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A CONTRIBUTION TO THE KNOWLEDGE OF THE GENUS
ANDRENA (APOIDEA) IN ISRAEL

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ABSTRACT

134 species and forms of *Andrena* are enumerated as occurring in Israel, 73 % of them new to the fauna of Israel. 22 species and forms are described as new.

Very little has so far been known about the species of *Andrena* occurring in Israel, as almost no material is present in European collections, Perez (1887) described one new species and Friese (1899) several others. Foreign collectors of Hymenoptera as Morice, Schmiedeknecht, Enslin and Stich came too late in the season (April-May) to collect the early flying *Andrena* and left too early to get the second generation; so the lists given by Alfken (1935, 38) report only 25 *Andrena* species from Palestine and Sinai.

However Prof. H. Bytinski-Salz, Tel Aviv collected bees for 30 years in all parts of the country all the year round, and it is chiefly on this material the present paper is based. It is only a token of, my recognition that this paper is dedicated to this indefatigable collector on the occasion of his 65th birthday.

His material is indicated only in exceptional cases by the letter "B". I also received a small collection from the region of Lake Tiberias collected by J. Palmoni, Degania (P) and a few specimens in my collection (W) originate from Schmiedeknecht, Enslin and Stich. Besides I possess a number of specimens apparently collected about the turn of the century, but the collector is unknown to me (W).

The material described here enumerates about 134 species and forms of them 99 (73%) new to Israel. This number of species agrees well with the number of species recorded from other Eastmediterranean countries as f.e. the Balcan peninsula (excl. Greece) with 136 (Warncke 1966a), Greece also with 136 Warncke (1965a) and Turkey with 137 species and forms (Warncke 1965b).

In spite of the great number of specimens (nearly 1000), few species are re-presented in large series; especially among the subgenera *Micrandrena*, *Graecandrena* and *Aciandrena* some specimens could not be determined specifically for lack of sufficient material. More intensive collecting, especially of the small species will certainly result in additions to the faunal list of species recorded from neigh-

bouring countries, but not yet reported from Israel, but the present material is already enough to give a general picture of the faunal character of the genus Andrena in Israel.

As usual, I have refrained from designing an allotype. 22 species and subspecies are described as new at the end of this paper. The types are in my collection, paratypes in coll. Bytynski-Salz

The transcription of the Hebrew names of localities follows that of the official map 1:250.000 of the Survey of Israel, 1968. The localities are arranged in general from North to South and from West to East.

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LIST OF SPECIES AND SUBSPECIES

- * = Species or form new to Israel.
** = Species or form new to science.

Subgenus Chlorandrena Pérez, 1890

- * A. astica Warncke, 1967
Distribution: Turkey, Israel.
Material: Jerusalem ♂ 15.I., 7 ♀ 27.II.-6.III.; Aquabella ♂ 15.III.
- * A. taraxaci ssp. orientana Warncke, 1965
Distribution: North Africa North to Central Europe, East through most of Asia; the subspecies from Israel, Greece and Turkey.
Material: Herzliya ♀ 13.II.; Ramla 4 ♀ 2 ♂ (W); Jerusalem 2 ♂ 17.II.-16.III., 6 ♀ 2.III.-16.III.
- A. panurgimorpha Mavromoustakis, 1957
Literature: Jericho (Warncke 1967 p. 578)
Distribution: Greece through Turkey to Caucasus and Israel.
Material: Elon ♀ 18.IV.; Allonim ♂ 17.III.; Bet Jimal ♂ 23.III.
- * A. cinereophila Warncke, 1965
Distribution: Greece, Eastern Rumania, Turkey to Caucasus, Israel.
Material: Deganya ♂ 23.II. (P); Birquat Ramadan ♂ 13.III.; Miqve Yisrael ♂ 10.III.; Ramla ♀(W); Jerusalem ♀ 2.III.
- A. sinuata Pérez, 1895
Literature: Tel Aviv (Warncke 1967 p. 66).
- * A. microcardia ssp. canosa Benoist, 1961
Distribution: Algeria to Cyrenaica, Israel.
Material: Ramat Gan ♂ 17.III.; Bat Yam ♀ 10.IV.
- * spec. aff A. microcardia Pérez
Material: Tel Aviv ♀ 7.VI.

- * A. humilis Imhoff, 1832
Distribution: North Africa, Europe except the extreme North,
Turkey, Israel?
Material: Jerusalem ♀ (leg. Schmiedeknecht, W). It may be, that
this specimen is not from Israel; because this species is stronger
punctate in SE-Turkey and Schmiedeknecht often has labelled wrong.
- (A. nigroolivacea Dours, 1873)
Literature: Israel (Bodenheimer 1937 p. 174). Wrong determination,
the species is West-mediterranean.
- * A. humabilis Warncke, 1965
Distribution: Greece, Turkey, and Israel.
Material: Birquat Ramadan ♀ 13.III.; Jerusalem 3 ♀ 2 ♂ e.II. -
16.III.
- ** A. pinkeunia n.sp. (Description on p. 396)
Distribution: Israel.
Material: Heromon 1650 m ♂ 20.IV.; Jerusalem ♂ 25.III.; 3 ♀
18.IV.; Qiryat Anavim ♀ (W).
- Subgenus Orandrena Warncke, 1968
- ** A. garrula ssp. lomvia n.ssp. (Description on p. 397).
Distribution: Central Turkey, Israel.
Material: Jerusalem 8 ♂ 28.I. -1.III., 3 ♀ 16.II. -28.II.
- * A. monilia Warncke, 1967
Distribution: Till now known only from Central Spain; Israel.
Material: Jerusalem ♀ (W); Beror Hayil ♂ 15.II.; Beer Sheva 4 ♀
1.IV.; Yeroham, ♀ ♂ 13.III. - Migde ♀ 18.III.
- Subgenus Pallandrena Warncke, 1968
- A. pallidicincta Brullé 1832
Literature: Nablus (Alfken 1935 p. 171, Warncke 1967 p. 578)
Distribution: SW-Jugoslavia, Greece, Turkey, Israel.
- ** A. bytinskii n.sp. (Description on p. 397).
Distribution: Israel.
Material: Hermon 1650 m ♂ 20.IV.; Elon ♀ 5.IV.; Kinneret 4 ♂ 4.III.;
Binyamina ♀ 16.III.; Jerusalem 2 ♂ 1.III. -9.VI.; Qiryat
Anavim ♀ 5.IV.
- Subgenus Poecilandrena Hedicke, 1933
- * A. sphecodimorpha Hedicke, 1942
Distribution: Greece to South Russia, Israel.
Material: Kefar Szold ♂ XII.

- ** A. crassana ssp. inka n. ssp. (Description on p. 398).
Distribution: Greece to Eastern Turkey, Israel.
Material: Binyamina ♀ 7. IV.; Miqwe Yisrael ♂ 10. III.; Jerusalem
4 ♂ 21. II. - 18. IV., 2 ♀ 18. - 20. IV.
- * A. semirubra Morawitz, 1876
Distribution: Turkey, Crimea, Israel. The locality "Karadagh",
mentioned by me in 1966, Act. Ent. Bohem. 63 - lies
not in the Caucasus but in the Eastern part of Crimea.
Material: Hermon 1650 m 8 ♂ 20. IV.
- ** A. kilikiae n. sp. (Description on p. 399).
Distribution: Turkey, Israel.
Material: Hermon 1650 m ♂ 20. IV.

Subgenus Cryptandrena Pittioni, 1948

- A. aruana Warncke, 1967
Literature: Ramla (Warncke 1967 p. 229)
Distribution: Israel.
Material: Kinneret 2 ♀ 4. III.; Binyamina ♀ 12. IV.; Jerusalem
♀ 10. IV. - Migde ♀ 18. III.
- * A. clypeata Brullé, 1832
Distribution: Italy to Turkey, Israel.
Material: Bet Jimal ♂ 23. III.
- A. ventricosa Dours, 1873
Literature: Jericho (Alfken 1935 p. 172)
Distribution: Northeast Spain to Caucasus, Israel.
Material: Hermon 1650 m ♂ 20. IV.; Rosh Pinna ♂ 19. III.;
Binyamina 3 ♂ 15. V.
- Subgenus Ulandrena Warncke, 1968
- ** A. isabellina n. sp. (Description on p. 400).
Distribution: Israel, Turkey.
Material: Hermon 1650 m ♂ 20. IV.; Jericho ♀ 20. - 28. IV. (leg. Enslin,
W); Ramla ♀ (W); Jerusalem ♀ 18. IV.; Qiryat Anavim ♀ leg.
Bodenheimer, W).
- A. fulvitaris Brullé, 1832
Literature: Jerusalem, Ramla (Warncke 1967 p. 575)
Distribution: Italy to Turkey, South to Israel.
Material: Beer Sheva ♂ 19. III.

- ** A. glareola n.sp. (Description on p. 400).
Distribution: Israel
Material: Nazareth (W); Ramla ♂ (W); Jerusalem ♀ 2 ♂ 1.IV
Avedat ♀ 30.III.
- ** A. dauma n.sp. (Description on p. 401).
Distribution: Israel
Material: Hermon 1650 m ♀ 20.IV.; Dan ♂ 20.III.; Kinneret 2 ♀, 4.III.;
Allonim ♀ ♂ 17.III.; Tivon ♂ 20.III.; En Harod ♂, 5.III.; Nablus
3 ♀ 19.-26.IV. (leg. Enslin, Stich - W).
- A. leucorhina ssp. abnormis Warncke, 1967
Literature: Jerusalem, Nazareth, Wadi Qilt (Warncke 1967 p. 216);
Wadi Qilt (Alfken 1935 p. 171 as A. aegyptiaca Fr. var.)
Distribution: Greece to Caucasus; the subspecies in Israel.
Material: Shisaf ♀ 15.IV.; Deganya 4 ♂ 13.III. (B,P);
Allonim ♂ 17.III., ♀ 7.V.; Jerusalem 2 ♂ 25.III.-18.IV.,
♀ 16.IV.
- A. speciosa Friese, 1899
Literature: Jericho Friese 1899 p. 344 Alfken 1935 p. 171
Distribution: Algeria to Egypt, Israel.
Material: Jericho 3 ♀ 25.III.-3.IV; Al Maghtas ♂ 25.II.; Kallia
♂, 14.II.; Wadi Qilt ♀ 26.II. - Migde ♀ 14.III.
- Subgenus Nobandrena Warncke, 1968
- ** A. iliaca n.sp. (Description on p. 401).
Distribution: Israel
Literature: Jericho, Nablus (Alfken 1935 p. 171 as A. purpurascens
Pér)
Material: Elon ♀ 27.III.; Kinneret ♂ 4.III.; Nablus ♀ ♂ 19.-26.IV.34
(leg. Enslin, det. Alfken A. purpurascens Pér., W);
Miqwe Yisrael ♂ 10.III.; Niram ♂ 4.III.
- * A. truncatilabris Morawitz, 1878
Distribution: North Algeria, Spain-East to Central Asia, Israel.
Material: Elon ♂ 27.III.; El Hamma ♂ 21.III.; Deganya ♀ 18.III.;
Kinneret 4 ♀ 4.III En Gev ♀, Jericho 3 ♀ 2 ♂ 23.II.;
Niram ♀ 14.III.; 5.IV.: Beer Sheva ♀ 1.IV.
- * A. rufomaculata Friese, 1921
Distribution: Southern Yugoslavia, Greece East to Caucasus, Israel.
Material: Kinneret ♀ 4.III.; Rishon le Zion ♂ 10.III.; Miqwe Yisrael
♂ 17.II.; Jerusalem 3 ♂ 7.-21.II.; Mishmar HaNegev ♀
24.III.

- * spec. aff. A. medeninensis Pér.
Distribution: Israel
Material: Beer Sheva 2 ♀ 1.IV.
- * A. tscheki ssp. tritica Warncke, 1965
Distribution: Central Europe East to Caucasus, Israel.
Material: Birqat Ramadan ♂ 13.III.; Jerusalem 8 ♂ 27.I. -21.II.,
♀ 8.III.
- * A. seitzi Alfken, 1935 ?
Literature: Nablus (Alfken 1935 p. 171 as A. ? hystrix Schm.)
Distribution: described from Ankara, Turkey, in the female only;
it seems to me that the males from Israel belong to
this species.
Material: Dafna 4 ♂ 20.II.; Rosh Pinna ♂ 19.III.; Zikhron Yaaqov 2 ♂
6.IV.; Nablus ♂ 19.-26.IV. (leg. Enslin, det. Alfken
A. hystrix Schm., W); Miqwe Yisrael 4 ♂ 10.III.; Niram
6 ♂ 14.III.
- A. oulskii ssp. ochraceohirta Alfken, 1935.
Literature: Jericho, Jerusalem, Nablus, Wadi Qilt (Alfken 1935 p.
179, 1938 p. 419).
Distribution: North Africa from Marocco to Egypt, Israel; North to
Turkey, Greece and East to Central Asia.
Material: Ginnosar ♀ 6.III.; Deganya 2 ♂ 18.III.-5.IV. (B,P); Kinneret
♀ 9.IV. (P); Binyamina ♂ 7.IV.; Birquat Ramadan ♂ 13.III.
Miqwe Yisrael ♀ 10.III.; Jericho ♂ 13.II., ♀ 5.IV.; Ramla
♀ ♂ (W); Jerusalem ♂ 5.III.; Aquabella 4 ♀ 15.III.
- ** A. bassana n.sp. (Description on p. 403).
Distribution: Israel
Material: Dafna 2 ♂ 20.III.; Ginnosar 9 ♂ 20.III.; Deganya ♂ 1.III.
(P); Binyamina ♀ 16.III.; Ramla 9 ♂ (W) - Migda 2 ♂
14.-18.III.
- * A. fuligula Warncke, 1966
Distribution: SE-Turkey, Israel.
Material: Jerusalem 2 ♀ 4 ♂ 1.III.
- * A. doursana ssp. derbentina Morawitz, 1886
Distribution: North Africa from Algeria to Cyrenaica, Israel, SE-
Turkey to Caucasus.
Material: Ramla ♂ (W); Jerusalem 2 ♂ 1.III.; Aquabella 2 ♂ 15.III.

- ** A. rotundilabris ssp. rila n. ssp. (Description on p. 404).
Distribution: Turkey to Caucasus, Israel, Lebanon.
Material: Allonim 2 ♀ 1 ♂ 17.III.
- ** A. ulula n. sp. (Description on p. 404).
Literature: Jericho (Alfken 1935 p. 171, as A. antigana Pér.)
Distribution: Israel, Turkey.
Material: Tel Aviv ♀ (W); Ginnosar → 6.III.; Tiberias ♂ 14.III. (P);
Haifa ♀ (leg. Reitter, W); Deganya 2 ♀ 18.-28.III. (B,P);
Betania ♀ 17.III. (P); Jericho ♀ 20.-28.IV. (leg. Enslin,
det. Alfken A. antigana Pér., W); Dorot 2 ♀ 15.IV.
- A. mucronata Morawitz, 1871
Literature: Ramla (Warncke 1967 p. 577).
Distribution: All parts of the Mediterranean area.
Material: Wadi Ghar ♂ 15.III.
- * A. serraticornis Warncke, 1965
Distribution: Greece to Turkey, Israel.
Material: Jerusalem 4 ♂ 3.III.-27.III.
- * spec. aff. A. serraticornis Warncke
Distribution: Israel.
Material: Jerusalem ♀ 21.II.

Subgenus Melittoides Friese, 1921

- A. melittoides Friese, 1899
Literature: Jerusalem (Friese 1899 p. 338), Nablus (Alfken 1935 p.171)
Distribution: Turkey to Israel.
Material: Rosh Pinna ♀ 15.IV.
- ** A. innesi ssp. undata n. ssp. (Description on p. 404).
Distribution: Algeria to Egypt, Israel.
Material: Tiberias ♂ 10.II.; Kinneret 2 ♀ 9.IV. (P).
- A. ramlehiana Pérez, 1903
Literature: Ramla (Pérez, 1903).
Distribution: till now known only from Ramla, Israel.

Subgenus Suandrena Warncke, 1968

- A. savignyi Spinola, 1838
Literature: Jericho (Friese 1899 p. 341 as A. moricei Fr.)
Distribution: From the Canarian Islands to Northern India.
Material: Al Maghtas ♀ 25.II.; En Gedi ♀ ♂ 16.III.; Mezaad
Mohila 6 ♀ 1 ♂ 30.III.

- ** A. cyanomicans ssp. mirna n. ssp. (Description on p. 404).
Distribution: from the Canarian Islands to Spain, Israel.
Material: Jericho ♀ 25.I.; Al Maghtas ♂ 25.II; Beer Sheva ♀ 14.III.;
Yeroham, ♀ 13.III.

- * A. aegypticola Friese, 1922
Distribution: Cyprus to Egypt, Israel.
Material: Tel Aviv 2 ♀ (W); Ramla ♀ (W).

Subgenus Melanapis Cameron, 1902

- A. fuscosa ssp. rutila Spinola, 1838
Literature: Jerusalem, Tel Aviv (Alfken 1938 p. 419), Jericho (Warnecke
1967 p. 575).
Distribution: North Africa inclusive Canarian Islands, North to Central
Europe, East to Central Asia and Northern India.
Material: Dafna ♂ 28.III.; Deganya ♀ 18.III.; Kinneret ♀ 9.IV. (P);
Binyamina 4 ♂ 15.V.; Birquat Ramadan ♂ 13.III.; Ramat Gan
2 ♂ 9.-13.V.; Jericho ♂ 15.II.; 2 ♀ 23.II-28.IV, ♂ 30.V.;
Jerusalem 4 ♂ 15.III.-18.IV.; 2 ♂ 1.-15.VI., ♀ 18.V.; En Gedi
3 ♀ 16.-30.III., ♂ 30.III.; Beer Sheva 2 ♀ 25.IV.-5.V., ♀ 22.V.;
Kerem Shalom ♂ 30.III.; Tel Yeroham ♀ 17.IV.; Bir Rechme
♂ 13.III., 3 ♀ 28.IV.-1.V.; Wadi Fuqra ♂ 26.IV.; En Hazeva
♂ 7.IV.; Wadi Avedat ♀ ♂ 3.V.; Mezad Mohila ♀ 30.III.; Wadi
Ramon 2 ♀ 3.V.

Subgenus Plastandrena Hedicke, 1939

- A. bimaculata (Kirby, 1802)
Literature: Israel (Bodenheimer 1937 p. 174).
Distribution: North Africa, whole of Europe except the north, East to
Asia. I haven't seen material from Israel.

Subgenus Micrandrena Ashmead, 1899

- * A. alfkenelloides Warncke, 1965
Distribution: Greece. Israel (the male will be necessary to ascertain
whether the females belong to this species).
Material: Deganya ♀ 23.II.; Tel Aviv ♀ (W); Ramla ♀ (W).
- * A. simontornyella Noskiewicz, 1939
Distribution: France to Turkey, Israel.
Material: Hermon 1650 m 2 ♂ 20.IV.; Tel Qazir ♀ 5.III.; Kinneret
♀ 4.III.

A. spreta Pérez, 1895

Literature: ? Jericho (Zavattari 1905 p. 6, as A. parvula K.); Wadi
Werdan, Sinai, (Alfken 1938 pl 420, as A. aff. niveata Fr.);
(Bodenheimer 1937 p. 174, as A. pusilla Pér.).

Distribution: North Africa inclusive Canarian Islands, North and Central
Europe, Egypt, Israel to South Turkey.

Material: Elon ♀ 18.IV.; Zemah ♂ 21.II.; Deganya 7 ♀ 1.-19.III.;
♂ 3.III. (B,P); Kinneret 2 ♂ 4.III.-12.IV, 2 ♀ 8.-9.IV. (B,P);
Nazareth ♀ (W); Tivon ♀ 20.III.; Tel Aviv ♀ (W); Ramla ♀ ♂
(W); Jerusalem ♂ 1.III., 2 ♀ 11.III.-18.IV.; Jericho 2 ♀ 2.II.;
Al Maghtas ♀ 25.II.; Kallia ♀ 15.II.; Beror Hayil ♀ 15.II.;
Nir Yizhaq ♀ 14.IV.

- * At least seven more species of Micrandrena, too few specimens for correct
identification.

Subgenus Distandrena Warnke, 1968

* A. mariana Warncke, 1968

Distribution: North Africa from Canarian Islands to Egypt, Israel.

Material: Tel Aviv 4 ♂ 27.III.

* A. longibarbis Pérez, 1895

Distribution: from Central Spain through North Africa to Egypt, Israel.

Material: Tel Aviv ♀ 17.III.; Rehovot ♀ 9.II.

Subgenus Graecandrena Warncke, 1968

* A. euzona Pérez, 1895

Distribution: Morocco to Algeria, Israel. - male unknown.

Material: Al Maghtas ♀ 25.II.; Kallia 9 ♀ 14.II.; - En Radian ♀ 1.IV.

* A. eremobia Guiglia, 1833

Distribution: Cyrenaica, Israel.

Material: Kallia ♀ 14.III.

* A. impunctata ssp. contusa Pérez, 1895

Distribution: South and Central Europe, ssp. contusa Pér. in North
Africa from Canarian Islands to Egypt, Israel.

Material: Yeroham 5 ♀ 3.IV.

* A. butea Warncke, 1966

Distribution: Turkey, Israel.

Material: Kefar Nahum ♂ 29.IV. (P).

- * A. graecella Warncke, 1965
Distribution: From Southern Yugoslavia to Turkey, Israel.
Material: Ramla ♂ (W); Niram ♂ 14. III.
- ** A. volka n. sp. (Description on p. 405).
Distribution: Turkey, Israel.
Material: Jerusalem 2 ♀ 1.-4. III.; Aquabella 6 ♀ 1 ♂ 15. III.
- * Three more species of Graecandrena, too few specimens for correct identification.

Subgenus Aciandrena Warncke, 1968

- A. spolata Warncke, 1968
Literature: Jericho, Wadi Qilt (Alfken 1835 p. 172, as A. varicornis
Jerusalem, Jericho, Wadi Qilt (Warncke 1968 p. 75)
Distribution: North Africa inclusive Canarian Islands.
- * Two more species of Aciandrena, to few specimens for correct identification.

Subgenus Cordandrena Warncke, 1968

- A. torda Warncke, 1966
Literature: Ramla (Warncke 1967 p. 580).
Distribution: Turkey to Israel.
Material: Ginnosar ♀ 6. III.; Kinneret ♀ 4. III.; Deganya ♀ 17. III. (P);
Tel Qazir 5 ♀ 4.-5. III.; Tivon ♀ 20. III.; Daliya ♀ 6. II.
- A. cypria Pittioni, 1950
Literature: Ramla (Warncke 1967 p. 574).
Distribution: Turkey to Israel.
Material: Niram 4 ♂ 14. III.

Subgenus Aenandrena Warncke, 1968

- A. aeneiventris Morawitz, 1872
Literature: Stora (Zavattari 1905 p. 6).
Distribution: North Africa, Israel, Southern Europe, East to Central
Asia.
Material: Dan ♂ 20. III.; Herzliya ♂ 17. III.; Jericho ♀ 30. IV., ♀ 2. VI.;
Jerusalem ♀ 18. IV., 2 ♀ 1.-20. VI.; Beeri ♀ 1. VI.
- ** A. bonasia ssp. naevia n. ssp. (Description on p. 406).
Distribution: Israel, Turkey.
Material: Jerusalem ♂ (W); Bet Jimal ♂ 23. III.
- A. bisulcata Morawitz, 1878
Literature: Jericho, Nablus (Alfken 1935 p. 171).
Distribution: Italy, East to Caucasus, South to Israel.

Material: Tiberias ♀ 16.IV.; Allonim ♀ 14.IV.; Jericho ♀ 20.-28.IV
(leg. Enslin, det. Alfken); Jerusalem ♀ 2.VI.

* A. chaetogastra Pittioni, 1950

Distribution: Cyprus, Israel.

Material: Tivon ♂ 20.III.; Allonim 2 ♀ 27.III.-26.IV.; Nablus ♀ 19.-
26.IV.34 (leg. Enslin, det. Alfken A. bisulcata Mor., (W).

Subgenus Parandrenella Popov, 1958

** A. nisoria n. sp. (Description on p. 407).

Distribution: Israel, Cyprus, Turkey, Tunis.

Material: Tiberias ♀ 12.IV.; Deganya ♀ 13.III. (P); Massada ♂ 27.III.
(P); Jericho 3 ♀ 20.-28.IV. (leg. Enslin, W); Gat ♀ 23.III.;
Niram 4 ♂ 14.III.

Subgenus Brachyandrena Pittioni, 1948

A. colletiformis Morawitz, 1874

Literature: Wadi Qilt (Alfken 1935 p. 171).

Distribution: North Africa, Israel, Southern Europe - East to Central
Asia.

Material: Deganya 2 ♂ 4.VII. (P); Bat Yam ♀ 24.III.; Jerusalem
♂ 13.VI.; Beer Toviya 2 ♂ 8.VII. (P).

A. migiella Dours, 1873

Literature: Israel (Bodenheimer 1937 p. 176, as A. tingitana Pér.).

Distribution: Southern France, Italy, Marocco to Egypt.

I have not seen material of this species from Israel.

Subgenus Chrysandrena Hedicke, 1933

* A. hesperia Smith, 1853

Distribution: North Africa, Israel, Southern Europe, East to Central
Asia.

Material: Dan ♂ 20.III.; Allonim ♂ 17.III.; Herzliya ♀ 13.II.; Ramla
♀ ♂ (W); Bet Jimal ♂ 23.III.; Beror Hayil ♂ 27.II.

** A. merula n. sp. (Description on p. 407).

Distribution: Cyprus, Israel, Greece.

Material: Tivon 2 ♀, 1 ♂ 20.III.

* spec. aff. A. hesperia Sm.

Distribution: Israel.

Material: Jericho 6 ♂ 20.-28.IV. (leg. Enslin, W).

A. aegyptiaca Friese, 1899

Literature: Tel Aviv (Friese 1899 p. 343); Nazareth (Warncke 1967 p. 572).

Distribution: North Africa from Canarian Islands to Egypt, Israel.

Material: Herzliya ♀ 28.IV., Bat Yam ♀ 21.IV.

Subgenus Poliandrena Warncke, 1968

** A. guttata n. sp. (Description on p. 407).

Distribution: Israel.

Material: Shivta ♀ 9.IV.; Mishmar HaNegev ♀ 2.III.; Beer Sheva ♀ 28.IV.; Yeroham, ♀ 13.III.; En Mor ♀ 15.IV.

* A. caspica Morawitz, 1886

Distribution: Greece to Caucasus, Israel.

Material: Elon 2 ♂ 27.III.; Khreibe ♀ 17.IV.; Allonim 2 ♀ 17.III.; Jericho ♂ 23.II.; Ramla ♀ ♂ (W); Wadi Qilt 2 ♀ 26.II.; Jerusalem ♀ 1.IV.; Bet Jimal ♀ 23.III.

A. uncinata Friese, 1899

Literature: Jerusalem (Friese 1899 p. 339, Alfken 1935 p. 171)

Distribution: Israel.

Material: Kinneret ♀ ♂ 4.III.; Haifa ♀ 13.V.; Allonim ♀ 17.III.; Jerusalem 3 ♂ 4 ♀ 25.III.; ♀ 15.IV.; Qiryat Anavim ♀ 5.IV.

* A. tölghiana Friese, 1921

Distribution: Turkey, Israel. - male unknown.

Material: Dan, Tel el Kadi ♀ 12.VI.; Dafna 2 ♀ 13.V.

Subgenus Campylogaster Dours, 1873

A. lateralis Morawitz, 1876

Literature: Oud (?Bab el Wad) (Pérez 1887 p. 175, as A. octomaculata Pér.)

Distribution: Greece, East to Central Asia, South to Israel.

Material: Tiberias ♀ 25.IV.; Jerusalem 4 ♂ 12.V.-6.VI.; ♀ 15.-30.V.; Niram ♀ 14.III., 2 ♂ 10.VI.; Beeri ♂ 1.VI.

* A. pruinosa ssp. succinea Dours, 1872

Distribution: Spain, North Africa from Morocco to Egypt, Israel.

Material: Jerusalem ♂ 1.IV.; Shivta ♀ 9.IV.; Yeroham 1 ♀ 2 ♂ 17.IV.; Yeroham 5 ♀ 1.V.; Sede Boqer ♂ 17.IV.; Wadi Nafha ♀ 10.IV.

* A. caroli Pérez, 1895

Distribution: North Africa from Morocco to Egypt, Israel.

Material: Beer Sheva ♀ 5.V.; Shivta ♀ 9.IV.; Wadi Avedat 6 ♀ 3 ♂ 13.V. En Gedi ♀ 16.III..

Subgenus Holandrena Pérez, 1890

- * A. variabilis Smith, 1853
Distribution: North Africa, Israel, Southern Europe - East to Central Asia.
Material: Lavi ♀ 3.VII; Deganya ♂ 1.VI.; Beerot Yizhaq ♀ 25.V.; Ramat Gan ♂ 6.V.; Jerusalem 3 ♂ 6.V.-16.VI., 1 ♀ 29.V.-15.VII.

- * A. forsterella Warncke, 1967
Distribution: Italy to Caucasus, Israel.
Material: En Harod ♀ 5.III.; Jerusalem ♂ 1.IV.

Subgenus Opandrena Robertson, 1902

- * A. schencki Morawitz, 1866
Distribution: South and Middle Europe, East to Central Asia. Israel.
Material: Kefar Blum ♀ 15.V.

Subgenus Cubiandrena Warncke, 1968

- * A. cubiceps Friese, 1914
Distribution: Turkey to Caucasus, Israel.
Material: Tiberias ♂ 12.V.; En Gev 1 ♀ 2 ♂ 15.IV.-23.IV.; Sussita ♀ 13.IV. (P); Ramat Gan ♀ 13.V.

Subgenus Zonandrena Hedicke, 1933

A. flavipes Panzer, 1799

Literature: Israel (Bodenheimer 1937 p. 174)

Distribution: North Africa, Israel, North to Central Europe, East to Central Asia.

Material: Hermon 1650 m 1 ♀ 6 ♂ 20.IV.; Dafna ♂ 20.II.; Dafna Oaks ♂ 4.III., ♂ 17.V.; Nahariya ♀ 11.VI.; Tiberias ♀ 25.IV.; En-GeV ♀ 21.II.; Tel Qazir ♀ 5.III.; Jerusalem ♂ 1.III.; Birqat Ramadan ♂ 13.III.; Beror Hayil ♀ 27.II., ♀ 27.V.; Niram ♀ 14.III.; Beer Sheva ♀ 14.III., ♂ 4.VI.

- * spec. aff. A. korleviciana Fr.
Distribution: Israel.
Material: Tivon ♂ 20.III.; Jerusalem 2 ♂ 1.III.-2.IV.; Aquabella ♀ ♂ 15.III.

- * A. gazella Friese, 1922
Distribution: Egypt, Israel to South Turkey

Material: Jericho ♂ 19.-26. IV. (leg. Enslin, W); Wadi Qilt ♂ 20.-28. IV. (leg. Enslin, W); Jerusalem ♀ 15.-30. V.; Beror Hayil 2 ♀ 27. II.; Beer Sheva ♀ 14. III., ♂ 5. V.; Urim 11 ♀ 23 ♂ 15. V.; Revivim ♂ 5. VI.

A. vachali Pérez, 1895

Distribution: North Africa from Canarian Islands to Egypt, Israel.
Material: Tivon ♂ 20. III.; Yeroham, ♀ 20. IV.; Sede Boqer ♀ 17. IV.; Mezad Mohila ♀ 30. III.

Subgenus Taeniandrena Hedicke, 1933

* A. russula ssp. similis Smith, 1849

Distribution: Israel, North Africa, Turkey.
Material: Dafna Oaks ♂ 4. III.; Tel-Aviv ♂ 12. IV.; Jerusalem ♀ 1. III.

* A. ovatula (Kirby, 1802)

Distribution: North Africa, Israel, Europe - East to Central Asia.
Material: Deganya ♀ 20. VI.

Subgenus Melandrena Pérez, 1890

A. pyropygia Kriechbaumer, 1873

Literature: Israel (Bodenheimer 1937 p. 174).
Distribution: Greece to Caucasus, South to Israel.
Material: Ilaniya ♀ 11. VII.; Jerusalem ♂ 15.-30. V.. 5 ♀ 17. V-5. VI.; Urim ♀ 15. V.

* A. albifacies Alfken, 1927

Distribution: from Morocco to Southern Irak, Israel.
Material: Revivim 2 ♀ 16. V.; - Migde ♀ 14. III.

A. thoracica ssp. kotschyi Mavromoustakis, 1953

Literature: Israel (Bodenheimer 1937 p. 174)
Distribution: North Africa, Israel, North to Central Europe, East to Central Asia.
Material: Dafna ♀ 20. II.; Dafna Oaks ♀ 4. III.; Tel Qazir ♀ 5. III.; Jerusalem ♀ 16. III.; Beror Hayil ♀ 27. II.

* A. limata ssp. batesiae Cockerell, 1910

Distribution: South and Central Europe to Central Asia, Israel.
Material: Dan, ♀ 16. VI.; Elon ♀ 11. IV.; Binyamina ♀ 2. VI.

A. morio ssp. lugubris Erichson, 1840

Literature: Israel (Bodenheimer 1937 p. 174), Ramla (Warncke 1967 p. 577)
Distribution: North Africa, Israel, North to Central Europe and East to Central Asia.

Material: En Gev ♂ 21. II.; Binyamina ♂ 29. V.; Ramat Gan ♂ 5. VI.;
Jerusalem ♂ 1. -15. VI.; Urim ♂ 15. V.; Beer Sheva ♀ 1. IV.,
2 ♀ 20. V. -4. VI., 2 ♂ 22. V.; Zeelim 3 ♀ 28. III.; Gevulot ♂
18. V.; Revivim ♀ 21. V.; Yeroham 7 ♂ ♀ 13-29. III.; Wadi Avedat
2 ♀ 1 ♂ 13. V.

* A. albopunctata ssp. funeris Panzer, 1798

Distribution: North Africa, Israel, Southern Europe - East to Central
Asia.

Material: Binyamina ♂ 16. V.; Jerusalem ♀ 1. -15. VI., Jordan ♀ 11. V.;
Beerot Yizhaq ♀ 25. V.; Urim 2 ♀ 28. V.

* A. marmora Nurse, 1904

Distribution: Pakistan, Israel.

Material: Beerot Yizhaq ♂ 25. V.; Niram 3 ♂ 14. III.; Beer Sheva 2 ♀
14. III., ♀ 22. V., ♂ 5. V.; Urim 3 ♀ 15. V.; Gevulot ♂ 30. V.;
Yehoram, 2 ♂ 13. III.; Wadi Avedat ♀ ♂ 13. V.; Wadi Ramon ♀ 3. V.,
En Gedi 2 ♂ 14. -30. III.

A. cineraria (Linné, 1758)

Literature: Israel (Bodenheimer 1937 p. 174).

Distribution: Whole of Europe to Central Asia, - It is possible that
this is a wrong determination.

* A. grandilabris Pérez, 1903

Distribution: Cyprus, East to Turkey, Israel.

Material: Elon ♀ 27. III.; Jerusalem ♂ 5. III.

A. nigroaenea ssp. candiae Strand, 1945

Literature: Jericho (Alfken 1935 p. 171).

Distribution: North Africa, Israel, Europe - East to Central Asia.

Material: En Gev 5 ♀ 21. III., Tel Qazir 3 ♀ 5. III.; Ramla ♀ (W);
Qiryat Anavim ♀ (leg. Bodenheimer, W); Wadi Qilt ♀ 1. III.;
En Gedi ♂ 1. V.

Subgenus Euandrena Hedicke, 1933

* A. bicolor Fabricius, 1775

Distribution: North Africa, Israel, whole of Europe - East to Central
Asia.

Material: Hermon 1650 m 2 ♀ 20. IV.; En Gedi ♀ 1. V.

A. rufitibialis Friese, 1899

Literature: Jericho (Friese 1899 p. 342).

Distribution: Israel, Jordan.

Material: Deganya ♂ 10. IV. (P).

** A. rufitibialis ssp. limosa n. ssp. (Description on p. 408).

Distribution: Israel, Syria, Turkey.

Material: Mt. Meron 800 m ♂ 17.V. Mt. Karmel 3 ♂ 25.IV. (leg. Stich, W); Jericho ♂ 20. -28.IV. (leg. Enslin, W).

* A. vulpecula Kriechbaumer, 1873

Distribution: Israel, Algeria-Tunis, North to S. France and Italy.

Material: Binyamina 5 ♀ 1.XII. on Colchicum.

* spec. aff. A. vulpecula Kr.

Distribution: Israel.

Material: Jerusalem ♀ 1.III.

Subgenus Simandrena Pérez, 1890

* A. dorsata (Kirby, 1802)

Distribution: North Africa, Israel, North to Central Europe, East to Central Asia.

Material: Dafna Oaks ♀ 11.V.

* spec. aff. A. congruens Schm.

Distribution: Israel.

Material: Nevatim ♀ 8.IV.

* A. lepida Schenck, 1859

Literature: ? Mar Saba (Zavattari 1905 p. 6, as A. combinata Chr.)

Distribution: South and Central Europe, Israel.

Material: Ginnosar 2 ♀ 1 ♂ 6.III.; Kinneret 2 ♀ 4.III.; Tel Qazir ♂ 5.III.

* spec. aff. A. dorsata (K)

Distribution: Israel.

Material: Jerusalem ♂ 29.II.

A. venerabilis Alfken, 1935

Literature: Jericho (Alfken 1935 p. 178)

Distribution: Israel.

Material: El Hamma ♀ 20.IV.; Wadi Auja 3 ♂ 17.IV.; Jericho ♀ 23.II.; Al Maghtas 3 ♀ 25.II.; Jerusalem ♀ (leg. Bodenheimer, W); Migde 2 ♂ 18.III.; Beer Sheva ♂ 5.V ♀ 5.V.; Kurnub 2 ♀ 28.IV.; En Gedi ♂ 9.IV.

* A. transitoria Morawitz, 1871

Distribution: Austria to Central Asia, Israel.

Material: Ginnosar 1 ♀ 10 ♀ 6.III.; Deganya 2 ♂ 19.V.; Binyamina ♂ 15.V.; Beerot Yizhaq ♀ 25.V.; Tel Aviv ♂ 27.III.; ♀ 13.V.; Jerusalem ♂ 9.IV.; 5 ♂ 15.V. -15.VI., ♀ 2.VI.; Beer Sheva ♂ 4.VI.

Subgenus Didonia Gribodo, 1894

A. mucida Kriechbaumer, 1873

Literature: Nazareth (Warncke 1967 p. 577).

Distribution: North Africa, Israel and Southern Europe.

Material: Dan ♀ 11.V.; Tiberias ♀ 8.V.

Subgenus Ptilandrena Robertson, 1902

A. vetula Lepeletier, 1841

Literature: Jericho, Nablus (Alfken 1935 p. 172), Jericho (Warncke 1967 p. 581).

Distribution: North Africa, Israel, Southern Europe - East to Central Asia.

Material: Dafna Oaks ♀ 4.III.; Rosh Pinna ♀ 5.IV.; Haifa ♂ 20.III.;
Zemah ♀ 21.II.; Afula ♂ 13.V.; Kefar Yehezqel ♀;
Binyamina ♀ 12.IV.; Tel Aviv 16 ♂ 20.III.-12.IV.; Jerusalem
44 ♂ 27.III.-10.V., 3 ♀ 18.IV.-10.V.; Jericho ♀ 23.II.,
2 ♂ 28.II.-2.III.; Beer Sheva ♂ 10.IV., ♀ 13.IV.; Nir Yizhaq
♀ 14.IV.; Yeroham ♀ 13.III.; En Mor ♀ 15.IV.

* spec. aff. A. muscaria War.

Distribution: Israel.

Material: Daliya 3 ♀ 6.II.; Jerusalem ♀ 6.III.

Subgenus Margandrena Warncke, 1968

* A. hyacinthina Mavromoustakis, 1958

Distribution: Southern Turkey to Cyprus, Israel.

Material: Jerusalem 2 ♀ 1 ♂ 1.III.

Subgenus Carandrena Warncke, 1968

A. aerinifrons ssp. levantina Hedicke, 1938

Literature: Betania, Kiryat Anavim, Jerusalem (Hedicke 1938 p. 123).

Distribution: Spain, Sicily, Algeria- East to Israel.

Material: Dafna Oaks ♂ 4.III.; Deganya 5 ♂ 11.II.; Zemah 3 ♀ 21.II.;
Jericho 3 ♀ 7.II., 4 ♂ 2.-7.II.; Al Maghtas ♀ 25.II.;
Jerusalem ♂ 3.II.; Niram 3 ♀ 14.III.; Beror Hayil ♀ 27.II.,
♂ 15.III.; Mishmar HaNegev ♀ ♂ 2.III.; Beer Sheva 6 ♀
14.III.-1.IV.; Yeroham ♂ ♀ 13.III.

** A. falcinella n.sp. (Description on p. 408).

Literature: Deganya (Alfken 1938 p. 420, as A. nigroviridula Drs.)

Distribution: Israel, Turkey.

Material: Kinneret ♀ 4.III.; En Harod ♂ 5.III.; Herzliya 3 ♀ 10-13.II.

* spec. aff. A. purpureomicans Alfk.

Distribution: Israel

Material: Migde ♀ 18.III.

* spec. aff. A. purpureomicans Alfk.

Distribution: Israel.

Material: Kefar Nahum ♀ ♂ 29.IV. (P); Deganya ♀ 17.III.; Niram ♀
14.III.

Subgenus Notandrena Pérez, 1890

* A. nitidiuscula ssp. nigellata Pérez, 1895

Distribution: Israel, North Africa, North to Central Europe, East to
Caucasus.

Material: Dan, 2 ♀ 1 ♂ 18.V.; Nazareth ♂ (W); Binyamina ♀ 15.V.;
Herzliya ♀ 17.VI.; Ramla ♂ (W).

* A. langadensis ssp. clanga Warncke, 1966

Distribution: Circummediterranean, except Italy, Israel.

Material: Gilat ♀ 7.IV.

A. ungeri Mavromoustakis, 1952

Literature: Deganya (Alfken 1938 p. 419, as A. gascheti Pér.),
Deganya (Warncke, 1967 p. 580).

Distribution: from Trieste (Italy) East to Turkey, South to Israel.

Material: Qiryat Shemona 3 ♂ 21.VI., ♀ 7.VII.; Tiberias ♂ 12.IV.;
Deganya 3 ♂ 4.-17.III. (P), 2 ♀ 11.II.-18.III.; Zemar
2 ♂ 21.II.; Binyamina 3 ♂ 15.V.; En Harod ♂ 5.III.;
Herzliya ♀ 17.VI.; Ramat Gan ♀ 11.VI.; Miqwe Yisrael ♀
23.VI.; Ramla ♂ 2.VI.; Dorot ♀ 15.IV.; Beror Hayil ♂
15.III.; Beeri ♀ 1.VI.; Beer Sheva ♀ 18.IV.; Gevulot ♀
30.V. - Migda ♀ 18.III.

A. pandosa Warncke, 1968

Literature: Nablus (Warncke 1968 p. 73).

Distribution: Israel, North Africa to Canarian Islands.

Material: Tiberias 2 ♀ 21.III.-12.IV.; Jerusalem 2 ♂ 27.III.-7.IV.,
4 ♀ 7.IV.-1.V.; Beer Sheva 2 ♀ 1.IV.

Subgenus Andrena s. str.

(A. apicata Smith, 1847)

Literature: Israel (Bödenheimer 1937 p. 147) - wrong determination!

DESCRIPTIONS OF NEW SPECIES AND SUBSPECIES

Andrena pinkeunia n. sp.

♀: 10 mm. Body covered with loose yellow-brown pilosity; tibial brush pinnate. Inner side of hind femora with about 8 spines. Upper side of thorax and abdomen prevalently bare. Legs dark; wings turbidly yellowish, stigma brown with blackish-brown inner edge. Nervulus interstitial to slightly post-furcal.

Structure: Clypeus slightly arched with indistinct granular chagreen, therefore dull. Punctuation medium strong, slightly impressed, medium dense; distance of points varying, reduced toward the lower edge to less than one point-diameter. Labrum trapezoidal, about 4 times as broad as long, anterior edge slightly emarginate.

Antennae only toward the tip slightly more reddish-brown; joint 2 slightly longer than 3 + 4. Vertex equals ocellar distance. Eye furrows relatively narrow, 1/3 of face below, broadened to 1/2 above; above about twice as far from the edge of the eye as below.

Mesonotum and scutellum smooth and lucid; punctuation shallow, medium strong with rounded edges, intervals variable, usually 1-2 point-diameter. Postscutellum weakly chagreened, with strongly oblique aciculate punctuation, edges of points elongate behind. Propodaeum lucid to finely chagreened, punctuation slightly oblique, less deeply aciculate with rounded edges; intervals laterally below one point-diameter, towards the middle up to 2-3 point-diameters, Median area distinctly lucid, finely and reticulately chagreened.

Tergite I finely and reticulately chagreened on the indistinct depression, otherwise smooth and shiny; punctuation obliquely aciculate, strong to medium fine, distance of points variable, up to several point-diameters; depression prevalently devoid of punctuation. In the following tergites the depressions become broader, up to almost the whole breadth of the tergite; tergites finely and moderately punctate, the depressions impunctate with reticulate chagreen.

♂: 9 mm. Body covered with scanty upright yellowish-brown hairs; dorsal side of thorax and abdomen prevalently bare. Clypeus with dull reticulate chagreen, moderately punctate with aciculate points, the upturned edges fused to transverse wrinkles. Antennal joint 2 as long as 3 + 4, both subquadrate, the following ones quadrate.

Mesonotum slightly lucid, finely chagreened, punctation medium strong, the points moderately deeply aciculate with rounded edges; intervals variable, equal to about one point-diameter, on the disc more distant. Punctation of the thorax otherwise as in the female.

Tergite I smooth and shiny, indistinctly chagreened only in the middle of the depression: punctation coarse, slightly obliquely aciculate, distance of points irregular, about 2 point-diameters; depression devoid of points. The following tergites more and more chagreened, punctation slightly diminishing. Depressions occupying almost half of the breadth of the tergites, finely reticulately chagreened to foveolate, largely devoid of points.

Genitalia with long drawn out penis-valves and gonostyles. Sternite VIII slightly enlarged and rounded.

A. pinkeunia can be distinguished from the other Chlorandrena species by the extremely broad depressions on the abdominal tergites.

HOLOTYPE: ♂ Qiryat Anawim (leg. Bodenheimer) PARATYPES: the specimens enumerated from Israel on p. 380.

Andrena garrula ssp. lomvia n. ssp.

♀: Pilosity in general somewhat browner, blackish-brown above the insertion of the antennae and especially on the inner side of the eye furrows. Sculptures duller everywhere, tergites distinctly less punctate.

♂: Sides of the face from the base of the mandibulae to above the antennae with blackish-brown pilosity. Body surface without shine; sculptures duller everywhere, tergites distinctly less punctate, points slightly more disperse.

HOLOTYPE: ♂ Jerusalem I.III.69 (leg. Bytinski-Salz) PARATYPES: the specimens enumerated from Israel on p. 380.

Andrena bytinski n. sp.

♀: 9 mm. Pilosity upright, moderately dense, light yellowish-brown, on the dorsal side somewhat darker; outer side of the tibial brush short brushy, hairs on the inner side twice as long. Abdomen on tergites II--IV with narrow brownish-yellow bands, on the first more narrow or interrupted. Apical fimbriae reddish-yellow, legs dark, only the distal tarsal joints reddish-yellow. Wings brownish, slightly turbid, veins light brown; periphery of the stigma brownish, centre lighter. Subcosta dark brown, nervulus distinctly postfurcal; 2 cubital cells.

Structure: Clypeus laterally slightly arched, in the middle almost flat, with reticulate to finely granulate chagreen dull, with greenish bronze shine, upper part also with reddish bronze shine. Punctuation shallow, medium fine and slightly obliquely aciculate; point intervalls usually 2-3 point-diameters. Labrum rectangular, about 4 times as broad as high, outer edge slightly arched. Ara frontalis slightly rugose, dull, indistinctly punctate. Antenna lighter toward the tip, reddish-brown, especially below. Joint 2 slightly longer than 3+4, subquadrate, the following ones quadrate. Face with weak greenish bronze hue, frons finely longitudinally striate, impunctate. Vertex as broad as ocellar distance; eye furrows shallow, tapering off toward the vertex, at the base of the antennae moderately long, below covering slightly less than half of the face, above broadened to 2/3.

Mesonotum, scutellum and postscutellum densely granulate, foveolate chagreened, therefore dull, indistinctly dispersely punctate; all three parts slightly greenish with reddish bronze hue. Mesopleurae granulose, chagreened, indistinctly and very finely punctate. Propodaeum with reticular chagreen, slightly lucid, with extremely fine and shallow punctuation; median area slightly more rough with granulate chagreen.

Tergites with horn-coloured depressions, tergite I with slightly foveolate chagreen, with disperse fine oblique aciculation; following tergites with more reticulate chagreen and vertical punctuation, punctuation becoming more strong and dense.

♂: 8 mm. Pilosity erect, light brownish-yellow, whitish below. Bands on tergites II-IV not dense, the first two more or less distinctly interrupted.

Head and thorax with light greenish bronze lustre, on the abdomen almost not recognizable. Sculpture exactly as in the female. Antennal joint 2 slightly longer than 3 + 4, 3 almost twice as broad as long, 4 quadrate, the following ones slightly longer.

Genital capsule compressed, with very long and narrow dorsal tooth of the gonocoxite; end of gonostyles scoop-shaped, triangularly restricted; penis-valves almost globularly inflated, with an opening almost exactly as large.

The new species is placed among the Pallandrena due to its sculpture and spurs broadened at their base.

HOLOTYPE: ♀ Binyamina 16.III. (leg. Bytinski-Salz); PARATYPES: the specimens enumerated on p. 380.

Andrena crassana ssp. inka n. ssp.

♀: Antennae more pronounced reddish-yellow. Tibial brush brownish-white, under side hardly darker. Upper side of the thorax more shining, with distinctly stronger punctuation. Tergites more finely and less densely punctate.

♂ Upper side of the thorax more shiny and distinctly stronger punctate. Veins light brown as in the female.

HOLOTYPE: ♀ Binyamina 7.IV. (leg. Bytinski-Salz); PARATYPES: the other specimens enumerated on p.381; also 1 ♀ from Malatya (Turkey) 18.V.55. (leg. Seidenstucker)

Andrena kilikiae n. sp.

♀ 7 mm. Body bare with striking greenish bronze shine, on clypeus also with reddish to bluish hues. Head sparingly covered with erect yellow-brown hair; Upper side of thorax with few longer, and denser shorter brownish hairs; underside with only slightly lighter pilosity. Tergites with inconspicuous short brownish hairs; sides of posterior borders of tergites II-IV with single yellow-whitish hairs. Anal fringe brownish-yellow. Legs black with brown-yellowish pilosity. Upper side of tibial brush brown, underside yellowish-white with loose and erect pilosity. Wings slightly turbid, brownish; veins black-brown, as well as stigma, the latter with indistinctly light centre. Nervulus antefurcal to interstitial. Second discoidal cross vein reaches the 2nd cubital cell slightly behind the middle.

Structure: Clypeus slightly arched, chagreened, more lucid toward the anterior border, punctuation fine to moderately strong and scattered, intervals about 2 point-diameters; an impunctate midline indicated. Labrum trapezoidal, about twice as broad as high with smooth anterior edge. Area frontalis moderately distinct, chagreened with feeble longitudinal striation. Antennae blackish-brown; tip lighter red-brown. Joint 2 slightly longer than 3 + 4, each of these twice as broad as long, the following ones slightly subquadrate. Vertex almost as broad as the ocellar distance. Eye furrows tapering above, somewhat constricted in the middle, below even broader than above, narrowly but distinctly separated from the internal edge of the eye; breadth of eye furrow about as half of breadth of face.

Mesonotum and Scutellum with reticulate chagreen, therefore slightly lucid; punctuation medium dense and medium finely aciculate, intervals one point-diameter, on the sides distinctly more disperse. Postscutellum rugosely chagreened in the middle, very feebly lucid, punctuation almost unrecognizable. Mesopleurae finely granulate chagreened, very superficially and finely punctate. Propodaeum similar, median area separated by fine edges; surface uniform without distinct ridges.

Tergite I with finely reticulate to foveolate chagreen, finely but deeply aciculate, intervals 1-2 point-diameters in the middle, on the sides somewhat more. Depression more indistinctly reticulately chagreened, outer part impunctate. Also the depressions on the following tergites with reddish horn coloured metallic hue. Second and following tergites with fine indistinctly reticulate chagreen, punctuation distinctly finer, more dense and uniform.

♂: 6-7 mm. Body with shabby and erect pilosity, only clypeus with pronounced denser hairs pointing towards the anterior edge; abdomen almost nude. The whole body with greenish bronze hue, clypeus also with reddish and bluish metallic reflections. Head yellowish-brown, only the clypeus yellowish-white pilose; upperside of the thorax with few long erect brownish hairs, sides more brownish-yellow pilose. Abdomen with indistinct brownish-yellow hairs, which become shorter on the posterior segments, sides of the apical borders of tergites II-IV with single light yellowish hairs. Sternites almost bare, on the apical borders with rows of relatively long yellowish hairs, these becoming somewhat shorter toward the middle.

Structure: Clypeus as in the female, only somewhat shorter, almost twice as broad as high. Antennal joint 2 slightly longer than 3 + 4, these distinctly subquadrate, the following ones quadrate. Vertex as broad as one ocellus. Sculpture of thorax and tergites as in the female.

Genital capsule slender and elongate. Dorsal tooth of gonocoxite lacking, end of gonostyle broad scoop-shaped, toward the tip elongate, pointed. Penis-valves somewhat broadened towards the base, highly arched, distinctly lobate. Sternite VIII narrowed toward the end, apical edge rounded, indistinctly notched in the middle.

Similar to A. viridescens Vier. in size and sculpturation, differs by its greenish and not blue bronze hue and finer punctation; in the male the clypeus also yellow.

HOLOTYPE: ♂ Adana Turkey 25.III.67 (leg. Warncke); PARATYPES: 1 ♀ ♂ same place and locality on Veronica; Israel: ♂ Mt. Hermon 1650 m (leg. Bytinski-Salz).

Andrena isabellina n. sp.

Similar to A. trikalensis War. in sculpture and size.

♀: Pilosity brownish. Clypeus lucid in the broad median line, with scarcely recognizable chagreen and medium strong and medium dense vertical aciculation; intervals below one point-diameter. Antennal joint 2 almost as long as 3+4+5. Upper side of thorax twice as strongly and clearly aciculate-punctate. Tergites with more disperse but stronger punctation, intervals 1-2 point-diameters.

HOLOTYPE: ♀ Jericho 20-28 IV.27 (leg. Enslin); PARATYPES: the other specimens enumerated on p.381 ; also 1 ♀ Antakya (Turkey) 23.V.67. (leg. Gusenleitner).

Andrena glareola n. sp.

Similar to A. neocyprica Mavr. Differs as follows:

♀: Clypeus lucid, almost unrecognizably chagreened; punctation almost twice as strong and very dense, also upper side of thorax twice as strongly punctate. The ridges, originating from the postscutellum, in the median area

of the propodeum distinctly stronger. Punctuation on the tergites only slightly stronger, but remaining equally strong to the last segment.

♂: Antennae not serrate but rounded all around, more pronounced reddish-yellow than in the female. Sculpture similar to female. Genital capsule similar to that of A. schulzei Strd. only the base of the gonostyles about three times as broad and the penis-valves not so globularly inflated. Sternite VIII distally enlarged and notched.

HOLOTYPE: ♂ Nazareth (W); PARATYPES: the other specimens mentioned on p. 382.

Andrena dauma n. sp.

Like a small A. acerba Warn. with shining clypeus.

♀: 8 mm. Clypeus almost flat, upper border and upper centre finely reticulate chagreened, otherwise smooth and shining with strong but shallow and disperse punctuation, intervals 1-3 point-diameters. Eye furrows somewhat more narrow. Antennal joint 2 slightly longer than 3 + 4, these almost twice as broad as long, the following ones slightly subquadrate.

Mesonotum and scutellum also lucid, but punctuation only half as strong i.e. fine, intervals almost one point-diameter. Hind femora without keel on inner side, tibial brush more brownish. Tergites slightly chagreened, therefore almost dull, punctuation similar, dispersed, but somewhat finer, becoming almost indistinct on the posterior tergites.

♂: Only the clypeus yellow, also shining. Length of antennal joints and sculpture of tergites as in the female. Upper side of the thorax with reticulate chagreen, the disc, or almost the whole disc area, smooth and lucid, finely, dispersely punctate, intervals 2-several point diameters.

Genital capsule: Dorsal tooth of gonocoxite absent, gonostyles with broad base, tips almost not enlarged; penis-valves only slightly broadened at base, with narrow dorsum and rapidly narrowing toward the tip. Sternite VIII broadened at tip, rounded to slightly notched.

HOLOTYPE: ♀ Nablus 19-26.IV.34 (leg. Enslin); PARATYPES: the other specimens enumerated on p. 382.

Andrena iliaca n. sp.

♀: 8-9 mm. Body sparingly covered with greyish-white hair, upper side of thorax and tergites mostly bare. Tibial brush short brushy on the outer side, simply and slightly brownish pilose. Abdomen with loose whitish bands on tergites II-IV, on the first narrowly interrupted. Apical fringe reddish-yellow in the middle, whitish on the sides. Legs dark. Wings slightly brownish, veins light

brownish, nervulus interstitial, first discoidal cross vein reaches the middle of the second cubital cell.

Structure: Clypeus only slightly arched, with fine reticulate chagreen, anterior border smooth, slightly lucid, bare, with more or less distinct greenish to reddish bronze shine. Punctuation medium strong, discretely disperse, intervals 1-2 point-diameter; the narrow midline impunctate. Labrum small trapezoidal with trimmed border. Area frontalis smooth, finely longitudinally striped, impunctate. Frons longitudinally grooved, finely discretely punctate in between. Vertex half of breadth of ocellar distance. Eye furrows long, bordering the inner edge of the eyes, tapering off toward the upper and inner parts of the head; narrowly grooved in the lower third, broadening upwards to almost the ocelli. Antennae reddish-yellow on the underside and toward the tip. Joint 2 as long as 3 + 4, these slightly subquadrate, the following ones quadrate.

Mesonotum and Scutellum with fine granular chagreen, dull with weak reddish bronze hue, finely and discretely punctate, intervals 2-3 point diameters: some points distinctly larger, but also shallowly aciculate. Postscutellum more strongly granularly chagreened, without bronze shine and indistinctly punctate. Mesopleurae with dense reticulate chagreen, very finely obliquely aciculate and dispersely punctate. Propodaeum as long as scutellum and postscutellum together, densely reticulately chagreened, indistinctly punctate, median area with dense granular chagreen. Tergite I reticulately chagreened, impunctate, as also the following tergites, these with slight greenish bronze hue and fine punctuation.

♂: 6-7 mm. Sparingly covered with upright whitish hair, almost bare on upperside. Bands almost undeveloped. Clypeus and the adjoining lower parts of the face yellow, strongly lucid, with discret medium strong punctuation, sides relatively densely punctate, middle impunctate. Lower part of area frontalis smooth and shining. Underside of antennae reddish brown. Joint 2 longer than 4, distinctly shorter than 3 + 4, 3 almost twice as broad as long, 4 and following joints slightly longer than broad.

Thorax as in the female, only with slightly stronger punctuation. Tergite I with feebly reticulate to foveolate chagreen, with extremely fine and disperse punctuation. The following tergites more and more lucid, more distinctly and more densely punctate, intervals 2-3 point-diameters. Depression slightly lighter reddish-yellow.

Genitalia: Gonocoxite with almost undeveloped broad dorsal tooth, gonostyles with scoop broadened to the inner side; penis-valves broadened toward base. Sternite VIII distally only slightly enlarged, tip rounded.

13. - Mesanthidium nigratum n.sp., ♂. (a) clypeus; (b) scutellum; (c) last tergite; (d) right half of genitalia (the base still in situ not represented).

A. iliaca is the smallest species among the Nobanorena and the only one in which the narrow and shallow eye furrows converge; the male is clearly distinguishable by its short clypeus and the shortened genital capsule.

HOLOTYPE: ♀ Nablus 19-26 IV.34 (leg. Enslin); PARATYPES: the other specimens from Israel mentioned on p.

Andrena bassana n. sp.

♂: 9-13 mm. Pilosity long, erect, brownish-yellow, ventral side and lower half of clypeus whitish; tergites also long erect pilose without bands. Wings yellowish turbid, veins dark brown; nervulus slightly postfurcal. Legs dark.

Structure: Clypeus somewhat snoutlike elevated, but of normal length, plane in the centre; finely chagreened, slightly lucid, punctation coarse, intervals one point-diameter. Labrum small triangular, deeply excised at the tip. Antennae dark, joint 2 equals 3+4, 3 almost quadrate, the following ones slightly longer than broad. Vertex equals twice the breadth of ocellar distance.

Mesonotum smooth and shining with medium strong punctation, intervals one point-diameter, more disperse on the disc. Scutellum and postscutellum similar, the latter also with fine chagreen. Mesopleurae with fine granular to dense reticular chagreen, with medium fine and shallow punctation. Propodaeum similar, median area granularly chagreened.

Tergite I smooth and shining, slightly arched across, with medium strong disperse punctation, intervals 2-3 point-diameters. The following tergites with insignificant chagreen, but still lucid, punctation less strong but more dense.

Genitalia similar to A. schmiedeknehti Magr. only the enlargement of the gonostyles shorter and broader, and the opening of the penis-valves larger. Sternite VIII broadened at the tip and slightly notched.

HOLOTYPE: ♂ Ramla (coll. Warncke). PARATYPES: the males from Israel mentioned on p. 383. It is doubtful whether the ♀ belongs also to this species.

Andrena rotundilabris ssp. rila n. ssp.

♀: Antennae bright yellow; body yellow-brown pilose, distribution of black hairs as in the nominate form; tibial brush red. The differences in coloration are not so much pronounced in the male.

HOLOTYPE: ♀ Allonim 17.III. (leg. Bytinski-Salz); PARATYPES: the other specimens listed on p. 383; also 1 ♀ N. Lebanon, Cedars near Bscharré 1900 m 12-19.VI.31 (leg. Zerny, W.).

Andrena ulula n. sp.

In sculpture and venation similar to A. doursana derbentina Mor ♀

♀: differs by the rectangular labrum which is 3 times as broad as long. Clypeus hemispherical arched instead of being flat. Middle of frons below median ocellus not depressed but slightly arched. Colour normal dark without blue bronze shine.

♂: similar to ♀; only clypeus completely yellow, antennal joint 2 as long as 3 + 4. Genitalia as in A. rotundilabris Mor., only dorsal tooth of gonocoxite broader.

HOLOTYPE: ♀ Tel Aviv (W); PARATYPES: the other specimens mentioned from Israel on p. 384, also 2 ♀ Beysehir (Turkey) 4-6.VI.64 (leg. Gusenleitner).

Andrena innesi ssp. undata n. ssp.

♀: Tibial brush lighter, uniformly yellowish-white on outside; upperside of thorax and abdomen greyish-yellow, segment V and apical fringe black-brown.

♂: also lighter, tergites with black hair already from the middle of the fourth segment on. Valves of the genitalia more thickened in the middle.

HOLOTYPE: ♀ Kinneret 9.IV.42 (leg. Bytinski-Salz); PARATYPES: the rest of the specimens mentioned on p.384.

Andrena cyanomicans ssp. mirna n. ssp.

♀: black hair cover as in the nominate form, other hairs withish instead of yellow-brown. Tibial brush black-brown, only underside slightly red-brown. Tergites without bands. Sculpture as in the nominate form, tergites black without greenish bronze shine. Aspect in general as ssp. notata Warn. but with dark tibial brush.

♂ exactly like ssp. fratella War.

HOLOTYPE: ♀ Beersheba 14.III.46 (leg. Bytinski-Salz); PARATYPES: the specimens enumerated on p. 385.

Andrena volka n. sp.

♀ : 7-8 mm. Body sparingly pilose, hairs yellowish to greyish-yellow. Upper side of thorax brown; edges of tergites II-IV with loosely ciliated fasciae, those on II and III broad, the last medially interrupted, Apical fringe brownish-yellow. Tibial brush yellowish, upper anterior border brownish. Legs dark, tarsi slightly lighter reddish-brown. Wings hyaline, veins brown; stigma yellowish, inner edge bordered dark, Nervulus interstitial. First discoidal cross vein enters distinctly before the middle in the second cubital cell.

Structure: Clypeus uniformly, flatly arched, with granulose chagreen, therefore dull; punctation shallow, medium fine, disperse, intervals 1-2 point-diameters. Labrum small, moderately broad, bluntly triangular. Area frontalis finely chagreened, longitudinal rugosities and punctation imperceptible. The whole body except clypeus with slight but distinct metallic hue. Antennae, from joint 4 on, reddish, especially on the under side. Joint 2 as long as 3 + 4, those subquadrate, the following ones quadrate. Vertex as broad as half ocellar distance. Eye furrows medium long, their lower part distinctly separate from the punctate inner edge of the eyes, about one third as broad as the lower half of the face.

Mesonotum and scutellum finely reticulately chagreened, slightly lucid, discretely covered with deep aciculate points, intervals 1-3 point-diameters. Postscutellum and mesopleurae also slightly reticulately chagreened; the first impunctate, the second with fine oblique aciculation. Propodaeum similar to mesopleurae; median area with slightly coarser chagreen, on the edge of the postscutellum few short transparent ridges.

Tergites with reticulate to foveolate chagreen, impunctate. Depressions without distinct borders, sculptured as the tergites, tergite II and the following ones with more disperse chagreen, tergite III and the following ones very finely punctate.

♂ : 6 mm. Pilosity erect, longer, more dense, upper side brownish, under side yellowish. Bands on tergites only laterally indicated. Clypeus yellow.

Structure: Clypeus with almost inrecognizable chagreen, lucid with medium strong and disperse punctation, Antennal joint 2 almost twice as long as 3, shorter than 3 + 4; 3 twice as broad as long, 4 slightly subquadrate, the following ones quadrate. Vertex slightly broader than half the ocellar distance.

Mesonotum with indistinct reticulate chagreen, smooth, in the middle lucid, there with medium strong deep aciculate punctation, intervals 2 point-diameters. Postscutellum, mesopleurae and propodaeum as in the female.

Tergite I with foveolate chagreen and fine disperse aciculate punctation, the following tergites with more diffuse chagreen, with increasing gloss and fine punctation; depressions with almost indistinct borders, only slightly lighter. Genitalia slender with somewhat elongate gonostyle. Hind edge of sternite VIII shovel shaped with straight posterior border.

A. volka n. sp. belongs to the subgenus Graecandrena, according to the eye furrows and the sculpture on thorax and abdomen. The species is recognizable by its lowly arched clypeus and the slight bronze shine of the body. In the male, the clypeus is yellow, which in general does not occur in other species of this subgenus.

HOLOTYPE: ♀ Adana (Turkey) 12.V.; PARATYPES: the specimens mentioned from Israel on p.337 Further 2 ♀ 2♂ Adana (leg. Bolle); 5 ♀ 4 ♂ Adana 7-12.V. (1 ♀ stylotized); 2 ♂ Aleppo (Syria) 10.V. (leg. Pietschmann).

Andrena bonasia n. sp.

Very similar to A. aeneiventris Mor., differing in the following characters:
♀: Clypeus also shining, smooth, points distinctly aciculate, the borders still indistinctly confluent, Labrum somewhat broader and straight in front. Antennal joint 2 somewhat longer, as long as 3 + 4; joints from the 4th on bright yellow-red. Mesonotum with slightly less dense punctation, the brushy hair cover finer and therefore appearing less dense. Punctation of tergites imperceptibly coarser.

♂: White, pilose; antennae from joint 3 bright red-yellow. Clypeus as in the female; joint 2 as long as 5,3 twice as broad as long; 4 quadrate, the following ones longer than broad. Punctation of the thorax as in A. aeneiventris with shiny bronze metallic gloss; abdomen also glossy. Tergite I lucid with disperse foveolate chagreen, dispersely obliquely aciculate; tergite II with more dense foveolate chagreen, III similar to I, the following ones with almost imperceptible chagreen, so the fine punctation becoming more distinct.

Genitalia with strongly developed ends of gonostyles, the inner side extended into a blunt tip.

HOLOTYPE: ♂ Konya (Turkey) 25-27.V.65 (leg. Gusenleitner); PARATYPES: 3 ♂ 3 ♀ Konya 4-15.VI. 1965-67; Urfa 1 ♀ 9 ♂ 19-21.VI.1967 (all leg. Gusenleitner).

Andrena bonasia ssp. naevia n. ssp.

♂ Torax and abdomen with somewhat finer punctation, abdomen also with fine foveolate chagreen. Genital capsula somewhat different; dorsal tooth of gonocoxite almost undeveloped; shovel of gonostyle rounded on the inner edge; penis-valves somewhat broader.

HOLOTYPE: ♂ Jerusalem, Mt. of Olives; PARATYPE: ♂ from the same locality (W).

Andrena nisoria n. sp.

Size and sculpture as in A. dentiventris Mor.

♀: Labrum small and narrowly trapezoidal, three times as broad as long. Clypeus chagreened to anterior edge, posterior third smooth and lucid. Mesonotum and scutellum with stronger chagreen, dull, punctation somewhat denser, intervals often below one point-diameter. Lateral keel on tergite I only slightly developed, inconspicuous; in the following tergites torus around the broad depressions only indicated; sides of tergites with finer punctation.

♂: Antennae more conspicuous red-brown than in the ♀. Tergites with slightly finer punctation and almost unbordered horn-coloured depressions. Genital capsula very similar to A. taxana War.; sternite VIII as in A. figurata Mor.

HOLOTYPE: ♀ Jericho 20-28.IV.27 (leg. Enslin); PARATYPES: the other specimens from Israel mentioned on p.388; also: 2 ♀ Limassol (Cyprus) 25.III.1956 (leg. Mavromoustakis); 3 ♀ Urfa (Turkey) 19-21.V.1967 (leg. Gusenleitner); 1 ♂ Sfax (Tunisia). A somewhat differing ♀ from Aschabad 16-20.IV.29 (leg. Tschestakov) may also belong to this species.

Andrena merula n. sp.

Very similar to A. hesperia Sm. differing in the following way:

♀: slightly smaller, 7-8 mm. Pilosity similar, only tibial brush light brown-yellow. All legs dark, apparently never bright red-yellow. Abdominal bands distinctly narrower, only about half as broad as in A. hesperia. Disc of mesonotum with distinctly more disperse and finer punctation, especially on the inner side of the parapsidal furrows; intervals equal one point-diameter; tergites also with finer and more disperse punctation, on the last tergites the punctation only more very fine.

♂: also smaller, 7 mm. Face only lateral with black pilosity; abdominal bands scarcely indicated. Also the hindlegs very dark, usually brown. Sculpturation as in the female. Genital capsule with somewhat more slender penis-valves and more shovel-formed gonostyles.

HOLOTYPE: ♂ Ayia Ezini (Cyprus) 20.IV.39. (leg. Mavromoustakis); PARATYPES: the specimens from Israel mentioned on p.388; also 1 ♂ Athens (Greece) 10.IV.63. (W), 1 ♀ Delphi 12.IV.63 (W); 1 ♀ Limassol (Cyprus) 10.IV.67 (leg. Mavromoustakis).

Andrena guttata n. sp.

Very similar to A. murana War.

♀: Upper side of thorax reddish-yellow pilose, tibial brush black-brown. Tergites without bands, apical fringe dark brown.

Clypeus chagreened, dull, with narrow elevated midline, which tapers off toward the anterior edge; vertex also dull. Upper side of thorax chagreened and dull, lucid only in the middle. Tergites slightly shiny, punctation fine, recognizable especially on tergite I.

HOLOTYPE: ♀ Yeroham 13.III. (leg. Bytinski-Salz); PARATYPES: the other specimens mentioned on p.389.

Andrena rufotibialis ssp. limosa n. ssp.

♀: Pilosity darker, i. e. brownish-yellow, especially on the dorsal side; bands yellowish. Mesonotum with extensive but indistinct black pilosity. Abdomen completely black in both sexes.

HOLOTYPE: ♀ Konya (Turkey) 15.VI.65 (leg. Schwarz); PARATYPES: the specimens from Israel mentioned on p.393; furthermore from Turkey: 3 ♀ 4 ♂ Konya 10.VI.65 (leg. Schwarz) 2 ♀ Mardin; ♀ Taurus 15.VI.; ♂ Antakya 2.VI.65 (leg. Schwarz); ♂ Antakya 26-27.VI.55 (leg. Seidenstücker); Syria: ♂ Lattakya V.1885 (leg. Leuthner).

Andrena falcinella n. sp.

Similar but smaller than A. purpureomicans Alf.

♀ 7-8 mm. Pilosity in general brownish yellow, somewhat lighter below. Bands narrow, sparsely pilose, yellowish-white, on tergites II-IV, broadly interrupted only on tergite I. Tibial brush short on outside. Nervulus slightly antefurcal.

Clypeus slightly arched, chagreened and dull, except the narrow lucid anterior border, with greenish and reddish metallic hue. Antennae somewhat more reddish. Mesonotum with slightly finer punctation, but tergites almost smooth, extremely fine points discernible only from tergite II on.

♂: differs from A. purpureomicans Alf. in a similar way as the female. Clypeus more yellow in the middle. Genital capsule with more narrow penis-valve and more narrow but more elongate gonostyles.

HOLOTYPE: ♀ Herzliya 13.II. (leg. Bytinski-Salz); PARATYPES: the specimens from Israel mentioned on p.395; also 3 ♀ 2 ♂ Adana (Turkey) 1.IV.(W).