

**NOTES ON ANT-LIONS (NEUROPTERA: MYRMELEONIDAE) OF ISRAEL  
AND ADJACENT COUNTRIES, WITH DESCRIPTIONS OF NEW SPECIES**

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**ABSTRACT**

Descriptions are given of 11 new species of ant-lions (Neuroptera: Myrmeleonidae). A redescription of *Solter virgittii* (Navas) and a key to all Solfer-species recorded from Israel and Sinai are presented.

**INTRODUCTION**

The Ant-lions of the Middle East were comprehensively studied by Holzel (1972) and all relevant publications dealing with the fauna of this region are cited there. Since then, this family was further studied by D. Simonl (Department of Zoology, Tel Aviv University) from Israel and adjacent areas. The material collected in the course of this study, as well as other material from collections in Israel, was sent to me for identification. Some of the new species are described here.

The terminology used by Aspöck et al. (1980) for wing venation and genitalia, is adopted in this publication.

The following abbreviations are used in the text for the various collections in which the material studied is deposited.

ZTA — Department of Zoology, Tel Aviv University, Israel

ZHU — Department of Zoology, Hebrew University, Jerusalem, Israel

GHU — Department of Genetics, Hebrew University, Jerusalem, Israel

NMW — Naturhistorisches Museum, Wien

NMB — Naturhistorisches Museum, Basel

LNK — Landessammlungen für Naturkunde, Karlsruhe

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, D. 1979. The Ant-lions (Myrmeleonidae) of Israel. M.Sc. Thesis, Tel Aviv University, 123 pp. + 8 pl.

(Reproduced from stencil - in Hebrew with English summary)

DESCRIPTION OF SPECIES

*Acanthaclisis formosa* n. sp.

(Fig. 1, 2, 3, 4).

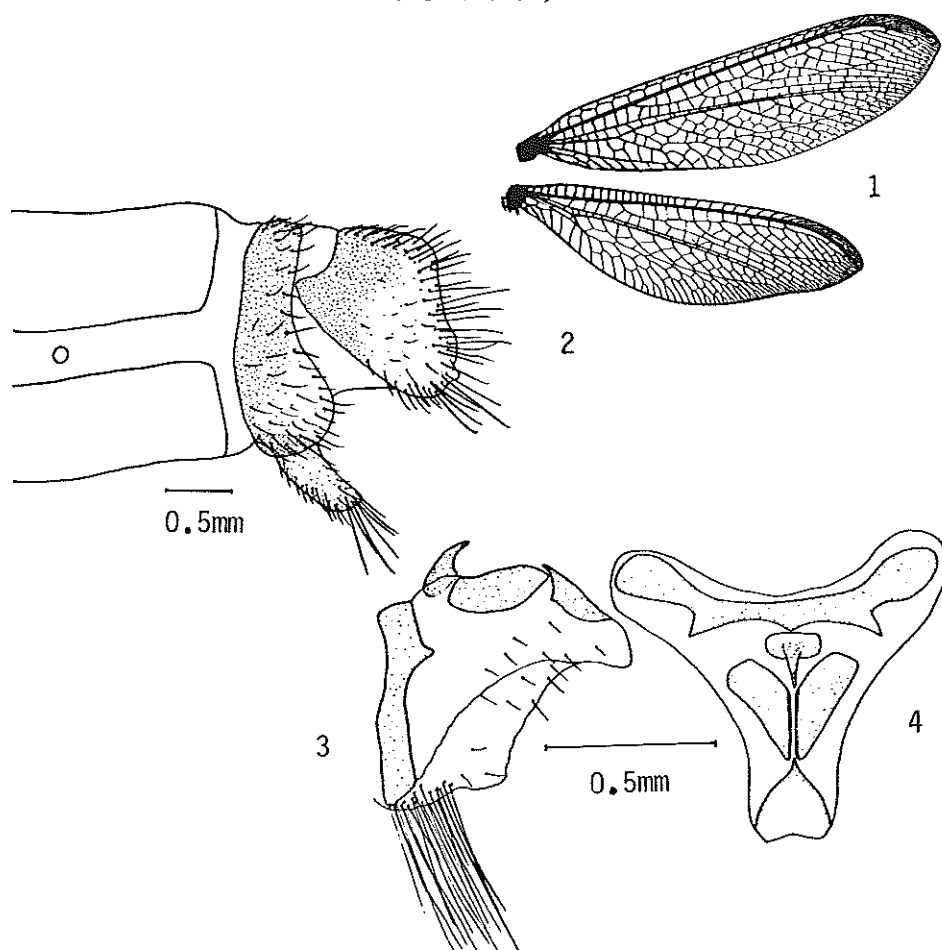


Fig. 1-4. *Acanthaclisis formosa* n. sp. 1. Wings (paratype ♂ from Sudan, Kassala) 2. Apex of abdomen, laterally (holotype ♂) 3. Gonarcus, Mediuncus, parameres, laterally (holotype ♂) 4. Ditto, dorsally.

Description of holotype

Length of anterior wing 27 mm, length of posterior wing 25 mm, length of body about 26 mm. General colour dark brown. Face (clypeus and frons) pale yellowish, no interantennal mark, a brown transverse band behind antennae; occiput dark brown with two indistinct pale spots; short white hairs. Antennae yellow with dark annulations. Pronotum scarcely longer than broad with four median and two lateral obscure stripes, with long lateral bristles and white hairs; metanotum with yellowish markings,

mesonotum entirely dark brown. Wing hyaline, venation pale with considerable dark mottling; pilula axillaris present. Anterior wing with 5 basal costal veinlets preceding the division of costal cellules (Fig. 1); pterostigma distinct. Subcosta with small dark spots, radius prevailing dark with small pale areas, cubitus anterior with marked brown areas, all other veins faintly speckled.

Hind wing generally paler; subcosta, radius, radial sector distally and media posterior basally with dark areas; fore wing with 7, hind wing with 5 presectoral cross-veins (cross-veins which lie between the base of the wing and the divergence of the radial sector from radius). Legs dark brown, tibiae marked with yellowish beneath (not in fore legs), clothed with white hairs and armed with rows of stout white (and a few black) spines. Spurs reddish-brown, abruptly curved, about as long as the three basal segments of the tarsi.

Abdomen clothed with sparse short whitish hairs; tergites mainly dark, only small yellowish rings on the caudal parts of tergite 2-4; sternites yellowish beneath. Apex as in Fig. 2, with very prominent tergite 9 and short round ectoprocts, each with a small median process; gonarcus, mediuncus and parameres as in Fig. 3, 4.

The paratypes agree in all essential details with the holotype; the length of anterior wings varies from 31 mm (♂) to 34-36 mm (♀).

The rectangular shape of the costal cellules in anterior wing (Fig. 1) should serve to distinguish this from all other *Acanthaclisis* species recorded from Israel.

MATERIAL EXAMINED: Holotype ♂, Sinai, Wadi Kid 6.10.1969, Werner (ZHU); Paratypes: 1 ♀, Sinai, St. Katharina, 6.9.1976, R. Barkai; 1 ♀ Israel, Ein Gedi 10.10 Bytinski-Salz leg. (ZTA); 1 ♂ 1 ♀ Sudan, Kassala, Erkowit-mountains 1100-1300 m, 25.6.1962, R. Remane (OHM); 2 ♀♀ Saudi Arabia, Wadi Shuqub 1390 m, 21.10.1979, W. Büttiker (NMB); 1 ♀ Asir 850 m, Wadi Tihama, 23.4.1979, H.G. Amsel (LNK).

### Genus *Iranoleon* Hölzel

*Iranoleon* Hölzel, 1968: 7; 1972: 21 (Type species: *Iranoleon vartianae* Hölzel, 1968).

The diagnosis of this genus as given by Hölzel (1968) has to be modified because the male of the species which is described below has three pairs of pleuritosquamae on abdomen — on segments 5, 6 and 7. Usually all males of the Myrmecaelurini (and all hitherto described species of *Iranoleon*) have pleuritosquamae on segments 6 and 7 only in *Lopezus* Navas, 1913 there is only one pair on segment 7.

The genus contains now 8 species which are distributed from Sinai to Pakistan.

### *Iranoleon octavus* n. sp.

(Fig. 5, 6, 7).

#### Description of holotype

Length of anterior wing 24 mm, length of posterior wing 21 mm, length of body about 25 mm. General colour pale brown. Head with brown interantennal mark, extending below the antennal bases; vertex with a narrow median stripe and two inter-

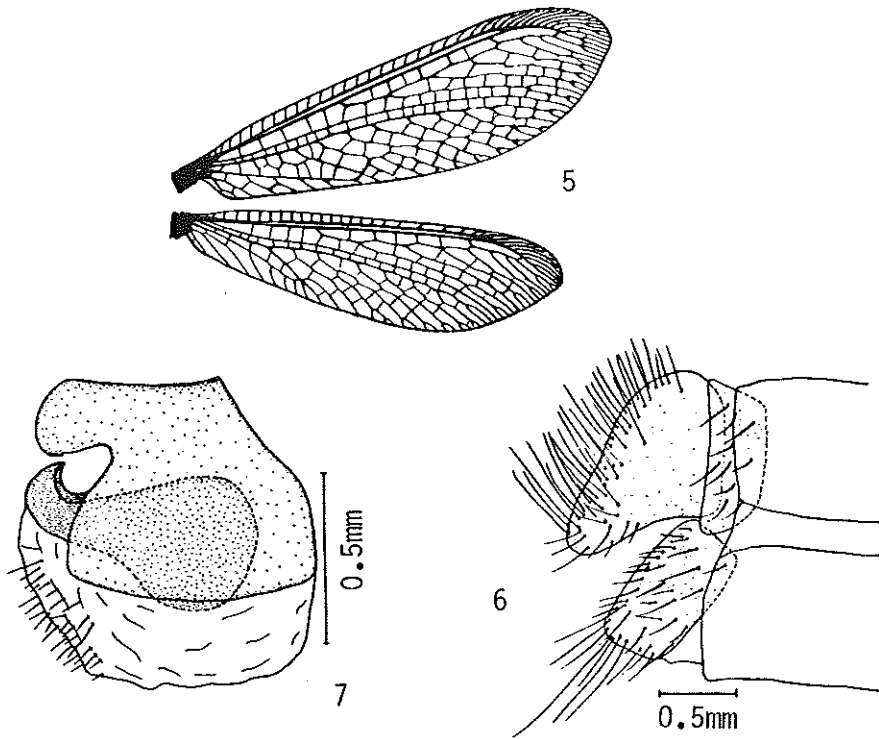


Fig. 5-7. *Iranoleon octavus* n. sp. 5. Wings (paratype from Sinai) 6. Apex of abdomen, laterally, 7. Gonarcus with parameres, laterally.

rupted transversal rows of spots. Antennae with pale and brown annulations. Pronotum scarcely longer than broad, with three narrow longitudinal brown stripes, laterals interrupted, and two isolated brown spots laterally on hind margin; white hairs and bristles; meso- and metanotum with broad bands laterally and a narrow interrupted median stripe; a few small dots and lines between the stripes. Wings as in Fig. 5. Venation pale with brown areas; membrane hyaline, posterior margin of wing slightly suffused with brownish; pterostigma distinct; in hind wing 5 presectoral cross-veins. Legs: femora and tibiae mainly brownish, tarsi luteous with apices of segments brownish; with pale hairs and black bristles; tibiae with dark brown rings at apices and in basal half; tibial spurs shorter than basal tarsal segments. Abdomen pale brown, each segment with large dark brown patches; short pale hairs; a pair of pleuritosquamae on segments 5, 6, and 7!; apex as in Fig. 6, gonarcus and parameres as in Fig. 7.

The paratypes agree in all essential details with the holotype; length of anterior wings 25-26 mm.

The species differs from all hitherto known *Iranoleon* species in having three pairs of pleuritosquamae on male abdomen.

MATERIAL EXAMINED: Holotype ♂, paratypes 1 ♂ 2 ♀♀, Sinai, Nueiba, 10.5.1978, D. Simon (ZTA).

*Cueta clara* n. sp.  
(Fig. 8, 9 10)

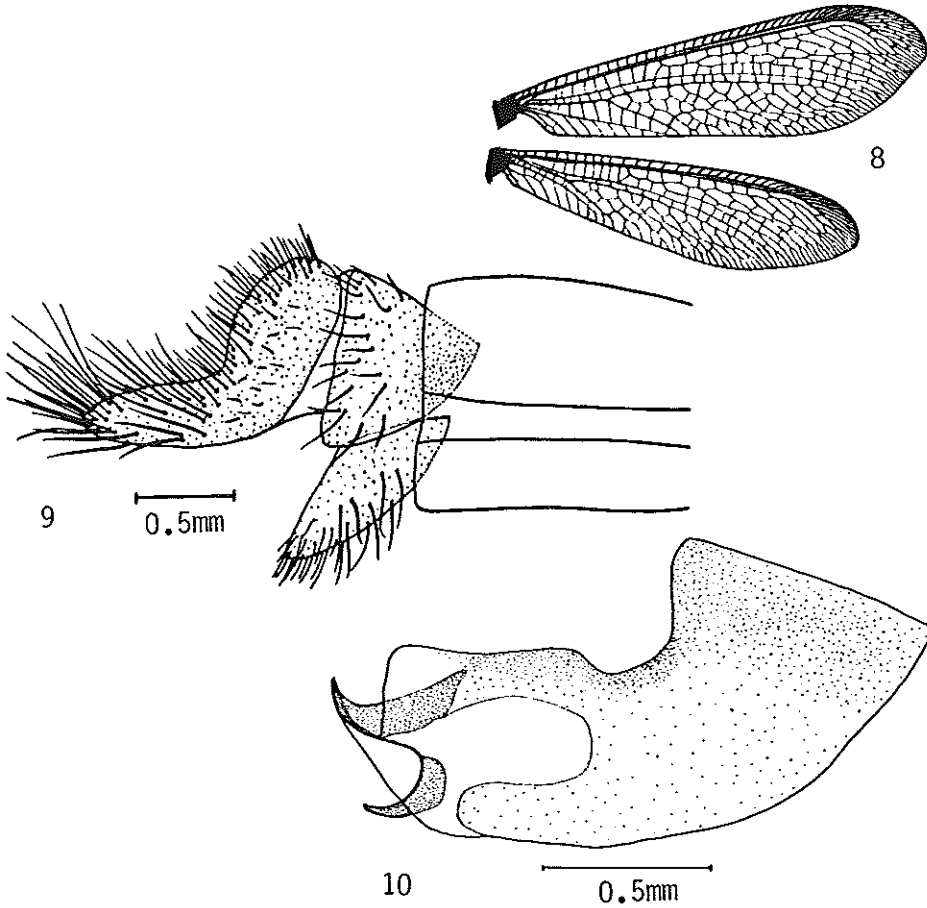


Fig. 8-10. *Cueta clara* n. sp. (holotype ♂) 8. Wings 9. Apex of abdomen, laterally 10. Gonarcus with mediuncus and parameres, laterally.

Description of holotype

Length of anterior wing 22 mm, length of posterior wing 18 mm, length of body 33 mm. General colour yellow with sparse brown markings. Head with brown inter-antennal mark and a brown mark above antennae; epicranium with a narrow median stripe, an interrupted transversal band and two isolated brown spots laterally; short black hairs. Antennae brownish, antennal bases luteous. Pronotum scarcely longer than broad, with three narrow longitudinal brown stripes, laterals interrupted, white hairs and bristles laterally. Meso- and metanotum with narrow longitudinal stripes. Wings as in Fig. 8. Venation pale with small brown lines and dots; membrane hyaline without speckles; pterostigma distinct, yellowish; 9 presectoral cross-veins in posterior wings.

Legs luteous with small brown dots; hind femora with long black hairs above; hairiness mostly pale, with white and black bristles; tibial spurs shorter than basal tarsal segments. Abdomen luteous with a narrow longitudinal stripe above and two brown stripes ventrally, small spots laterally. Short pale hairs basally, on terminal segments dark and dense; apex as in Fig. 9; gonarcus and parameres as in Fig. 10. The paratypes agree well with the holotype; length of anterior wings 22-23 mm.

The species resembles *Cueta luteola* Hölzel, 1972 from Iran, but differs in the male genitalia: ectoprocts more slender, gonarcus and parameres very much like in *C. lineosa* and entirely different from *luteola*. It differs from *C. lineosa* (Rambur, 1842) in the pale colouration and absence of distinct markings in the wings.

MATERIAL EXAMINED: Holotype ♂, Paratypes 2 ♂♂, Wadi Faria 3.6.1977 D. Simon; 1 ♂ Tel-chai 30.5.1979, D. Simon (ZTA); 1 ♂ Central Jordan Valley, near Lake Tiberias Y. Palmoni (coll. Hölzel); 1 ♂ 1 ♀ Tel Kazir, 6.8.1956, J. Wahrman; 1 ♂ Beer Sheva, 18.5.1961, Friedländer; 1 ♂ Tsiqlag, 30.8.1961, Friedländer; 1 ♂ Kinneret 3.6.1961 D. Leston; 1 ♂ Ein Gedi, 29.10.1960, 1 ♀ Lahav 30.8.1961, 1 ♀ Jerusalem 10.7.1961 Friedländer (ZTA).

*Cueta maculata* n. sp.

(Fig. 11, 12, 13)

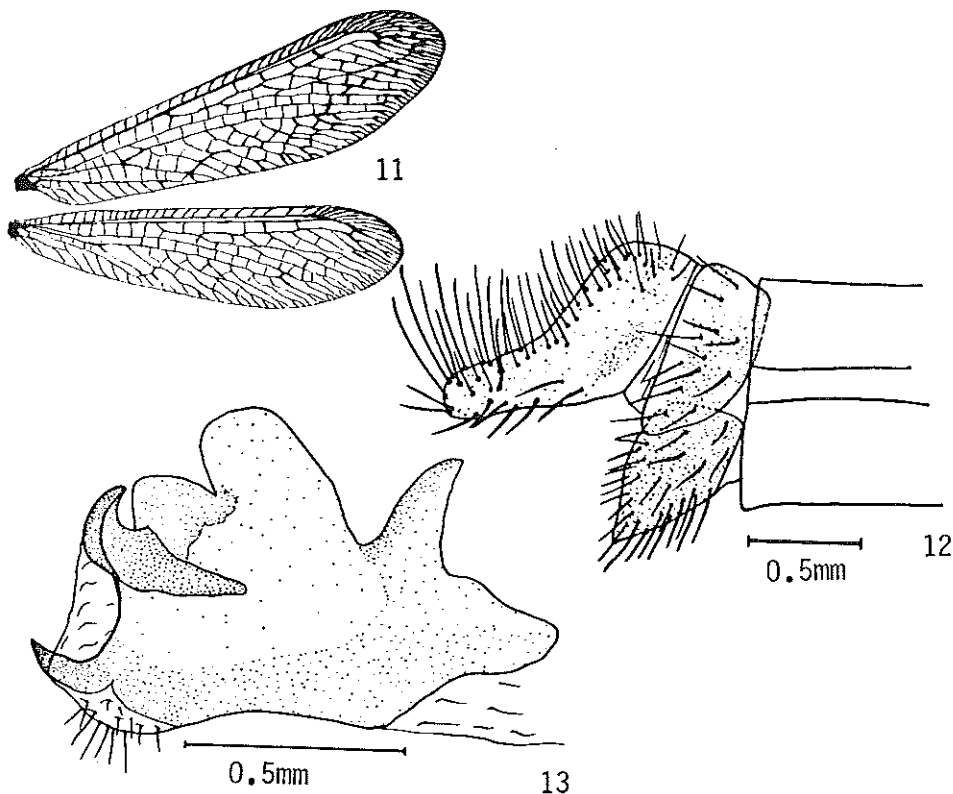


Fig. 11-13. *Cueta maculata* n. sp. 11. Wings (paratype ♀ from Israel) 12. Apex of abdomen, laterally (holotype ♂) 13. Gonarcus with mediuneus and parameres, laterally (holotype ♂).

#### Description of holotype

Length of anterior wing 17 mm, length of posterior wing 14 mm, length of body about 18 mm. General colour luteous with brown markings. Head luteous, a brown mark below and between antennal bases; vertex with two transversal rows of brown spots and short black hairs. Antennae dark brown. Pronotum scarcely longer than broad, with three narrow longitudinal brown stripes, white hairs and white bristles laterally. Meso- and metanotum with narrow longitudinal stripes. Wings as in Fig. 11. Venation pale with brown areas; membrane hyaline with brown speckles; posterior wings generally more pale, membrane without speckles; 6 presectoral cross-veins in both wings; pterostigma distinct. Legs luteous with small brown dots especially on femora; tibiae marked with brown rings at apex and at basal half; short hairs and bristles; hind femora with a series of long black and white hairs above; tibial spurs shorter than basal tarsal segments.

Abdomen dark brown ventrally, tergites with two longitudinal pale stripes and short pale hairs. Apex as in Fig. 12, gonarcus and parameres as in Fig. 13. The ♀ paratype agrees in all essential details with the type; length of anterior wing 20 mm.

The species shows no resemblance to any other hitherto described species of this genus; it may be readily distinguished by the markings of the wings and the short ♂ abdomen.

MATERIAL EXAMINED: Holotype ♂, Paratype ♀, Israel, Mashash Sands (7 km south of Beer Sheva) 9.9., 14.10.1978, D. Simon (ZTA).

#### Genus *Solter* Navas

*Solter* Navas, 1912: 32 (Type species: *Solter liber* Navas, 1912).

In the last years records of species of this genus from the Middle East have been published repeatedly and a number of new species has been described (Hölzel 1967, 1968, 1969, 1972). It was therefore most surprising to find within the material from Israel and Sinai five new species which will be described below.

The species of this genus bear very much resemblance to each other in the uniform pale brown colouring of the body and the wings. However, structures of the legs, such as the relative length of tibiae and tarsi and in particular of tibial spurs are distinct specific characters. The female genitalia are also important sources of characters, especially the shape of sternite 7 and the pregenital plates.

Together with the new described species the genus *Solter* now contains 19 species which are distributed over North- and East-Africa and Asia Minor.

#### *Solter ledereri* Navas

*Solter ledereri* Navas, 1912: 169; Hölzel 1969: 301; 1972: 35.

MATERIAL EXAMINED: 1 ♂ Israel, Jerusalem 1941, Bytinski-Salz (ZTA), 1 ♂ Jerusalem, 27.8.1960, Tsur-Namal (ZHU).

For details of genitalia see Hölzel (1969). The species so far has been recorded from Lebanon, Syria, Iran and Turkey.

*Solter virgillii* Navas  
(Fig. 14, 15, 16, 17)

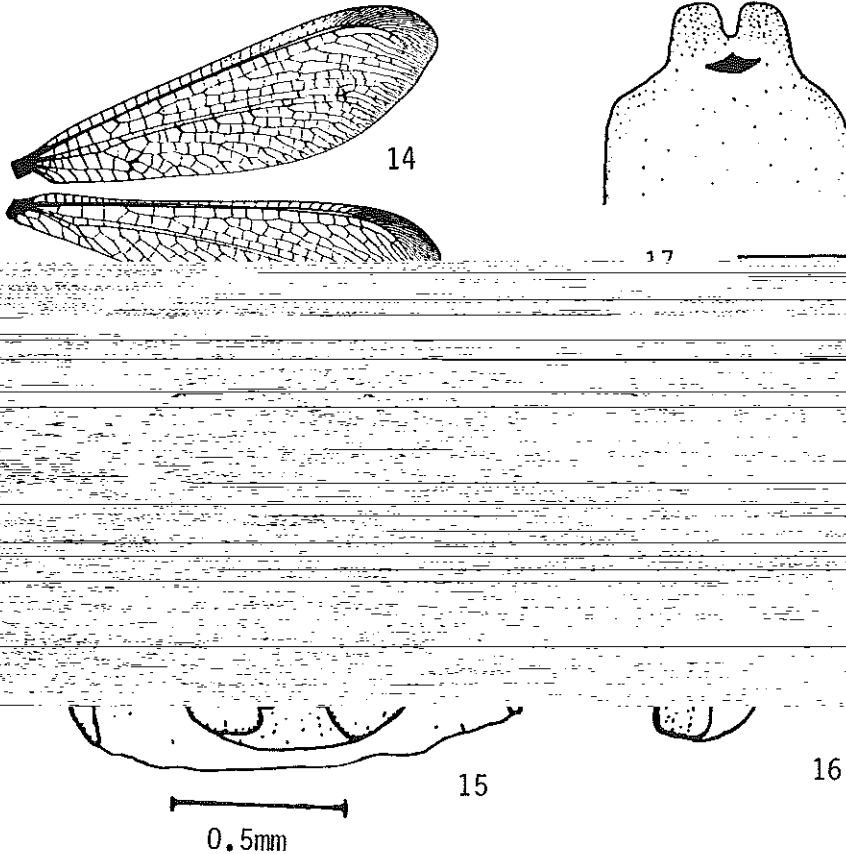


Fig. 14-17. *Solter virgillii* Navas. 14. Wings ( $\delta$  from Israel) 15, 16, Gonarcus and parameres, caudally and laterally, ( $\delta$  from Sudan, Kassala-prov). 17. Apex of sternite 7, ventrally ( $\eta$  from Israel, Ras Feshca).

*Solter virgillii* Navas, 1931: 131

The examined material agrees very well with the species which Navas described from Somalia. The length of the wings (anterior wing about 40 mm) and the venation (presectoral cross-veins) are very characteristic, Navas gave figures of the pronotum and abdomen.

I will give further details: Wing as in Fig. 14; length of anterior wings 38-45 mm; in hind wings only 3 presectoral cross-veins (evidently this character of venation is constant in this species). Legs: anterior legs with pale spines; posterior legs with pale and black spines; tibial spurs in fore legs as long as the three basal tarsal segments, in hind legs as long as tarsal segment 1+2; tibiae shorter than femora, tarsi shorter than tibiae. Genital segments:  $\delta$  gonarcus and parameres as in Fig. 15, 16,  $\eta$  apex of sternite 7 as in Fig. 17.

MATERIAL EXAMINED: 2  $\delta\delta$  3  $\eta\eta$  from Israel and Sinai: Jiftlik 23.8.1977, Ras Fashkha 14.7.1977, Hazeva 28.7.1977, Sinai-Wadi Watir 19.7., 15.8.1977, D. Simon (ZTA), Sudan: 2  $\delta\delta$  Kassala prov., Erkowit-mountains 1100-1300 m, 26.6.1962, R. Remane (coll. Ohm) 1  $\delta$  Niger, Koulouba III/1916 (coll. Mus. Paris).



*Solter simoni* n. sp.  
(Fig. 18, 19, 20, 21, 22, 23)

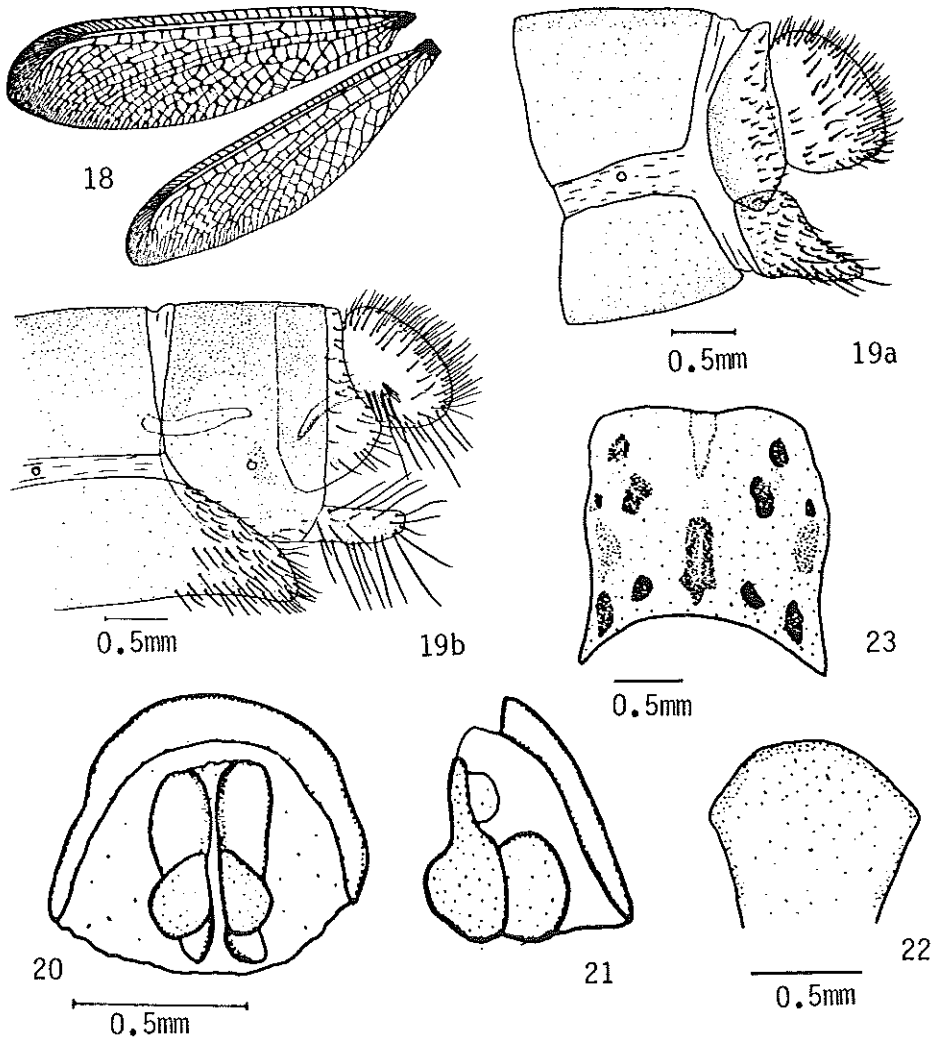


Fig. 18-23. *Solter simoni* n. sp. 18. Wings (holotype ♂). 19a. Apex of abdomen, laterally, (holotype ♂). 19b. Apex of abdomen laterally, (paratype ♀). 20, 21. Gonarcus and parameres, caudally and laterally (holotype ♂). 22. Apex of sternite 7, ventrally (paratype ♀). 23. Pronotum, dorsally.

Description of holotype

Length of anterior wing 32 mm (width 8 mm), length of posterior wing 29 mm (width 7 mm), length of body about 25 mm. General colour brown.

Head luteous, above antennae with a broad brown mark, vertex with six brown spots. Antennae with luteous and brownish annulations. Pronotum longer than broad

(Fig. 23) with short brown and longer whitish bristles. Meso- and metanotum dark brown with a few paler spots. Wings as in Fig. 18. Venation pale with numerous brown spots, some cross-veins totally brown; membrane hyaline, in the anterior wings with a few brown speckles. Pterostigma distinct. Posterior wings generally more pale. Legs yellowish with black and pale spines, femora, tibiae and tarsi brownish at apices, tibiae also with a brown spot at base and a brownish ring in basal half (lacking in hind tibiae); tibiae and femora of almost the same length, tarsi (especially in posterior legs) distinctly shorter. Spurs of anterior legs longer than tarsal segments 1+2, in posterior legs lightly shorter. Abdomen luteous beneath, brown above with luteous patches. Apex as in Fig. 19a, gonarcus and parameres as in Fig. 20, 21.

The paratypes agree in all essential details with the holotype. Length of fore wings 27-35 mm. Genital segments of ♀: Apex of sternite 7 tongue-shaped (Fig. 22), no sclerotized pregenital plate visible.

I have much pleasure in naming this species for Mr. Dany Simon, Tel Aviv, collector of the type series.

**MATERIAL EXAMINED:** Holotype ♂ Israel, Baniass 11.9.1977; Paratypes: 1 ♀ Baniass 23.8.1977; 1 ♂ Ma'ale Adummim 22.9.1977; 1 ♂ Tiberias 3.8.1977; 2 ♂♂ 2 ♀♀ Gilboa 4.8., 23.8., 5.9., 17.9.1977; 1 ♂ Eilabun 2.8.1977; 1 ♂ Susita 2.9.1976, D. Simon. 3 ♂♂ 1 ♀ Tel Aviv, 1.9.1971, Schwartz; 17.6.197?, Bytinski-Salz; 27.8.1973, 1.9.1974, Freidberg (ZTA); 1 ♂ Tel Qazir, 25.8.1956, J. Wahrman (GHU).

*Solter propheticus* n. sp.

(Fig. 24, 25, 26, 27)

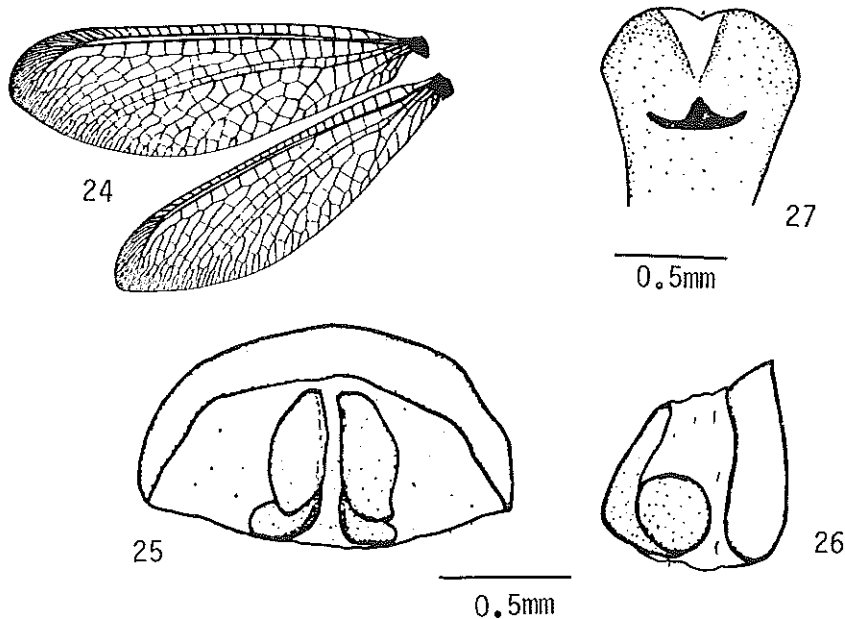


Fig. 24-27. *Solter propheticus* n. sp. 24. Wings (paratype ♀ from Israel) 25, 26, Gonarcus and parameres, caudally and laterally (holotype ♂). 27. Apex of sternite 7, ventrally (paratype ♀).

### Description of holotype

Length of anterior wing 31 mm (width 9 mm), length of posterior wing 28 mm (width 7 mm), length of body about 25 mm. General colour brown. Head luteous, above antennae with a brown mark, vertex with indistinct brown spots. Antennae with pale brownish annulations. Pronotum a little longer than broad with traces of three narrow brown longitudinal lines and small dark spots laterally; long whitish bristles. Meso- and metanotum brown with pale spots. Wings as in Fig. 24. Venation pale with brown spots, membrane hyaline, in the anterior wings with a few pale brown speckles. Pterostigma distinct. Venation of posterior wings almost totally pale. Legs yellowish with black and pale spines, tibiae with brownish spots at apices, tibiae and femora of almost the same length, tarsi shorter. Spurs of anterior and median legs as long as the tarsal segments 1+2+3, in posterior legs slightly shorter. Abdomen luteous beneath, brown above, with small pale patches. Gonarcus and parameres as in Fig. 25, 26.

The paratypes agree in all essential details with the holotype. Length of anterior wings 28-31 mm. Genital segments of ♀: apex of sternite 7 as in Fig. 27., pregenital plate large funnel-like.

**MATERIAL EXAMINED:** Holotype ♂, Israel, Machtesh Ramon, 8.8.1977, D. Simon, (ZTA); Paratypes: 1 ♀ Machtesh Ramon 8.8.1977; 1 ♀ Hazeva 2.9.1976, 1 ♀ Wadi Paran 24.6.1979, D. Simon; 1 ♀ Negev, Mizpe Ramon, 13.8.1956, J. Wahrman; 1 ♀ Sinai, Firan, 8.8.1976, G. Cnaani; 1 ♂ 2 ♀♀ Sinai, Wadi Firan, 27.9.1977, D. Simon; 1 ♀ Sinai, Mitla, 15.7.1977, O. Chason; Saudi Arabia: 1 ♂ 2 ♀♀ Salim 20.9.1978; 1 ♀ Wadi Khurma 4.8.1977; 3 ♂♂ W. Huraymalal 12.8.1976; 2 ♂♂ 1 ♀ Wadi Mizbil 16.9.1976; 1 ♀ Bahara 24.8.1976; 1 ♂ Wadi Salbukh 9.8.1977; 2 ♂♂ Ath Thamamah, 23.5.1978, W. Büttiker; Sudan: 1 ♀ Northern prov., Hudeiba 380 m, 29.9.1961, R. Remane.

Paratypes in coll. NMB, ZTA, GHU, coll. Ohm and Coll. Hölzel.

### *Solter katharinae* n. sp.

(Fig. 28, 29, 30)

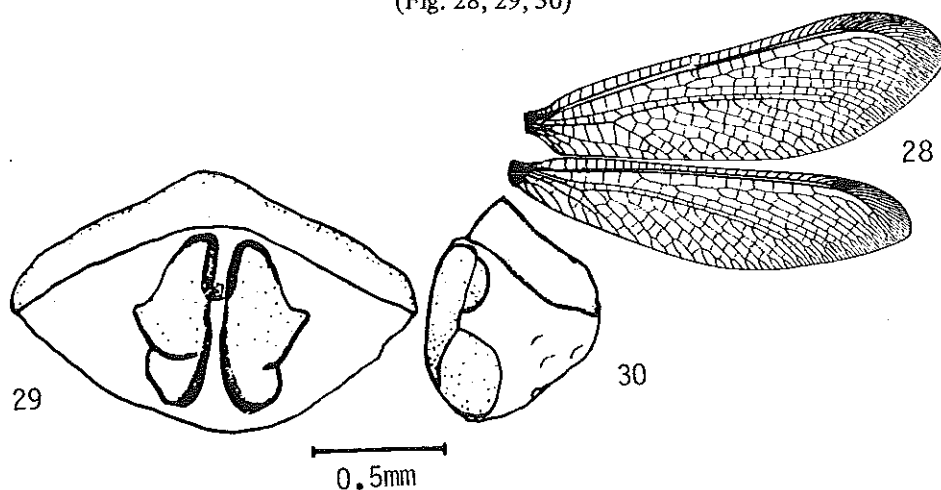


Fig. 28-30. *Solter katharinae* n. sp. 28. Wings (paratype ♀). 29, 30, Gonarcus and parameres, caudally and laterally, (holotype ♂).

Description of holotype

Length of anterior wing 34 mm (width 10 mm), length of hind wing 32 mm (width 8 mm), length of body 30 mm. General colour brown. Face luteous, no inter-antennal mark, a brown transverse band behind antennae; vertex with numerous irregularly situated brown spots. Antennae brown, basal segments luteous. Pronotum a little longer than broad, with two median spots and traces of four interrupted longitudinal stripes, with black hairs and long pale lateral bristles; meso- and metanotum brown with pale spots. Wings see Fig. 28. Venation pale with brown areas, membrane hyaline without speckles; pterostigma distinct, whitish. Legs yellowish with pale and (especially in posterior legs) black spines, femora, tibiae and tarsi brownish at apices; tibiae also with a brown spot at base and a brownish ring in basal half (lacking in hind tibiae); tibiae shorter than femora, tarsi shorter than tibiae; spurs of anterior legs as long as the three basal tarsal segments, in hind legs slightly longer than the two basal tarsal segments. Abdomen brown with pale patches. Gonarcus and parameres as in Fig. 29, 30.

The paratype agrees with the holotype, length of anterior wing 37 mm.

MATERIAL EXAMINED: Holotype ♂, Paratype ♀, Sinai, St. Katharina 18.7.1974, A Freidberg (ZTA).

*Solter freidbergi* n. sp.  
(Fig. 31, 32, 33, 34)

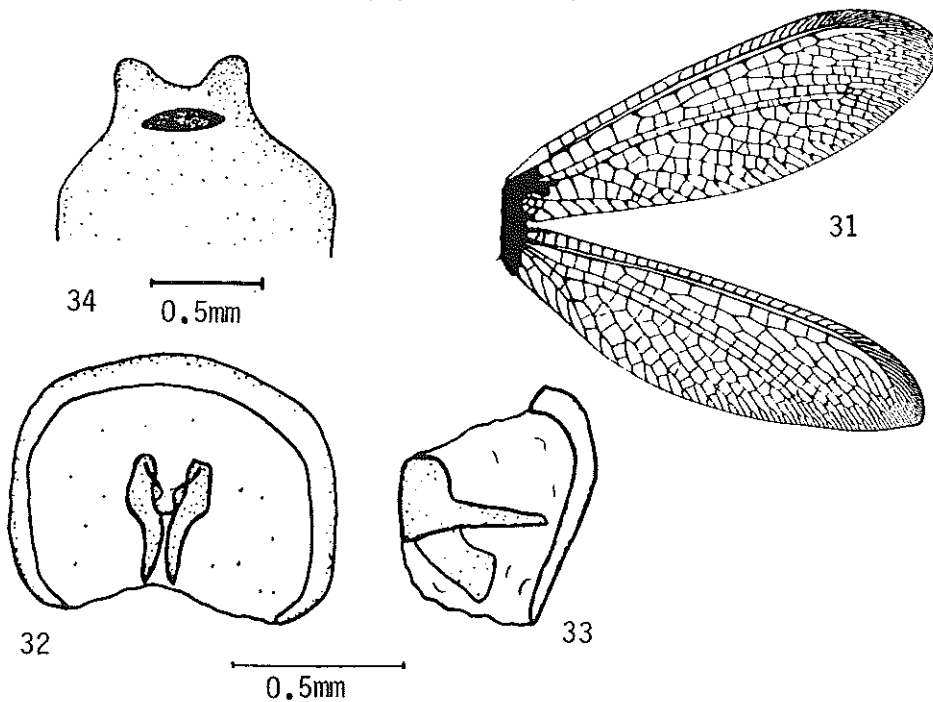


Fig. 31-34. *Solter freidbergi* n. sp. 31. Wings (holotype ♂). 32, 33, Gonarcus and parameres, caudally and laterally (holotype ♂) 34. Apex of sternite 7, ventrally (paratype ♀).

Description of holotype

Length of anterior wing 38 mm (width 10 mm); length of posterior wing 34 mm (width 9 mm), length of body about 30 mm. General colour brown. Head brown, above antennae with a dark mark, vertex with roughly three transversal rows of small spots. Antennae brown, basal segments yellowish. Pronotum scarcely longer than broad, with three interrupted longitudinal stripe and a few spots laterally, meso- and metanotum brown with pale spots. Wings see Fig. 31. Venation pale with brown areas, some cross-veins totally brown; membrane hyaline, in the anterior wing with a few brown speckles; pterostigma distinct, brown basally, yellowish distally; posterior wing generally more pale. Legs brownish with (a few) pale and black spines, dark spots at apices of femora, tibiae and tarsi; femora (especially in anterior legs) with large darker spots, tibiae with a dark spot at base and a brownish ring in basal half. Tibiae scarcely shorter than femora, tarsi shorter than tibiae; spurs of anterior legs as long as the basal tarsal segment, in hind legs slightly shorter than the basal segment. Abdomen dark brown with pale patches; gonarcus and parameres as in Fig. 32, 33.

The ♀ paratype agrees in all essential details with the holotype, length of anterior wing 39 mm; apex of sternite 7 with very prominent median processus as in Fig. 34.

I have much pleasure in naming this species for Mr. Amnon Freidberg, Tel Aviv.

MATERIAL EXAMINED: Holotype ♂, Paratype ♀, Sinai, St. Katharina, 18.7. 1974, A. Freidberg (ZTA).

*Solter dubiosus* n. sp.  
(Fig. 35, 36, 37, 38)

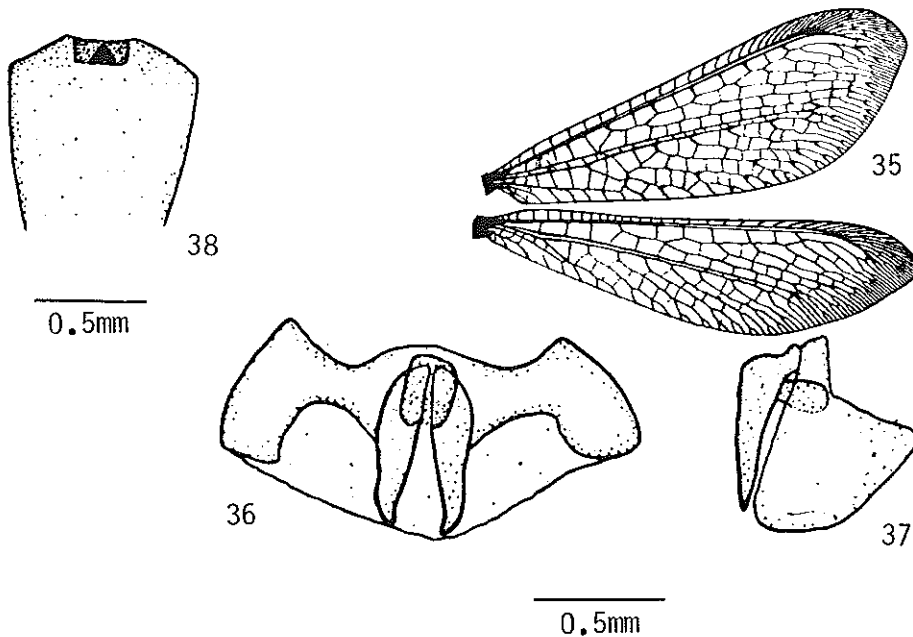


Fig. 35-38. *Solter dubiosus* n. sp. 35. Wings (paratype ♀). 36, 37, Gonarcus and parameres, caudally and laterally (holotype ♂). 38. Apex of sternite 7, ventrally (paratype ♀).

Description of holotype

Length of anterior wing 24 mm (width 8 mm); length of posterior wing 22 mm (width 7 mm); length of body 22 mm. General colour brown. Head luteous, above antennae with a broad brown mark, vertex pale. Antennae with luteous and brownish annulations. Labial palps conspicuously enlarged, the terminal segments distinctly dilated. Pronotum longer than broad, pale with a broad brown median stripe and brown lateral margins with long whitish bristles; meso- and metanotum pale brown with a few darker spots. Wings see Fig. 35. Venation pale with numerous brown spots, membrane hyaline, in the anterior wings with small brown speckles. Pterostigma distinct. Posterior wings generally paler, 3 presectoral cross-veins! Legs luteous with pale spines. Femora partly brownish, tibiae with a conspicuous black ring at apices. Tibia shorter than femora, tarsi longer than tibiae. Spurs of anterior legs longer than the tarsal segments 1-3, in posterior legs exactly as long as tarsal segments 1-3. Abdomen luteous beneath, tergites 1 and 3 almost totally pale, tergite 2 and 4 brown, the others predominantly brown with a few pale spots. Gonarcus and parameres as in Fig. 36, 37.

The ♀ paratype agrees well with the holotype, length of anterior wing 25 mm; apex of sternite 7 and pregenital plate as in Fig. 38.

MATERIAL EXAMINED: Holotype ♂, Sinai, Wadi Watir, 12.8.1971, Kaplan, (ZTA). Paratype ♂ Sudan, Kassala-prov, Port Sudan, 23.6.1962, R. Remane (coll. Ohm).

Key to *Solter* species recorded from Israel and Sinai

- |   |   |                       |
|---|---|-----------------------|
| 1 | Labial palps conspicuously enlarged; legs with pale spines only . . . . .   | <i>S. dubiosus</i>    |
| — | Labial palps not enlarged; legs with pale and black spines . . . . . 2  |                       |
| 2 | Anterior legs: tibial spurs not longer than the tarsal segments 1+2 . . . . . 3   |                       |
| — | Tibial spurs longer than the two basal tarsal segments . . . . . 4  |                       |
| 3 | Anterior legs: tibial spurs as long as the first tarsal segment . . . . .   | <i>S. freidbergi</i>  |
| — | Tibial spurs as long as the two basal tarsal segments . . . . .   | <i>S. ledereri</i>    |
| 4 | Large species, length of anterior wings 38-45 mm, in hind wings only 3 presectoral cross-veins . . . . .  | <i>S. virgilii</i>    |
| — | Length of anterior wings 35 mm not exceeding, in hind wings 5 presectoral cross-veins . . . . . 5   |                       |
| 5 | Anterior legs: tibial spurs shorter than the tarsal segments 1+2+3; gonarcus (♂), apex of sternite 7 (♀) as in Fig. 20, 22 . . . . .                | <i>S. simoni</i>      |
| — | Tibial spurs as long as the three basal tarsal segments . . . . . 6   |                       |
| 6 | Posterior legs: tibial spurs distinctly longer than the two basal tarsal segments; gonarcus (♂), apex of sternite 7 (♀) as in Fig. 25, 27 . . . . . | <i>S. propheticus</i> |
| — | Tibial spurs not longer than the two basal tarsal segments; gonarcus (♂) as in Fig. 29 . . . . .  | <i>S. katharinae</i>  |

*Myrmeleon (Morter) pseudofasciatus* n. sp.

(Fig. 39, 40, 41, 42, 43, 44)

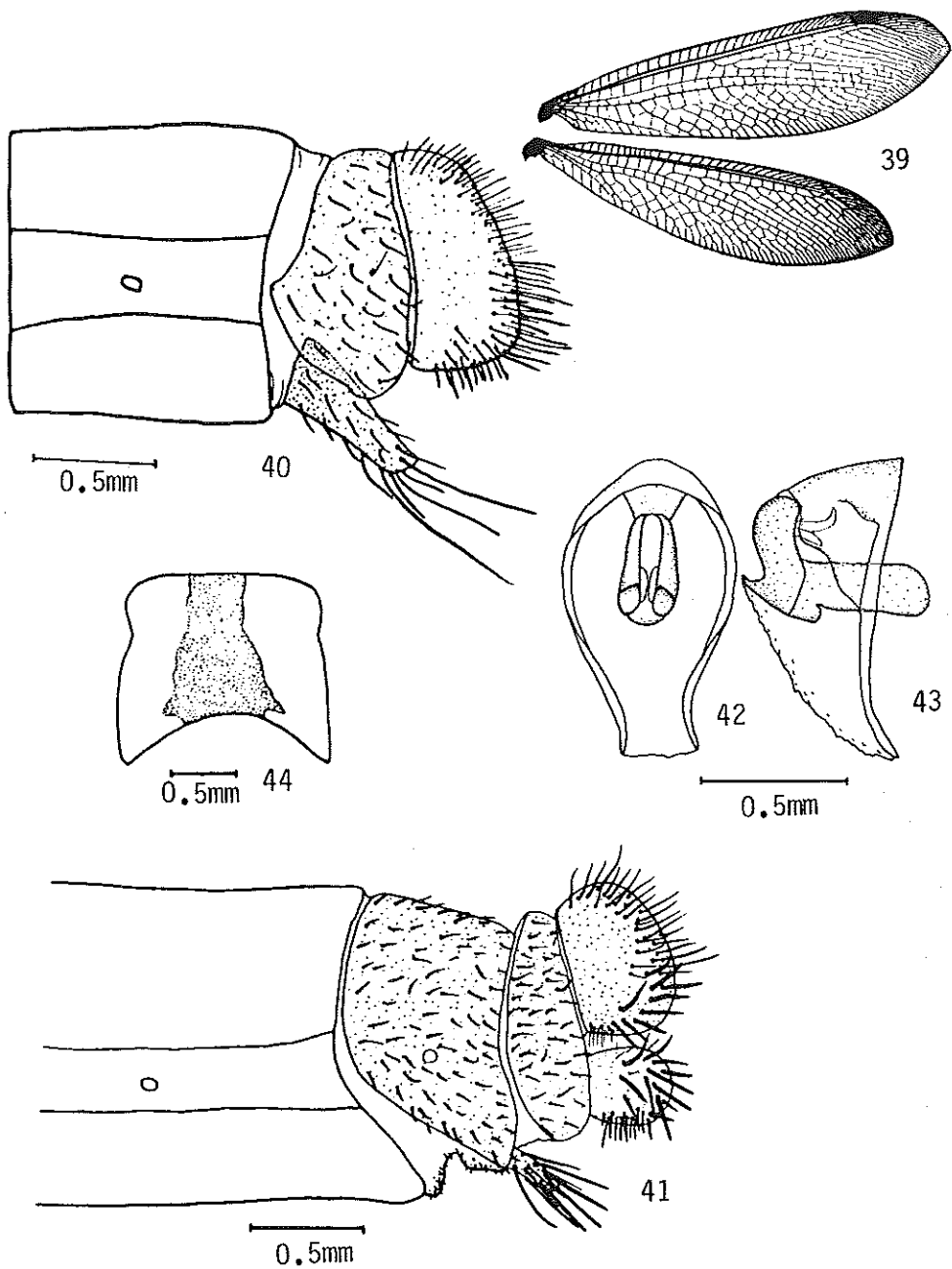


Fig. 39-44 *Myrmeleon (Morter) pseudofasciatus* n. sp. 39. Wings (paratype ♀ from Israel). 40. Apex of abdomen, laterally (holotype ♂). 41. Apex of abdomen, laterally (paratype ♀). 43. Ditto, laterally (holotype ♂). 44. Pronotum, dorsally.

#### Description of holotype

Length of anterior wing 20 mm, length of posterior wing 18 mm, length of body about 20 mm. General colour luteous with brown markings. Head with a large brown spot below, between and above antennal bases; vertex with large pale brown spots; antennae brown. Pronotum about as long as broad, with short pale hairs and bristles, with a prominent brown median band (as in Fig. 44) and in caudal half with a narrow brown stripe laterally; prescutum, meso- and metascutum with brown patches. Wings as in Fig. 39. Membrane hyaline, pterostigma indistinct; venation pale, Sc with pale brown spots at the bases of the costal cross-veins; posterior wing with 7 presectoral cross-veins; pilula axillaris present. Legs luteous with black spines; tibial spurs shorter than the basal tarsal segments. Abdomen dark brown with short pale hairs; apex as in Fig. 40; gonarcus and parameres as in Fig. 42, 43.

Paratypes: Length of anterior wings ♂ 20-23 mm, ♀ 25-29 mm, posterior wings with 6-9 (mostly 7) presectoral cross-veins, abdominal tergites each with a large yellow patch. ♀ genitalia see Fig. 41; no sclerotized pregenital plate.

Resembling *M. fasciatus*, but differing in the markings on pronotum and wings. From *M. pseudohyalinus* which is also similar it differs in its less strongly marked head, its narrower wings with less rounded margins behind the apices: the markings on pronotum are also different (as in Fig. 45).

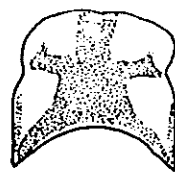


Fig. 45. *Morter pseudohyalinus* pronotum, dorsally.

0.5mm

45

The ♂ genitalia of species of *fasciatus*-group (*M. fasciatus* Navas, 1912, *pseudofasciatus* n. sp., *alternans* Brulle, 1839 and *pseudohyalinus* Hölzel, 1972) are uniform and cannot be used for recognition of species. The wing venation has some common characters: in anterior wings the median fork (divergence of media posterior) is more basal than the forking of cubitus anterior; in posterior wing (5) 6-9 presectoral cross-veins are present. In the remaining mediterranean *Morter*-species (*inconspicuus* Rambur, 1842, *circumcinctus* Tjeder, 1963 and *hyalinus* Oliver, 1811) the fork of Cua is more basal than the median fork, the number of presectoral cross-veins is usually 5.

MATERIAL EXAMINED: Holotype ♂, Israel, Susita, 11.6.1976, D. Simon; Paratypes: 1 ♀, Susita 10.9.1976; 1 ♂ 3 ♀♀ Zor'a 1.7., 3.7., 7.7., 8.7.1977; 2 ♂♂ El Hamma 29.7., 15.8.1977; 1 ♂ Fazael 15.8.1976; 1 ♂ Sede Boqer 3.7.1977; 1 ♂ Wadi Fari'a 29.9.1976; 1 ♀ Nahal Ze'elim 30.8.1977; 1 ♀ Ora 12.7.1977; 1 ♀ Ein Feshka, 21.8.1977, D. Simon (ZTA); 1 ♀ Tel Kazir, 6.8.1956, J. Wahrman; 1 ♀ Central Jordan Valley, Y. Palmoni (coll. Hölzel); 1 ♀ Syria, 20 km N. of Damascus, 4.6.1961, Kasy & Vartian (NMV).



*Megistopus mirabilis* n. sp.

(Fig. 46, 47, 48)

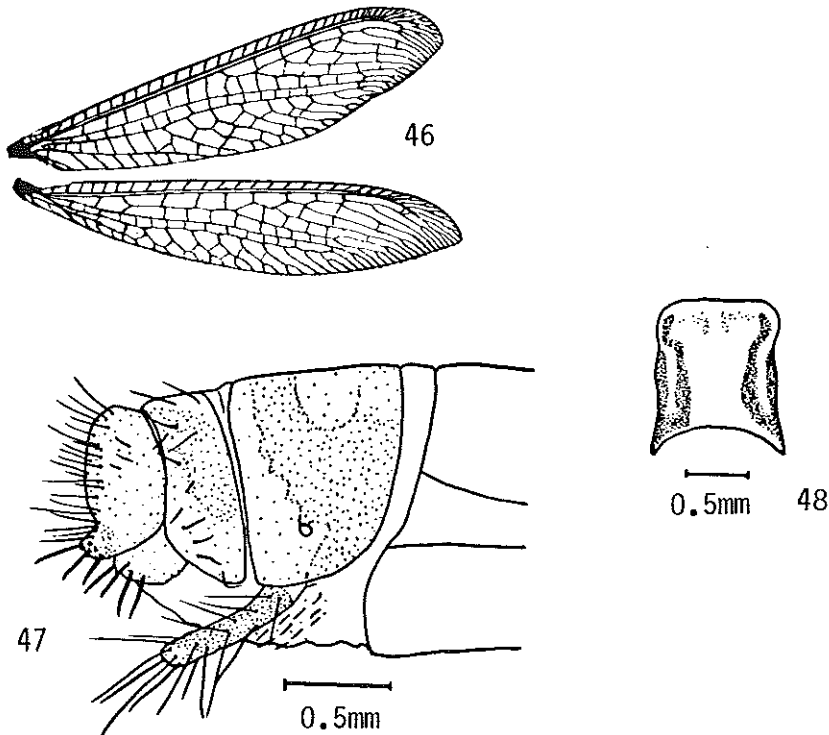


Fig. 46-48. *Megistopus mirabilis* n. sp. (holotype ♂). 46. Wings. 47. Apex of abdomen, laterally. 48. Pronotum, dorsally.

Description of holotype

Length of fore wing 19 mm, length of hind wing 18 mm. General colour luteous with brown spots. Face with two small spots on clypeus and frons, a dark brown mark below and between antennal bases and a transversal brown band above them; vertex with indistinct brownish spots. Antennae luteous, basal segments with brown spots, some segments in the basal half with brownish annulations. Pronotum longer than broad with four narrow longitudinal stripes (Fig. 48), white hairs and bristles; meso- and metanotum luteous, with broad brown markings laterally, mesonotum with white hairs. Wings as in Fig. 45. Venation pale, membrane hyaline with a few small brown speckles; pterostigma distinct. Legs yellowish with small dark dots and spots, median femora with dark lines beneath, hind femora brown at apices; white (in hind legs also black) hairs and white spines; tibial spurs shorter than the basal tarsal segment. Abdomen luteous with irregular brown patches; apex as in Fig. 47; ectoprocts with a large rounded ventral process, anterior gonapophyses long fingerlike, lateral gonapophyses not fused, gonapophysal plates long and slender; no sclerotized pregenital plate.

This species bears considerable resemblance to *Gymnocnemia variegata* (Schneider, 1945) but may be easily distinguished by its tibial spurs; *G. variegata* has no spurs. It differs from the only hitherto known species of the genus *Megistopus* Rambur, *M. flavicornis* (Rossi, 1970) (which is also recorded from Israel), in its less marked wing membrane. In the anterior wing of *M. flavicornis* there is a prominent round brown speckle about midway along the posterior margin; moreover the ♀ ectoprocsts are different and in *M. flavicornis* without ventral process.

MATERIAL EXAMINED: Holotype ♀ Sinai, W. Shreg 16.8.1974, T. Hizkalahov (ZTA).

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