

A new species of *Plesina* Meigen (Diptera: Tachinidae) from the Mediterranean

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Abstract

A new tachinid species (Diptera: Tachinidae), *Plesina nigroscutellata* n.sp. from Sardinia, Spain and Crete, is described. The main features that distinguish the new species from the similar *Plesina claripennis* Mesnil, 1953 are the different abdominal proportions, the darker colour, and a more distinct pruinescence.

Key words: Tachinidae, *Plesina*, Sardinia, Spain.

Zusammenfassung

Eine neue Raupenfliegen-Art (Diptera: Tachinidae), *Plesina nigroscutellata* n.sp. aus Sardinien, Spanien und Kreta, wird beschrieben. Die neue Art unterscheidet sich von der ähnlichen *Plesina claripennis* Mesnil, 1953 hauptsächlich durch andere Abdominalproportionen, dunklere Färbung und deutlichere Bereifung.

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1 Introduction

The tachinine genus *Plesina* Meigen, 1838 was previously known from eight species:

- P. phalerata* (Meigen, 1824) from France, Spain and Morocco (CZERNY & STROBL 1909, WAINWRIGHT 1933, VILLENEUVE 1934, KUGLER 1978, HERTING 1984, HERTING & DELY-DRASKOVITS 1993, TSCHORSNIG et al. 1997);
- P. fascipennis* (Wiedemann, 1830) from Sudan (KUGLER 1978);
- P. claripennis* Mesnil, 1953 from Egypt (Sinai), Israel [including Cisjordan] and Syria (KUGLER 1978, HERTING 1984, HERTING & DELY-DRASKOVITS 1993); the records from Crete (HERTING 1984, HERTING & DELY-DRASKOVITS 1993) and Spain (TSCHORSNIG et al. 1997) turned out to be erroneous (see below);
- P. africana* Kugler, 1978 from Nigeria (KUGLER 1978);
- P. deserticola* Kugler, 1978 from Israel and Egypt (Sinai) (KUGLER 1978);
- P. nepalensis* Kugler, 1982 from Nepal (KUGLER 1982);
- P. asiatica* Richter, 1988 from Tajikistan (RICHTER 1988);
- P. zimini* Richter, 1991 from Uzbekistan (RICHTER 1991).

The genus is characterized by the following combination of external morphological features: male frons very narrow, without orbital setae, frontal stripe very narrow; female frons about as wide as or wider than an eye in dorsal view, with 2–4 proclinate or laterocline orbital setae; parafacial with a row of short and robust proclinate setulae; back of head with at least a few pale hairs ventrally; fore coxa elongated, about half as long as fore femur; one katepisternal seta; anterior and posterior lappets of posterior spiracle about equal in size; postmetacoxal area en-

tirely or partly sclerotized; wing cell r_{4+5} long petiolate; abdominal tergites usually consisting of two different parts (except in *P. deserticola* and *P. zimini*).

Plesina flies live close to the ground and do not visit flowers; this behaviour is probably the reason why individuals are normally only rarely collected. *Plesina claripennis* and *P. deserticola* have been observed running on the ground and on rocks or flying short distances close to the ground, often beneath trees (KUGLER 1978, 1982; FREIDBERG pers. comm. 2007); specimens of *P. phalerata* were collected in Spain by the second author while they were sitting or running on large stones on a steep slope (see TSCHORSNIG et al. 1997).

A new Mediterranean species of *Plesina* is described below, based on six specimens. The female from Crete was (mis-)identified by HERTING as *Plesina claripennis*, and subsequently recorded under this name in his catalogues (HERTING 1984, HERTING & DELY-DRASKOVITS 1993) from Greece. Also the two Spanish females were recorded under the erroneous name *P. claripennis* by TSCHORSNIG et al. (1997). The finding of one male and two females from Sardinia enabled us to show that the dark specimens are not a simple colour variation of *P. claripennis* but belong to a separate species, with clear-cut morphological differences.

No preparation was made of the genitalia of the holotype of *P. nigroscutellata* n.sp. to avoid damage of this single male specimen. The species can easily be distinguished from other *Plesina* by its external morphology

(see key in chapter 3), and variability of the male genitalia within the genus seems not very important (see figures in KUGLER 1978).

The length of the abdominal segments was measured medially in exact dorsal view; the fore margin of syntergite 1+2 is meant at the level of its anterior lateral edges.

Digital SEM images were used to show details of the fine morphology of "pruinescence" (= fine reflecting microtrichosity that looks like a thin waxy layer when viewed under low magnification).

Acronyms of depositories

CNBF	Insect collection of Centro Nazionale Biodiversità Forestale, Verona, Italy
MZLU	Museum of Zoology, Lund University, Lund, Sweden
MZUR	Museum of Zoology, Università degli Studi di Roma "La Sapienza", Rome, Italy
SMNS	Staatliches Museum für Naturkunde, Stuttgart, Germany
TAU	Museum of Zoology, Tel-Aviv University, Israel

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2 Description of *Plesina nigroscutellata* n. sp.

Material

Holotype (♂): Italy, Sardinia, (Carbonia-Iglesias), Iglesias, near Colonia Benek, 636 m, UTM 32 S 04662391 4355441, 27.VI.–11.VII.2006, Malaise trap, leg. G. CHessa (MZUR).

Paratypes: 2 ♀♀, same data as holotype, but 13.–27.VI.2006 (CNBF). – 1 ♀, Spain, Prov. Salamanca, Villar de Ciervo, Las Coronas, 720 m, 22.VI.1994, leg. H.-P. TSCHORSNIG (SMNS). – 1 ♀, same data as before, but 28.VI.1995 (SMNS). – 1 ♀, Greece, Crete, 2 km S Malia, near pump station, 15.V.1979, leg. R. DANIELSSON (MZLU).

The Sardinian and the Spanish specimens were collected in Malaise traps installed directly in or in the vicinity of *Quercus ilex* forests.

Etymology

The name "nigroscutellata" is derived from the black scutellum.

Description

Male:

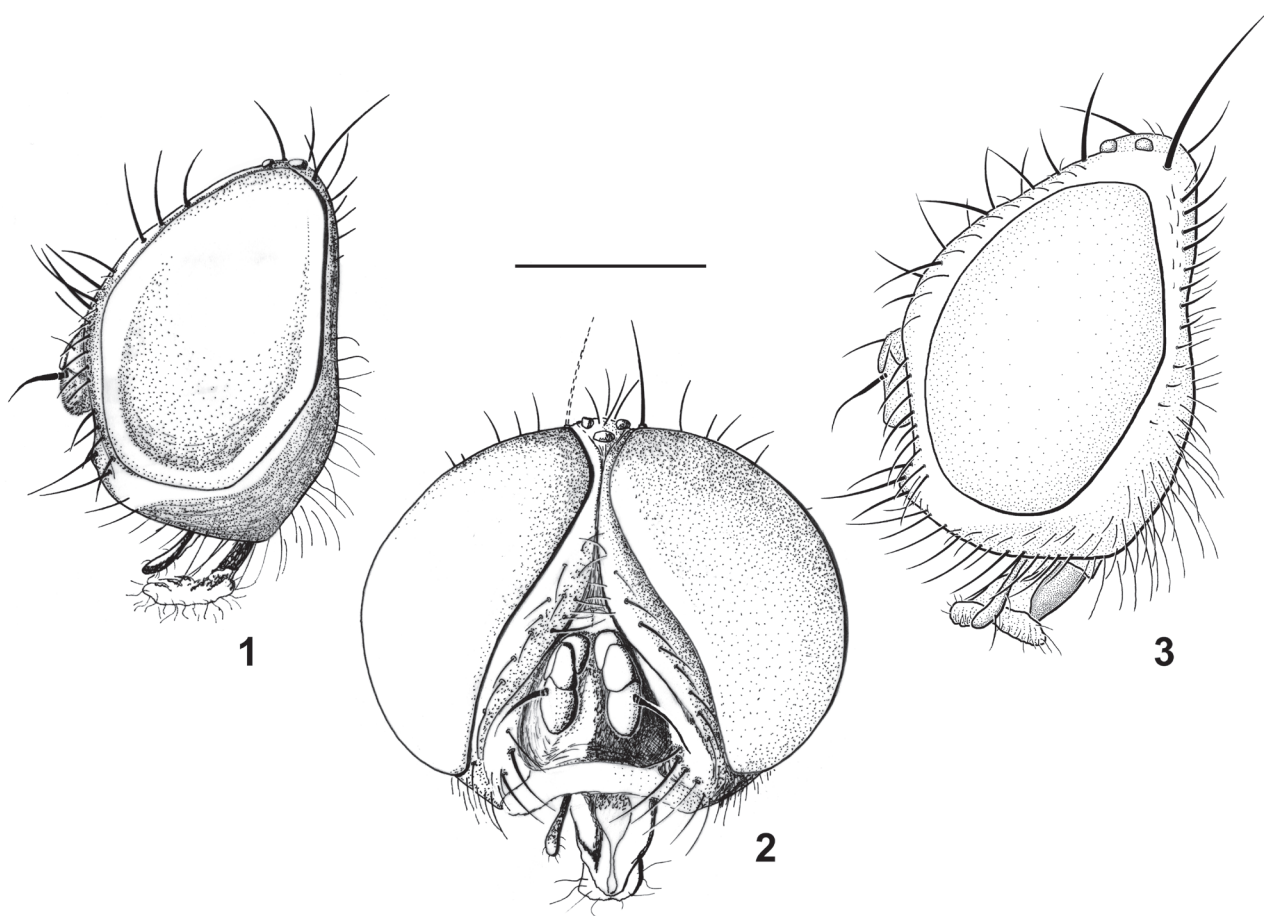
Colour: Head black; first and second antennal segment black or dark brown; palpus mainly brown, slightly yellowish at tip. Thorax entirely shiny black. Halter basally yellowish, shading into brown distally. Lower calypter smoky with a brown margin. Tegula dark brown, basicosta reddish-brown. Wing predominantly hyaline, slightly in-

fusate to blackish anterobasally. Legs dark; trochanters yellowish, fore coxa reddish on anterior surface, mid and hind femora slightly reddish near trochanter. Abdomen bicoloured: syntergite 1+2 and tergite 3 predominantly yellow with a medial sub-triangular dark spot (concave anterior part of those tergites dark), lateroventral sides of tergite 4 yellow (dorsally largely black) and lateral margin of tergite 4 yellowish.

Pruinescence: Fronto-orbital plate and parafacial covered with light grey pruinescence. Thorax with a very light grey pruinescence laterally (dorsally shiny black). Abdominal syntergite 1+2 and tergite 3 with a very light pruinescence on the concave anterior part (visible in posterior view), and dense pruinescence on the convex posterior part (visible in anterior view) (Figs. 8, 13). Abdominal tergites 4 and 5 with a slight pruinescence (visible in anterior view) due to relatively scattered and erect microtrichia (Fig. 7).

Head (Figs. 1–4): Hemispherical shape. Eye bare. Frontal stripe very narrow, practically extinct in front of anterior ocellus. Frons at its narrowest point 0.08 times as wide as an eye in dorsal view. Inner vertical seta about 0.3 times vertical diameter of eye, outer vertical seta not differentiated. Ocellar setae present, proclinate. No upper reclinate orbital setae. Height of facial ridge about $\frac{1}{2}$ the length of the frons; antenna inserted below level of middle of eye. Fronto-orbital plate without proclinate orbital setae. Lowermost frontal bristle at level of antennal base. Parafacial strongly narrowed ventrally, at its narrowest point, when seen in profile, 0.4 times as wide as third antennal segment, with a row of stout, proclinate black setulae along its whole length. Facial ridge with one or two setulae above the vibrissa. Vibrissa arising at level of lower facial margin, the latter slightly visible in lateral view. Third antennal segment about as long as second antennal segment. Arista bare, thickened on about basal $\frac{1}{4}$; second aristomere as long as wide. Gena, when seen in profile about 0.1 times vertical diameter of eye; genal dilation triangular, short. Back of head with pale hairs ventrally. Prementum slightly longer than wide. Palpus slightly longer than prementum, enlarged apically.

Thorax: Prosternum and proepisternum bare. Postpronotum with 2 setae. Scutum with 1+0 acrostichal setae; 2+2–3 dorsocentrals; 1–2 posthumeral; 1+0–1 intralarg; 0–1 postsutural supra-alar setae (first postsutural supra-alar seta, if present, shorter than notopleural setae); 2 notopleurals; postalar callus with 2 setae. One katapisternal seta. One short anepimeral seta. Katapistimeron bare. Scutellum with 2 pairs of marginal setae (basals and divergent apicals) and 4 pairs of recumbent discal setulae. Mediotergite bare below lower calypter. Anterior and posterior lappets of posterior spiracle about equal in size. Meron with 1–3 setae. Postmetacoxal area entirely sclerotized.



Figs. 1–3. *Plesina nigroscutellata* n. sp. – 1–2. ♂ head, lateral and frontal view. 3. ♀ head, lateral view. – Scale: 0.5 mm.

Wing (Fig. 6): Second costal portion bare ventrally. Costal bristle not differentiated from the other costal setae. R_1 , base of R_{4+5} , and CuA_1 bare. Cell r_{4+5} with a petiole 1.10–1.15 times as long as postangular section of M.

Legs: Fore tibia without posterior setae; preapical anterodorsal seta about as long as preapical dorsal seta. Mid tibia with 1 anterodorsal seta, 1 ventral seta, and 2 posterior setae. Hind tibia with 2 anterodorsal setae, 2 posterodorsal setae, and 2 dorsal preapical setae; preapical posteroventral seta nearly as long as preapical anteroventral seta. Claws about half as long as fifth tarsal segment.

Abdomen: Tergites 1+2 and 3 differentiated into a slightly concave and bare anterior part, and a more or less convex posterior part with two rows of robust recumbent setulae (as in Figs. 8, 13). Tergites 4 and 5 with the normal recumbent setulae. Syntergite 1+2 with 2 strong median marginal bristles; middorsal excavation confined to about anterior $\frac{1}{4}$ of that segment. Tergite 3 with 4 strong marginal bristles and a small additional seta inserted next to the lateral bristle. Tergite 4 with 2 pairs of median marginal bristles; distance of the median pair to the hind mar-

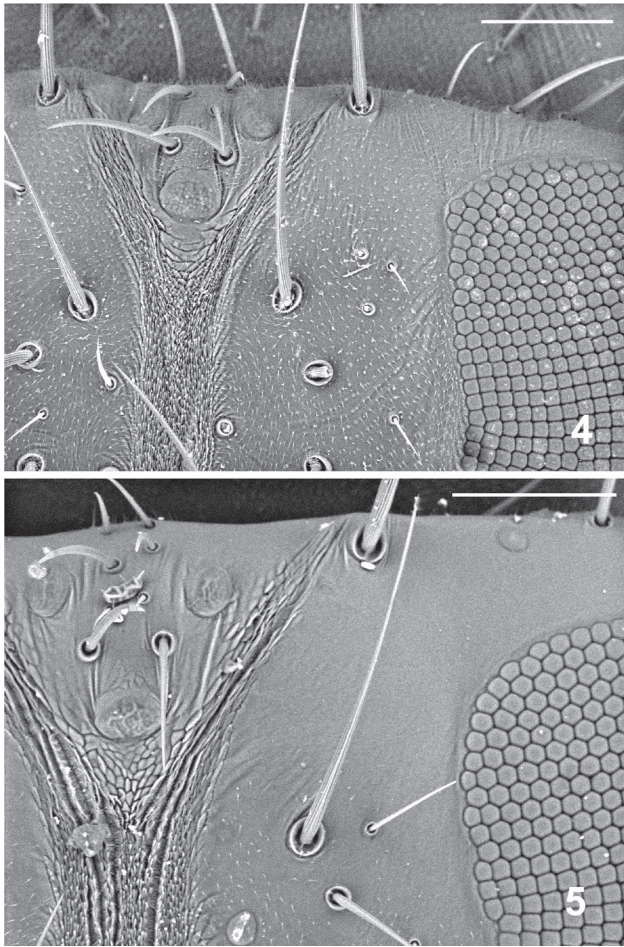
gin about $\frac{2}{5}$ the length of that segment. Tergite 5 with a row of 4 bristles (weaker than on tergites 3 and 4) slightly behind the mid length of that segment. Combined dorsal length of tergites 1–3 1.16 times as long as combined length of tergites 4–5. Postabdomen not dissected (see introduction).

Body length 3.0 mm.

Females differ from male as follows:

Colour: Posteroventral fourth of head yellowish to black; antenna, face and gena brown in one specimen from Spain; palpus yellowish to brown, femora more or less reddish basally and anteroventrally; abdomen entirely black (in the Crete specimen), or convex posterior part of syntergite 1+2 dark reddish dorsolaterally and a common lateralventral spot of tergites 1–3 (–4 in one specimen) yellow.

Pruinescence: Light pruinescence on frons visible in posterior view (not in the Crete specimen), due to scattered microtrichia as shown in Fig. 4; thorax with a very light grey pruinescence laterally, antero- and posterodorsally.



Figs. 4–5. *Plesina* spp., ♀ frons. – 4. *P. nigroscutellata* n. sp. 5. *P. claripennis*. – Scale: 0.1 mm.

Head (Figs. 3–4). Eye smaller; frons at its narrowest point 1.24 times as wide as an eye in dorsal view in the Crete specimen, 0.90–1.04 times in the other specimens (which were dried from alcohol). Inner vertical seta about 0.6 vertical diameter of eye. Frontal stripe as wide as $\frac{1}{3}$ – $\frac{2}{5}$ of a parafrontal. One reclinate upper orbital seta present. Fronto-orbital plate with a row of 2–4 proclinate orbital setae (the posterior one slightly laterocline).

Scutum with 1 + 0–2 acrostichal setae.

Base of R_{4+5} bare or with 1–2 minute setulae (in the Spanish specimens).

Pulvilli of fifth fore tarsal segment absent, fore claws minute; claws of mid and hind legs about as long as $\frac{1}{3}$ of fifth tarsal segment.

Tergite 3 with a pair of median marginal bristles. Combined dorsal length of tergites 1–3 0.9–1.1 times as long as combined length of tergites 4–5 (Figs. 8, 13). Postabdomen without peculiarities.

Body length 3.6–4.5 mm.

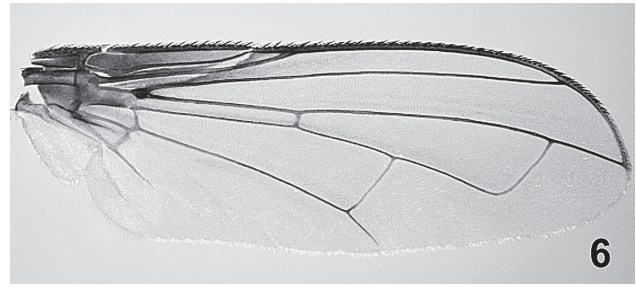


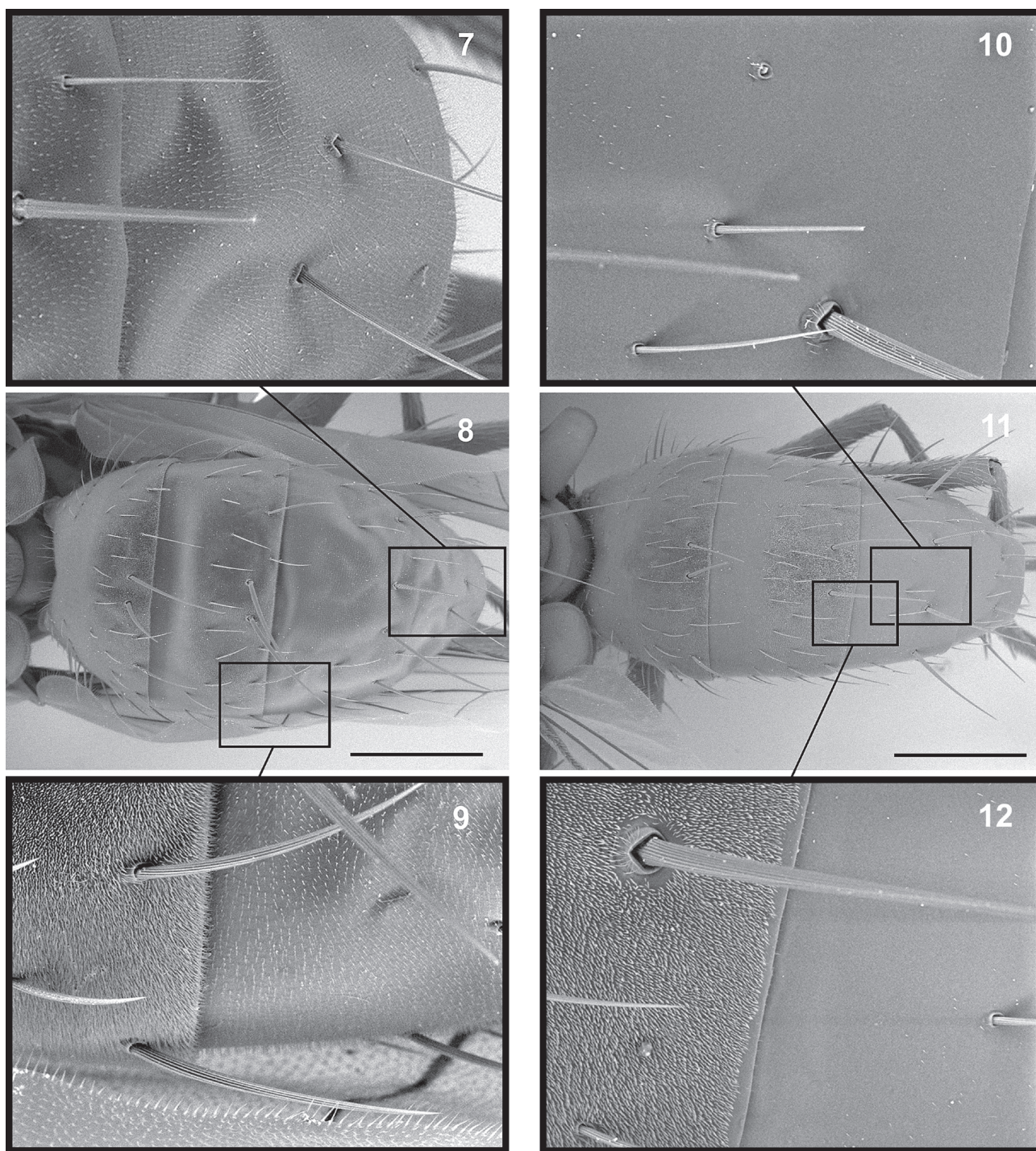
Fig. 6. *Plesina nigroscutellata* n. sp., wing.

3 Differential diagnosis

The newly described species *Plesina nigroscutellata* n. sp. can be separated from the other species of the genus *Plesina* as follows:

- 1 Wing patterned, with dark transversal bands or spots (compare figs. 2, 6, 8 of KUGLER 1978, figs. 5 and 7 of KUGLER 1982, and fig. 4(3) of RICHTER 1988). other species of *Plesina*
– Wing unpatterned (Fig. 6; figs. 12 and 18 of KUGLER 1978). 2
- 2 Abdominal tergites 1+2 and 3 of unique structure, not consisting of two different parts; abdomen covered with the normal recumbent setulae; at least tergites 1–4 with small spots of pruinescence (in posterior view). Thorax with dense pruinescence (in anterior view). *P. deserticola* and *P. zimini*
– Abdominal tergites 1+2 and 3 each differentiated into a slightly concave and bare anterior part and a more or less convex posterior part with rows of recumbent setulae (Figs. 8, 11, 13–14). Thorax at most with very weak pruinescence. 3
- 3 Combined dorsal length of tergites 1–3 about 1.7–2.0 times as long as combined length of tergites 4+5 in ♂ (see fig. 3 of Kugler 1978), 1.5–1.6 times in ♀ (Figs. 11, 14). Thorax including scutellum more or less yellow (in darkened specimens at least the posterior margin of the scutellum yellow), the latter usually with 2 discal setulae. Halter usually yellow. Tegula yellow. Legs usually predominantly yellow (very rarely largely dark brown). Margin of lower calypter fine, yellowish or light brown. Abdominal tergites 4 and 5 entirely shiny, without any pruinescence (Figs. 10–12). – ♀: Fifth fore tarsal segment 2.1–2.5 times as long as wide; frons entirely shiny, also in posterior view (Fig. 5). – Egypt, Israel, Syria. *P. claripennis*
– Combined dorsal length of tergites 1–3 about 1.2 times as long as combined length of tergites 4+5 in ♂, 0.9–1.1 times in ♀ (Figs. 8, 13). Thorax including scutellum entirely black, the latter with 3–5 discal setulae. Knob of halter brown. Tegula dark brown. Legs predominantly dark brown or black. Lower calypter with a coarse dark margin. Abdominal tergites 4 and 5 with slight pruinescence (best visible in anterior view) (Figs. 7–9). – ♀: Fifth fore tarsal segment 1.8–2.0 times as long as wide; light pruinescence on frons usually visible in posterior view (Fig. 4). – Spain, Sardinia, Crete. *P. nigroscutellata* n. sp.

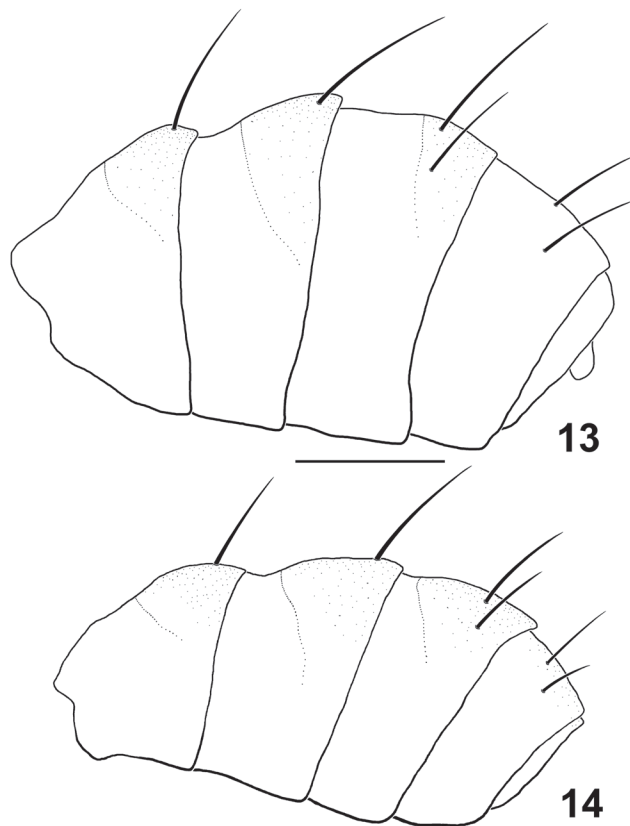
KUGLER (1978), in his description of the females of *Plesina claripennis*, noted: “variable in colour, from nearly



Figs. 7–12. *Plesina* spp., ♀ abdomen, dorsal view. – 7–9. *P. nigroscutellata* n. sp. 10–12. *P. claripennis*. – Scale: 0.5 mm.

entirely shiny yellow to almost entirely black”. The examination by the first author of more than 300 specimens of *P. claripennis* preserved in TAU revealed that even in darker specimens the scutellum has a narrow yellow posterior rim, that the legs are at least partly yellow, that the

combined dorsal length of abdominal tergites 1–3 is at least 1.5 times as long as the combined length of tergites 4–5, and that the abdominal tergites 4 and 5 are always entirely shiny, without pruinescence.



Figs. 13–14. *Plesina* spp., ♀ abdomen, lateral view. – **13.** *P. nigroscutellata* n. sp. **14.** *P. claripennis*. – Scale: 0.5 mm.

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