepidoptera, Geometridae, entomological collections.

Zusammenfassung

Es werden Daten von 112 Geometridae-Arten (1819 Exemplare) veröffentlicht, die sich in fünf Sammlungen in Israel befinden. Neun Arten sind neu für die Fauna von Israel. Eine neue Art und zwei neue Unterarten werden beschrieben: *Ennomos freidbergi* sp. nov., *Scopula beckeraria hermonicola* ssp. nov. und *Timandra griseata palmonii* ssp. nov. *Idaea affinitata* (BANG-HAAS, 1907) stat. rev. wird aus der Synonymie von *I. inquinata* (SCOPOLI, 1763) wieder in den Artrang erhoben. *Scopula beckeraria rebeli* (PROUT, 1913) stat. nov. wird als korrekter Name für die *S. beckeraria*-Populationen vom Balkan, der Türkei und Armenien festgelegt.

¹⁾ The Lepidoptera of Israel - a study of the taxonomy and distribution of the entire fauna with the aim of determining conservation needs.

Introduction

The aim of this paper is to publish data on Geometridae deposited in various entomological collections in Israel. Together with the extensive documentation of the bibliography on Israeli Lepidoptera, which will be published soon in a supplementary article, the status quo of faunistic knowledge will be defined fairly well.

In 1991 the author visited the more important entomological collections of Israel to check their Geometridae-material. These museums are located in Bet Dagan (near Tel Aviv), Tel Aviv (University), Oranim (near Haifa), Tel Dan (N. Israel) and in Deganya (lake Kinnereth). Each museum was visited for about one day. Due to the pressed time schedule data on flight season and sex of the specimens were not registrated completely for all the specimens. Where necessary, material has been borrowed and determined by genitalia.

Many specimens stored in these collections have been caught in the suburbs of the bigger cities and in the surroundings of university research centers, as in Jerusalem (31 species), Haifa (22), Oranim (20), Tel Aviv (18) and Rehovot (16). Still more important material is coming from Sede Nehamya (71 species) and Deganya (39 species) due to the excellent collecting activity of Z. SHOHAM (Sede Nehamya) and Y. PALMONI (Deganya).

List of species

Abbreviations:

B = beginning, M = mid, E = end of month respectively (1st, 2nd, 3rd decade),

VU = Volcani Center / University collection (Bet Dagan),

VY = Volcani Center / Yathom collection (Bet Dagan),

TAU = Collection of the Tel Aviv University,

OR = Collection of the University of Haifa (Oranim),

BUS = Bet Ussishkin Museum (Tel Dan),

BG = Bet Gordon Museum (Deganya).

The cited localities and zoogeographical subdivisions will be discussed extensively in the supplementary article.

Synonymous names used in AMSEL (1933) in his "Lepidopterous fauna of Palestine" are indicated after the scientific species name, when differing from the valid name very much. These have to be considered simple bibliographic indications, not taxonomically available names. Extensive taxonomical studies are published in the series on the Geometridae of the Levant (e.g. HAUSMANN 1996b).

The museum and the number of specimens are mentioned after the name of the collecting site (in parenthesis).

Orthostixinae

Myinodes shohami HAUSMANN, 1994

Pseudotagma interpunctaria: sensu STAUDINGER 1892: 168 nec HERRICH-SCHÄFFER, 1839.

Eusarca interpunctata: AMSEL 1933: 109.

(M2, E3). - 1b: Sede Nehamya (BUS: 3; VY: 1), Neot Mordehai (BUS: 1). - 2: Gazit (TAU: 1). - unlabelled (TAU: 1).

Remarks: compare revision in HAUSMANN (1994a).

Geometrinae

Pseudoterpna coronillaria halperini HAUSMANN, 1996

1a: Mt. Meron (TAU: 1). - 1b: Sede Nehamya (BUS: 11; VY: 1). - 3: Haifa (TAU: 2).

Holoterpna pruinosa (STAUDINGER, 1898)

(B4, B5; B8, E8 - B10). - 1a: Mapal Hatanur (BUS: 1). - 1b: Sede Nehamya (BUS: 9; TAU: 1). - 2: Gazit (BUS: 1). - 5: Megiddo (BUS: 1). - 6a: Daliyya ("Dahlia"; TAU: 1). - 11: Jerusalem (TAU: 1; VY: 1).

Aplasta ononaria (FUESSLY, 1783)

1b: Sede Nehamya (BUS: 13), Lahavot Ha-Bashan (BUS: 1). - 19: Hermon (BUS: 1). - unlabelled (BUS: 2).

Remarks: Habitus fairly variable (compare HAUSMANN 1996a).

Proteuchloris neriaris (HERRICH-SCHÄFFER, 1852)

1b: Sede Nehamya (BUS: 13; TAU: 1). - 9a: Miqve Yisra'el (VU: 1). - ?: Termoq (TAU: 1).

Xenochlorodes olympiaria cremonaria (Staudinger, 1897)

(E5 - E6). - 1b: Sede Nehamya (BUS: 1). - 3: Haifa (TAU: 1; VU: 1). - 7a: Deganya (BG: 1). - 11: Jerusalem (TAU: 1). - [unlabelled (TAU: 3)].

Remarks: With regard to the validity of the taxa *Eucrostis olympiaria* HS. var. *cremonaria* STAUDINGER, 1897 and *Geometra beryllaria* MANN, 1853 see also HAUSMANN (1996a). There are no structural differences between the whitish specimens (majority) and the bright green ones in Israel. Three unlabelled specimens from TAU collection deep green and perhaps from Europe. Venation slightly variable; PROUT notes in SEITZ (1913: 34), that in *X. beryllaria* the "subcostalis" of the forewing is more distinctly stalked than in *X. olympiaria*. Extensive studies of venation of many populations from all over the mediterranean basin didn't reveal any constant differential feature in venation (compare HAUSMANN 1996a).

Victoria eremita HAUSMANN, 1993

(E2). - 16c: Nahal Raham (TAU: 1). - unlabelled (VY: 1).

Eucrostes indigenata (DE VILLERS, 1789)

(E5 - B7; E10). - 1b: Sede Nehamya (BUS: 5). - 11: Jerusalem (TAU: 1). - unlabelled (TAU: 1).

Culpinia prouti (THIERRY-MIEG, 1913)

(B5). - 3: Haifa, Mt. Carmel (TAU: 1 ♀). - 11: En Kerem ("Ein Karim" TAU: 1 ♂).

Phaiogramma pulmentaria (GUENÉE, 1857)

1a: Metulla (VU: 1). - 1b: Sede Nehamya (BUS: 9). - 2: Oranim (OR: 1). - 9a: Rehovot (VY: 1), Tel Aviv (TAU: 1).

Phaiogramma faustina (MILLIÈRE, 1868)

(B9 - M9). - 1b: Sede Nehamya (BUS: 2). - 2: Hartuf (TAU: 2), Ein Hoab (TAU: 1).. - 3: Haifa (TAU: 3). - 5: Yitzre'el (TAU: 1). - 8: Herzliyya ("Nof Yam" TAU: 3). - 9a: Ashkelon (TAU: 1), Tel Aviv (TAU: 3; VU: 1), Yesodot (TAU: 2), Ad Halom Bridge (TAU: 1). - 10: Emek Ha'Ela Road (TAU: 2), Tarum (TAU: 2). - 13b: En Gedi (TAU: 1). - 15: Negev (TAU: 2). - unlabelled (VY: 1; OR: 2).

Neromia pulvereisparsa jodisata STAUDINGER, 1898

13b: En Gedi (VU: 2).

***Kuchleria gisis* HAUSMANN, 1995**

(A3; M10). - **9a:** Tel Aviv (TAU: 1; holotype). - **11:** Qiryat Anavim (TAU: 1; paratype).

***Microloxia herbaria* (HÜBNER, [1813])**

(M5, B6, B7, M9). - **1b:** Sede Nehamya (BUS: 2; TAU: 1). - **3:** Haifa (TAU: 2). - **7b:** Hamadya ("Hamdia", BUS: 1). - unlabelled (BUS: 1).

***Hierochthonia semitaria* (PÜNGELER, 1901)**

Eucrostes pulverata: AMSEL 1933: 107.

3: Mt. Carmel (OR: 1). - **11:** Jerusalem (TAU: 2).

Sterrhinae

***Idaea consanguinaria* (LEDERER, 1853)**

(B5, E5). - **1b:** Lahavot Ha-Bashan (BUS: 1). - **7b:** "Jordan" (TAU: 1). - **?:** Bet Zera nr. Zemod (VU: 1).

***Idaea intermedia* (STAUDINGER, 1897)**

(B4 - E5, M6, B7 - M7, B8, E8, E9 - B10, E10). - **1b:** Sede Nehamya (BUS: 2). - **3:** Haifa (TAU: 2). - **7a:** Deganya (BG: 21).

***Idaea rusticata* ([DENIS & SCHIFFERMÜLLER], 1775)**

9a: Mique Yisra'el (VU: 1).

Remarks: With more extensive material, the description of a distinct subspecies could be necessary (compare HAUSMANN 1991).

***Idaea mimosaria* (GUENÉE, 1857)**

Acidalia circuitaria: AMSEL 1933: 108

3: Haifa (TAU: 1).

Remarks: Compare taxonomic notes in HAUSMANN 1994b.

***Idaea mareotica* (DRAUDT, 1912)**

(E10). - **9a:** Mique Yisra'el (VU: 1).

Remarks: In PROUT (in SEITZ 1938: 227) as "*ssp. judaica* STERNECK"; unavailable being an unpublished manuscript name, even in PROUT without description. Probably no subspecific name necessary.

***Idaea striolata* (STAUDINGER, 1892)**

New for the fauna of Israel.

(M5 - E5, E7). - **1b:** Sede Nehamya (BUS: 1). - **7a:** Deganya (BG: 1). - unlabelled (BUS: 1).

Remarks: This little known species has been described from the Lebanon.

***Idaea allongata* (STAUDINGER, 1897)**

(B10-E10). - **3:** Mt. Carmel (VU: 1). - **7a:** Deganya (BG: 1). - **9a:** Mique Yisra'el (VU: 5).

Remarks: Among the material no dark specimens of the *ssp. sublongaria* (STAUDINGER, 1899).

***Idaea palaestinensis* (STERNECK, 1933)**

(E6, M10 - E10). - **1b:** Sede Nehamya (BUS: 1). - **7a:** Deganya (BG: 4). - **9a:** Mique Yisra'el (VU: 1).

***Idaea affinitata* (BANG-HAAS, 1907) stat. rev.**

Acidalia affinitata BANG-HAAS, 1907: Iris 20: 82, pl. 3, fig. 20.

New for the fauna of Israel.

(B4). - **7a:** Deganya (BG: 1).

Remarks: All previous records of this species are from the Lebanon. Male genitalia of specimens from Israel identic with typical *I. affinitata*-genitalia. The taxon is not conspecific with *I. inquinata* (SCOPOLI, 1763) as suggested in STERNECK (1940: 101). Main differential feature in male genitalia the form of the cornuti in the aedoeagus (see STERNECK, l.c.).

***Idaea camparia* (HERRICH-SCHÄFFER, 1851)**

Acidalia sodaliaria: AMSEL 1933: 108.

(B11). - 1b: Sede Nehamya (TAU: 1).

***Idaea inclinata* (LEDERER, 1855)**

Acidalia fractilineata: AMSEL 1933: 108.

(M7, B10 - M10). - 7a: Deganya (BG: 1). - 9a: Givat Brenner (TAU: 1), Mique Yisra'el (VU: 3). - 11: Jerusalem (VU: 1).

Remarks: see taxonomic notes in HAUSMANN (1995: 87-88).

***Idaea subsericeata* (HAWORTH, 1809)**

(M5). - 1b: Sede Nehamya (BUS: 5). - 7a: Deganya (BG: 1). - 9a: Bet Dagan (VU: 1).

***Idaea purpureomarginata* (BOHATSCH, 1879)**

(M4, B5, M6 - E6, E8, E10). - 1b: Sede Nehamya (BUS: 6). - 7a: Deganya (BG: 7). - unlabelled (BG: 1).

Remarks: Genitalia as figured in the description of *Idaea purpureomarginata stefani* HAUSMANN, 1991. Imago however with a short rudiment of tongue (length about 1 mm). In wing colour slightly differing from *I. p. stefani*. The species group including *Idaea purpureomarginata*, *Idaea subpurpurata* (STAUDINGER, 1899) and *Idaea gracilipennis* (WARREN, 1901) requires a revision on the base of more extensive material and name bearing types.

***Idaea distinctaria* (BOISDUVAL, 1840)**

Acidalia incarnaria: AMSEL 1933: 108.

(B3 - M3, B5, M6, "7"). - 1b: Sede Nehamya (TAU: 1). - 5: Ein Harod (VU: 1). - 7a: Deganya (BG: 4). - ? : Meged (TAU: 1).

***Idaea degeneraria* (HÜBNER, [1799])**

1b: Sede Nehamya (VY: 1; BUS: 2), Lahavot Ha-Bashan (BUS: 2), Mahanayim (BUS: 2).

***Brachyglossina staudingeri* PROUT, 1932**

Acidalia uniformis: AMSEL 1933: 108.

(B4). - 13b: En Gedi (VU: 1).

***Scopula submutata taurilibanotica* (WEHRLI, 1932)**

1b: Sede Nehamya (BUS: 5; VY: 1). - 2: Zipori (TAU: 1). - 5: Megiddo (BUS: 1). - unlabelled (BUS: 1).

***Scopula turbidaria* (HÜBNER, [1819])**

(B11). - 1b: Sede Nehamya (BUS: 2). - 7a: Deganya (VU: 1; BG: 1). - 9a: Mique Yisra'el (VU: 4). - 11: Jerusalem (VU: 1). - "Palästina" (TAU: 1).

***Scopula donovani* (DISTEL, 1892)**

New for the fauna of Israel.

1b: Sede Nehamya (TAU: 1; BUS: 8). - 9a: Mique Yisra'el (VU: 1).

An african oasis species, described from Transvaal. In N. Israel reaching the most northern point in the area of distribution.

***Scopula decolor flaccata* (STAUDINGER, 1897)**

(B6, M10). - 7a: Deganya (BG: 2). - 7b: "Jordan Valley" (TAU: 1).

***Scopula marginepunctata* (GOEZE, 1781)**

1a: Hanita ("Chanita", TAU: 2). - 1b: Sede Nehamya (VY: 1; BUS: 14). - 9a: Tel Aviv (TAU: 1).

***Scopula luridata* (ZELLER, 1847)**

(B1, E1 - B2, E2 - M3, M4, M5, E6, M7, M8 - B9, E9, B10, E11 - B12, E12). - 1a: Hanita ("Chanita", TAU: 1). - 1b: Sede Nehamya (BUS: 10; TAU: 4), Neot Mordehai (BUS: 1). - 5: Newe Ya'ar (BG: 2). - 7a: Deganya (BG: 23). - 8: Benjamina (TAU: 1). - 9a: Jaffa (TAU: 1), Tel Aviv (TAU: 2; VU: 1), Abu Kabir (TAU: 1). - unlabelled (OR: 1; BUS: 1).

***Scopula imitaria syriacaria* CULOT, 1919**

(M3). - 1b: Sede Nehamya (BUS: 1). - 8: Mikhmoret (TAU: 1).

***Scopula flaccidaria* (ZELLER, 1852)**

(M5). - 1b: Sede Nehamya (BUS: 1).

***Scopula beckeraria* (LEDERER, 1853) *hermonicola* subsp. nov. (fig. 3)**

New for the fauna of Israel.

Holotype: ♂, N. Israel, Sede Nehamya, 23.IV.1969, lg. Z. SHOHAM, (coll. TAU), gen. slide G 5133.

Paratypes: ♀, N. Israel, Hermon, 15.VI.1972, lg. Z. SHOHAM (coll. BUS) gen. slide G 5131. ♀, N.-Israel, Hermon, 15.VI.1972, lg. Z. SHOHAM, (coll. ZSM), gen. slide G 5132.

Description: Length of right forewing: 13.4 mm (♂), 12.2 and 11.7 (♀♀). Antennae of ♂ simple, ciliate, length of longest cilia about 1.5 times width of flagellum at same point; antennae of female simple, scarcely ciliate, length of longest cilia 1/3 width of flagellum at same point. Tongue well developed (length 4-5 mm). Frons dark brown, vertex whitish. Palpi slender, length somewhat exceeding diameter of eye. All these features corresponding well to equivalents in *S. b. beckeraria*. Hindtibia in the Holotypus lost. Hindtibia of both females with three spurs only (distally one single spur), in all the other populations of *S. beckeraria* with four spurs. On the base of further material constancy of this feature should be checked (in both females one hindleg lacking). Length of female hindtarsus about 2.5 mm, in the examined females of the other populations of *Scopula beckeraria* less than 2.0 mm. In wing colour and wing pattern very similar to *S. beckeraria* from SE. Europe or Turkey, with a very few dark scales only on the upper side.

Male genitalia (fig. 3) strongly resembling those of *S. b. beckeraria*. Lateral process of sternite 8 (cerata) shorter than in the nominate subspecies, somewhat similar to equivalents in specimens from Turkmenia, but in *S. b. hermonicola* ssp. nov. strongly inside curved.

Female genitalia without significant and constant differences to those of the nominate subspecies.

Discussion: In *Scopula beckeraria* the development of the lateral process in the 8th sternite (cerata) shows constant geographical patterns. This differential feature allows to distinguish some different subspecies.

The nominate subspecies (loc. typ.: S. Russia) has half-developed cerata arms. *S. beckeraria*-populations from SE. Europe, Asia Minor (even S. Turkey!) and Armenia are characterized by very long cerata-arms (see fig. 4); their correct name is *S. beckeraria rebeli* (PROUT, 1913) stat. nov. (formerly *Acidalia rebeli* PROUT, 1913). The types of *S. b. rebeli* however still wait for dissection. According to PROUT (in SEITZ 1913: 63) the white vertex and the shorter palpi should separate *rebeli* from *beckeraria*. There is, however, some variability in colour of vertex and length of palpi in the *S. beckeraria*-populations from Dalmatia and Macedonia examined by the author.

The population on the Mt. Hermon seems to be rather isolated. The genitalia (incl. sternite 8) of a male of *S. beckeraria* from Bscharre, N.-Lebanon, and even those of some NW. Iranian specimens (Täbris) examined by the author are quite similar to the genitalia of *S. b. hermonicola* ssp. nov. On their hindtibia like in typical *S. beckeraria* no spurs, but a long whitish pencil.

A survey over the whole distribution area of *S. beckeraria* will be given in a subsequent paper.

The name refers to the type locality, Mt. Hermon.

***Scopula minorata ochroleucaria* (HERRICH-SCHÄFFER, 1847)**

Acidalia ochroleucata: AMSEL 1933: 108.

(B2 - E3, M4, M5 - B7, E7, B9, E9 - B10, E10 - E12). - **1b**: Sede Nehamya (TAU: 1; BUS: 11), Neot Mordehai (TAU: 13). - **3**: Haifa (TAU: 1). - **7a**: Deganya (BG: 49). - **9a**: Bet Dagan (VU: 4), Givat Brenner (TAU: 1), Mique Yisra'el (VU: 3), Rehovot (BG: 2). - **11**: Jerusalem (VU: 1).

***Scopula immistaria lehmanni* HAUSMANN, 1991**

New for the fauna of Israel.

(B5). - **7a**: Deganya (BG: 1).

Remarks: The populations from N. Israel and Jordan (HAUSMANN 1991: 120) are rather isolated from the rest of the area of distribution on the Anatolian-Iranian heights. Perhaps a distinct species.

***Glossotrophia semitata* PROUT, 1913**

(M6, E10, M11). - **1b**: Sede Nehamya (BUS: 1). - **7a**: Deganya (BG: 1). - **?**: Heged (TAU: 1), Rivirim (VU: 1). - unlabelled (VY: 8).

***Glossotrophia chalcographata sinaica* REBEL, 1948**

New for the fauna of Israel.

(B4). - **13b**: En Gedi (VU: 1).

Remarks: Occuring also in the Sinai (REBEL 1948; WILTSHIRE 1949) and in Jordan (HAUSMANN 1991; 1992).

***Problepsis ocellata* (FRIVALDSZKY, 1845)**

(M3, B4, B6 - M6, B8, E8 - B9, E9, M11). - **1a**: Elon (TAU: 1). - **1b**: Sede Nehamya (TAU: 1; BUS: 2), Tel Dan (TAU: 1). - **2**: Oranim (OR: 2). - **7a**: Deganya (BG: 6), Migdal nr. Tiberias (VU: 1). - **11**: Jerusalem (TAU: 2). - **?**: Matsuvah (BUS: 1). - unlabelled (BUS: 3; VY: 1; BG: 1; OR: 1).

***Rhodostrophia tabidaria discopunctata* AMSEL, 1935**

Rhodostrophia calabra: AMSEL 1933: 109.

(B4-B5; B10). - **1a**: Mt. Meron (TAU: 1). - **1b**: Lahavot Ha-Bashan (BUS: 1). - **2**: Oranim (OR: 1). - **3**: Mt. Carmel (OR: 2), Mt. Carmel / Pl.o.Sacr. (VU: 2), Haifa (VU: 3; TAU: 2; BG: 1), N. Oren (TAU: 1). - **7a**: Deganya (BG: 1). - **8**: Ma'agan Mikha'el (BUS: 1). - **11**: En Kerem (BG: 1, TAU: 1), Jerusalem (VU: 1; VY: 1; TAU: 11), Qiriat Anavim (TAU: 1). - **12**: Qubeba (OR: 1). - **?**: Benjamina (TAU: 1), Bilu (VY: 1), Saga (BUS: 1). - unlabelled (VY: 2; BUS: 1).

Remarks: ♂ genitalia well corresponding to those of *R. tabidaria* from SE. Europe.

***Cyclophora puppillaria* (HÜBNER, [1799])**

Ephyra puppillaria: AMSEL 1933: 109.

1b: Sede Nehamya (VY: 1; BUS: 11), Qibbuz Kefar Blum (BUS: 1), Lahavot Ha-Bashan (BUS: 1). - **2**: Gazit (BUS: 1). - **3**: Haifa / Mt. Carmel (TAU: 1). - **8**: Herzliyya ("Nof Yam", TAU: 2). - **?**: Malfi (TAU: 1).

***Cyclophora porata* (LINNAEUS, 1767)**

(B7). - 3: Haifa / Mt. Carmel (TAU: 1). - ? : Chanita (TAU: 1), Ram Hafessa (TAU: 1).

Remarks: Until now not recorded between C. Turkey and Israel.

***Timandra comae* SCHMIDT, 1931 *palmonii* subsp. nov. (figs. 1, 4)**

New for the fauna of Israel.

Holotype: ♂, N. Israel, Sede Nehamya, 10.IV.1957, lg. SHOHAM (coll. BUS), gen. slide G 5122.

Paratypes: 3 ♂♂, N. Israel, Sede Nehamya, 13.IV.1967, 17.V.1968, 26.III.1969, lg. SHOHAM (1 coll. BUS, 2 coll. ZSM).

Description: Length of right forewing 15-16 mm. Antennae (♂) long 7.3 mm (in typical *comae* often less than 7 mm), bipectinate, length of longest branches nearly 1 mm (as in European populations). Development of tongue as in the nominate subspecies. Palpi rather slender, their length about 1.5 times diameter of eye, third segment very slender (as in European populations). Frons orange (in European populations often brown), vertex white, towards the collar with orange scales. Hindleg (♂) with long femur, tibia and tarsi; tibia with four spurs (as in European populations).

Colour of upperside of wings more yellowish than in European populations; apex divided by a well contrasted, dark brown line; oblique median line well contrasted in all wings, outwards adjacent many yellow scales (reminiscent to *T. reompta* PROUT, 1930); marginal line in all wings outwards curved and approaching the termen (much stronger than in European populations; reminiscent to *T. paralias* (PROUT, 1954). Cell spot almost lacking (in European populations distinct).

♂ genitalia (fig. 4): Resembling genitalia of *T. c. comae*, however both distal membranous lobi of valva broader (reminiscent to *T. reompta*); aedeagus more curved and more slender; teeth of socii comparatively long.

Discussion: Recently *Timandra comae* SCHMIDT, 1931 ("*comai*") has been separated as distinct species from *Timandra griseata* (KAILA & ALBRECHT, 1994), the latter thought to occur in N. Europe only. In some subsequent papers and communications both "species" were said to be recorded from various European countries. Both examined populations from Turkey and from Israel seem to match better the description of "*Timandra comae*". There are very slight differences only between both "taxa". After a first control of about 30 genitalia-slides, it seems doubtful, if the presented differential features in genitalia can justify separation of two different species in C. and S. Europe. More extensive research is required to check again the validity of the actual species concept.

"*T. griseata* / *comae*" is recorded from N: Turkey (distance about 800 km); some specimens have been examined by the author. The populations in Israel seem to be very isolated. According to the criteria applied by KAILA & ALBRECHT (l.c.) *T. c. palmonii* should be regarded a distinct species, since there are remarkable differences in habitus and genitalia. More material (both sexes) is required to resolve this question.

Devoted to Mr. Y. PALMONI, who was an active collector and the founder of the Bet Gordon Museum at Deganya.

***Rhodometra sacraria* (LINNAEUS, 1767)**

(E1, M2, M3 - B4, E4, M5 - E5, M6, B7 - E7, M8, M9, B10 - B11, E11 - E12). - 1a: Metulla (VU: 1). - 1b: Sede Nehamya (BUS: 16), Mahanayim (BUS: 1). - 2: Oranim (OR: 5). - 3: Mt. Carmel (OR: 1), Haifa (TAU: 6). - 4a: Kabri (OR: 2). - 5: Nahalal (BG: 1). - 7a: Deganya (BG: 20), Bet Yerah (BG: 1), Kinneret (BG: 2). - 8: Herzliyya ("Nof Yam", TAU: 2). - 9a: Bet Dagan (VU: 2), Abu Kabir (TAU: 3), Jaffa (VU: 1), Miqve Yisra'el (VU: 1), Tel Aviv (TAU: 6). - 11: Jerusalem (VU: 9). - 13b: En Gedi (TAU: 1). - 15: Dorot (VU: 1). - unlabelled (VU: 2; VY: 2).

***Casilda consecraria* (STAUDINGER, 1871)**

Sierrha anthophilaria: AMSEL 1933: 109.

(E4, M5 - B6, B11 - M11). - 1b: Sede Nehamya (BUS: 1). - 3: Haifa (TAU: 1). - 4a Kabri (OR: 2). - 7a: Deganya (BG: 4), Kinneret (BG: 1), Tiberias (VU: 2). - 9a: Mique Yisra'el (VU: 1), Rehovot (BG: 1). - 11: Jerusalem (TAU: 1).

Larentiinae

***Orthonama obstipata* (FABRICIUS, 1794)**

Larentia fluviata: AMSEL 1933: 109.

(B1 - M2, M3, B5, M11, M12). - 1a: Metulla (VU: 1). - 1b: Sede Nehamya (BUS: 30), Neot Mordehai (BUS: 1). - 7a: Deganya (BG: 17). - 9a: Bet Dagan (VU: 1), Mique Yisra'el (VU: 1), Rehovot (VY: 1), Tel Aviv (TAU: 1).

***Xanthorhoe fluctuata* (LINNAEUS, 1758)**

(E1 - M2, B3 - M3, B4, B11 - M11, M12). - 1b: Sede Nehamya (BUS: 5). - 2: Tivon (VU: 1). - 7a: Deganya (BG: 15). - 9a: Rehovot (BG: 1). - 11: Jerusalem (VY: 2, TAU: 1). - unlabelled (BUS: 1).

***Xanthorhoe pseudogaliata* (STAUDINGER, 1897)**

Larentia disjunctaria: AMSEL 1933: 109.

(E2). - 9a: Tel Aviv (TAU: 1). - 11: Jerusalem (TAU: 1). - 12: Ein Farah / Jerusalem (VU: 1). - 13b: "Dead Sea" (TAU: 2).

***Catarhoe permixtaria* (HERRICH-SCHÄFFER, 1852)**

(E5). - 1b: Sede Nehamya (VY: 1; BUS: 1). - 2: Oranim (OR: 1). - 3: Mt. Carmel (VU: 1). - unlabelled (BUS: 1).

***Catarhoe hortulanaria palaestinensis* (STAUDINGER, 1894)**

Larentia cupreata: AMSEL 1933: 109.

(B1, M2). - 1b: Sede Nehamya (BUS: 2). - 5: Ein Harod (VY: 1).

Remarks: see taxonomic notes in HAUSMANN (1995: 94-95).

***Catarhoe mosulensis cinneretharia* (AMSEL, 1935)**

Larentia sandosaria: AMSEL 1933: 109.

(E2-B3). - 7a: Deganya (BG: 1), Kinneret (BG: 1), Tabgha (TAU: 1).

***Costaconvexa polygrammata* (BORKHAUSEN, 1794)**

New for the fauna of Israel.

(M2, B5). - 1b: Sede Nehamya (BUS: 5), Lahavot Ha-Bashan (BUS: 1). - 7a: Deganya (BG: 2).

Remarks: In wing colour and genitalia without constant differences to specimens examined from Turkey and C. Europe. Subspecific separation of the populations of the Lebanon and N. Israel ("*C. polygrammata conjunctaria* (LEDERER, 1853)") therefore seems to be unjustified.

***Campptogramma bilineatum bohatschi* (AIGNER, 1902)**

(B6). - ?: Husan (TAU: 1).

***Larentia clavaria pallidata* (STAUDINGER, 1901)**

Ortholitha cervinata: AMSEL 1933: 109.

1b: Sede Nehamya (BUS: 2), Gonen (TAU: 1). - 2: Gazit (BUS: 4). - 5: Ein Harod (VY: 2). - 8: Herzliyya ("Nof Yam", TAU: 1). - 11: Jerusalem (TAU: 1). - ?: Nagba (BUS: 1). - unlabelled (VY: 4).

***Antilurga adlata* (STAUDINGER, 1894)**

(B11 - M11, B12). - 1b: Sede Nehamya (BUS: 3). - 7b: "Jordan Valley" (TAU: 1).

***Nebula ablutaria* (BOISDUVAL, 1840)**

Larentia salicata: AMSEL 1933: 109.

(M2 - E2, M3). - 1b: Sede Nehamya (VY: 1; BUS: 19). - 3: Mt. Carmel (VU: 6). - 7a: Deganya (BG: 4). - 11: Jerusalem / Beit Hakerem (VU: 2). - unlabelled (VY: 2; BUS: 1).

***Lulavia multipunctata* (STAUDINGER, 1897)**

unlabelled (TAU: 1).

Remarks: To date known in a very few specimens only (Israel and Jordan).

***Philereme transversata* (HUFNAGEL, 1767)**

(M4). - 1a: Elon (TAU: 1).

Remarks: Considering some slight differences in wing colour, wing pattern and in the male genitalia, the description of a separate subspecies could be necessary. Further material is required. To date no populations are known between Israel and the Taurus mountains (distance about 500 km).

***Eupithecia extremata* (FABRICIUS, 1787)**

(E2 - B3). - 1b: Sede Nehamya (BUS: 5), Mahanayim (BUS: 1). - 3: Mt. Carmel (VU: 1). - 7a: Deganya (BG: 2), Tiberias (BG: 1). - 9a: Bet Dagan (VU: 1).

***Eupithecia schiefereri* BOHATSCH, 1893**

New for the fauna of Israel.

1b: Mahanayim (TAU: 3; BUS: 5).

Remarks: Known also from the Lebanon.

***Eupithecia centaureata centralisata* STAUDINGER, 1892**

(M1 - B2, B3 - E3, E4, M5, B10 - M11). - 1b: Sede Nehamya (BUS: 9; BG: 1), Mahanayim (BUS: 1). - 2: Oranim (OR: 1), Poriyya (BG: 1). - 3: Mt. Carmel (VU: 1). - 5: Afulah (TAU: 3). - 7a: Deganya (BG: 21). - 9a: Miqve Yisra'el (VU: 1), Rehovot (VY: 2; BG: 1), Tel Aviv (TAU: 1). - 11: Betania (VU: 1). - ? : Einath (VY: 1). - unlabelled (BG: 1).

***Eupithecia breviculata* (DONZEL, 1837)**

(B3 - E3). - 1b: Sede Nehamya (BUS: 4). - 3: Beth Oren (OR: 1). - 7a: Deganya (BG: 3), Kinneret (BG: 1). - unlabelled (OR: 1).

***Eupithecia cerussaria* LEDERER, 1853**

(M3 - E3, M6). - 1b: Sede Nehamya (BUS: 6; BG: 1). - 5: Afulah (TAU: 1). - 7a: Deganya (BG: 3). - ? : Revirim (VU: 1). - unlabelled (BG: 2).

***Eupithecia unedonata* MABILLE, 1868**

(M2 - E3, B8, E10). - 1b: Sede Nehamya (BUS: 10; TAU: 1, BG: 2). - 7a: Deganya (BG: 10). - 11: Jerusalem (TAU: 1). - [22: Sta. Catherina (VY: 18)].

***Eupithecia ultimaria minusculata* ALPHERAKY, 1881**

(B2, E3, M4, B5). - 7a: Deganya (BG: 4). - 9a: Rehovot (BG: 1), Tel Aviv (TAU: 1).

***Gymnoscelis rufifasciata* (HAWORTH, 1809)**

Eupithecia pumilata: AMSEL 1933: 109.

(M3, E4, B5 - M5, B6 - M6, B8, E8, B12). - 1b: Sede Nehamya (BUS: 13). - 3: Mt. Carmel (VU: 2). - 4a: Akko (BG: 1). - 4b: Ma-ayan Zevi "Mayan Zvi", VU: 1). - 5: Ramat Dawid (BG: 1). - 6a: En Hashofet (BG: 3). - 7a: Deganya (BG: 11). - 8: Herzliyya ("Nof Yam", TAU: 2). - 9a: Netaim (VU: 4), Tel Aviv (TAU: 4). - 9b: El Balah (VU: 2). - ? : "Ag 419" (TAU: 2), Burot Jizhaq (BUS: 6).

***Aplocera mundulata* GUENÉE, 1857**

(B5). - 1b: Sede Nehamya (VY: 1; BUS: 9), Lahavot Ha-Bashan (BUS: 2). - 2: Gazit (BUS: 1). - 3: Mt. Carmel (VU: 3), Haifa (TAU: 1). - 8: Herzliyya ("Nof Yam", TAU: 1). - ? : Malacha (BUS: 1), Negba (BUS: 3).

***Aplocera plagiata* (LINNAEUS, 1758)**

(E1, E3, M4, M6, B11 - M11, B12). - 1b: Sede Nehamya (BUS: 1). - 7b: Sede Eliyyahu (BUS: 1). - 11: Jerusalem (VU: 1; BG: 1). - 19: Hermon (BUS: 1). - ? : Maos Haim (BUS: 1), Negba (BUS: 1). - unlabelled (BUS: 1; VY: 4).

***Lithostege palaestinensis* AMSEL, 1935**

Lithostege griseata: AMSEL 1933: 109.

(M2-E3). - 1a: Mapal Hatanur (BUS: 3). - 1b: Sede Nehamya (BUS: 3). - 7a: Deganya (BG: 9). - 7b: En Ha-Naziv ("Ein Hanaziv", VY: 1). - 11: Qiryat Anavim (TAU: 2). - 13b: En Gedi (TAU: 2). - 15: Beersheva (TAU: 1). - ? : Brer (VU: 1), Mishmar Hamgur (TAU: 1). - unlabelled (VY: 2; BG: 1).

***Oulobophora externaria* HERRICH-SCHÄFFER, 1848**

(M3). - 2: Tivon (VU: 1).

Ennominae

***Zamarada torrida* FLETCHER, 1974**

(B4). - 13b: En Gedi (VU: 1; TAU: 4).

Remarks: Recently recorded as new for the Fauna of Israel in HALPERIN & SAUTER (1992). This species was caught very commonly in the last years in some localities in C. and S. Israel by the light traps of the running project. Eremic species, known also from Egypt and Jordan.

***Macaria aestimaria sareptanaria* (STAUDINGER, 1871)**

(E1, E3, M4 - B6, B7 - E7, B9 - M9, B10). - 1b: Sede Nehamya (VY: 2; BUS: 11). - 3: Haifa (TAU: 3). - 4a: Nahariyya (TAU: 1). - 7a: Deganya (BG: 9), Kinneret (BG: 1). - 8: Mikhmoret (TAU: 3), Herzliyya ("Nof Yam", TAU: 2).. - 9a: Rehovot (VY: 3, BG: 2), Holon (TAU: 19), Tel Aviv (TAU: 8; VU: 15). - ? : Hofif (TAU: 1). - unlabelled (TAU: 2; BG: 4; BUS: 1).

***Macaria syriacaria* (STAUDINGER, 1871)**

(M3, M4 - E4, M5 - M6, B7, E7 - M8, B9, B10, M11 - B12). - 1a: Enot Enan (TAU: 1). - 1b: Sede Nehamya (BUS: 24). - 2: Harduf (TAU: 1). - 3: Haifa (TAU: 2). - 7a: Deganya (BG: 31). - 8: Mikhmoret (TAU: 2), Herzliyya ("Nof Yam", TAU: 1).. - 9a: Miqve Yisra'el (VU: 2), Rehovot (BG: 3), Tel Aviv (TAU: 4), Helez (TAU: 1). - unlabelled (BUS: 4).

***Macaria latimarginaria* (REBEL, 1931)**

[22: Sta. Catherina (VY: 5)].

***Tephрина inconspicuaria* (HÜBNER, [1817])**

Eubolia pumicaria: AMSEL 1933: 111.

(B10, B11, B12 - E12). - 1b: Sede Nehamya (BUS: 13; TAU: 3; VY: 1), Neot Mordehai (BUS: 1). - 3: Haifa (TAU: 2).

***Tephрина perviaria* (LEDERER, 1855)**

(B2, B4 - E4, M5 - B6, E6 - B7, E7 - B9, B10 - E11, M12 - E12). - 1a: Enot Enan (TAU: 1). 1b: Gadot (TAU: 4), Sede Nehamya (BUS: 9). - 2: Harduf (TAU: 1), Oranim (OR: 3). - 5: Yitzre'el (TAU: 1). - 6d: Wadi al Far'ia (TAU: 1). - 7a: Deganya (BG: 29), Buteiha (TAU: 1), Karey-Deshe (BG: 1), Ashmura ("Dardada", OR: 1), Bet Zera (TAU: 1),

Kinneret (BG: 3). - 7b: Tirat Zevi (TAU: 1). - 9a: Ashqelon (TAU: 1), Qiriat-Gat (Tau: 4), Rehovot (VY: 3; BG: 2), Ad Halom Bridge (TAU: 2), Tel Aviv (VU: 1). 10: Emeq Ha'Ela Road (TAU: 1). - 11: Abu Ghosh (BG: 1). 13a: Wadi Auja (TAU: 1). - 13b: En Gedi (VU: 2). - ?: Marqui'im (TAU: 1), Ogonia (VU: 1), Road to Maghar (TAU: 1). - unlabelled (BG: 1; BUS: 1).

***Neognopharmia stevenaria* (BOISDUVAL, 1840)**

1b: Sede Nehamya (BUS: 3). - 3: Mt. Carmel (VU: 1), Haifa (TAU: 2), Maajan Zvi (BUS: 1). - 9a: Bet Dagan (VY: 1).

***Gnopharmia rubraria* STAUDINGER, 1892**

11: Jerusalem (VY: 2; TAU: 1). - unlabelled (VY: 1).

***Petrophora jordanaria* (STAUDINGER, 1901)**

(E2). - 12: Ein Farah / Jerusalem (VU: 1). - [22: Sta. Catherina (VY: 2)].

***Enconista exustaria* STAUDINGER, 1897**

[21: Refidim (TAU: 1)]. - unlabelled (VY: 2).

***Ortaliella palaestinensis* (CALBERLA, 1891)**

1a: Elon (TAU: 3). - 2: Oranim (TAU: 1; OR: 9). - 3: Mt. Carmel / Pl.o.Sacrifice (VU: 1), Maajan Zvi (BUS: 1). - 8: Herzliyya ("Nof Yam", TAU: 1). - 11: Jerusalem (TAU: 1). - ?: "Palästina" (TAU: 1). - unlabelled (OR: 1).

***Stueningia poggearia meyi* HAUSMANN, 1993**

(B5). - 1b: Sede Nehamya (BUS: 1; Paratype).

***Coenina dentataria* SWINHOE, 1904**

(M3). - 1b: Tel Dan (VY: 1), Sede Nehamya (TAU: 1; BUS: 3), Lahavot Ha-Bashan (BUS: 1), Mahanayim (TAU: 1). - 7a: Kare-Deshe (TAU: 1). - 13b: En Gedi (TAU: 4).

***Coenina paulusi* (REBEL, 1906)**

13b: En Gedi (TAU: 4).

***Pseudopanthra syriacata* GUENÉE, 1857**

(B3, B4, E5). - 1b: Sede Nehamya (BUS: 2), Mahanayim (BUS: 3). - 2: Oranim (OR: 1). - 3: Mt. Carmel (VU: 1), Mt. Carmel, Pl.o.Sacrifice (VU: 5). - 4a: Rosh Ha-Niqra (VY: 3). - 5: Ginnegar (BG: 1). - 6c: Mt. Gilboa' (BG: 1). - 7a: Kinneret / N.coast "Hill slope" (BG: 1). - 11: En Kerem (TAU: 2), Jerusalem / Beit Hakerem (VU: 1), Jerusalem (VY: 2). - ?: Kfar Jovi (TAU: 1), Kima Cave (BUS: 1). - unlabelled (OR: 3; BUS: 1).

***Ennomos freidbergi* sp. nov. (Figs. 2, 6, 7)**

Ennomos quercarius: sensu BYTINSKI-SALZ & STERNLICHT 1967: 129; err. det. nec (HÜBNER, [1813]).

Holotype: ♂, N. Israel, Tivon, 19.11.1957, lg. M. STERNLICHT, (coll. TAU), gen. slide G 5150.

Paratype: ♀, N. Israel, Oranim, 21.8.1958, lg. Ch. SANDLET, (coll. ZSM), gen. slide G 5149.

Description: Length of forewing 21 mm (♀) and 20 mm (♂), larger than *E. quercarius* (HÜBNER, [1813]) from Europe and Asia minor. Antennae of ♂ bipectinate, length of longest branches about 1.2 mm (in *E. quercarius* 1.1 mm). Female antennae shortly bipectinate, length of longest branches 0.25 mm (= width of flagellum at same point, as in *E. quercarius*). Tongue absent. Length of palpi in ♂ and ♀ about 2 mm (twice diameter of eye; as in *E. quercarius*). Foretibia of ♂ with pencil and chitinous plate. Foretibia of ♀ with a small pencil only. Mid- and hindtibia (♂♀) with 2 spurs; last segment of tarsus (♂♀)

with two distinct claws. Frons and thorax with whitish scales ("hairs"). Form of wings and wing pattern similar to that of *E. quercarius* from Europe, but strewn with more dark scales, which are spread all over the surface of wings. Forewing termen very prominent on M3, on CuA2 slightly convex; hindwing with prominent tooth on M3. Antemedial and post medial lines of forewings in the female specimen dark and broad, in the male specimen greyish and thin. Area between ante- and postmedial line as in *E. quercarius* (in *Ennomos olivarius* BRANDT, 1938 narrower). Hindwing crosslines wanting. Discal spots hardly visible on all wings.

Male genitalia (fig. 6) much larger than in *E. quercarius*. Length of valva 2,8 mm. Arms of furca terminally slightly curved outwards, much longer than in *E. quercarius*, somewhat resembling to equivalents in *E. olivarius*. Aedeagus, with five long and stout cornuti on the terminal part of vesica, length about 0,5 - 0,7 mm, furthermore eight small ones. In *E. quercarius* and *E. olivarius* only two of the cornuti of the distal row reach the length of about 0,5 mm, the other three much shorter.

Female genitalia (fig. 7) larger than in *E. quercarius*. Ductus bursae distinctly curved (as also in *E. lissochilus* from Cyprus), surface smooth (in *E. quercarius* granulous structured). Ostium bursae longer and broader than in *E. quercarius*, more resembling to that of *E. lissochilus*. Signum bursae stronger chitinised than in *E. quercarius* and *E. olivarius*, basis with two prominent dents similar to that of *E. lissochilus*.

Discussion: In wing pattern, wing colour, form of the wing termen and size well differing from *E. olivarius* (Iran), *E. lissochilus* PROUT, 1929 (Cyprus) and *E. duercki* REISSER, 1958 (Creta). Habitually more resembling to *E. quercarius*.

Food plant of *E. freidbergi* is the Tabor oak, *Quercus ithaburensis* according to BYTINSKI-SALZ & STERNLICHT (1967: 129). The habitat therefore should be the mediterranean Quercetus on red alluvial soils of the coastal region, lower slopes, lower Galilee and N. Jordan. These habitats are quite isolated in the middle East. Probably the populations recorded in Jordan (cf. HAUSMANN 1991) and in the Lebanon (ELLISON & WILTSHIRE 1939) are conspecific to *E. freidbergi* sp. nov.

Figures of the adult and the genitalia will be given in a subsequent paper.

Devoted to Dr. A. FREIDBERG, Tel Aviv University, for kindly supporting my studies.

***Eumera turcosyrica* WEHRLI, 1934**

Eumera regina: AMSEL 1933: 110.

(E10 - B11). - 2: Oranim (OR: 1). - 5: Megiddo (BUS: 3). - 11: Jerusalem (VY: 2; TAU: 2). - unlabelled (VY: 1).

***Dasycorsa modesta* (STAUDINGER, 1878)**

(M12-M2, B3). - 1b: Sede Nehamya (BUS: 4; TAU: 1). - 2: Oranim (OR: 6), Tivon (TAU: 1). - 6a: Daliyya ("Dahlia", TAU: 2). - 7a: Deganya (BG: 11), Tiberias (BG: 2). - 9a: Bet Dagan (VU: 2), Rehovot (VY: 2). - ?: Zora'a (TAU: 1). - unlabelled (OR: 3).

Remarks: About 50 eggs ("25.3.1965") from Sede Nehamya in BUS.

***Apochima flabellaria* (HEEGER, 1838)**

(B12 - B1, E1 - M2). - 1b: Sede Nehamya (BUS: 16), Kfar Yuval (TAU: 1), Mahanayim (BUS: 1). - 2: Oranim (OR: 3), Poriyya (BG: 1). - 6a: Daliyya ("Dahlia", TAU: 2). - 7a: Deganya (BG: 13), Kinneret (BG: 1). - 8: Herzliyya (TAU: 1). - 9a: Bet Dagan (VU: 3), Rehovot (VY: 2), Tel Aviv (TAU: 4), Ramat Gan (TAU: 1). - 11: Jerusalem (TAU: 2). - 15: Kefar Gilat (VY: 1), Dorot (VU: 1), Ruhama (VU: 10). - ?: Havathaltula (BUS: 1). - unlabelled (TAU: 3; BUS: 7).

***Biston achyra* WEHRLI, 1936**

(M3). - 1b: Mahanayim (BUS: 1).

Remarks: Recently recorded (with question mark) as new for the Fauna of Israel in HALPERIN & SAUTER (1992: 141). This species was caught quite commonly in the last years in some localities in N. Israel by the light traps of the running project. Previously known only from the Taurus and Amanus Mountains (S. Turkey) and from Jordan (HAUSMANN 1991).

***Agriopis bajaran* ([DENIS & SCHIFFERMÜLLER], 1775)**

1b: Sede Nehamya (BUS: 2).

Remarks: Recently recorded as new for the Fauna of Israel in HALPERIN & SAUTER (1992: 141). This species was caught quite commonly in the last years in some localities in N. and C. Israel by the light traps of the running project. The populations of Israel and Jordan (HAUSMANN 1991) constitute the southern border in the area of distribution of this species.

***Phaselia deliciosaria* (LEDERER, 1855)**

(E6, B8, E8, E9). - 2: Oranim (TAU: 1). - 4a: Nahariyya (TAU: 1). - 5: Megiddo (BUS: 4). - 9a: Rehovot (VY: 2). - ?: "Syria" (TAU: 1).

***Nychiodes palaestinensis* F. WAGNER, 1919**

(B4, E4, E5, M10, B11). - 1a: Elon (TAU: 1, VU: 1, as "Eilon"). - 1b: Sede Nehamya (BUS: 12; TAU: 1), Mahanayim (BUS: 1). - 2: Oranim (OR: 1). - 3: Mt. Carmel (TAU: 1). - 9a: Bet Dagan (VY: 4), Givat Brenner (TAU: 1), Abu Kabir (TAU: 3), Rehovot (TAU: 2). - 11: Jerusalem (TAU: 1; VU: 1). - ?: "fc. Acre" (VU: 1), Shualim (VU: 1). - unlabelled (VU: 3; VY: 3; TAU: 2; BUS: 4).

***Nychiodes amygdalaria* (HERRICH-SCHÄFFER, 1848)**

(M9). - 1b: Sede Nehamya (TAU: 1). - 2: Oranim (OR: 2). - 11: Jerusalem (TAU: 1).

***Peribatodes rhomboidarius* ([DENIS & SCHIFFERMÜLLER], 1775)**

Boarmia gemmaria: AMSEL 1933: 110.

1b: Sede Nehamya (BUS: 18; VY: 2), Mahanayim (BUS: 1). - 8: Binyamina (TAU: 1). - ?: O. Ghodin (TAU: 1).

***Peribatodes umbrarius syrianus* WEHRLI, 1943**

11: Jerusalem (VU: 1).

***Calamodes subscudularia* (TURATI, 1919)**

?: Vintim (TAU: 1). - unlabelled (TAU: 1).

Remarks: In HAUSMANN (1991: 140) description of features (♂ and ♀ genitalia) refer to *C. occitanaria* DUPONCHEL, 1830 and not for *C. subscudularia*. The names have to be changed.

***Ascotis selenaria* ([DENIS & SCHIFFERMÜLLER], 1775)**

1a: Mt. Meron (TAU: 1). - 1b: Tel Dan (BUS: 5), Sede Nehamya (BUS: 24). - 2: Oranim (OR: 3). - 5: Yitzre'el (TAU: 1). - 8: Herzliyya ("Nof Yam", TAU: 4). - 9a: Bet Dagan (VU: 1, TAU: 5), Rehovot (BUS: 1; VY: 1), Tel Aviv (TAU: 2). - ?: Kfar Hyarok (VU: 4), Khreibu (TAU: 1). - unlabelled (OR: 1; TAU: 1; VY: 1; VU: 3; BUS: 2).

***Eumannia fumosaria* HAUSMANN, 1995**

Tephronia sepiaria: AMSEL 1933: 110.

Mannia oppositaria syriaca: HAUSMANN 1991: 141, figs. 55, 182. (E5). - 1b: Lahavot Ha-Bashan (BUS: 1).

***Aleucis orientalis* STAUDINGER, 1892**

Bapta pictaria: AMSEL 1933: 110.

(E3). - 1b: Sede Nehamya (BUS: 1).

***Dicrognophos sartatus* (TREITSCHKE, 1827)**

(E4, E5). - 1a: Elon (VU: 7; TAU: 1), Mt. Meron (TAU: 1). - 1b: Sede Nehamya (BUS: 3). - 2: Harduf (TAU: 1), Oranim (OR: 4), Zipori (TAU: 2). - 3: Mt. Carmel (VU: 2), Haifa (VU: 1). - 8: Herzliya ("Nof Yam", TAU: 1). - 9a: Qiriat-Gat (TAU: 2). - 11: Jerusalem (TAU: 1). - ?: Zagur (BUS: 1). - unlabelled (VY: 1; OR: 2).

***Kemtrognophos onustarius* (HERRICH-SCHÄFFER, 1852)**

2: Tivon (VY: 1).

***Euchrognophos subtauricus* (WEHRLI, 1934)**

Gnophos variegata: AMSEL 1933: 110.

9a: Tel Aviv (TAU: 1). - 11: Jerusalem (TAU: 1), Wadi Qatanna (TAU: 1). - ?: "Palästina" (TAU: 1).

***Cnestrognophos adjectarius* (STAUDINGER, 1897)**

(E10). - 7a: Deganya (BG: 1).

***Aspilates ochrearius* (ROSSI, 1794)**

(E3, M6). - 1b: Sede Nehamya (BUS: 14), Neot Mordehai (BUS: 1), Qiriath Shemona (BUS: 1). - 3: Mt. Carmel (VU: 2), Mt. Carmel / Pl.o.Sacrifice (VU: 5). - 5: Megiddo (BUS: 1). - 8: Zikhron Ya'aqov (TAU: 1). - 9a: Rehovot (VY: 6). - 15: Gilat (VY: 1). - ?: Revirim (VU: 1). - unlabelled (VY: 3).

***Dyscia sicanaria osmanica* WAGNER, 1930**

Scodion conspersaria: AMSEL 1933: 111.

(B11). - 1b: Sede Nehamya (BUS: 1).

***Scodionista amoritaria* (PÜNGELER, 1902)**

unlabelled (VY: 1).

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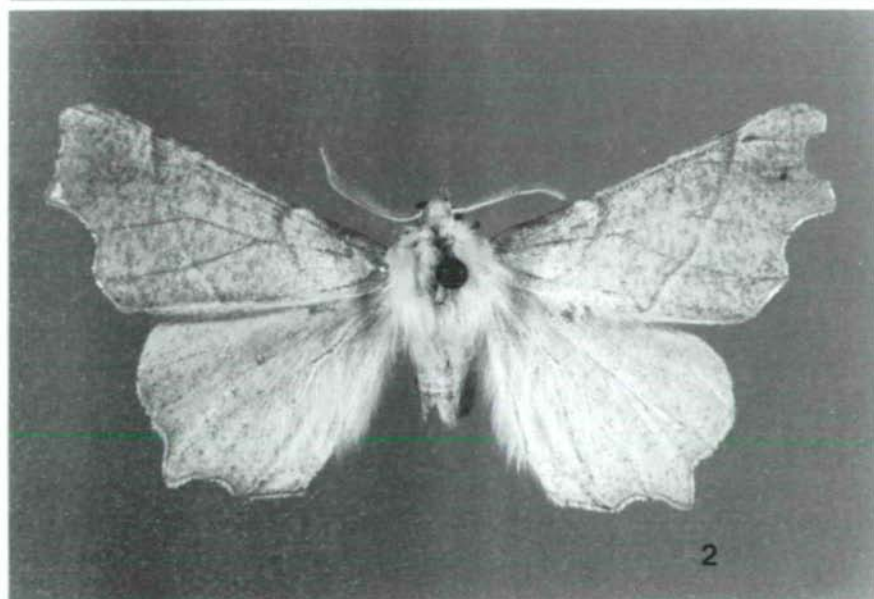
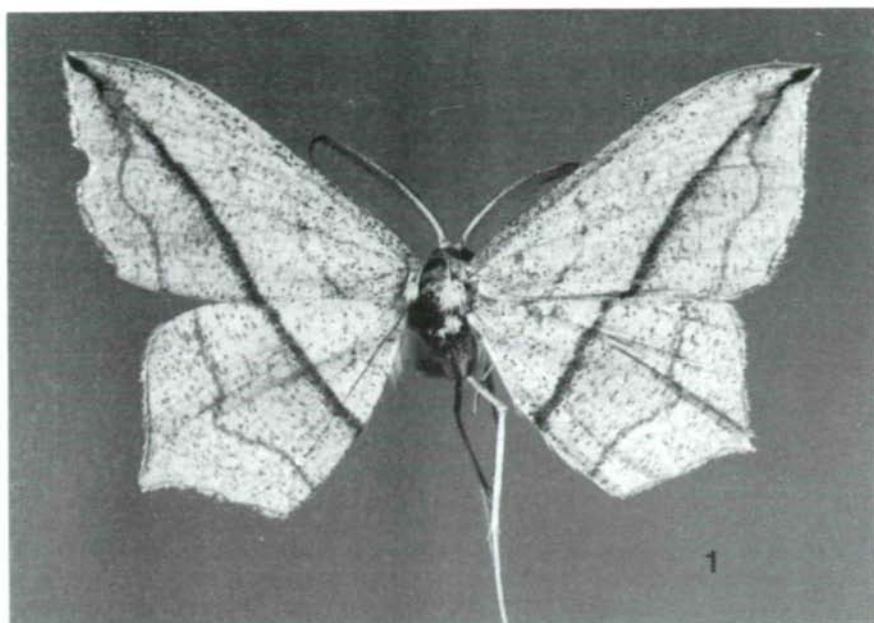
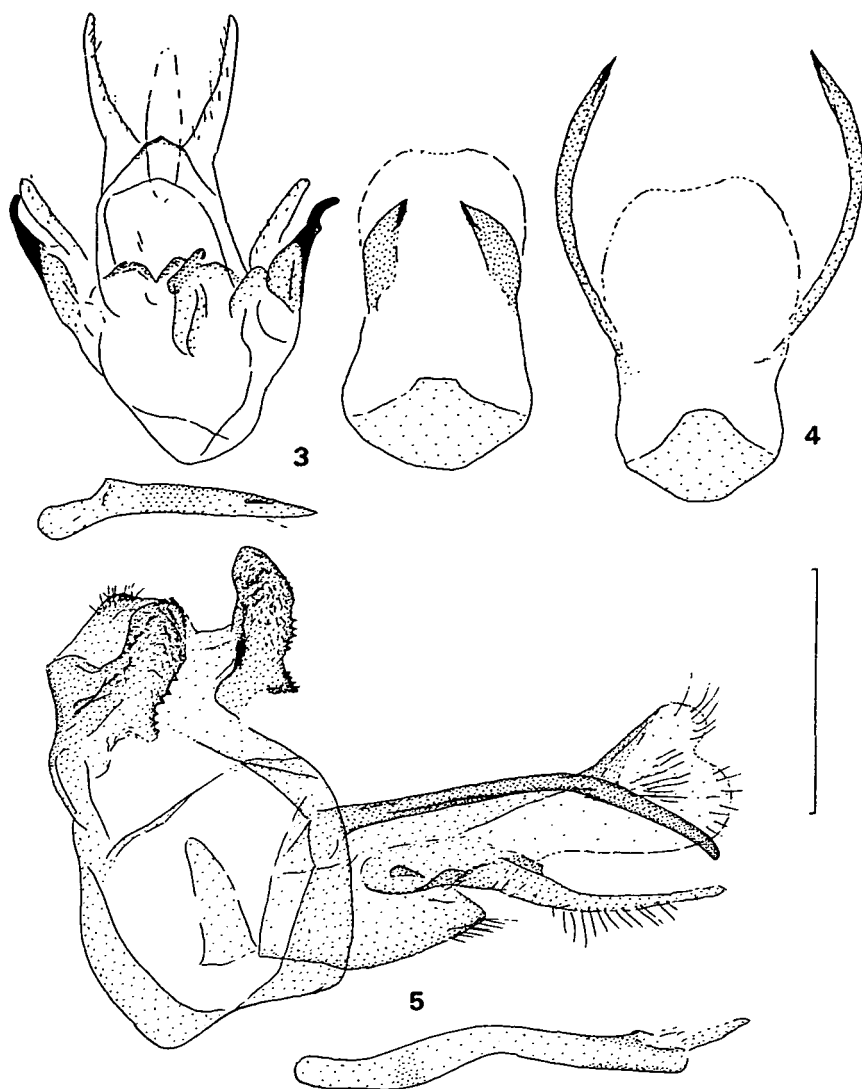


Fig. 1: *Timandra comae palmonii* ssp. nov., ♂ Holotype, forewing length 16 mm.
Fig. 2: *Ennomos freidbergi* sp. nov., ♂ Holotype, forewing length 20 mm.

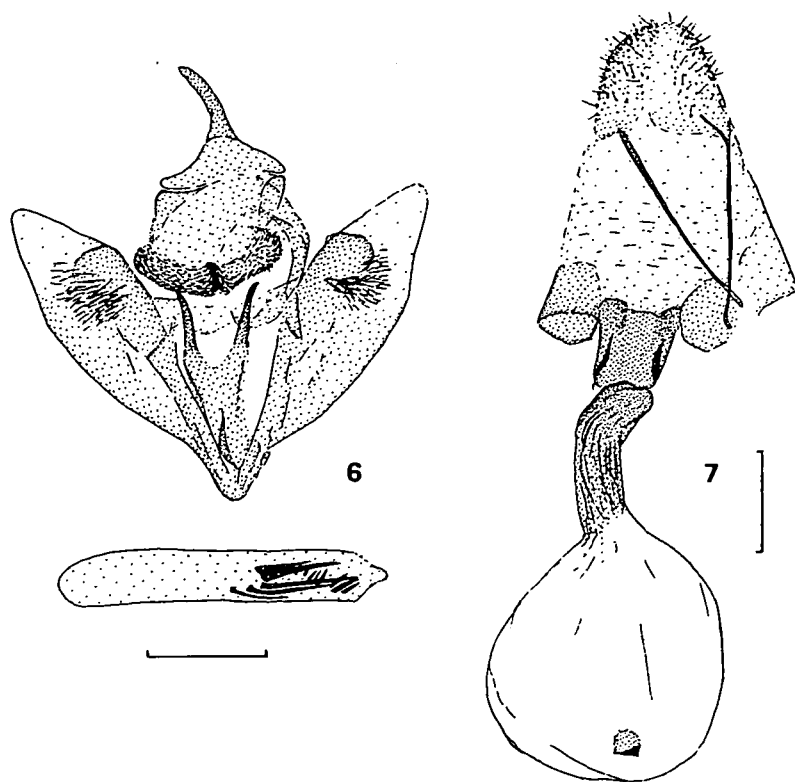


Figs 3-5: Male genitalia; scale bar = 1 mm.

Fig. 3: *Scopula beckeraria hermonicola* ssp. nov., genitalia of ♂ Holotype with sternite 8.

Fig. 4: *Scopula beckeraria rebeli* PRT., Makedonia, sternite 8.

Fig. 5: *Timandra comae palmonii* ssp. nov., genitalia of ♂ Holotype.



Figs 6-7: Genitalia; scale bar = 1 mm.

Fig. 6: *Ennomos freidbergi* sp. nov., genitalia of ♂ Holotype.

Fig. 7: *Ennomos freidbergi* sp. nov., genitalia of ♀ Paratype.

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Address of the author:

Dr. Axel HAUSMANN,
Münchhausenstraße 21,
D-81247 München, Germany

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BRANDSTETTER, C.M., KNAPP, A. & SCHABEL, F. 1994: Die Käfer von Vorarlberg und Liechtenstein. 1. Band (Carabidae). Eigentümer, Herausgeber und Verleger: Eigenverlag des Ersten Vorarlberger Coleopterologischen Vereines.

Das Werk basiert auf den Angaben und den Resten der historischen Sammlung von Julius A. MÜLLER, der ersten koleopterologischen Dokumentation für Vorarlberg, und den neueren Daten, vor allem den Funden der Mitarbeiter des EVCV. In der Einleitung finden wir einen kurzen Lebenslauf Dr. Julius A. MÜLLERS (1853-1926). Dann folgt die Vorstellung des Projektes. Es wird über die Natur und Landschaft des Untersuchungsgebietes kurz berichtet und die Lage der Großlandschaften charakterisiert. Die Mündung des Galinabaches, die wohl am meisten gefährdete Biozönose des Untersuchungsgebietes, wird ausführlich bearbeitet.

Dieser Band allein behandelt etwa 300 Arten und umfaßt mehr als 600 Seiten. Für jede Art stehen eine Seite Text mit allgemeinen Bemerkungen über Verbreitung, "Neigungen" und bewohnte Habitate, aktuelle und historische Vorkommen und Fundorte mit absoluter Höhenangabe, Datum und Biodaten und eine eigene Seite für die Darstellung der Verbreitung in Vorarlberg und Liechtenstein auf einer hervorragenden Reliefkarte, gedruckt von der Firma Alpina in Innsbruck, zur Verfügung. Das alles ist eine sehr großzügige Bearbeitung, die viel Raum und sehr viele Karten beansprucht und daher entsprechend teuer kommt. Eine Anzahl Verbreitungskarten (bei mehreren ist kein einziger Punkt vermerkt) hätte man einsparen können; zwei oder drei Arten hätten mit verschiedenen Symbolen in einer Karte untergebracht werden können. Im Band des Rezensenten finden sich zwei Auflager mit den Schutzgebieten und den Wäldern. Die Auflagerpalette ist daher noch ergänzungsbedürftig.

Der Band liefert eine Unmenge Daten für den Biotopschutz und verlässliche Indikatoren zur Bewertung von Lebensgemeinschaften. Er gehört nicht nur in die Bibliothek jedes Koleopterologen, sondern auch in jede einschlägige öffentliche Bibliothek Österreichs und der Nachbarländer als ökologische Dokumentation Österreichs und als Grundlage für die Belange des Naturschutzes.

Dieser erste Band ist eine ausgezeichnete und mutige Leistung dieses kleinen koleopterologischen Vereines, der damit in der einschlägigen österreichischen Literatur eine erste herausragende Dokumentation schuf. Wir erwarten mit Spannung weitere Bände.

Gerfried DESCHKA

Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:
Maximilian SCHWARZ, Konsulent für Wissenschaft der O.Ö. Landesregierung,
Eibenweg 6, A-4052 Anselden

Redaktion: Erich DILLER, ZSM, Münchhausenstrasse 21, D-81247 München, Tel. (089) 8107-159

Fritz GUSENLEITNER, Lungitzerstrasse 51, A-4222 St. Georgen / Gusen

Wolfgang SCHACHT, Scherrerstrasse 8, D-82296 Schöngesing, Tel. (089) 8107-146

Erika SCHARNHOP, Himbeerschlag 2, D-80935 München, Tel. (089) 8107-102

Johannes SCHUBERTH, Bauschingerstrasse 7, D-80997 München, Tel. (089) 8107-160

Emma SCHWARZ, Eibenweg 6, A-4052 Anselden

Thomas WITT, Tengstrasse 33, D-80796 München

Postadresse: Entomofauna (ZSM), Münchhausenstrasse 21, D-81247 München;
Tel. (089) 8107-0, Fax (089) 8107-300

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