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A New Species of the Genus *Meigenia* Robineau-Desvoidy (Diptera: Tachinidae)

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With 1 figure

Summary

A previously unrecognized species of the *Meigenia mutabilis*-group, *M. simplex* **n.sp.**, is described. The new species has been reared from larvae of Chrysomelidae (Coleoptera): *Crioceris asparagi* Linnaeus, *C. quatuordecimpunctata* Scopoli, *Melasoma populi* Linnaeus, *M. tremulae* Fabricius, and *Phyllodecta laticollis* Suffrian. It is known from Switzerland, Austria, France, Italy, Spain, and Turkey.

Zusammenfassung

Eine bisher nicht erkannte Art der *Meigenia mutabilis*-Gruppe, *M. simplex* **n.sp.**, wird beschrieben. Sie wurde gezogen aus Larven von Chrysomelidae (Coleoptera): *Crioceris asparagi* Linnaeus, *C. quatuordecimpunctata* Scopoli, *Melasoma populi* Linnaeus, *M. tremulae* Fabricius und *Phyllodecta laticollis* Suffrian. Die Art wurde bisher in der Schweiz, in Österreich, Frankreich, Italien, Spanien und in der Türkei nachgewiesen.

1. Introduction

The species of the *Meigenia mutabilis*-group (consisting of *M. mutabilis* Fallén, *M. dorsalis* Meigen, *M. uncinata* Mesnil, and *M. grandigena* Pandellé) can only be separated by the structure of their male genitalia (see Tschorsnig & Herting 1994: 45, 121). Females are currently not separable. It seemed that there was probably another species in this group, but it could not be desribed until now because only a single male specimen from Switzerland was known. We have recently studied a large series reared from *Crioceris asparagi* from Spain, and, after revising material from several collections, can now clearly recognize that there is a new species which we describe below.

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Abbreviations of collections:

IEGG: Istituto di Entomologia "Guido Grandi", Bologna (Italy);
NHMW: Naturhistorisches Museum, Wien (Austria);
OXUM: University Museum, Oxford (England);
SMNS: Staatliches Museum für Naturkunde, Stuttgart (Germany);
UPN: Universidad Publica de Navarra, Departamento de Produccion agraria, Pamplona (Spain).

2. Description of *Meigenia simplex* n.sp.

Holotype: Switzerland, Ticino, Riazzino near Gordola, 7. VIII. 1969, 1 ♂, leg. B. Herting [SMNS].

Paratypes: Austria, Austr. inf., Wien-Speising, ex *Crioceris* larva on *Asparagus*, larva collected 6. VII. 1890, 1 ♂ fly emerged 23. VII. 1890, leg. F. A. Wachtl [SMNS]. – Possibly Austria, ex *Crioceris quatuordecimpunctata*, 2 ♂♂, coll. Brauer & Bergenstamm (published as *Meigenia floralis* by Brauer & Bergenstamm 1894: 561, as *Meigenia mutabilis* by Herting 1960: 54) [NHMW]. – France: Vaucluse, Saumane, 18. V. 1972, 1 ♂, leg. B. Herting [SMNS]. – France (no locality): ex *Crioceris asparagi*, VIII. 1880, 3 ♂♂ 1 ♀, collection Bigot [OXUM]. – Probably France (no locality): ex *Melasoma populi* ("chrysomèle du peuplier"), VIII. 1864, 1 ♂ 3 ♀♀, collection Bigot [OXUM). – Italy, Bologna, Pian di Macina, Pianora, ex *Melasoma populi*, 20. VII. 1996 (6 ♂♂ 2 ♀♀) [SMNS: 3 ♂♂ 1 ♀], 27. VII. 1996 (1 ♂ 1 ♀) [SMNS: 1 ♀], 20. VIII. 1996 (2 ♂♂) [SMNS: 1 ♂], 27. VIII. 1997 (7 ♂♂ 5 ♀♀) [SMNS: 1 ♂ 1 ♀], 5. IX. 1997 (2 ♀♀), leg. R. Farneti [material in IEGG except where stated]. – Italy, Liguria, 15 km NW of La Spezia, Monterosso al Mare, 25. IX. 1997, 1 ♂ leg. B. Merz [private collection of B. Merz). – Italy, Bologna, Sabbiuno, ex *Phyllodecta laticollis*, 1 ♂ (published as *Meigenia mutabilis* by Albertoni 1962: 12) [IEGG]. – Italy, Bologna, Sabbiuno, ex *Crioceris asparagi*, 1 ♂ [IEGG]. – Italy, Bologna, VI. 1961, ex *Melasoma populi*, 1 ♂ (published as *Meigenia mutabilis* by Mellini 1962: 131) [IEGG]. – Italy, Bologna, Corticella, 17. X. 1959, 1 ♂ [IEGG]. – Italy, Modena, Zocca, 21. VIII. 1964, ex *Melasoma*, 1 ♂ [IEGG]. – Spain, Navarra, ex *Crioceris asparagi*, leg. J. J. Lipa (data refer to the emergence of the flies): Mendigorría, 10.–11. VII. 1997 (11 ♂♂ 6 ♀♀), 8. VIII. 1997 (1 ♂), 10. VIII. 1997 (16 ♂♂ 3 ♀♀); Artajona, 10. VIII. 1997 (3 ♂♂ 2 ♀♀) 17. VIII. 1997 (1 ♂ 1 ♀), 23. VIII. 1997 (2 ♂♂), 24. VIII. 1997 (2 ♂♂) [SMNS, most of the material stored in alcohol]. – Spain: Prov. Huelva, 5 km NW of Mazagón, 30. V. 1983, 1 ♂, leg. H.-P. Tschorsnig (published as *Meigenia mutabilis* by Tschorsnig 1992: 9) [SMNS]. – Mallorca: Puerto de Alcudia, La Albufera, 25. V. 1985, 3 ♂♂, leg. H.-P. Tschorsnig [SMNS]. – Turkey, Ankara-Kalecik, 28. VI. 1984, 2 ♂♂ ex *Melasoma tremulae*, leg. H. Karakaya (published in OILB-list 11 as *Meigenia dorsalis*) [SMNS].

Further material (not regarded as paratypes because of its bad condition): Spain, Navarra, ex *Crioceris asparagi*, leg. J. J. Lipa (data refer to the emergence of the flies): Mendigorría, 10.–11. VII. 1997 (13 ♂♂ 11 ♀♀), 14. VII. 1997 (1 ♀), 8. VIII. 1997 (1 ♀), 9. VIII. 1997 (1 ♂), 10. VIII. 1997 (15 ♂♂ 18 ♀♀), 11. VIII. 1997 (2 ♂♂ 1 ♀); Biurrun, 15. VIII. 1997 (1 ♂), 17. VIII. 1997 (2 ♀♀), 18. VIII 1997 (1 ♀), 19. VIII. 1997 (1 ♀); Artajona, 10. VIII. 1997 (14 ♂♂ 14 ♀♀), 16. VIII 1997 (2 ♂♂ 6 ♀♀), 17. VIII. 1997 (1 ♂ 2 ♀♀), 18. VIII. 1997 (1 ♀) 19. VIII. 1997 (1 ♂), 20. VIII. 1997 (1 ♀), 23. VIII. 1997 (6 ♂♂ 2 ♀♀), 24. VIII. 1997 (5 ♂♂ 3 ♀♀), 25. VIII. 1997 (1 ♀) [UPN].

Male [statements given within square brackets refer to male paratypes]:

Colour: Body (including antenna, palpus, tegula, basicosta, and legs) black [tergites 3 and 4 sometimes brownish laterally]. Calypter darkened. Head and thorax covered with grey pruinescence; scutum before suture with 5 dark longitudinal stripes, the 3 inner stripes usually more or less fused together. Abdominal tergites 3–5 covered with grey pruinescence, tergites 3 and 4 each with a black longitudinal stripe and a pair of reflecting dark spots, whose length varies between $^1/_3$ and $^5/_6$ of the length of each tergite.

Head: Eye practically bare (sparse hairs often present, but each hair no longer

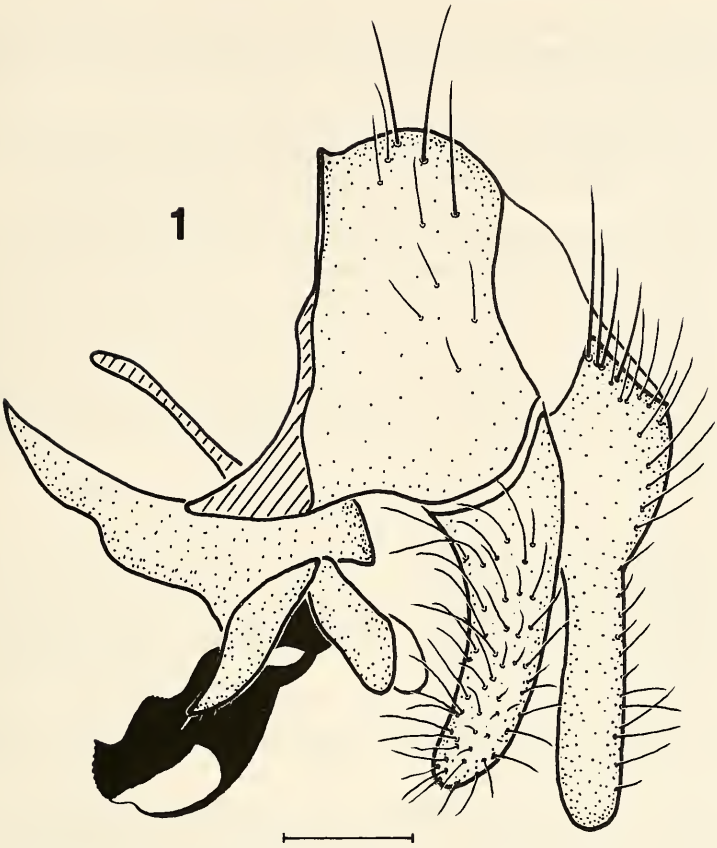

Fig. 1. *Meigenia simplex* n.sp., male terminalia. – Scale: 0.1 mm.

than combined diameter of two facets). Frons at its narrowest point 0.45 [0.39–0.54] times as wide as an eye in dorsal view. Outer vertical bristle not differentiated. Postocular setae long, bent forwards. Ocellar bristles strong, proclinate. Frontal bristles descending to level of lower margin of second antennal segment [or to base of arista]. 3 or 4 reclinate upper orbital bristles of equal length. Frons with several fine hairs outside frontal row. Parafacial bare, about as wide as third antennal segment. Facial ridge with a few setae on its lower $^1/_5$. Vibrissa arising at level of lower facial margin or slightly above, the latter not visible in lateral view. Third antennal segment 2.4 [2.1–2.4] times as long as second antennal segment. Arista bare, thickened on its basal $^1/_5$ [$^1/_5$–$^1/_4$]. Second aristomere at most as long as wide. Gena, when seen in profile, about $^1/_4$ [$^1/_5$–$^1/_4$] vertical diameter of eye. Occiput with well-developed genal dilation. Posterodorsal half of head with one or two rows of black setulae behind the postocular row. Prementum about 3 times as long as its diameter. Palpus well-developed.

Thorax: Lateral margins of prosternum with several fine hairs. Proepisternum setose. Postpronotum with 4 bristles, the 3 basal bristles arranged in a straight line. Scutum with 3 + 3 pairs of acrostichal bristles, 2 + 3 pairs of dorsocentral bristles, 1

[0–1] + 3 intra-alar bristles. Katepisternum with 4 [3–4] bristles. Katepimeron bare or with 1 or 2 fine hairs anteriorly. Apical scutellar bristles parallel or divergent, more or less erect.

Wing: Costal bristle indistinct. Base of R_{4+5} with 2 [1–4] setulae. Fourth costal section 3–4 times as long as sixth costal section. Section of M between crossveins r-m and dm-cu 1.5 [1.4–2.1] times as long as section between dm-cu and bend of M. Wing cell r_{4+5} open.

Legs: Claws slightly longer than fifth tarsal segment. Mid tibia with 1 anterodorsal bristle. Hind tibia with 2 dorsal preapical setae.

Abdomen: Syntergite 1 + 2 with 1 pair of median marginal bristles; tergite 3 with 1 pair of median marginal bristles, 1 pair of lateral marginal bristles, and 1 or 2 pairs of discal bristles; tergite 4 with a complete row of marginal bristles, and several discal and laterodiscal bristles; tergite 5 with 2 or 3 rows of bristles on its posterior 2/3. Terminalia (Fig. 1): Cercus with a distinct angle in lateral view (because of its protruding base), surstylus curved forwards.

Body length 4.9 [3.5–7.0] mm (small specimens are reared from *Phyllodecta,* large specimens from *Melasoma;* specimens from *Crioceris* are intermediate).

Female (assignable to the new species, because belonging to series reared from hosts), differing from male as follows:

Frons at its narrowest point 0.87–1.09 times as wide as an eye in dorsal view. Outer vertical bristle present. 2 proclinate orbital bristles. Palpus yellow. Claws about half as long as fifth tarsal segment.

Couplet 6 in the key to the species of *Meigenia* by Tschorsnig & Herting (1994: 45) may be replaced as follows:

6 Cercus as long as 0.55–0.64 of tergite 5 (tergite 5 measured along its dorsal midline), with a distinct angle in lateral view because of its protruding base. Surstylus curved forwards. Hairs of surstylus and cercus shorter (Fig. 1) ..... ***simplex* n.sp.**

– Cercus as long as 0.68–0.85 of tergite 5, straight or slightly concave in lateral view, without an angle. Surstylus straight. Hairs of surstylus and cercus dense and long (Fig. 249 in Tschorsnig & Herting 1994) ..... 7 [*dorsalis* Meigen + *grandigena* Pandellé].

3. Discussion

Unlike the other species of the *Meigenia mutabilis*-group, the new species has rarely been collected in the field (see section 2). Most of the specimens have been reared from hosts. All known localities (except Speising in Austria) are situated in southern Europe.

The question of the host-specificity of the new species is not yet solved. Based on the host records given in chapter 2., it seems probable that at least species of the genera *Melasoma* and *Crioceris* are its main hosts. Records of *Meigenia mutabilis* from *Melasoma* (Bugnion 1880, Kanervo 1946, Baronio 1973, Gruev 1973), *M. dorsalis* from *Melasoma* (OILB-list 10), or the numerous records of *M. 'mutabilis'* from *Crioceris* need to be confirmed. Most of them – except perhaps the records from northern countries – could belong to *M. simplex* n.spec.

The record of *Meigenia mutabilis* from *Crioceris asparagi* in Tschorsnig (1990) is based on a single small female (body length 3 mm); it is impossible to decide whether it belongs to *M. mutabilis* or to the new species.

Among the material sent to us from Bologna, there was a single male of *Meigenia mutabilis* which had been reared from *Crioceris asparagi* (Bologna, Sabbiuno) [IEGG]. This is at present the only confirmed record for *Meigenia mutabilis* from this host.

Unfortunately the material of BARONIO (1973), who reared *Meigenia "mutabilis"* from three different hosts, is probably lost. It cannot be ruled out that he had three or even four species of *Meigenia* instead of one.

It seems possible that the revision of reared material of *Meigenia* from more collections will yield further host records for the new species.

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