Revision of the genera of the Afrotropical and W. Palaearctic Rogadinae Foerster (Hymenoptera: Braconidae)

C. van Achterberg

Achterberg, C. van. Revision of the genera of the Afrotropical and W. Palaearctic Rogadinae Foerster (Hymenoptera: Braconidae).

Zool. Verh. Leiden 273, 24.xii.1991: 1-102, figs 1-390.— ISSN 0024-1652.

Key words: Braconidae; Rogadinae; Lysitermini; Rogadini; Pentatermini; Clinocentrini; keys; Palaearctic; Afrotropical; distribution; biology.

The genera of the subfamily Rogadinae Foerster, 1862 sensu stricto from the Afrotropical and W. Palaearctic regions are revised. Keys to the species of several genera are given and all genera are fully illustrated. Five new genera are described: *Aspidorogas* gen. nov. (type species: *Aspidorogas fuscipennis* spec. nov.), *Korupia* gen. nov. (type species: *Korupia curvinervis* spec. nov.), *Myocron* gen. nov. (type species: *Myocron antefurcale* spec. nov.), *Pholichora* gen. nov. (type species: *Hemigyroneuron madagascariensis* Granger, 1949), and *Rectivena* gen. nov. (type species: *Cystomastax madagascariensis* Granger, 1949). Two taxa are renamed: *Aleiodes convexus* nom. nov. for *A. rufithorax* (Enderlein, 1912) nec Cameron, 1911, and *Scoporogas* nom. nov. for *Scopophthalmus* Szépligeti, 1914 nec Agassiz, 1846.

Two new tribes are proposed: Clinocentrini to include *Clinocentrus* Haliday, 1833 and related genera, and Yeliconini (of the subfamily Betylobraconinae sensu lato) to include *Yelicones* Cameron, 1887, which was formerly included in the Rogadinae. Additionally twelve new species are described: *Acanthormius sumatrensis* spec. nov. from Indonesia, *Aspidorogas fuscipennis* spec. nov. from Zaire, *Hemigyroneuron certum* spec. nov. from Malagasy, *Korupia curvinervis* spec. nov. from Cameroons, *Myocron antefurcale* spec. nov. from S. Africa and Kenya, *M. macrocellatum* spec. nov. from Malagasy, *M. striatum* spec. nov. from Cameroons, *Pholichora inopina* spec. nov. from Malagasy, *P. bipanna* spec. nov. from Nigeria, *Rectivena intermediata* spec. nov. and *R. lineata* spec. nov. from Cameroons, and *R. punctata* spec. nov. from Uganda.

Eleven genera are synonymized: *Camptocentrus* Kriechbaumer, 1894, and *Microrhogas* Cameron, 1910 with *Clinocentrus* Haliday, 1833; *Neontsira* Rohwer, 1924 and *Eorhyssalus* Belokobylskij, 1989 with *Tebennotoma* Enderlein, 1912; *Petalodes* Wesmael, 1838, *Nebartha* Walker, 1860, *Chelonorhogas* Enderlein, 1912, *Leluthinus* Enderlein, 1912, *Aleiorhogas* Baker, 1917, *Heterogamoides* Fullaway, 1919, and *Hyperstemma* Shestakov, 1940 with *Aleiodes* Wesmael, 1838. Six species are synonymized: *Chremylus striatus* Szépligeti, 1908 with *Pentatermus carinatus* Hedqvist, 1963; *Orthorhogas gerardi* Shenefelt, 1969 with *Rectivena limacodiphaga* (Shenefelt, 1969); *Aleiodes heterogaster* Wesmael, 1838 with *A. albitibia* (Herrich-Schäffer, 1838); *Petalodes unicolor* Wesmael, 1838 with *Aleiodes compressor* (Herrich-Schäffer, 1838); *Gyroneuron africanum* Brues, 1924 with *Cordylorhogas trifasciatus* Enderlein, 1920, and *Diachasma rimulosa* Marshall, 1898 with *Triraphis tricolor* (Wesmael, 1838).

Thirty new combinations are given: *Pentatermus striatus* (Szépligeti, 1908), *Tebennotoma typica* (Rohwer, 1924); *T. aciculata* (Belokobylskij, 1989); *Clinocentrus kriechbaumeri* (Fahringer, 1941); *Aleiodes africanus* (Enderlein, 1920); *A. bicoloratus* (Enderlein, 1920); *A. nigripes* (Enderlein, 1920); *A. mongolicus* (Telenga, 1941); *Colastomion bicoloricorne* (Granger, 1949); *C. concolor* (Szépligeti, 1911); *C. nigricorne* (Granger, 1949); *C. tristis* (Granger, 1949); *Myocron albitarsus* (Szépligeti, 1911); *M. persimile* (Szépligeti, 1914); *M. nigriceps* (Szépligeti, 1914); *M. voeltzkowi* (Szépligeti, 1913); *Rectivena antennata* (Granger, 1949); *R. madagascariensis* (Granger, 1949); *R. limacodiphaga* (Shenefelt, 1969); *Pholichora madagascariensis* (Granger, 1949); *P. apicalis* (Brues, 1926); *Scoporogas jeanneli* (Szépligeti, 1914); *Triraphis gregarius* (Watanabe, 1970); *T. nigrovenosus* (Vojnovskaja-Krieger, 1935); *T. roxanus* (Telenga, 1941); *T. harrisinae* (Ashmead, 1889); *T. discoideus* (Cresson, 1869); *Mesobracon inermis* (Guérin-Méneville, 1848); *Xenolobus fuliginosa* (Shenefelt, 1979); *X. promisca* (Shenefelt, 1979).

Lectotypes are designated of the following species: *Triraphis discolor* (Ruthe, 1855); *Colastomion bicoloricorne* (Granger, 1949); *C. nigricorne* (Granger, 1949); *Iporhogas infuscatipennis* Granger, 1949; *Myocron albitarsus* (Szépligeti, 1911); *Pholichora madagascariensis* (Granger, 1949); *Rectivena madagascariensis* (Granger, 1949).

C. van Achterberg, Nationaal Natuurhistorisch Museum, Postbus 9517, 2300 RA Leiden, The Netherlands.

Contents

Introduction

The subfamily Rogadinae Foerster, 1862 (Braconidae) is here treated in the restricted sense of van Achterberg (1990) and Quicke & van Achterberg (1990). The rest of the Rogadinae sensu lato is excluded in recognition of the polyphyletic nature of

the group (Quicke & van Achterberg, 1990). As a result only the endoparasitic species remain in the Rogadinae. In this restricted sense the Rogadinae contains four tribes: Lysitermini Tobias, 1968, Pentatermini Belokobylskij, 1990, Clinocentrini tribus nov., and Rogadini Foerster, 1862. The tribes contain (as far as the limited biological data allow a conclusion) koinobiont endoparasites of lepidopterous larvae, which regularly mummify the host larva, to form a pupation-site for the parasite (Shaw & Huddleston, 1991: Rogadini). Most of the Rogadini are medium-sized to large Braconidae, often having an ophionoid facies (Gauld & Huddleston, 1976); the species belonging to the other tribes are small to medium-sized and usually lack an ophionoid facies.

The identification of this group is problematical as reliable keys to the genera and species are non-existent. Therefore, it is not surprising that no key exists for the genera of the Rogadinae from the Afrotropical region. Although Granger (1949) published a key to the genera of the Malagasian Braconidae, he assigned several species to incorrect genera because he had not examined the types of the type species and he overlooked important characters.

This revision is part of a broader project on the genera of the Braconidae, and is also a necessary foundation for other work in hand: the revision of the genera of the Oriental Rogadinae, and a revision of West Palaearctic species of *Aleiodes*.

For the terminology used in this paper, see van Achterberg, 1988a (p. 5-11). An asterisk indicates a new record for the country concerned.

Subfamily Rogadinae Foerster, 1862 sensu stricto

Rogadoidae Foerster, 1862: 228, 240.

Diagnosis.— Antennal segments 14-104; maxillary and labial palpi with 6 and 4 segments, respectively (fig. 27), but 5- and 3- segmented in *Artocella* (fig. 325); labrum concave and glabrous (figs 63, 118, 198), subvertical and not slanted backwards as in the Yeliconini (fig. 367); mandibles twisted and often robust, with second tooth more or less developed (figs 7, 17, 257, 315, 344); pronope absent (figs 10, 13, 33, 361); pronotum much shorter than mesoscutum, rounded anteriorly, and not protruding (fig. 10); prosternum (largely) flat, at most moderately protruding, and not visible in lateral view (figs 41, 70); prepectal carina present (fig. 3), exceptionally reduced (fig. 16) or absent (fig. 27); transverse mesoscutal suture absent or narrow medially (figs 10, 14, 78, 248); vein M+CU1 of fore wing usually straight or slightly curved (figs 25, 87, 114, 216), but sometimes distinctly curved (figs 231, 232, 234); fore basitarsus with inner concavity, and with specialized bristles; fore and middle telotarsi normal, shorter than second-fourth tarsal segments combined (cf. fig. 12); dorsal carinae of first tergite frequently united (figs 290, 312, 317, 350); laterope absent or obsolescent (figs 3, 105, 315, 355).

Biology.— Endoparasites of larval Lepidoptera. Pupation is in the mummified host.

All four tribes are present in the W. Palaearctic and Afrotropical regions: Rogadini Foerster, 1862, Lysitermini Tobias, 1968, Pentatermini Belokobylskij, 1990, and Clinocentrini nov.

Phylogeny

The Rogadinae sensu stricto are considered to be a monophyletic group with as synapomorphies the mummification of the host larve, (and among the traditional Rogadinae-complex) the endoparsitism and strong sclerotization of the metasoma, the spiracles of second and third metasomal tergites situated in their nota, and the sculpture of the three basal metasomal tergites well developed. Within de Rogadinae the tribe Pentatermini Belokobylskij, 1990 is the most basal one because of three synapomorphies: the occipital carina is not curved towards the hypostomal carina ventrally and consequently not connected to it; the dorsal carinae of the first metasomal tergite are semi-circularly curved and often joined to each other forming a regular curve; and the vein 1-SR of fore wing is comparatively short. The tribe Pentatermini contains the Old World genus *Pentatermus* Hedqvist, 1963 and four New World genera: *Stiropius* Cameron, 1911 (= *Bucculatriplex* Viereck, 1912), *Polystenidea* Viereck, 1911, *Viridipyge* Whitfield, 1988, and *Choreborogas* Whitfield, 1990.

The next group in the cladogram is the tribe Lysitermini Tobias, 1968, containing four Old World genera: *Lysitermus* Foerster, 1862, *Acanthormius* Ashmead, 1906, *Aulosaphes* Muesebeck, 1935, and *Tritermus* van Achterberg, 1982. They share the following synapomorphies: vein CU1b of fore wing near level of vein 2-CU1 or halfway between veins 2-CU1 and 2-1A, the fourth and fifth metasomal tergites retracted below third tergite and less sclerotized than third tergite, and third tergite with complete lateral crease. The remaining genera have as (weak) synápomorphy that the vein m-cu of the fore wing is antefurcal or subinterstitial; they can be divided among two tribes: Rogadini Foerster, 1862 and its sister-group, Clinocentrini nov. The Rogadini, with the majority of the genera of the Rogadinae, have several synapomorphies: the propodeum has no distinct areola, the vein m-cu of hind wing is absent (but may be exceptionally (faintly) developed), the second metasomal tergite has a more or less developed medio-basal area (but (secondarily?) absent in several genera), and the tendency to have a short and more or less widened ovipositor sheath (probably correlate with the change to parasitize exposed-living hosts). The Clinocentrini (containing *Clinocentrus* Haliday, 1833, *Tebennotoma* Enderlein, 1912, *Artocella* van Achterberg, 1980, and *Xenosternum* Muesebeck, 1935) lack clear synapomorphies, for most species the transverse sculpture of the third or fourth metasomal tergites is a distinct synapomorphy, but it is e.g. absent in the aberrant New World genus *Xenosternum*.

Key to genera of the Afrotropical and W. Palaearctic Rogadinae sensu stricto

1. Fore and middle telotarsi strongly enlarged, longer than the exceptionally short and widened second-fourth tarsal segments combined (figs 369, 370); transverse mesoscutal suture widened in front of scutellar sulcus; fore tibial spur as long as fore basitarsus (fig. 370); labrum (largely) flat and more or less slanted backwards and subhorizontal (fig. 367); prosternum lamelliform, strongly protruding, and visible in lateral view (figs 365, 368); vein M+CU1 of fore wing distinctly curved (fig. 364); ovipositor more or less depressed apically; fore basitarsus unspecialized (fig. 370); hind basitarsus with specialized area (fig. 374); mandibles (nearly)

unidentate (fig. 367); (tribe Yeliconini nov. of the Betylobraconinae) .....
..... ***Yelicones*** Cameron

Note. I include this group in the key because it is superfically similar to the Rogadinae and it has been included in this subfamily up to now. However, considering the numerous differences I exclude this group from the Rogadinae sensu stricto. The flat labrum, the widened tarsi and the strong vein m-cu of hind wing probably indicate a relationship with the Betylobraconinae sensu lato. No species have been described from the Afrotropical region, but I have seen two species among the material from Kenya (RMNH), Malagasy (MNHN) and W. Africa (Hedqvist Collection). Papp (1989: 23) reports *Y. delicatus* (Cresson, 1872) from Israel.

- Fore and middle telotarsi normal, shorter than second-fourth tarsal segments combined (cf. fig. 12); transverse mesoscutal suture absent or narrow medially (figs 10, 14, 78, 248); labrum concave, and (sub)vertical (figs 50, 63, 297, 316, 338); prosternum (largely) flat and at most moderately protruding, and invisible in lateral view (figs 41, 70); vein M+CU1 of fore wing usually nearly straight or slightly curved (figs 25, 87, 114, 216), but sometimes distinctly curved (figs. 231, 232, 234); fore basitarsus with inner concavity and specialized setae; hind basitarsus normal (figs 31, 81, 112); second tooth of mandible more or less developed (fig. 17) 2

2. Spiracle of third tergite in its notum (figs 3, 16, 27, 236, 344, 336), very exceptionally in its epipleuron; pronope absent (figs 10, 60); eyes distinctly emarginate at inner sides (figs 7, 17, 118, 240, 245, 297), if weakly or not emarginate (figs 309, 326, 338) then dorsal carinae of first metasomal tergite semi-circularly curved, united or nearly so (figs 312, 317, 350), second metasomal tergite distinctly sculptured and/or fourth metasomal tergite largely retracted and third tergite with sharp lateral crease (figs 344, 355, 363); pronotum in dorsal view much shorter than mesoscutum (fig. 14); endoparasites and host caterpillar mummified; (subfamily Rogadinae Foerster sensu stricto) 3
- Spiracle of third tergite in its epipleuron, if exceptionally situated dorsally then pronope present; eyes not emarginate at inner sides; dorsal carinae of first metasomal tergite not semi-circularly curved basally and nearly always separated, or if united then second tergite smooth; fourth metasomal tergite exposed and third tergite without sharp lateral crease, if very exceptionally fourth tergite retracted and third tergite with a lateral crease then pronotum in dorsal view as long as mesoscutum (the wingless *Eupambolus* Tobias); ectoparasites and no mummification of host caterpillar ..... Subfamilies Rhyssalinae & Exothecinae (including Hormiini)

3. Vein m-cu of hind wing present, at least as a fold in the wing membrane (figs 302, 314, 327, 333, 343, 352); propodeal areola present, at least posteriorly (figs 319, 339, 348, 361); second metasomal tergite without triangular area medio-basally (figs 332, 341, 363), but it may be weakly developed in *Clinocentrus* (fig. 317); eyes weakly or not emarginate (figs 309, 316, 326, 357); tarsal claws simple (figs 322, 334, 358); ovipositor sheath distinctly protruding beyond apex of metasoma (figs 313, 315, 325, 336) 4
- Vein m-cu of hind wing absent (figs 1, 265, 278, 291), if very exceptionally present (*Scoporogas* (fig. 234) and some *Aleiodes* spp.) then propodeal areola completely absent (cf. fig. 78); second tergite with distinctly differentiated (usually triangular or semi-circular) area medio-basally, which is often minute (figs 11, 19, 36, 56, 88, 111, 290), but absent in *Myoporhogas* (fig. 253), *Triraphis* (fig. 194) and part of *Aleiodes*; ovipositor sheath hardly or not protruding beyond apex of metasoma (figs

6, 27, 247, 268, 283), if distinctly protruding (Spinariini, *Rogas* (fig. 116), *Rectivena* (fig. 140), and *Triraphis* (fig. 188)), then eyes distinctly emarginate (figs 143, 185) and tarsal claws with a large lobe (figs 123, 144); (tribe Rogadini Foerster) 9

4. Third metasomal tergite with complete sharp lateral crease and strongly sculptured dorsally (figs 336, 355); third and fourth tergites without transverse sculpture (figs 336, 350); vein CU1a of fore wing near level of vein 2-CU1 (fig. 333); dorsal carinae of first tergite semi-circularly curved and united or remaining removed from each other (figs 350, 363) 5
- Third tergite at most with sharp lateral crease anteriorly (figs 306, 315) and at most moderately sculptured dorsally (figs 317, 332); third or fourth tergite with fine transverse sculpture (figs 312, 317, 332); vein CU1a of fore wing closer to level of vein 2-1A than to level of vein 2-CU1 (figs 314, 327) or situated about halfway (figs 302, 317); dorsal carinae of first tergite variable, often united and enclosing a slender triangular area (figs 312, 317); (tribe Clinocentrini nov.) 7
5. Fourth and fifth metasomal tergites at least basally sculptured, strongly sclerotized and well-exposed (fig. 336); occipital carina not connected to hypostomal carina laterally (fig. 336); malar suture present (fig. 338); head strongly narrowed ventrally (fig. 338); vein 1-SR of fore wing short and vein m-cu of fore wing comparatively long (fig. 333); parastigma differentiated (fig. 333); (tribe Pentatermini Belokobylskij) ..... ***Pentatermus*** Hedqvist
- Fourth and fifth tergites smooth, weakly sclerotized and largely retracted (figs 344, 355); occipital carina distinctly connected to hypostomal carina ventrally (fig. 344); malar suture absent (figs 346, 357); head gradually narrowed ventrally (fig. 346, 357); vein 1-SR of fore wing long and vein m-cu short (figs 343, 352); parastigma hardly or not differentiated (figs 343, 352) ; (tribe Lysitermini Tobias) 6
6. Vein 2-SR of fore wing largely absent, at most present as an unsclerotized trace (fig. 343); third metasomal tergite truncate posteriorly (fig. 350); dorsope absent (fig. 350); mesoscutum largely glabrous ..... ***Lysitermus*** Foerster
- Vein 2-SR of fore wing sclerotized (fig. 352); third tergite with strongly to weakly protruding posterior corners (figs 359, 363), at least with a slightly pointed lamella or its margin minutely serrated; dorsope present, and medium-sized (figs 355, 363); mesoscutum setose ..... ***Acanthormius*** Ashmead
7. Marginal cell of fore wing short, remaining far from apex of wing (fig. 327); second submarginal cell of fore wing minute (fig. 327); dorsal carinae of first metasomal tergite remaining separated from each other (fig. 332); maxillary palp short and 5-segmented (fig. 325) ..... ***Artocella*** van Achterberg
- Marginal cell of fore wing long, reaching apex of wing (figs 302, 314); second submarginal cell of fore wing medium-sized (figs 302, 314); dorsal carinae of first tergite united and enclosing a triangular area (figs 312. 317); maxillary palp medium-sized to rather long and 6-segmented (figs 306, 315) 8
8. Vein M+CU of hind wing distinctly shorter than vein 1-M (fig. 302); oblique groove connected to precoxal sulcus dorsally (fig. 306); first subdiscal cell of fore wing variable open (fig. 308; *Tebennotoma* s.s.) or closed (*"Eorhyssalus"*) apically and comparatively slender (fig. 308); outer spur of hind tibia comparatively short, only slightly longer than surrounding setae; vein 3-M of fore wing largely

sclerotized (fig. 302); vein m-cu of fore wing subinterstitial (fig. 302); second metasomal suture absent (figs 306, 312); propodeum without elongate areola (fig. 304) ..... ***Tebennotoma*** Enderlein

- Vein M+CU of hind wing about as long as vein 1-M (fig. 314); no groove connected to precoxal sulcus dorsally (fig. 315); first subdiscal cell of fore wing closed apically and less slender (fig. 314); outer spur of hind tibia distinctly longer than surrounding setae (fig. 320); vein 3-M of fore wing unsclerotized (fig. 314); vein m-cu of fore wing distinctly antefurcal (fig. 314); second metasomal suture slightly (fig. 317; *Clinocentrus* s.s.) or deeply (*"Microrhogas"*) impressed; propodeum with (irregular) medium-sized areola (fig. 319) ..... ***Clinocentrus*** Haliday

9. Vein r of fore wing continuous with baso-posterior margin of pterostigma and first discal cell very large (figs 1, 13); frons distinctly concave (figs 2, 18); antennal segments about 100 (but unknown for *Bequartia*); third and fourth segments of hind and middle tarsi of ♂ swollen (fig. 9); length of fore wing 14.5-16 mm; wings banded; base of first metasomal tergite with semi-circular smooth area, bordered by dorsal carinae posteriorly (figs 4, 19); body reddish 10
- Vein r of fore wing discontinuous with posterior margin of pterostigma (figs 25, 234); if exceptionally subcontinuous then first discal cell of fore wing medium-sized (fig. 67); frons usually flat or slightly concave (figs 68, 299); antennal segments less than 75; third and fourth segments of hind and middle tarsi of ♂ slender (figs 75, 225), exceptionally enlarged (fig. 255); length of fore wing usually less than 14 mm; wings unicolorous, but banded in *Cordylorhogas* (fig. 265) and dark with a pale patch in some *Aleiodes*; first tergite usually with triangular or irregular smooth area basally (figs 262, 277); body usually mainly yellowish or black with red markings 11

10. Semi-circular area at base of first metasomal tergite about perpendicular to dorsal face of tergite (figs 3, 4); propodeum of ♂ without pair of semi-circular depressions below pilosity (fig. 3); propodeum of ♀ without sinuate transverse carina (cf. fig. 3); vein CU1b of fore wing almost absent and hardly visible (fig. 1); precoxal sulcus more or less impressed (fig. 3); malar suture absent (fig. 7); palpi comparatively robust (fig. 5) ..... ***Bequartia*** Fahringer
- Semi-circular basal area of first tergite obliquely connected to dorsal face of tergite (figs 16, 20); propodeum of ♂ with a pair of deep semi-circular depressions that may be concealed below a fatty substance (fig. 14); propodeum of ♀ with a sinuate transverse carina (fig. 16); vein CU1b of fore wing short, but distinct (fig. 13); precoxal sulcus not impressed (fig. 16); malar suture present (fig. 17); palpi less robust (fig. 16) ..... ***Xenolobus*** Cameron

11. Prepectal carina completely absent (fig. 27); ovipositor strongly down curved (fig. 27); hypopygium of ♀ large (fig. 27); second and third labial palp segments and fourth maxillary palp segment of ♂ vesiculate (cf. fig. 47); apex of antenna without distinct spine (fig. 26); smooth medio-basal area of second metasomal tergite wide (fig. 36); (Malagasy) ..... ***Orthorhogas*** Granger
- Prepectal carina present (figs 41, 283); ovipositor straight or weakly curved (figs 45, 70, 128, 140, 160); hypopygium of ♀ variable (figs 45, 236, 283); palpi of ♂ variable (figs 47, 57, 116, 380), often slender; apex of antenna with more or less developed spine (figs 42, 117); smooth medio-basal area of second tergite absent,

minute or medium-sized (figs 56, 79, 88, 124, 290), or if large then narrower and triangular (figs 48, 133) 12

12. First metasomal tergite distinctly widened basally in front of subbasal constriction (figs 48, 56, 79, 88, 96, 111); hind spurs completely glabrous, except for at most some inconspicuous setae on outer spur basally, and curved (figs 43, 76, 112); vein 1r-m of hind wing oblique (fig. 37); inner spur of middle tibia with row of (basally long) setae (figs 44, 77, 113); tarsal claws without lobe (figs 51, 108), except in *Myocron* (figs 66, 74, 89); fourth metasomal tergite with sharp lateral margin (figs 41, 70) 13

- First tergite normal basally, not or slightly widened basally or constricted subbasally (figs 124, 133, 145); if distinctly widened basally and somewhat constricted subbasally (some *Rectivena* and *Aleiodes* spp.) then hind spurs setose and nearly straight (figs 147, 287) and/or vein 1r-m of hind wing vertical (fig. 136); at least basal half of hind spurs distinctly setose (figs 134, 147, 174, 287); inner spur of middle tibia more evenly setose (figs 142, 181) or (nearly) completely glabrous; tarsal claws and fourth tergite variable 14

13. First metasomal tergite (nearly) linearly widened subbasally (fig. 48); vein 3-SR of fore wing nearly twice as long as vein 2-SR (fig. 37); hypopygium of ♀ strongly convex ventrally and posteriorly evenly curved and partly closed (figs 41, 45); tarsal claws simple (fig. 51); vein 2-SC+R of hind wing vertical (fig. 37) or subquadrate (cf. fig. 54); second and third labial palp segments of ♂ strongly inflated (fig. 47); third and fourth maxillary palp segments of ♂ extremely inflated and aciculate (fig. 47) ..... ***Colastomion*** Baker

    N.B. Specimens from Malagasy have median carina of first tergite present (fig. 48) and continental Afrotropical specimens lack the strong median carina of the first tergite. Oriental specimens may have vein m-cu of fore wing angled with vein 2-CU1 or forming a curve (fig. 37).

- First tergite angularly or roundly widened subbasally, and with wing- or lobe-like processes latero-basally (figs 56, 79, 88, 91, 93, 96, 111); vein 3-SR of fore wing about as long as vein 2-SR (figs 54, 67); hypopygium of ♀ moderately convex ventrally and completely open posteriorly (fig. 57), if exceptionally closed posteriorly then rather angulate subapically (fig. 70); tarsal claws with a minute tooth or with a distinct acute lobe (figs 74, 86, 89); vein 2-SC+R of hind wing subquadrate to longitudinal (figs 67, 84, 101); second and third labial palp segments of ♂ slender (fig. 89); third and fourth maxillary palp segments of ♂ not inflated (except in *voeltzkowi* which has these segments strongly inflated, but its surface smooth (fig. 89), and at most moderately widened compared to segments of ♀ (fig. 70) ..... ***Myocron*** gen. nov.

    N.B. If tarsal claws are simple (fig. 108), vein 3-SR of fore wing more than twice as long as vein 2-SR (fig. 101), vein cu-a of fore wing inclivous (fig. 101), and hypopygium of ♀ straight ventrally or nearly so (fig. 106), cf. **Macrostomion** Szépligeti which probably occurs only in the Indo-Australian region.

14. Tarsal claws with a large (and often truncate) lobe (figs 123, 131, 144, 173, 190, 203); vein m-cu of fore wing more or less curved and gradually merging into vein 2-CU1 (figs 114, 125, 136, 149, 164, 171, 196); inner side of hind tibia with distinct comb of modified ivory setae apically (figs 122, 134, 174, 192, 204); third maxillary palp segment (especially of ♂) often enlarged (figs 116, 161); hypopygium of ♀ medium-sized to large (figs 128, 140, 175, 188); ovipositor sheath slender (figs

116, 128, 140, 160, 199); malar suture more or less impressed (figs 127, 128, 198); vein r of fore wing shorter than vein 3-SR (fig. 149); fourth and fifth metasomal tergites with sharp lateral crease (fig. 128) 15

- Tarsal claws without lobe (figs 218, 230, 249, 273, 285); vein m-cu of fore wing (virtually) straight and angled with vein 2-CU1 (figs 168, 228, 265, 278, 291); hind tibia usually without distinct whitish comb (figs 252, 287), some modified setae may be present (fig. 272) and rarely a distinct comb is present, e.g. the *Aleiodes narangae*-group which has vein r of fore wing longer than vein 3-SR and setae of tibial comb yellowish and generally less modified; palpi normal and slender (figs 221, 283); hypopygium of ♀ small to medium-sized (figs 247, 283, 294); ovipositor sheath comparatively robust (figs 221, 247, 268, 283, 294)), if exceptionally slender then fourth and fifth metasomal tergites without sharp lateral crease (fig. 236); malar suture absent (fig. 240) 20

15. Vein M+CU of hind wing shorter than vein 1-M (figs 114, 125, 136); tarsal claws with large dark and truncate lobe (figs 123, 131, 144); occipital carina connected to hypostomal carina (fig. 128); hind tibial spurs normally setose (fig. 134) 16

- Vein M+CU of hind wing about as long as vein 1-M or longer (figs 171, 184, 196); tarsal claws with medium-sized and yellowish lobe (figs 190, 203), if large then rounded apically (fig. 173); occipital carina usually reduced ventrally and remaining removed from hypostomal carina (fig. 188), if connected to hypostomal carina (*Iporhogas*; fig. 175) then apical half of hind tibial spurs glabrous (fig. 174) 18

16. Third segment of maxillary palp strongly compressed and enlarged medially (fig. 116); angle between veins 1r-m and vein 1-SC+R of hind wing distinctly acute (fig. 114); dorsal carinae of first metasomal tergite usually remain separated from each other subbasally (fig. 124); vein SR of hind wing slightly curved basally (fig. 114) ..... ***Rogas*** Nees

- Third segment of maxillary palp less compressed and parallel-sided medially (figs 128, 140); angle between veins 1r-m and 1-SC+R of hind wing about rectangular (figs 125, 136, 137); dorsal carinae of first tergite connected subbasally (figs 133, 145); vein SR of hind wing distinctly curved basally (figs 125, 136, 149) 17

17. Vein 1r-m of hind wing oblique (fig. 125); mandible with wide ventral carina and depression between first and second teeth very deep (fig. 132); vein 1-SR+M of fore wing distinctly sinuate (fig. 125); vein 1-M of hind wing distinctly curved (fig. 125); hypopygium of ♀ (except basal patch) desclerotized and unpigmented (fig. 128); dorso-lateral carinae of first metasomal tergite distinctly widened basally (fig. 130); length of fourth tergite in dorsal view about 0.2 times its basal width; third-fifth tergites convex in lateral view (fig. 128); length of antenna unknown ..... ***Korupia*** gen. nov.

- Vein 1r-m of hind wing vertical (figs 136, 137, 164), at most slightly reclivous (fig. 149); mandible with narrow ventral carina and depressions between first and second teeth moderately deep (fig. 140); vein 1-SR+M of fore wing straight or slightly sinuate (figs 136, 149, 164); vein 1-M of hind wing slightly curved or straight (figs 136, 149, 164); hypopygium of ♀ normal, evenly sclerotized and pigmented (fig. 140); dorso-lateral carinae of first tergite narrow to somewhat widened basally (fig. 140); length of fourth tergite in dorsal view 0.3-0.5 times its basal width; third-fifth tergites flat to slightly convex in lateral view (fig. 140); antenna

about twice as long as fore wing (figs 136, 148) ..... ***Rectivena*** gen. nov.

18. Apical half of hind tibial spurs glabrous (fig. 174); occipital carina complete (figs 175, 180); vertex rugose (fig. 180); submedial carina of propodeum (at least partly) strong (figs 175, 182); second metasomal tergite with smooth triangular area medio-basally comparatively large (fig. 183); vein 1r-m of hind wing comparatively short (fig. 171); (Malagasy) ..... ***Iporhogas*** Granger
- Apical half of hind tibial spurs setose (figs 192, 204); occipital carina at least ventrally reduced (fig. 188); vertex smooth, or nearly so (figs 185, 197); medial carina(e) of propodeum comparatively weak medially (fig. 195) or largely absent (fig. 202); medio-basal area of second tergite variable (figs 194, 205); vein 1r-m of hind wing longer (figs 184, 196) 19

19. Second metasomal tergite without smooth triangular area medio-basally (fig. 194); telotarsi normal, not strongly depressed (figs 190, 191); clypeus flattened, not protruding and thick apically (fig. 188); vein cu-a of fore wing distinctly less oblique than vein 3-CU1 (fig. 184); wing membrane subhyaline .. ***Triraphis*** Ruthe
- Second tergite with smooth triangular area medio-basally (fig. 205); telotarsi strongly depressed (fig. 203); clypeus shield-like, strongly protruding forward and thin apically (fig. 199); vein cu-a of fore wing slightly more oblique than vein 3-CU1 (fig. 196); wing membrane dark brown ..... ***Aspidorogas*** gen. nov.

20. Subbasal cell of fore wing strongly widened subapically and without scleromes or patches (figs 168, 206); vein m-cu of fore wing diverging from vein 1-M posteriorly (fig. 168); first subdiscal cell of fore wing comparatively high (figs 168, 206); hind tarsal claws only basally finely pectinate (figs 169, 211); occipital carina strong and angulate ventrally (fig. 208); propodeum more or less protuberant medio-laterally (fig. 208) ..... ***Hemigyroneuron*** Baker
- Subbasal cell of fore wing weakly or not widened subapically (figs 234, 243, 265, 278, 291), if rather widened then scleromes present (figs 216, 231); vein m-cu of fore wing (sub)parallel with or converging to vein 1-M posteriorly (figs 216, 228, 278), at most slightly diverging (fig. 231); first subdiscal cell of fore wing lower (figs 216, 278); hind tarsal claws simple (figs 254, 285), or if pectinate then usually completely so (figs 242, 273, 295); occipital carina and propodeum variable 21

21. Subbasal cell of fore wing rather widened, vein 1-1A curved subapically and with (pair of) sclerome(s) or patches (figs 216, 228, 231, 232); vein cu-a of fore wing distinctly curved basad posteriorly (figs 226, 229, 232) or straight and inclivous; vein 2-SC+R of hind wing very short, subquadrate (figs 216, 231); subbasal cell of fore wing largely glabrous apically (figs 226, 232) ..... ***Pholichora*** gen. nov.
- Subbasal cell of fore wing not or slightly widened subapically, vein 1-1A not or slightly curved subapically, and without scleromes or patches (figs 234, 243, 265, 278); vein cu-a of fore wing vertical or inclivous (figs 234, 243, 258, 291); vein 2-SC+R of hind wing usually longer, transverse (figs 234, 243, 258, 278); subbasal cell of fore wing setose, but exceptionally largely glabrous (e.g., *Cordylorhogas:* fig. 266) 22

22. Vein SR of hind wing distinctly curved and its basal 0.4 sclerotized (fig. 234); hind wing with vein r (nearly) completely absent or present (fig. 234); eyes and ocelli strongly enlarged (figs 237, 240); tarsal claws pectinate (fig. 242) ..... ***Scoporogas*** gen. nov.
- Vein SR of hind wing straight or slightly curved and basal 0.4 (largely) unsclero-

tized (figs 243, 258); vein r of hind wing (largely) absent (fig. 258); eyes, ocelli and claws variable 23

23. Vein m-cu of fore wing distinctly converging to vein 1-M posteriorly (fig. 243); ovipositor sheath slender (fig. 247); second metasomal tergite without smooth triangular area or median carina medio-basally (fig. 253); notauli reduced (fig. 248); propodeum tuberculate and short (fig. 247); propodeum without median carina; eyes and ocelli strongly enlarged (figs 244, 245); tarsal claws setose (fig. 249) ..... ***Myoporhogas*** Brues

- Vein m-cu of fore wing (sub)parallel to vein 1-M (figs 258, 265); ovipositor sheath more or less widened (figs 268, 283, 294); second tergite with minute triangular area medio-basally, connected to a median carina (figs 262, 277, 290), but absent in part of the genus *Aleiodes*; notauli nearly always complete (figs 281, 296); propodeum usually without tubercles; if tuberculate then propodeum longer; propodeum usually with median carina; eyes, ocelli and tarsal claws variable 24

24. Basitarsus and second segment of hind tarsus of ♂ (unknown for ♀) enlarged, and basitarsus wider than hind tibia (fig. 255); occipital carinal complete and horizontal dorsally (fig. 260); vein 1-M of fore wing straight (fig. 258) ..... ***Cratodactyla*** Szépligeti

- Basitarsus and second segment of hind tarsus (of both sexes) slender and narrower than hind tibia (fig. 298); occipital carina usually partly reduced, or if complete then more or less arched dorsally (fig. 299); vein 1-M of fore wing variable (figs 278, 291) 25

25. Vein 1-M of fore wing at least slightly sinuate and widened dorsally (fig. 265); vein M+CU1 of fore wing widened subapically (figs 265, 266); posterior corners of first metasomal tergite acutely protruding (fig. 277); first tergite strongly convex subbasally in lateral view (fig. 268); second tergite with crest-like lateral carina (fig. 277); fore wings banded (fig. 265) ..... ***Cordylorhogas*** Enderlein

- Vein 1-M of fore wing evenly curved or straight, not widened (figs 278, 291); vein M+CU1 of fore wing (nearly) straight subapically (figs 278, 291); posterior corners of first tergite not protruding (fig. 290), or exceptionally roundly protruding (fig. 300); first tergite less convex subbasally in lateral view (figs 283, 294); second tergite without crest-like lateral carina (figs 290, 300); fore wing unicolorous, but some species may have an elongate pale patch below the pterostigma ..... ***Aleiodes*** Wesmael

Tribe Pentatermini Belokobylskij, 1990

Pentatermini Belokobylskij, 1990: 116.

Diagnosis.— Antennal segments 26-34; eyes weakly or not emarginate (fig. 338); occiptial carina not curved towards hypostomal carina ventrally and consequently not joined to it; malar suture variable; propodeal spiracle round and in front of middle of propodeum (cf. figs 315, 355); propodeal areola medium-sized or reduced (fig. 339); vein CU1a of fore wing near level of vein 2-CU1 (fig. 333) or near level of vein 2-1A (New World genera); vein 1-SR of fore wing comparatively short (fig. 333); vein m-cu of fore wing antefurcal or subinterstitial (fig. 333); parastigma differentiated;

vein CU1b of fore wing long (fig. 333), absent or short; vein 1-SR of fore wing continuous with vein 1-M (fig. 333); vein M+CU of hind wing about as long as or longer than (fig. 333) vein 1-M; vein m-cu of hind wing present, at least as a fold in the membrane (fig. 333); tarsal claws simple (fig. 334); dorsal carinae of first tergite semicircularly laterally, often united but frequently separated in *Pentatermus* (fig. 341); second tergite without triangular area medio-basally (fig. 341); third-fifth metasomal tergites at least partly sculptured and with sharp lateral crease; metasoma without transverse sculpture (figs 336, 341); fourth and fifth tergites well exposed (*Pentatermus*), or largely retracted (the New World genera); ovipositor sheath distinctly protruding and slender, but shorter than metasoma.

Distribution.— In the Palaeotropical region only the genus *Pentatermus* Hedqvist, 1963. In the New World four genera occur which are closely related to each other: *Stiropius* Cameron, 1911 (= *Bucculatriplex* Viereck, 1912), *Polystenidea* Viereck, 1911, *Viridipyge* Whitfield, 1988, and *Choreborogas* Whitfield, 1990. At least two of the New World genera contain parasites of Lyonetiidae.

Pentatermus Hedqvist, 1963
(figs 333-342)

Pentatermus Hedqvist, 1963: 40; Shenefelt, 1975: 1153. Type species (by monotypy): *Pentatermus carinatus* Hedqvist, 1963 [examined; = *Chremylus striatus* Szépligeti, 1908. **Syn. nov.**].

Diagnosis.— Antennal segments of ♀ 26-34; apex of scapus truncate (fig. 336); antennal sockets hardly protruding (figs 335, 338); head strongly narrowed ventrally (fig. 338); occipital carina remain separated from hypostomal carina ventrally (fig. 336); malar suture present (fig. 338); mesoscutum setose; vein 3-SR of fore wing short (fig. 333); vein m-cu of fore wing comparatively long (fig. 333); vein 2-SR of fore wing complete; parastigma differentiated and short (fig. 333); first subdiscal cell of fore wing narrow and vein CU1b present (fig. 333); dorsope of first metasomal tergite small and obsolescent (fig. 341); third tergite without protruding corners posteriorly; fourth and fifth tergites at least basally sculptured, strongly sclerotized, well exposed and with lateral crease (fig. 336); ovipositor sheath slender and short (fig. 336).

Distribution.— Afrotropical and Oriental regions: probably one wide-spread and variable species, *P. striatus* (Szépligeti, 1908) **comb. nov.** It has been described from Java and cannot be separated from the African *P. carinatus* Hedqvist, 1963. The recently described *P. medvedewi* Belokobylskij from Vietnam is according to the original description (Belokobylskij, 1990: 128-131) different. It should differ by an enlarged fifth tergite (but that is normal for *P. striatus*; usually more developed than in the figured holotype (fig. 336)), a less narrowed head ventrally and a wider first subdiscal cell of the fore wing. This may be sufficient to separate it from *P. striatus*, but re-examination of the type of *P. medvedewi* and additional material from the Oriental region is required before a conclusion can be drawn.

Biology.— Parasite of Noctuidae.

Tribe Lysitermini Tobias, 1968

Lysitermini Tobias, 1968: 28.

Diagnosis.— Antennal segments 14-25; eyes weakly or not emarginate (figs 346, 357); malar suture absent (figs 346, 357); occipital carina distinctly curved to hypostomal carina and connected ventrally (fig. 344); parastigma hardly or not differentiated; vein CU1a of fore wing near level of vein 2-CU1 (figs 343, 360); propodeal spiracle round and in front of middle of propodeum (fig. 355); propodeal areola medium-sized (figs 348, 361); vein CU1b of fore wing long (figs 343, 352); vein 1-SR of fore wing continuous with vein 1-M (figs 302, 314, 352); vein M+CU of hind wing shorter than vein 1-M or about as long as (fig. 352) vein 1-M; vein m-cu of hind wing present, at least as a fold in the membrane (figs 343, 352); tarsal claws simple (fig. 358); dorsal carinae of first tergite variable (figs 350, 363), if united then semi-circularly so (fig. 350); second tergite without triangular area medio-basally (figs 341, 363); third metasomal tergite strongly sculptured and with complete, sharp, lateral margin (figs 336, 355); third and fourth tergites without transverse sculpture (figs 336, 350); fourth and fifth tergites (largely) retracted (fig. 350); ovipositor sheath distinctly protruding and slender, but shorter than metasoma.

Distribution.— In the Afrotropical region represented only by the genus *Acanthormius* Ashmead, 1906. In the West Palaearctic region only the genus *Lysitermus* Foerster, 1862, occurs and in the East Palaearctic region the genera *Tritermus* van Achterberg, 1982 (Kazakhstan) and *Acanthormius* are found.

Acanthormius Ashmead, 1906
(figs 352-363)

Acanthormius Ashmead, 1906: 200; Shenefelt, 1975: 1139-1140. Type species (by monotypy): *Acanthormius japonicus* Ashmead, 1906 [examined].

Diagnosis.— Antennal segments (of both sexes) 14-25; apex of scapus oblique (fig. 355); antennal sockets protruding laterally (figs 356, 357); head gradually narrowed ventrally (fig. 355); malar suture absent (figs 355, 357); mesoscutum setose; at least distal half of vein 2-SR of fore wing sclerotized (fig. 352); vein m-cu of fore wing short (fig. 352); vein 1-SR of fore wing long (fig. 352); first subdiscal cell of fore wing narrow and vein CU1b present (fig. 352); first metasomal tergite movably joined to second tergite (fig. 355); dorsope of first tergite present, but small (fig. 363); third tergite with strongly to weakly protruding corners posteriorly (figs 359, 363), at least with a slightly pointed lamella or lamella minutely serrated; fourth and fifth tergites smooth, weakly sclerotized, largely retracted and without lateral crease (fig. 355); ovipositor sheath distinctly protruding, short to medium-sized, and shorter than metasoma.

Distribution.— Afrotropical (including Malagasy), Indo-Australian, and East Palaearctic. Medium-sized genus.

Biology.— Parasites of Xyloryctidae.

Key to species of the genus *Acanthormius* Ashmead

Compiled from the descriptions in Belokobylskij (1986, 1987, 1988 & 1990), Hedqvist (1963), Papp (1986), Tobias & Belokobylskij (1981) and Watanabe (1968), and commented upon by Dr S.A. Belokobylskij (in litt.).

1. Mesoscutum densely sculptured, rugose or granulate and setose 2
- Mesoscutum largely smooth, at most punctulate 13
2. Mesoscutum only finely granulate; ovipositor sheath longer than second metasomal tergite and 0.7-0.9 times combined length of second and third tergites 3
- Mesoscutum distinctly rugose between granulation; ovipositor sheath about as long as second tergite (unknown for *A. capensis*) 8
3. Vein r of fore wing emitted behind middle of pterostigma, up to near its apical third; teeth of third metasomal tergite about half as long as third tergite medially or longer; antenna of ♀ without ivory ring subapically, at most with yellowish part; antennal segments of ♀ 19-20; vertex rugose 4
- Vein r emitted submedially from pterostigma; teeth of third tergite about 0.3 times as long as third tergite medially, shorter than 0.3 times length of third tergite or absent; antenna of ♀ with ivory ring subapically; antennal segments of ♀ 15-17 (the latter two characters are unknown for the Afrotropical *A. capensis*); vertex smooth 6
4. Teeth of third metasomal tergite 0.6-0.9 times length of third tergite medially; medial length of second tergite 1.5-1.7 times medial length of third tergite; lateral sides of second and third tergites slightly curved 5
- Teeth of third tergite about 0.3 times length of third tergite medially; medial length of second tergite about 1.2 times medial length of third tergite; lateral sides of second and third tergites distinctly curved; (Vietnam) ..... ***A. nixoni*** Belokobylskij, 1990
5. Teeth of third metasomal tergite about 0.6 times as long as third tergite medially; (India) ..... ***A. obstitus*** Papp, 1986
- Teeth of third tergite slightly shorter than third tergite medially; (Vietnam) ..... ***A. flavoapicalis*** Belokobylskij, 1990
6. Apex of third metasomal tergite only serrate apico-laterally (with three pairs of lobes), and without teeth; (Afrotropical) ..... ***A. capensis*** (Hedqvist, 1963)
- Apex of third tergite with pair of teeth; (East Palaearctic) 7
7. Length of apical teeth of third metasomal tergite 0.3-0.4 times medial length of tergite; third tergite with subhyaline lamella latero-apically; medial length of second tergite nearly as long as its basal width; apical half of antenna completely dark brown ..... ***A. crustatus*** Belokobylskij, 1986
- Length of apical teeth of third tergite 0.5-0.6 times medial length of tergite; third tergite without subhyaline lamella apically; medial length of second tergite about 1.4 times basal width of tergite; apical half of antenna with whitish ring ..... ***A. takadai*** Watanabe, 1968
8. Vertex rugose; antenna of ♀ without ivory ring subapically; antennal segments of ♀ 17-19; (Taiwan, Ryukyu Islands) 9
- Vertex smooth; antenna of ♀ variable in colour; antennal segments of ♀ 17-24 .. 10
9. Mesopleuron rugose; apical teeth of third metasomal tergite about half as long as third tergite medially; (Japan: Ryukyu Islands) ..... ***A. rugosus*** Watanabe, 1968

- Mesopleuron smooth; apical teeth of third tergite about 0.7 times length of third tergite medially; (Taiwan) ..... *A. rugosivertex* Belokobylskij, 1988

10. Antennal segments of ♀ about 24; antenna of ♀ without ivory segments subapically; teeth of third metasomal tergite about two-thirds as long as third tergite medially; (Philippines) ..... *A. philippinensis* Watanabe, 1968
- Antennal segments of ♀ 17-19; antenna of ♀ with ivory ring subapically; teeth of third tergite about half as long as third tergite medially or teeth absent 11

11. Third metasomal tergite without apical teeth or lobes, only its lateral lamella somewhat pointed apically; ovipositor sheath about 0.8 times combined length of second and third tergites; malar space directly narrowed below eyes, with straight outer border; (Taiwan) ..... *A. wusheensis* Belokobylskij, 1988
- Third tergite with pair of large teeth apically; ovipositor sheath about as long as second tergite or slightly longer; malar space gradually narrowed below eyes, with outer border curved 12

12. Length of temple in dorsal view about 0.6 times eye; precoxal sulcus smooth; length of hind femur about 5 times its maximum width; first metasomal tergite about as long as wide apically; third tergite with one small ventro-lateral tooth; apical segments of antenna yellowish-white (4-6 segments); (Taiwan) ..... *A. unidens* Belokobylskij, 1988
- Length of temple in dorsal view about 0.75 times eye; precoxal sulcus rugose; length of hind femur 5.6-6.3 times its width; length of first tergite about 0.6 times its apical width; third tergite with two small ventro-lateral teeth; antenna dark brown apically, but subapically with 2-5 yellowish-white segments; (Far East U.S.S.R.) ..... *A. rossicus* Tobias & Belokobylskij, 1981

13. Apex of third metasomal tergite without distinct teeth apically, only its lamella protruding latero-apically 14
- Apex of third tergite with pair of distinct apical teeth 15

14. Antennal segments of ♀ about 14; antenna of ♀ with ivory ring subapically; ovipositor sheath about as long as second tergite; temples gradually narrowed behind eyes; (Malaysia) ..... *A. malayensis* Watanabe, 1968
- Antennal segments of ♀ about 19; antenna of ♀ without ivory ring subapically; ovipositor sheath about as long as second and third tergites combined; temples strongly narrowed behind eyes; (Philippines, India) ..... *A. bakeri* Watanabe, 1968

15. Ovipositor sheath about as long as metasoma; teeth of third tergite rather diverging posteriad and about 0.4 times as long as third tergite medially; (India) ..... *A. alius* Papp, 1986
- Ovipositor sheath at most as long as second and third metasomal tergites combined (unknown for *A. nitidinotum*); teeth of third tergite parallel and usually about half as long as third tergite medially 16

16. Teeth of third metasomal tergite slender and about two thirds as long as third tergite medially, and lamella below it serrate; antennal segments of ♂ 21-25, (unknown for ♀) 17
- Teeth of third tergite at most nearly half as long as third tergite medially, and below it lamella usually not serrate; antennal segments of ♂ 20-22 (but unknown for last three species mentioned in key), and of ♀ 18-21 18

17. Apex of antenna ivory; teeth of third metasomal tergite wider and curved downwards in lateral view (figs. 355, 359); antennal segments of ♂ about 25; (Indonesia: Sumatra) ..... *A. sumatrensis* spec. nov.

- Apex of antenna of ♂ dark brown; teeth of third tergite narrow and straight in lateral view; antennal segments of ♂ 21-23; (Taiwan) ..... ***A. nitidinotum*** Belokobylskij, 1988

18. Length of ovipositor sheath about equal to combined length of second and third tergites; antenna of ♀ with ivory ring subapically; pair of teeth of third tergite pale yellow and slender; (Ryukyu Islands) ..... ***A. iriomotensis*** Watanabe, 1968
- Length of ovipositor sheath at most slightly longer than second tergite; antenna of ♀ without ivory ring subapically; pair of teeth of third tergite brownish and less slender 19

19. Vein r of fore wing emitted distinctly behind middle of pterostigma; (Japan, including Ryukyu Islands; Taiwan) ..... ***A. japonicus*** Ashmead, 1906
- Vein r emitted near middle of pterostigma 20

20. Length of ovipositor sheath less than length of first metasomal tergite; antennal segments of ♀ about 21; (Solomon Islands) ..... ***A. dubitatus*** Brues, 1918
- Ovipositor sheath about as long as second tergite; antennal segments of ♀ 18-19 21

21. Pair of teeth of third metasomal tergite about a quarter as long as third tergite medially; apical half of antenna tricolorous; (Malagasy) ..... ***A. dentatus*** Granger, 1949
- Pair of teeth of third tergite slightly shorter than half length of third tergite medially; apical half of antenna dark brown; (India) ..... ***A. balanus*** Papp, 1986

Acanthormius sumatrensis spec. nov.
(figs 352-363)

Material.— Holotype, ♂ (RMNH), "Museum Leiden, N. Sumatra: Bivouac Two, Mt. Bandahara, 3°44'N-97°43', 5-10.vii.1972, J. Krikken, no. 24, ca. 1430 m", "Multistratal evergr[een] forest, at light".

Holotype, ♂, length of body 2.5 mm, of fore wing 2.2 mm.

Head.— Antennal segments 25, length of third segment 1.1 times fourth segment, length of third, fourth, and penultimate segments 5.0, 4.7, and 3.5 times their width, respectively (figs 353-355); scapus strongly oblique apically (fig. 353); pedicellus comparatively large, somewhat shorter than scapus dorsally (fig. 353); length of maxillary palp 1.2 times height of head; length of eye in dorsal view 2.2 times temple; temples directly roundly narrowed posteriorly (fig. 356); OOL:diameter of ocellus:POL = 10:6:9; face and vertex smooth; length of malar space 1.4 times basal width of mandible.

Mesosoma.— Long and densely setose (fig. 355); length of mesosoma 1.5 times its height; side of pronotum granulate anteriorly and ventrally, crenulate anteromedially and remainder largely smooth (fig. 355); precoxal sulcus only medially distinctly impressed, smooth; remainder of mesopleuron smooth; pleural sulcus smooth; metapleuron rugulose, with some rugae ventrally; notauli largely smooth; surface of propodeum rugulose between carinae and median carina absent (fig. 361).

Wings.— Fore wing: r distinctly longer than width of pterostigma and emerging submedially from pterostigma (fig. 352); r:3-SR:SR1 = 9:13:38; 1-CU1:2-CU1 = 1:27; cu-a indistinct (fig. 352); first subdiscal cell about 6 times as long as wide; 2-SR:3-

SR:r-m = 17:13:19. Hind wing: M+CU slightly longer than 1-M (fig. 352); m-cu distinct; SC+R1 curved (fig. 352).

Legs.— Hind coxa smooth; length of femur, tibia and basitarsus of hind leg 5.8, 10.4 and 8 times their width, respectively; hind tibial spurs indistinct, similar to surrounding setae.

Metasoma.— Length of first tergite 1.2 times its apical width; surface of three basal tergites longitudinally rugose with finely transverse sculpture in between (figs 355, 363); third tergite with pair of long and parallel apical teeth which have concave serrate margins ventro-basally (figs 355, 359) and are 0.7 times as long as medial length of tergite (fig. 363).

Colour.— Dark brown; antenna tricolorous: the two apical segments ivory, four basal segments largely (yellowish-)brown and remainder dark brown; head (but near ocelli dark brown), mesosoma largely (with pronotum largely infuscated) yellowish-brown; palpi, metasoma ventrally and coxae ivory; tegulae, basal 0.4 of pterostigma and remainder of legs brownish-yellow; remainder of pterostigma and most veins dark brown; wing membrane subhyaline, but slightly infuscate near veins 1-M, 1-SR and r of fore wing (fig. 352).

Note.— Closely related to *Acanthormius nitidinotum* Belokobylskij, 1988 from Taiwan, but males of *A. nitidinotum* have 21-24 antennal segments, the apical antennal segments are dark brown and the teeth of the third tergite are narrower and in lateral view straight.

Lysitermus Foerster, 1862
(figs 343-351)

Lysitermus Foerster, 1862: 236 [not Tobias, 1971: 205 & 1976: 49]; Shenefelt, 1975: 1154-1155; van Achterberg, 1982a: 125; Belokobylskij & Tobias, 1986: 63-64. Type species (by monotypy): *Lysitermus pallidus* Foerster, 1862 [examined].

Rogadinaspis Boucek, 1956: 441; Shenefelt, 1975: 1155. Type species (by monotypy): *Rogadinaspis tritoma* Boucek, 1956 [examined].

Paracedria Hedqvist, 1957: 219; Shenefelt, 1975: 1155. Type species (by monotypy): *Paracedria suecicus* Hedqvist, 1957 [examined].

Prolysitermus Tobias, 1971: 205-206; Shenefelt, 1975: 1155; Shenefelt, 1975: 1155; Tobias, 1976: 49; van Achterberg, 1982a: 125 (synonym of *Lysitermus*). Type species (by monotypy): *Prolysitermus talitzkii* Tobias, 1971 [examined].

Diagnosis.— Antennal segments of ♀ 14-17; scapus oblique apically (fig. 344); antennal sockets not or hardly protruding (fig. 345); head gradually narrowed ventrally (fig. 346); mesoscutum largely glabrous; vein 2-SR of fore wing largely absent, at most developed as an unsclerotized trace (fig. 343); first subdiscal cell of fore wing narrow and with vein CU1b present (fig. 343); parastigma hardly or not differentiated (fig. 343); first metasomal tergite movably joined to second tergite (figs 344, 350), and without dorsope (fig. 350); third tergite truncate posteriorly (fig. 350); fourth and fifth tergites smooth, weakly sclerotized, largely retracted and without lateral teeth (fig. 344); ovipositor sheath slender and medium-sized, shorter than metasoma.

Biology.— Parasites of *Luffia* spec. (Psychidae: *Lysitermus suecicus* (Hedqvist, 1957) **stat. nov.** (TMA, RMNH: material from Sardinia)).

Distribution.— Palaearctic; contains at least the four species keyed below: *Lysi-*

termus longiventris (Tobias, 1976), *L. pallidus* Foerster, 1862 [= *L. talitzkii* (Tobias, 1971)], *L. suecicus* (Hedqvist, 1957), and *L. tritoma* (Boucek, 1956). The last two species were synonymized with *L. pallidus* Foerster by Hedqvist (1963: 35). The types of the species listed have been examined.

Key to species of the genus *Lysitermus* Foerster

1. Second metasomal suture distinctly sinuate; antennal segments of ♀ about 14; posterior third of notauli absent; apex of third metasomal tergite with thickened ridge medio-posteriorly; median carina of propodeum comparatively long, subequal to oblique anterior side of propodeal areola; (Czechoslovakia) ..... ***L. tritoma*** (Boucek)
- Second metasomal suture straight (fig. 350); antennal segments of ♀ 15-17 (unknown for *L. longiventris*); posterior third of notauli shallowly impressed (fig. 347), or indistinct by sculpture; apex of third tergite somewhat upcurved and scarcely thickened (fig. 344); median carina of propodeum variable 2
2. Posterior half of first and third metasomal tergites subparallel-sided; third tergite weakly sculptured; (N. Caucasus) ..... ***L. longiventris*** (Tobias)
- Posterior half of first tergite widened posteriorly, and third tergite distinctly narrowed to apex (fig. 350); third tergite distinctly sculptured (figs 344, 350) 3
3. Median carina of propodeum about as long as oblique anterior side of propodeal areola, resulting in a distinctly petiolate areola (fig. 348); area behind stemmaticum superficially coriaceous (fig. 345); precoxal sulcus often with some rugae; (Germany, Moldavia, N. Caucasus) ..... ***L. pallidus*** Foerster
- Median carina of propodeum much shorter than oblique anterior side of areola, resulting in a subsessile areola; area behind stemmaticum and precoxal sulcus smooth; (*France, *Italy (Sardinia), *Portugal, Sweden) ..... ***L. suecicus*** (Hedqvist)

Tribe Clinocentrini nov.

Diagnosis.— Antennal segments 22-40; eyes weakly (figs 316, 326) or not (fig. 309) emarginate; occipital carina curved towards hypostomal carina ventrally and joining it (fig. 315); propodeal spiracle round and in front of middle of propodeum (figs 304, 315); propodeal areola medium-sized (fig. 319), or reduced (figs 304, 325); vein CU1a of fore wing closer to level of vein 2-1A than to level of vein 2-CU1 (figs 314, 327) or situated about halfway (figs 302, 308); vein CU1b of fore wing absent (figs 302, 308) or short (figs 314, 327); vein 1-SR of fore wing continuous with vein 1-M (figs 302, 314, 352); vein M+CU of hind wing variable, shorter than vein 1-M (fig. 302), about as long as (fig. 314) or longer than (fig. 327) vein 1-M; vein m-cu of hind wing present, at least as a fold in the membrane (figs 302, 314, 327); tarsal claws simple (fig. 322); dorsal carinae of first metasomal tergite variable (figs 312, 317, 332), but if united then enclosing a slender triangular area (figs. 312, 317); second tergite without triangular area medio-basally (figs 312, 332), but may be weakly developed in *Clinocentrus* (fig. 317); third tergite at most anteriorly with acute lateral margin (figs 306, 315), and finely to moderately coarsely sculptured (figs 317, 332); third or fourth ter-

gite with fine transverse sculpture (figs 312, 317, 332), exceptionally absent; fourth and fifth tergites without sharp lateral crease; ovipositor sheath slender and medium-sized (fig. 325) to about as long as metasoma (figs 306, 313, 315).

Distribution.— Contains in the Afrotropical region the genera *Clinocentrus* Haliday, 1833 and *Tebennotoma* Enderlein, 1912. In the West Palaearctic region represented by *Clinocentrus* and (in N. Africa) *Artocella* van Achterberg, 1980.

Artocella van Achterberg, 1980
(figs 324-332)

Artocella van Achterberg, 1980: 72. Type species (by monotypy): *Artocella brevipalpis* van Achterberg, 1980 [examined].

Diagnosis.— Antennal segments 29-30; scapus narrowed dorso-basally, and apically truncate (fig. 325); maxillary palp short and 5-segmented (fig. 325); no groove connected to precoxal sulcus dorsally (fig. 325); propodeum with only a pair of parallel carinae posteriorly (fig. 332); marginal cell of fore wing short and remaining far removed from apex of wing (fig. 327); second submarginal cell of fore wing minute (fig. 327); first subdiscal cell of fore wing closed apically and robust (fig. 327); vein 3-M of fore wing unsclerotized; vein m-cu of fore wing antefurcal (fig. 327); vein M+CU of hind wing distinctly longer than vein 1-M (fig. 327); inner spur of hind tibia longer than surrounding setae; dorsal carinae of first metasomal tergite remaining separated from each other (fig. 332); second metasomal suture shallow (fig. 332); fourth tergite with faint transverse sculpture (figs 325, 332); ovipositor sheath comparatively short (fig. 325).

Distribution.— SW. Palaearctic; only the type species known.

Biology.— Unknown.

Clinocentrus Haliday, 1833
(figs 314-323)

Clinocentrus Haliday, 1833: 266; Tobias, 1971: 201 (transl. 1975: 62); Shenefelt, 1975: 1187-1193; Tobias, 1976: 45-46; Marsh, 1979: 178; Belokobylskij & Tobias, 1986: 71-72; Shaw & Huddleston, 1991: 94-95 (biology). Type species (by monotypy): *Clinocentrus umbratilis* Haliday, 1833 [examined].

Camptocentrus Kriechbaumer, 1894: 61; Shenefelt, 1975: 1216; Marsh, 1979: 179 (as synonym of *Rogas* auct.). **Syn. nov.** Type species (by monotypy): *Camptocentrus testaceus* Kriechbaumer, 1894 (= *Clinocentrus kriechbaumeri* (Fahringer, 1941) **comb. nov.**, a valid replacement name (Int. Code, Art. 59(6)) [holotype lost?]).

Microrhogas Cameron, 1910: 96; Shenefelt, 1975: 1204. **Syn. nov.** Type species (by monotypy): *Microrhogas foveatus* Cameron, 1910 [examined].

Neorhyssalus Baker, 1917a: 286; Shenefelt, 1975: 1188. Type species (by monotypy): *Neorhyssalus compositus* Baker, 1917 [examined].

Diagnosis.—Antennal segments 24-40; apex of scapus subtruncate (fig. 323); maxillary palp medium-sized and 6-segmented (fig. 315); no groove connected to precoxal sulcus dorsally (fig. 315); propodeum with (irregular) medium-sized areola (fig. 319); marginal cell of fore wing long, reaching apex of wing (fig. 314); second

submarginal cell of fore wing medium-sized (fig. 314); first subdiscal cell of fore wing closed apically and moderately robust (fig. 314); vein 3-M of fore wing unsclerotized; vein m-cu of fore wing distinctly antefurcal (fig. 314); vein M+CU of hind wing about as long as vein 1-M (fig. 314); outer spur of hind tibia distinctly longer than surrounding setae (fig. 320); dorsal carinae of first metasomal tergite united and enclosing a triangular area (fig. 317); second metasomal suture slightly (*Clinocentrus* s.s.; fig. 317) to deeply (*Microrhogas*) impressed; third tergite frequently (partly) with transverse sculpture (fig. 317); fourth tergite smooth; ovipositor sheath comparatively long (fig. 315).

Distribution.— Cosmopolitan; medium-sized genus with a mainly Holarctic and Oriental distribution. Granger (1949: 157) gives a key to both species from Malagasy.

Biology.— Endoparasites of (preferably mature) larvae of Tortricidae, Pyralidae, Momphidae (M.R. Shaw, pers. comm.), Choreutidae, Epermeniidae, Yponomeutidae, and Oecophoridae. The records of Noctuidae and Geometridae need to be confirmed.

Notes.— The depth of the second metasomal suture is variable; rather deep in *Microrhogas* Cameron and probably also in *Camptocentrus* Kriechbaumer. The genus *Camptocentrus* Kriechbaumer, 1894 has been considered to be a synonym of *Rogas* auct. (= *Aleiodes* Wesmael; Shenefelt, 1975: 1216). However, this is most likely incorrect because Kriechbaumer mentioned the longitudinal areola of the propdeum which has short divided costulae, a character absent in *Aleiodes*. Kriechbaumer mentioned the resemblance to *Clinocentrus* and this genus has this character. Also it occurs in the same area (E. Africa), from which similar genera (e.g. *Triraphis* Ruthe) are unknown. The most recent key to a part of the W. Palaearctic species is by Belokobylskij & Tobias, 1986.

Tebennotoma Enderlein, 1912
(figs 302-313)

Tebennotoma Enderlein, 1912a: 36; Shenefelt, 1975: 1260. Type species (by monotypy): *Tebennotoma calvata* Enderlein, 1912 [examined].

Neontsira Rohwer, 1924: 124-125; Shenefelt, 1975: 1204. **Syn. nov.** Type species (by monotypy): *Neontsira typica* Rohwer, 1924 [examined].

Eorhyssalus Belokobylskij, 1989: 145-147. **Syn. nov.** Type species (by original designation): *Eorhyssalus aciculatus* Belokobylskij, 1989 [examined].

Diagnosis.— Antennal segments 22-29; apex of scapus oblique (fig. 306); maxillary palp rather long and 6-segmented (fig. 306); oblique groove connected to precoxal sulcus dorsally (fig. 306; propodeum without elongate areola (fig. 304); marginal cell of fore wing long, reaching apex of wing (fig. 302); second submarginal cell of fore wing medium-sized (fig. 302); first subdiscal cell of fore wing open apically and comparatively slender (fig. 308; *Tebennotoma* s.s.) or closed and vein CU1b present (*"Eorhyssalus"*); vein 3-M of fore wing largely sclerotized (fig. 302); vein m-cu of fore wing subinterstitial (fig. 302) or far antefurcal; vein M+CU of hind wing distinctly shorter than vein 1-M (fig. 302); outer spur of hind tibia comparatively short, only slightly longer than surrounding setae; dorsal carinae of first metasomal tergite united and enclosing a triangular area (fig. 312); second metasomal suture absent (figs

306, 312); third tergite smooth or with transverse sculpture (fig. 312); fourth tergite smooth; ovipositor sheath comparatively long (figs 306, 313).

Distribution.— Afrotropical (including Malagasy) and Oriental regions, only the type species of the three genera mentioned above known.

Biology.— Unknown.

Notes.— *Tebennotoma calvata* Enderlein, 1912 differs from the figured *T. typica* (Rohwer, 1924) **comb. nov.** mainly by the distinctly impressed and crenulate notauli, the subposteriorly somewhat elevated sscutellum, the smooth third metasomal tergite and the more robust hind femur. The head of the holotype of *T. calvata* is missing. *T. aciculata* (Belokobylskij, 1989) **comb. nov.** has the vein CU1b of the fore wing present and the vein m-cu of the fore wing far antefurcal.

Tribe Rogadini Foerster, 1862 sensu stricto

Rogadoidae Foerster, 1862: 228, 240.
Rhogadides Marshall, 1872: 99.
Pelecystominae Viereck, 1918: 71.
Aleiodinae Muesebeck, 1928: 901.

Diagnosis.— Antennal segments 27-104; inner sides of eyes more or less emarginated (figs 7, 17, 29, 63, 297, 316); propodeal spiracle situated in front of middle of propodeum and round (figs 27, 140, 247), exceptionally elliptical (figs 3, 16, 268); propodeal areola usually reduced or absent (figs 3, 78, 126, 166, 195, 202, 281), if exceptionally present then narrow (figs 111, 121, 182); vein CU1b of fore wing much shorter than vein 3-CU1 (figs 114, 168, 206, 231, 234, 265, 278), often (nearly) absent (figs 1, 243, 258); vein 1-SR of fore wing usually (sub)continuous with vein 1-M (figs 1, 13, 37, 87, 196, 228, 243), exceptionally angled with vein 1-M (figs 206, 291); vein m-cu of hind wing absent (figs 265, 278, 291), exceptionally present (*Scoporogas* (fig. 234) and some *Aleiodes* spp.); vein M+CU of hind wing longer than vein 1-M (figs. 1, 25, 168, 171, 184, 206, 291) or of about equal length (figs 80, 92), exceptionally shorter than vein 1-M (figs 114, 125, 136, 149, 164); tarsal claws with (figs 66, 74, 89, 123, 131, 144) or without (figs 8, 24, 218, 242, 295) lobe; first metasomal tergite movably joined to second tergite (figs 57, 116, 128, 290, 294), except in the subtribe Spinariina; second tergite with distinctly differentiated, usually triangular or semi-circular, area mediobasally, often minute (figs 11, 19, 36, 56, 88, 111, 290), but absent in *Myoporhogas* (fig. 253), *Triraphis* (fig. 194) and some *Aleiodes* species; fourth-sixth tergites exposed (figs 3, 27, 41, 247), exceptionally largely or completely retracted (fig. 294); ovipositor sheath hardly or not protruding beyond apex of metasoma (figs 6, 27, 247, 268, 283), except in the Spinariina, *Rogas* (fig. 116), *Rectivena* (fig. 140) and *Triraphis* (fig. 188).

Distribution.— Cosmopolitan; the subtribe Spinariina van Achterberg, 1988 (described as tribe in 1988 (van Achterberg, 1988b: 91) but deserves a lower ranking because it obviously belongs to the tribe Rogadini) has been reported from the Afrotropical region in error. Type material of the only species reported (*Spinaria inermis* Guérin-Méneville, 1848) has been examined (a ♀ in the Staatssammlung München) and this proved to belong to the genus *Mesobracon* Szépligeti, 1902 (**comb. nov.**; subfamily Braconinae).

Aleiodes Wesmael, 1838
(figs 278-301, 376, 390)

Aleiodes Wesmael, 1838: 194; Shenefelt, 1975: 1163-1185; Marsh, 1979: 177-178; Papp, 1985a: 143-164 & 1985b: 347-349; Shaw & Huddleston, 1991: 95-96 (biology). Type species (designated by Viereck, 1914): *Aleiodes heterogaster* Wesmael, 1838 [examined; = *A. albitibia* (Herrich-Schäffer, 1838). **Syn. nov.**].

Petalodes Wesmael, 1838: 123; Tobias, 1971: 218 (transl. 1975: 86-87); Shenefelt, 1975: 1209-1211; Tobias, 1976: 90; Marsh, 1979: 179. **Syn. nov.** Type species (by monotypy): *Petalodes unicolor* Wesmael, 1838 [examined; = *Aleiodes compressor* (Herrich-Schäffer, 1838). **Syn. nov.**].

Heterogamus Wesmael, 1838: 120; Tobias, 1971: 217 (transl. 1975: 86); Shenefelt, 1975: 1200-1202; Tobias, 1976: 89; van Achterberg, 1985: 178-180; Tobias, 1986: 85. Type species (by monotypy): *Aleiodes crypticornis* Wesmael, 1838 [examined; = *A. dispar* (Haliday, 1833)].

Schizoides Wesmael, 1838: 94. Unavailable name.

Nebartha Walker, 1860: 310; Shenefelt, 1975: 1216; Marsh, 1979: 179. **Syn. nov.** Type species (by monotypy): *Nebartha macropodides* Walker, 1860 [examined].

Neorhogas Szépligeti, 1906: 605; Shenefelt, 1975: 1205. Type species (by monotypy): *Neorhogas luteus* Szépligeti, 1906 [examined; = *Aleiodes praetor* (Reinhard, 1863)].

Chelonorhogas Enderlein, 1912b: 258; Shenefelt, 1975: 1187. **Syn. nov.** Type species (by monotypy): *Chelonorhogas rufithorax* Enderlein, 1912 [examined; nec *Aleiodes rufithorax* (Cameron, 1911) = *A. convexus* **nom. nov.**].

Leluthinus Enderlein, 1912c: 96; Shenefelt, 1975: 1202-1203. **Syn. nov.** Type species (by monotypy): *Leluthinus lividus* Enderlein, 1912 [examined].

Aleirhogas Baker, 1917b: 383, 411; Shenefelt, 1974: 1185-1186. **Syn. nov.** Type species (designated by Viereck, 1921): *Rhogas* (*Aleirhogas*) *schultzei* Baker, 1917 [examined].

Heterogamoides Fullaway, 1919: 43; Shenefelt, 1975: 1188. **Syn. nov.** Type species (by monotypy): *Heterogamoides muirii* Fullaway, 1919 [examined].

Hyperstemma Shestakov, 1940: 10; Shenefelt, 1975: 1200. **Syn. nov.** Type species (by monotypy): *Hyperstemma chlorotica* Shestakov, 1940 [examined].

Jirunia Malác, 1941: 137; Shenefelt, 1975: 1200. Type species (by monotypy): *Heterogamus farmakena* Malác, 1941 [depository unknown; = *Aleiodes excavatus* Telenga, 1941].

R(h)ogas auct.; Tobias, 1971: 215-217 (transl. 1975: 83-86); Shenefelt, 1975: 1215-1256; Tobias, 1976: 81-89; Marsh, 1979: 179-181; Tobias, 1986: 74-84.

Diagnosis.— Antennal segments 27-75, apical segment with (figs 286, 379) or without (fig. 292) spine; maxillary and labial palpi slender (figs 294, 380), exceptionally widened; hypostomal carina joining occipital carina ventrally, or reduced ventrally; occipital carina variable, usually medio-dorsally interrupted (fig. 279); vertex and frons smooth or sculptured; malar suture absent; eyes more or less emarginate (figs 284, 297, 382); antescutal depression more or less developed (figs 281, 296, 380); prosternum variable, comparatively wide and upcurved (fig. 386) to obsolescent; prepectal carina complete (fig. 383); precoxal sulcus absent or present (figs 283, 380); notauli variable (figs 281, 296, 385), may be partly absent; lateral carina of scutellum absent, obsolescent or strong (figs 281, 385); median carina of metanotum absent to nearly complete (figs 281, 385); propodeal areola absent, at most with some carinae (fig. 285); propodeal tubercles usually absent, but present in some species (fig. 380); vein 1-SR of fore wing variable (figs 278, 291); vein m-cu of fore wing antefurcal, straight, angled with vein 2-CU1, and converging to or parallel with vein 1-M posteriorly (figs 278, 376); vein r of fore wing usually medium-sized, but species with long vein r are not uncommon; vein 3-SR of fore wing from about as long as vein 2-SR to much longer (figs 278, 291, 376); first subdissal cell of fore wing robust (fig. 291) to slender (fig. 278), vein 1-CU1 horizontal, short to long; vein cu-a of fore wing short to long, vertical or inclivous; vein M+CU1 of fore wing usually slightly sinuate (figs.

278, 291); marginal cell of hind wing variable, parallel-sided or widened (figs 278, 291, 376); vein 1r-m of hind wing long to rather short, oblique; tarsal claws without lobe and setose, in several species also pectinate; tarsi of males normal, similar to tarsi of females (fig. 289); apex of hind tibia without distinct comb of specialized setae at inner side (fig. 287), very exceptionally a comb may be present; first tergite with large to rather small dorsope, its dorsal carinae united and more or less arched (figs 290, 300, 377), and tergite without basal flanges (figs 290, 300, 377); second tergite with medio-basal triangular area and medio-longitudinal carina variable (figs 290, 200); second tergite and at least base of third tergite with sharp lateral crease (fig. 294), but in some species also fourth tergite may have a crease; hypopygium of female medium-sized, ventrally straight and apically truncate (figs 283, 387).

Biology.— Endoparasites of (young) larvae of Geometridae, Noctuidae, Notodontidae, Lasiocampidae, Pterophoridae, Lycaenidae, Zygaenidae, Hesperiidae, Satyridae, Arctiidae, Lymantriidae, Drepanidae and Yponomeutidae. The following hosts need confirmation: Limacodidae, Tortricidae, Oecophoridae, Lyonetiidae, and Nymphalidae.

Distribution.— Cosmopolitan; large genus. The type species of the subgenus *Neorhogas* Szépligeti, *Aleiodes praetor* (Reinhard, 1863) is known from W. and E. Palaearctic areas, including Japan. Both the other subgenera contain large conglomerates of species. The subgenus *Chelonorhogas* is predominantly Holarctic.

Notes.— Overall the genus *Aleiodes* is rather viariable, with the frequent occurrence of intermediate character states inhibiting clear definitions of species or subgenera, even when obvious and extreme characters appear to exist. The type species of *Chelonorhogas* (with its convex third metasomal tergite and its apex curved), for example, the type species clearly belongs to a species-group that includes others having this tergite flat and its apex straight. Furthermore, in a few *Aleiodes* species that are not clearly related (e.g. *A. fasciatipennis* (Ashmead, 1906); van Achterberg, 1985: 186) the third tergite is similar to that of the type species of *Chelonorhogas*. The major synapomorphy for all *Aleiodes* species is their widened and flattened ovipositor sheath.

Three subgenera may be recognized as shown in the following key. Most other "genera" such as *Petalodes*, *Heterogamus*, *Heterogamoides*, and *Hyperstemma* are small species groups within the subgenus *Aleiodes*, from which their exclusion would result in a paraphyletic residue.

The names *Aleiodes heterogaster* Wesmael, 1838 and *Petalodes unicolor* Wesmael, 1838 are new junior synonyms of *Aleiodes albitibia* (Herrich-Schäffer, 1838) and *A. compressor* (Herrich-Schäffer, 1838), respectively. *Chelonorhogas rufithorax* Enderlein, 1912 is preoccupied in the genus *Aleiodes* by *A. rufithorax* (Cameron, 1911), and therefore it is renamed *A. convexus* **nom. nov.** in this paper.

Key to subgenera of the genus *Aleiodes* Wesmael

1. Ovipositor sheath largely glabrous (except apically and ventrally: fig. 389); ovipositor with small ventral teeth and a wide dorsal flange (figs 387, 389); marginal cell of hind wing narrowed near basal 0.6 and slightly widened apically (fig. 376); lateral carina of scutellum strong (fig. 385); prosternum comparatively wide and distinctly upcurved (fig. 386); vein SC+R1 of hind wing angularly bent (fig. 383);

vein cu-a of fore wing long and oblique (fig. 376); lateral carina of propodeum angularly protruding (figs 380, 385); vein r of fore wing 0.6-0.9 times vein 3-SR (fig. 376); posterior corners of first tergite distinctly protruding (fig. 377); parasite of Sphingidae ..... subgenus ***Neorhogas*** Szépligeti

- Ovipositor sheath largely setose; ovipositor without ventral teeth and at most with a narrow dorsal flange (fig. 294); marginal cell of hind wing largely parallel-sided (fig. 278) or evenly widened distally (fig. 291), only exceptionally similar to fig. 376; lateral carina of scutellum absent, or if present then weakly developed; prosternum less developed and less upcurved posteriorly; vein SC+R1 of hind wing usually nearly straight or evenly curved (figs 278, 291); vein cu-a of fore wing shorter and usually less oblique (figs 278, 291); lateral carina of propodeum usually not protruding; vein r of fore wing variable; posterior corner of first tergite variable (fig. 300), usually not or hardly protruding (fig. 290); parasites of other lepidopterous families 2

2. Apical half of marginal cell of hind wing distinctly widened, its maximum width 1.6 times its width near hamuli or wider (fig. 291), or if exceptionally largely parallel-sided then tarsal claws blackish pectinate (cf. fig. 242); mesopleuron partly smooth, exceptionally densely sculptured; second metasomal tergite with distinct and smooth triangular area medio-basally (fig. 300; usually less developed than depicted); occipital carina usually reduced ventrally, not reaching hypostomal carina; lateral carina of scutellum usually absent (fig. 296) ..... subgenus **Chelonorhogas** Enderlein **stat. nov.***

- Apical half of marginal cell of fore wing parallel-sided or slightly widened and its maximum width less than 1.8 times its width near hamuli (fig. 278), or if up to 2.7 times as wide apically then mesopleuron largely coriaceous; mesopleuron usually extensively coriaceous or finely granulate, but medially coarsely sculptured in the *bicolor*-group; tarsal claws at most yellowish pectinate (cf. fig. 295); second tergite without triangular area medio-basally or this area minute or indistinct (fig. 290); occipital carina usually complete ventrally and reaching hypostomal carina; lateral carina of scutellum more or less developed, but sometimes absent (fig. 281) ..... subgenus **Aleiodes** Wesmael

---

*The type series of the following Afrotropical species has been examined and the species is briefly characterized below:

Aleiodes (Chelonorhogas) africanus (Enderlein, 1920) comb. nov.

Pelecystoma africanum Enderlein, 1920: 147; Shenefelt, 1975: 1206.

Material.— Holotype, ?♀ (apex of metasoma missing; PAN), "D. Ost-Afrika [= Tanzania], Salala, Hammerstein S., Mai 1908", "Type", "*Pelecystoma africanum* Enderl., ♀, Type, Dr. Enderlein det. 1919".

Large reddish species with a densely and coarsely reticulate propodeum, without a median carina, the head and the mesoscutum largely reticulate, the second submarginal cell of fore wing robust, the vein m-cu of hind wing present as a faint trace, the antenna with 70 segments and the maxillary palp only slightly widened.

Aspidorogas gen. nov.
(figs 196-205)

Type species: *Aspidorogas fuscipennis* spec. nov.

Etymology.— From "aspidos" (Greek for "shield") and the genus name "*Rogas*", because it belongs to the *Rogas* group of genera, but has the clypeus protruding shield-like above the hypoclypeal depression. Gender: masculine.

Diagnosis.— Antennal segments unknown, more than 36; maxillary and labial palpi of female partly rather robust (fig. 199), shape of palpi of male unknown; hypostomal carina not joining occipital carina ventrally; occipital carina nearly complete, only ventrally reduced; vertex sparsely punctate and with a weak median groove (fig. 197); frons smooth; clypeus shield-like, protruding above hypoclypeal depression (figs 198, 199); malar suture distinct; eyes weakly emarginate (fig. 198); antescutal depression obsolescent; prepectal carina complete; precoxal sulcus present only medially (fig. 199); notauli narrow (fig. 202); median carina of metanotum short; propodeal areola absent, only with chevron-shaped carina anteriorly (fig. 202); propodeal tubercles absent; vein 1-SR of fore wing short, continuous with vein 1-M (fig. 196); vein m-cu of fore wing antefurcal, rather curved, gradually merging into vein 2-CU1, and subparallel with vein 1-M posteriorly (fig. 196); vein r of fore wing discontinuous with posterior border of pterostigma; vein 3-SR of fore wing longer than vein 2-SR, and 2-SR curved (fig. 196); first subdiscal cell of fore wing medium-sized (fig. 196), vein 1-CU1 short; vein cu-a of fore wing distinctly inclivous, slightly more oblique than vein 3-CU1 (fig. 196); vein M+CU1 of fore wing straight; marginal cell of hind wing narrowed apically; vein 1r-m of hind wing rather short and oblique (fig. 196); wing membrane dark brown; tarsal claws with rather truncated lobe (fig. 203); telotarsi strongly depressed (figs, 201, 203); middle and hind tibial spurs setose and straight (fig. 204); apex of hind tibia with distinct comb of specialized setae at inner side (fig. 204); first tergite with medium-sized dorsope, its dorsal carinae united, and no basal flanges (fig. 205); second tergite with medium-sized medio-basal triangular area and with irregular medio-longitudinal carina (fig. 205); second-sixth tergites with sharp lateral crease (fig. 199); hypopygium of female medium-sized, ventrally straight and apically truncate.

Distribution.— Afrotropical; only the type species known.

Biology.— Unknown.

Note.— The clypeus is similarly strongly protruding in *Aleiodes* (*Chelonorhogas*) *mongolicus* (Telenga, 1941) **comb. nov.**, but this species is not congeneric with *Aspidorogas*. It lacks the malar suture, the marginal cell of the hind wing is widened apically, the hind coxa is coarsely punctate; the second submarginal cell of fore wing is subquadrate, vein 2-SR of fore wing is straight, the propodeum is short, the eyes are small and the second-third tergites are only punctate.

Aspidorogas fuscipennis spec. nov.
(figs 196-205)

Material.— Holotype, ♀ (RMNH), "Zaire, Lubumbashi, [no.] 8364, 17-18.ii.1972, A.B. Stam, at light".

Holotype, ♀, length of body 5.7 mm, of fore wing 5.1 mm.

Head.— Remaining antennal segments 36, long setose, length of third segment 1.1 times fourth segment, length of third, and fourth segments 2.8 and 2.6 times their width, respectively; scapus ovoid and slightly longer dorsally than ventrally (fig. 199); maxillary palp partly missing, but third and fourth segments and second and third segments of labial palp somewhat widened (fig. 199); length of eye in dorsal view 1.5 times temple (fig. 197); temples convexly narrowed posteriorly (fig. 197); occipital carina fine and not arched dorsally (fig. 197); OOL:diameter of ocellus:POL = 7:4:5; face punctate-rugose; clypeus densely and coarsely punctate (fig. 200); distance between anterior tentorial pits and eye longer than diameter of pit; frons flat; vertex strongly shiny and convex; length of malar space 0.7 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.3 times its height; pronotal sides coriaceous, medially and dorsally rugose (fig. 199); precoxal sulcus narrow and crenulate (fig. 199); remainder of mesopleuron and area below precoxal sulcus largely smooth, with sparse punctures posteriorly and ventrally (fig. 199); metapleuron smooth medially and rugose ventrally; mesoscutum sparsely setose and punctulate, except for lateral parts of lateral lobes (fig. 202); notauli finely crenulate; scutellar sulcus deep and with one longitudinal carina; scutellum rather flat and with some punctures; side of scutellum rugose, interconnected medio-dorsally (fig. 202); propodeum transversely rugose (figs 199, 202).

Wings.— Fore wing: 1-SR+M weakly sinuate; r:3-SR:SR1 = 4:14:29; SR1 straight; 2-SR:3-SR:r-m = 10:14:9; r-m vertical (fig. 196); 1-CU1:2-CU1 = 3:16. Hind wing: M+CU slightly longer than 1-M; 1-M slightly widened subbasally (fig. 196).

Legs.— Hind coxa smooth; tarsal claws rather pectinate (fig. 203); length of femur, tibia and basitarsus of hind leg 3.4, 8.2 and 6 times their width, respectively; length of hind tibial spurs 0.3 and 0.4 times hind basitarsus.

Metasoma.— Length of first tergite equal to its apical width, its surface longitudinally rugose, with a rather large and smooth basal area (fig. 205), dorsope medium-sized and dorsal carinae connected to median carina (fig. 205); medio-basal area of second tergite medium-sized and triangular (fig. 205); second and third (except its apex) tergites longitudinally rugose, apex of third tergite and following tergites coriaceous (fig. 199); ovipositor straight; length of ovipositor sheath 0.07 times fore wing.

Colour.— Pale yellowish; head (except for clypeus, mandibles, and malar space near hypoclypeal depression), scapus and pedicellus, mesoscutum (except for posterior part of scutellum), pronotum, mesopleuron antero-dorsally, and antero-ventrally (including area below precoxal area) black; telotarsi, propleuron, mesosternum anteriorly, antenna (except scapus and pedicellus), ovipositor sheath, tegula, most veins, and pterostigma dark brown; parastigma brown; humeral plate ivory; wing membrane dark brown.

Bequartia Fahringer, 1936
(figs 1-12)

Bequartia Fahringer, 1936: 573; Shenefelt, 1975: 1186 & 1979: 128-129 (partly, not figures!). Type species (by monotypy): *Bequartia gigantea* Fahringer, 1936 [examined].

Diagnosis.— Number of antennal segments unknown; maxillary and labial palpi comparatively robust (fig. 5); hypostomal carina not joining occipital carina ventrally (fig. 5); occipital carina ventrally absent (fig. 3), dorsally present but rather weak; vertex rugose and laterally coarsely punctate (fig. 2); frons distinctly concave and rugose (fig. 2); malar suture absent; eyes distinctly emarginate (fig. 7); antescutal depression deep and narrow; prepectal carina complete; precoxal sulcus more or less impressed (fig. 3); notauli wide and complete (fig. 10); median carina of metanotum absent; propodeal areola and carina absent; propodeum of ♂ without depressions (fig. 3) and of ♀ without transverse carina; propodeal tubercles absent, but laterally angularly protruding (fig. 3); vein 1-SR of fore wing short, and subcontinuous with vein 1-M (fig. 1); vein m-cu of fore wing postfurcal, slightly sinuate, angled with vein 2-CU1, and subparallel with vein 1-M posteriorly (fig. 1); vein r of fore wing continuous with baso-posterior margin of pterostigma (fig. 1); vein 3-SR of fore wing about as long as vein 2-SR (fig. 1); first subdiscal cell of fore wing narrow, and discal cell very large (fig. 1), vein 1-CU1 comparatively long; vein cu-a of fore wing short and slightly inclivous; vein CU1b of fore wing almost absent and hardly visible (fig. 1); vein M+CU1 of fore wing only slightly sinuate; marginal cell of hind wing widened apically; vein 1r-m of hind wing long, oblique (fig. 1); wings banded; tarsal claws finely pectinate (fig. 8) and without lobe; second-fourth segments of hind and middle tarsi of males swollen (fig. 9); fore tarsus of male only slightly inflated; tibial spurs setose; apex of hind tibia without distinct comb of specialized setae at inner side; semi-circular area at base of first metasomal tergite about perpendicular to dorsal face of tergite (figs 3, 4); first tergite with large dorsope, its dorsal carinae forming a semi-circular basal area (figs 4, 11), and no basal flanges; second tergite with medio-basal transverse, narrow area and no or indistinct medio-longitudinal carina (fig. 11); second and third tergites with sharp lateral crease (fig. 3); hypopygium of female large, ventrally straight and apically truncate (fig. 6); ovipositor straight, and its sheath slender (fig. 6); length of ovipositor sheath about 0.05 times fore wing.

Distribution.— C. Africa; only the type species (from Zaire) is known.

Biology.— Unknown.

Note.— Shenefelt (1979) overlooked the genus (and sister-group) *Xenolobus* Cameron, 1911; the figures he gives actually refer to the genus *Xenolobus*. For comment on the species transferred to that genus, see *Xenolobus*.

Colastomion Baker, 1917 stat. nov.
(figs 37-51)

Colastomion Baker, 1917a: 283, 290; Shenefelt, 1975: 1198 (as synonym of *Dedanima* Cameron, 1903). Type species (by monotypy): *Colastomion abdominalis* Baker, 1917 [examined].

Diagnosis.— Antennal segments 49-65, apical segment with short spine (fig. 42); maxillary and labial palpi of female normal (fig. 41), of male partly extremely inflated (fig. 47); hypostomal carina not joining occipital carina ventrally; occipital carina absent ventrally, remaining part rather distinct; vertex strongly declivous posteriorly and with some punctures (fig. 38); frons flat and smooth; malar suture short (fig. 50); eyes distinctly emarginate; antescutal depression deep and narrow; prepectal carina complete; only posterior half of precoxal sulcus shallowly impressed and with weak

crenulae (fig. 41); notauli deep and rather narrow (fig. 49); median carina of metanotum only anteriorly developed (fig. 49); propodeal areola absent (fig. 49), but median carina may be present; propodeal tubercles present, small and blunt (fig. 41); vein 1-SR of fore wing medium-sized, continuous with vein 1-M (fig. 37); vein m-cu of fore wing subinterstitial, curved, gradually merging into vein 2-CU1, and converging to vein 1-M posteriorly (fig. 37); vein r of fore wing discontinuous with posterior margin of pterostigma; vein 3-SR of fore wing nearly twice as long as vein 2-SR (fig. 37); first subdiscal cell of fore wing elongate (fig. 37), vein 1-CU1 short or absent; vein cu-a of fore wing vertical; vein M+CU1 of fore wing straight; marginal cell of hind wing wide basally, narrow and parallel-sided apically (fig. 37); vein 1r-m of hind wing oblique; vein 2-SC+R of hind wing vertical (fig. 37) or subquadrate (cf. fig. 54); tarsal claws simple (fig. 51); tarsi of males elongate, similar to tarsi of females (fig. 39); middle and hind tibial spurs glabrous (fig. 43), but inner middle spur with row of long setae (fig. 44); apex of hind tibia with distinct comb of specialized setae at inner side (fig. 43); first tergite with dorsope situated laterally (fig. 41), not visible in dorsal view (fig. 48), its dorsal carinae united, with basal flanges absent, but (nearly) linearly narrowed subbasally (fig. 48); second tergite with medium-sized mediobasal triangular area and indistinct medio-longitudinal carina (fig. 48); second-fifth tergites with sharp lateral crease (fig. 41); hypopygium of female large, ventrally strongly convex, posteriorly evenly curved and apically partly closed (figs 41, 45); ovipositor slightly curved (fig. 45); ovipositor sheath rather slender (fig. 41), its length about 0.1 times fore wing.

Distribution.— Afrotropical (including Malagasy) and Oriental.

Biology.— Unknown.

Notes.— The type species differs from the Malagasian spp. by the distinct angle between the veins m-cu and 2-CU1 of the fore wing, and the quadrangular vein 2-SC+R of hind wing. The inclusion of the Malagasian species into the genus *Cystomastax* Szépligeti, 1904 by Granger (1949) is incorrect. The latter genus has a Neotropical distribution, its tarsal claws have a lobe, the marginal cell of the hind wing is very narrow basally and widened distally, the first metasomal tergite is very slender and the hind coxa has a tubercle dorsally.

Key to Afrotropical species of the genus *Colastomion* Baker

1. Body largely dark brown or blackish, but metasoma after first tergite paler; antennal segments about 34; length of body about 6 mm; (Malagasy) ..... ***C. tristis*** (Granger)
- Body yellowish-brown; antennal segments 44-66; length of body 7.5-14 mm 2
2. Antennal segments 65-66; hind tarsi ivory; flagellum completely black; (Malagasy) ..... ***C. nigricorne*** (Granger)
- Antennal segments 44-55; hind tarsi yellowish-brown; flagellum (yellowish-) brown medially, at most basally black and apically dark brown 3
3. Flagellum bicoloured, basally black(ish) and medially yellowish-brown; antennal segments 49-55; vein r of fore wing about 0.3 times vein 3-SR (fig. 37); length of vein 2-M of fore wing about 3 times vein r-m, and vein 3-SR about 1.9 times vein 2-SR (fig. 37); (Malagasy) ..... ***C. bicoloricorne*** (Granger)

- Flagellum yellowish-brown, infuscated only apically; antennal segments 44-46; vein r of fore wing 0.35-0.4 times vein 3-SR; length of vein 2-M of fore wing about 2.7 times vein r-m and vein 3-SR 1.4-1.7 times vein 2-SR; (Malagasy; Tanzania; Togo) ..... *C. concolor* (Szépligeti)

Colastomion bicoloricorne (Granger, 1949) comb. nov.
(figs 37-51)

Cystomastax bicoloricornis Granger, 1949: 163; Shenefelt, 1975: 1195.

Material.— Lectotype here designated, ♀ (MNHN), "Madagascar, Rogez, Forêt cote est", "Muséum Paris, ii.[19]37, A. Seyrig", "54"[= number of antennal segments; actually 53!], "Type". Paralectotypes: 11 ♀♀ + 4 ♂♂ (MNHN) from Malagasy, neighbourhood of Tananarive and Ranomafana.

Colastomion concolor (Szépligeti, 1911) comb. nov.

Megarhogas concolor Szépligeti, 1911: 410.
Cystomastax concolor; Shenefelt, 1975: 1195-1196.

Material.— Holotype, ♀ (ZMB), "Nyassa-See, Langenburg [= SW. Tanzania], Ende xii.[18]98-Ende i.[18]99, Fülleborn S.", "Type", "*Megarhogas concolor* [in Szépligeti's handwriting]"; 1 ♀ (ZMB), "Togo, Mansa-Jendi, vii.1909, Gesundheitsamt S."

Colastomion nigricorne (Granger, 1949) comb. nov.

Cystomastax nigricornis Granger, 1949: 163-163, fig. 174; Shenefelt, 1975: 1197.

Material.— Lectotype here designated, ♀ (MNHN), "Madagascar, Rogez, Forêt cote est", "Muséum Paris, iv.[19]73, A. Seyrig", "65", "Type". Paralectotypes: 9 ♀♀ + 2 ♂♂ (MNHN) from Malagasy, Rogez, Tananarive, and Ranomafana.

Colastomion tristis (Granger, 1949) comb. nov.

Cystomastax tristis Granger, 1949: 164-165.

Material.— Not examined: 3 ♀♀ in MNHN.

Cordylorhogas Enderlein, 1920
(figs 265-277)

Cordylorhogas Enderlein, 1920: 153; Shenefelt, 1975: 1195. Type species (by monotypy): *Cordylorhogas trifasciatus* Enderlein, 1920 [examined].

Diagnosis.— Antennal segments 67-69 (♀), apical segment with spine; maxillary and labial palpi of female slender (fig. 268); hypostomal carina joining occipital carina ventrally, behind mandible base or not; occipital carina at least medio-dorsally

widely interrupted (fig. 271); vertex and frons finely coriaceous; malar suture absent; eyes distinctly emarginate; antescutal depression deep and wide; prepectal carina complete (fig. 268); precoxal sulcus absent; notauli narrow (fig. 267); median carina of metanotum short (fig. 267); propodeal areola variable, absent and its median carina complete (fig. 277) or with a rhombic areola and no distinct median carina; propodeal tubercles absent; vein 1-SR of fore wing short, continuous with vein 1-M, vein 1-M slightly sinuate and dorsally widened (figs 265, 266); vein m-cu of fore wing just antefurcal, straight, angled with vein 2-CU1, and about parallel with vein 1-M posteriorly (fig. 265); vein r of fore wing rather long, discontinuous with posterior border of pterostigma; vein 3-SR of fore wing about 1.5 times vein 2-SR; first subdiscal cell of fore wing and vein 1-CU1 medium-sized, and vein 2-CU1 curved (figs 265, 266); vein cu-a of fore wing medium-sized and vertical (fig. 266); vein M+CU1 of fore wing widened subapically and slightly curved (figs 265, 266); subbasal cell of fore wing glabrous (fig. 266); marginal cell of hind wing widened apically; vein 1r-m of hind wing long and oblique (fig. 265); wing membrane partly infuscate; tarsal claws pectinate and without lobe (fig. 275), but tarsi of males unknown; middle and hind tibial spurs straight and setose (fig. 272); apex of hind tibia without distinct comb of specialized setae at inner side, except for some thickened ones (fig. 272); first tergite with large dorsope, strongly convex basally (fig. 268), its dorsal carinae linearly connected to and united in a strong median carina, and its posterior corners acutely protruding (fig. 277), and no basal flanges present; second tergite with crest-like lateral carinae and a medium-sized medio-basal triangular area and strong mediolongitudinal carina (fig. 277); second-third tergites with sharp lateral crease (fig. 268); hypopygium of female rather small, ventrally straight and apically truncate (fig. 268); ovipositor sheath moderately wide and distinctly flattened.

Distribution.— Afrotropical: only the type species known, which occurs in S. and E. Africa as far northern as Kenya (1 ♀, Mtata, Quicke Collection, Sheffield). A female (BMNH) has been examined from Nigeria which is probably conspecific; it has the basal and medial bands of fore wing narrower, the vein 1-M of fore wing not or hardly widened anteriorly, the occipital carina complete ventrally, the third tergite brown, contrasting with the yellow propodeum and basal two metasomal segments.

Biology.— Unknown.

Note.— The second species belonging to this genus is *Gyroneuron africanum* Brues, 1924; however, it is a new junior synonym of the type species. The differences given by Brues (1926: 256) are insufficient to retain *C. africanus* as a separate taxon. The holotype (examined: ♀ (South African Museum, Cape Town), "Mfongosi, Zulu L., W.E. Jones/April 1916", "*Gyroneuron africanum* Brues") has 69 antennal segments, a rhombic areola on the propodeum and the band below the pterostigma is interrupted medially.

Cratodactyla Szépligeti, 1914
(figs 254-264)

Cratodactyla Szépligeti, 1914a: 180; Shenefelt, 1975: 1195. Type species (by monotypy): *Cratodactyla unicolor* Szépligeti, 1914 [examined].

Diagnosis.— Antennal segments about 40 (♂), apical segment with spine (fig. 255); maxillary and labial palpi of male slender (fig. 257); hypostomal carina not joining occipital carina ventrally; occipital carina nearly complete, reduced ventrally, and transverse dorsally (fig. 260); vertex reticulate (fig. 260); frons transversely rugose; clypeus largely depressed (fig. 261); malar suture absent; eyes rather emarginate (fig. 261); antescutal depression absent; prepectal carina complete (fig. 257); precoxal sulcus slightly impressed and distinctly sculptured (fig. 257); notauli shallow, medium-sized (fig. 259); median carina of metanotum absent, but a pair of submedial carinae present (fig. 259); propodeal areola absent; propodeal tubercles absent; vein 1-SR of fore wing short, continuous with vein 1-M (fig. 258); vein m-cu of fore wing antefurcal, straight, angled with vein 2-CU1, and subparallel with vein 1-M posteriorly (fig. 258); vein r of fore wing rather long; vein 3-SR of fore wing somewhat longer than vein 2-SR (fig. 258); first subdiscal cell of fore wing rather robust, vein 1-CU1 rather long and horizontal (fig. 258); vein cu-a of fore wing subvertical; vein M+CU1 of fore wing slightly sinuate; marginal cell of hind wing parallel-sided; vein 1r-m of hind wing medium-sized and oblique; vein m-cu of hind wing absent; tarsal claws setose and without lobe (fig. 254); hind basitarsus of males distinctly swollen (fig. 255), shape of tarsus of females unknown ; middle and hind tibial spurs straight and setose; apex of hind tibia without distinct comb of specialized setae at inner side; first tergite with rather large dorsope, its dorsal carinae somewhat arched and without basal flanges (fig. 262); second tergite with small medio-basal triangular area connected to medio-longitudinal carina (fig. 262); second-third tergites with sharp lateral crease (fig. 257); hypopygium of female unknown.

Distribution.— Afrotropical; known only from the type species from Kenya.

Biology.— Unknown.

Hemigyroneuron Baker, 1917
(figs 168-170, 206-215)

Hemigyroneuron Baker, 1917a: 284, 322; Shenefelt, 1975: 119. Type species (by original designation): *Hemigyroneuron speciosus* Baker, 1917 [examined].

Diagnosis.— Antennal segments 54-61, apical segment with spine; maxillary and labial palpi slender (fig. 208); hypostomal carina joining occipital carina ventrally; occipital carina complete, strong and ventrally angulate (fig. 208), but may be obsolescent medio-dorsally; vertex rugulose or rugose-granulate (fig. 210); frons largely granulate or largely smooth with a curved carina laterally; malar suture absent (fig. 212); eyes distinctly emarginate (fig. 212); antescutal depression obsolescent and narrow; prepectal carina complete (fig. 208); precoxal sulcus absent, its area punctate to striate (fig. 208); notauli absent to only shallowly impressed (fig. 214); median carina of metanotum short (fig. 214); propodeal areola absent, its median carina present at least in anterior half (fig. 214); propodeal tubercles small and obtuse (fig. 208); vein 1-SR of fore wing medium-sized, discontinuous with vein 1-M (fig. 206), or continuous (fig. 168); vein m-cu of fore wing antefurcal, straight, angled with vein 2-CU1, and diverging from vein 1-M posteriorly (fig. 206); vein r of fore wing long, discontinuous with posterior border of pterostigma (figs 168, 206); vein 3-SR of fore wing dis-

tinctly longer (fig. 206) or about as long as 2-SR (fig. 168); subbasal cell of fore wing without scleromes, and strongly widened subapically (figs 168, 206); first subdiscal cell of fore wing comparatively high, enlarged (figs 168, 206), vein 1-CU1 oblique; vein cu-a of fore wing long, straight or reclivous (figs. 168, 206); vein M+CU1 of fore wing straight (fig. 168) to slightly widened and bent (fig. 206); marginal cell of hind wing strongly widened apically (fig. 206); vein 1r-m of hind wing long and oblique (fig. 168); vein M+CU of hind wing longer than vein 1-M (figs 168, 206); tarsal claws without lobe, its apical tooth angularly bent, and only basally finely pectinate (figs 169, 211); tarsi of males normal, similar to tarsi of females; apex of hind tibia without comb of specialized setae at inner side (fig. 207); first tergite with large dorsope, its dorsal carinae united near level of spiracles, and without basal flanges (figs 170, 215); second tergite with rather small medio-basal triangular area and distinct medio-longitudinal carina (fig. 215); second and base of third tergite with sharp lateral crease (fig. 208); hypopygium of female medium-sized, ventrally straight and apically truncate (fig. 208); ovipositor sheath slender (fig. 208).

Distribution.— Oriental and Afrotropical: small genus with two species from the Oriental region and one from the Afrotropical region described below.

Biology.— Parasite of Lasiocampidae.

Note.— Only one Afrotropical species is included in *Hemigyroneuron* despite its aberrantly curved vein cu-a of fore wing, the strongly oblique vein 1-CU1 of fore wing, the oblique vein 1-SR of fore wing, the distinctly curved vein 1-1A of fore wing (fig. 168), the oblique apex of scapus, the lateral carinae of the frons and the comparatively robust second submarginal cell of fore wing (fig. 168). For *"Hemigyroneuron" apicale* Brues, 1926, see note under *Pholichora bipanna* spec. nov.

Hemigyroneuron certum spec. nov.
(figs 168-170)

Material.— Holotype, ♀ (MNHN), "Madagascar", "Anjozorobi (Lasini)", "Muséum Paris, xii.[19]36, A. Seyrig". Paratypes: 2 ♂♂ + 1 ♂ (RMNH), "Périnet"; 1 ♂ (MNHN), "Sandrangato".

Holotype, ♀, length of body 7.0 mm, of fore wing 7.1 mm.

Head.— Antennal segments 61, rather long and densely setose, length of third segment 1.4 times fourth segment, length of third, fourth and penultimate segments 1.4, 1.0 and 1.6 times times their width, respectively; scapus oval and its outer apex dorsally longer than ventrally; length of maxillary palp equal to height of head; length of eye in dorsal view 1.4 times temple; temples largely rugose and directly narrowed posteriorly; occipital carina obsolescent medio-dorsally; OOL:diameter of ocellus:POL = 5:28:14; frons largely smooth with curved carina laterally; vertex flat and rugulose; face rugose; length of malar space 0.7 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal sides crenulate dorsally and posteriorly, and rugulose-granulate ventrally; mesopleuron punctate, medially with interspaces wider than punctures; metapleuron punctate and with curved striae dorsally, ventrally rugose; mesoscutum densely setose, matt and finely rugulose-granulate; notauli shallowly impressed with a longitudinal carina at its inner side; scutellar sulcus deep and with five carinae; scutellum flat, rugose laterally, but without distinct lateral carina; side of scutellum coarsely crenulate; propo-

deum reticulate-rugose, with its median carina complete.

Wings.— Fore wing: 1-SR+M straight; r:3-SR:SR1 = 12:16:11; 1-SR linear with 1-M and oblique (fig. 168); 2-SR:3-SR:r-m = 12:16:11; 1-CU1:2-CU1 = 16:17; 1-CU1 strongly oblique and widened; 2-CU1 slender and horizontal (fig. 168); 1-1A distinctly curved and narrowed distally; subbasal cell sparsely setose ventrally and distally largely glabrous. Hind wing: 2-SC+R1 quadrate.

Legs.— Hind coxa somewhat micro-sculptured; length of femur, tibia, and basitarsus of hind leg 4.1, 9.1 and 7 times their width, respectively; length of hind tibial spurs 0.4 and 0.5 times hind basitarsus.

Metasoma.— Length of first tergite 0.9 times its apical width, its surface coarsely longitudinally rugose, and dorsope rather large (fig. 205); second tergite coarsely longitudinally rugose; third tergite densely punctate, but only sparsely so posteriorly; remainder of metasoma smooth; length of ovipositor sheath 0.08 times fore wing and with rather long setae.

Colour.— Yellowish-brown; antenna (except annellus), stemmaticum, and ovipositor sheath dark brown or black; head, palpi, legs, prothorax largely, tegulae and pterostigma yellowish; veins 1-SR+M and 1-M (largely) of fore wing paler than other veins; wing membrane subhyaline, but distally slightly infuscated.

Variation.— The paratypes are very similar to the holotype; length of fore wing 5.8-6.0 mm, antennal segments 54(1) and 58(1), inner hind tibial spur 0.4 times hind basitarsis; one paratype has the subbasal cell of fore wing partly yellowish mediodistally.

Iporhogas Granger, 1949
(figs 171-183)

Iporhogas Granger, 1949: 167; Shenefelt, 1975: 1202. Type species (by monotypy): *Iporhogas infuscatipennis* Granger, 1949 [examined].

Diagnosis.— Antennal segments about 51, antenna about 1.5 times fore wing (figs 171, 172), apical segment with spine (fig. 179); maxillary and labial palpi of female normal (fig. 175), but male unknown; hypostomal carina joining occipital carina ventrally (fig. 175); occipital carina complete (figs 175, 180); vertex rugose; frons rugulose; malar suture shallow; eyes rather emarginate (fig. 178); antescutal depression indistinct; prepectal carina nearly complete, but ventrally obsolescent (fig. 175); precoxal sulcus narrow, absent anteriorly and posteriorly; notauli rather wide and crenulate; median carina of metanotum absent (fig. 182); propodeal areola present because of (partly) strongly developed submedial carinae (fig. 182); propodeal tubercles absent; vein 1-SR of fore wing medium-sized, continuous with vein 1-M (fig. 171); vein m-cu of fore wing antefurcal, curved, gradually merging into vein 2-CU1, and converging to vein 1-M posteriorly (fig. 171); vein r of fore wing discontinuous with posterior margin of pterostigma; vein 3-SR of fore wing longer than 2-SR (fig. 171); first subdiscal cell of fore wing medium-sized (fig. 171), vein 1-CU1 short; vein 1-SR+M of fore wing sinuate; vein cu-a of fore wing nearly vertical; vein M+CU1 of fore wing nearly straight (fig. 171); vein 1-M of hind wing straight; marginal cell of hind wing parallel-sided apically, vein SR weakly curved basally and

unsclerotized; vein 1r-m of hind wing comparatively short and oblique (fig. 171); tarsal claws with large rounded lobe (fig. 173); middle tibial spurs largely setose and nearly straight (fig. 181); apical half of hind tibial spurs glabrous and curved (fig. 174); apex of hind tibia with distinct comb of specialized setae at inner side (fig. 174); first tergite with large dorsope, its dorsal carinae united behind level of spiracles and without basal flanges (fig. 183); second tergite with comparatively large medio-basal triangular area, connected medio-longitudinal carina (fig. 183); second-fifth tergites with sharp lateral crease (fig. 175); hypopygium of female large, ventrally slightly convex and apically truncate (fig. 175); ovipositor sheath rather slender (fig. 175).

Distribution.— Malagasy: only the type species known.

Biology.— Unknown.

Note.— The type series of the type species consists of six topotypic females, of which one female (MNHN) is here designated as lectotype: "Madagascar, Rogez, Forêt cote est", "Muséum Paris, i.[19]37, A. Seyrig", "51", "Type".

Korupia gen. nov.
(figs 125-135)

Type species: *Korupia curvinervis* spec. nov.

Etymology.— Derived from the name of the type locality of the type species: "Korup". Gender: feminine.

Diagnosis.— Number of antennal segments unknown; maxillary and labial palpi of female slender (fig. 128), but male unknown; hypostomal carina joining occipital carina ventrally; occipital carina complete; vertex punctulate and rather flat; frons flat; malar suture short (fig. 127); eyes distinctly emarginate; mandible with wide ventral carina and depression between first and second tooth deep (fig. 132); antescutal depression present; prepectal carina complete ; precoxal sulcus only medially impressed, narrow and superficially sculptured; notauli narrow (fig. 126); median carina of metanotum short and not protruding; propodeal areola irregular and narrowly elliptical; propodeal tubercles absent; vein 1-SR of fore wing short, continuous with vein 1-M (fig. 125); vein m-cu of fore wing antefurcal, curved, gradually merging into vein 2-CU1, and converging to vein 1-M posteriorly (fig. 125); vein r of fore wing not continuous with posterior margin of pterostigma; vein 3-SR of fore wing longer than vein 2-SR; first subdiscal cell of fore wing elongate, vein 1-CU1 short; vein 1-SR+M of fore wing distinctly sinuate; vein cu-a of fore wing inclivous, about similar to vein 2-SR (fig. 125); vein M+CU1 of fore wing straight; marginal cell of hind wing parallel-sided subapically, vein SR distinctly curved basally (fig. 125); vein 1r-m of hind wing oblique, but angle between veins 1r-m and 1-SC+R about 90° (fig. 131); vein 1-M of hind wing curved (fig. 125); tarsal claws of female with large and truncate blackish lobe (fig. 131), but tarsi of male unknown; middle and hind tibial spurs straight and setose; apex of hind tibia with distinct comb of specialized setae at inner side (fig. 134); first tergite with large dorsope, its dorsal carinae united subbasally and without distinct basal flanges (fig. 133); dorso-lateral carinae of first tergite widened basally (fig. 130); second tergite with medium-sized medio-basal triangular area and medio-longitudinal carina distinct (fig. 130); second-sixth tergites

with sharp lateral crease (fig. 128); in dorsal view length of fourth tergite about 0.2 times its basal width; third-fifth tergites convex in lateral view (fig. 128); hypopygium of female large, largely unpigmented and slightly sclerotized, ventrally straight and apically truncate (fig. 128); ovipositor sheath slender (fig. 128).

Distribution.— Afrotropical; only the type species known from the Cameroons.

Biology.— Unknown.

Korupia curvinervis spec. nov.
(figs 125-135)

Material.— Holotype, ♀ (BMNH), "Cameroun, Korup, 1981, D. Jackson".

Holotype, ♀, length of body 7.8 mm, of fore wing 7.0 mm.

Head.— Remaining antennal segments 17, length of third segment 1.4 times fourth segment, length of third and fourth segments 3.2 and 2.3 times their width, respectively; scapus subtruncate apically (fig. 128); length of maxillary palp 1.7 times height of head; length of eye in dorsal view 5.8 times temple (fig. 129); OOL:diameter of ocellus:POL = 3:6:3; frons smooth; vertex punctulate; face rugose, but largely smooth medially and near eyes (fig. 127); length of malar space 0.3 times basal width of mandible.

Mesosoma.— Length of antenna 1.5 times its height; precoxal sulcus finely crenulate and impressed only medially (fig. 128), remainder of mesopleuron smooth; mesoscutal lobes only finely punctulate; scutellum with few punctures; surface of propodeum coarsely reticulate (fig. 126), its median carina medium-sized and with narrow areola (fig. 126).

Wings.— Fore wing: r:3-SR:SR1 = 7:17:41; cu-a postfurcal and inclivous (fig. 125); 1-CU1:2-CU1 = 1:7; subbasal cell setose; 2-SR:3-SR:r-m = 13:17:8. Hind wing: M+CU:1-M = 19:26; 2-SC+R quadrate (fig. 125).

Legs.— Hind coxa with oblique striae postero-dorsally, and remainder finely punctate and ventrally slightly coriaceous; tarsal claws with large lobe (fig. 131); length of femur, tibia, and basitarsus of hind leg 5.2, 8.1 and 9.6 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus.

Metasoma.— Length of first tergite 1.3 times its apical width, its surface very coarsely longitudinally rugose, its median carina distinct (fig. 133); dorsope deep and dorsally situated (fig. 133); medio-basal area of second tergite triangular, with some rugae, and connected to medial carina (fig. 133); second-sixth tergites largely coarsely rugose (fig. 128); medial length of second tergite 2.3 times medial length (measured behind depression) of third tergite; sixth tergite rather concave medio-posteriorly; length of ovipositor sheath 0.09 times fore wing; sternites largely desclerotized and straight ventrally (fig. 128).

Colour.— Yellowish-brown; antenna (except pedicellus apically), temple (except ventrally), occiput, frons, vertex (including stemmaticum), and metasoma dorsally, black; face medio-dorsally, pterostigma, veins, coxa (except basally and apico-dorsally), trochantellus apico-dorsally, femur (except base), tibia (except base) and tarsus of hind leg, patches of sternites and ovipositor sheath dark brown; middle femur, middle and fore tarsi somewhat infuscate; wing membrane largely rather infuscate, especially near veins.

Myocron gen. nov.
(figs 54-100)

Type species: *Myocron antefurcale* spec. nov.

Etymology.— From "myo"(Greek for "close, shut") and "akron" (Greek for "top, tip") because of the partly closed hypopygium. Gender: neuter.

Diagnosis.— Antennal segments 47-56, apical segment with short spine (fig. 64); maxillary and labial palpi of both sexes slender (fig. 70), but strongly inflated in *M. voeltzkowi* (fig. 89) and somewhat so in *M. nigriceps*; hypostomal carina joining occipital carina ventrally or nearly so; occipital carina nearly complete, absent only near hypostomal carina; vertex smooth or sculptured (figs 55, 68); frons flat and usually smooth (fig. 85), except in *M. striatum* (fig. 94); malar suture short and usually shallow; eyes distinctly emarginate; antescutal depression narrow; prepectal carina complete; precoxal sulcus usually impressed only medially (fig. 70) or absent only posteriorly (fig. 57); notauli narrow (figs 60, 78); median carina of metanotum present anteriorly (fig. 60); propodeal areola absent and median carina irregular (figs 60, 78); propodeal tubercles absent; vein 1-SR of fore wing short, continuous with vein 1-M (fig. 92); vein m-cu of fore wing antefurcal to subinterstitial (figs 54, 67, 80), curved, gradually merging into vein 2-CU1, and converging to vein 1-M posteriorly (figs 54, 87); vein r of fore wing not continuous with posterior margin of pterostigma (figs 54, 80, 87), but sometimes subcontinuous (fig. 67); vein 3-SR of fore wing short (figs 54, 67); first subdiscal cell of fore wing elongated, vein 1-CU1 short or absent (figs 54, 67); vein cu-a of fore wing vertical (figs 54, 67); vein M+CU1 of fore wing straight; marginal cell of hind wing narrow apically (figs 54, 87); vein 1r-m of hind wing oblique; tarsal claws with medium-sized to minute lobe (figs 74, 86, 89); tarsi of males normal, similar to tarsi of females (fig. 65); middle and hind tibial spurs largely glabrous (figs 59, 62, 76, 77); apex of hind tibia with distinct comb of specialized setae at inner side (figs 62, 76); first tergite with large dorsope, its dorsal carinae absent, and with basal flanges (figs 56, 79, 93); second tergite with medium-sized to indistinct medio-basal triangular area and medio-longitudinal carina indistinct (figs 56, 79, 88); second-fifth tergites with sharp lateral crease, but crease of fifth tergite may be weak (fig. 57); hypopygium of female more or less convex ventrally and large, and apically truncate (figs 57, 70, 99); ovipositor slightly curved (fig. 70); ovipositor sheath rather slender (figs 70, 99), its length 0.06-0.08 times fore wing.

Distribution.— Afrotropical (including Malagasy).

Biology.— Unknown.

Note.— Considered to be the sister group of the Indo-Australian genus *Macrostomion* Szépligeti, 1900 because of the shape of the first tergite, the hind and middle tibial spurs, and the shape of the hypopygium. It is easily separable from it as follows:

1. Tarsal claws simple (fig. 108); vein 3-SR of fore wing long, more than twice length of vein 2-SR (fig. 101); vein cu-a of fore wing inclivous (fig. 101); hypopygium of ♀ straight ventrally or nearly so and smaller (fig. 106); dorsal carinae of first tergite present (fig. 111); (Indo-Australian) ..... ***Macrostomion*** Szépligeti
- Tarsal claws with (minute) lobe (figs 74, 86, 89); vein 3-SR of fore wing short, about as long as vein 2-SR (figs 54, 67); vein cu-a of fore wing vertical (figs 54,

67); hypopygium of ♀ more or less convex ventrally and large (figs 57, 70, 99); dorsal carinae of first tergite absent (figs 56, 91); (Afrotropical) ***Myocron*** gen. nov.

Key to species of the genus *Myocron* nov.

1. Vein cu-a of fore wing distinctly antefurcal (fig. 67); pterostigma completely yellowish-brown; area near anterior ocellus distinctly striate (fig. 68); tarsal claws with distinct lobe (fig. 74); vein 2-SC+R of hind wing subquadrangular (fig. 67); flagellum of ♀ yellowish-brown basally; pedicellus of ♂ enlarged (fig. 97); (S. & E. Africa) ..... ***M. antefurcale*** spec. nov.
- Vein cu-a of fore wing distinctly postfurcal (figs 54, 80, 84, 87); pterostigma variable, if completely yellowish-brown, then area near anterior ocellus smooth (fig. 55); tarsal claws usually with minute lobe (figs 82, 86, 89), but lobe sometimes rather large (fig. 66); vein 2-SC+R of hind wing variable (figs 54, 84); flagellum of ♀ more or less infuscate basally; pedicellus of ♂ not enlarged, but for several spp. the males are unknown 2
2. Mesosoma black; fourth-sixth metasomal tergites orange-brown; hind tarsus (except apex and base) ivory; frons smooth; pterostigma completely dark brown; ocelli large (fig. 83); (Zaire, Uganda, Tanzania) ..... ***M. albitarsus*** (Szépligeti)
- Mesosoma, fourth-sixth tergites and hind tarsus yellowish-brown; frons striate (fig. 94), if smooth (fig. 55) then pterostigma completely yellow; ocelli variable (figs 55, 85) 3
3. Ocelli large, POL 0.2-0.3 times diameter of posterior ocellus (figs 85, 90); pterostigma completely yellowish; tarsal claws with minute lobe (figs 86, 89); frons smooth (figs 85, 90); face shallowly longitudinally impressed beside clypeus; vein 2-SC+R of hind wing longitudinal (figs 84, 87), but quadrate in *M. nigriceps* 4
- Ocelli medium-sized, POL about half diameter of posterior ocellus (figs 55, 94); pterostigma variable, if completely yellowish then tarsal claws with distinct lobe (fig. 66); frons variable (figs 55, 94); face slightly convex beside clypeus (fig. 63); vein 2-SC+R of hind wing quadrate (figs 54, 92), but longitudinal in *M. voeltzkowi* 6
4. Head completely yellowish; vein 2-SC+R of hind wing longitudinal (figs 84, 87); OOL about 0.4 times diameter of posterior ocellus (figs 85, 90); medio-basal area of second tergite small (figs 88, 91); (E. Africa) 5
- Head largely dark brown; vein 2-SC+R of hind wing quadrate (cf. fig. 54); OOL about 0.2 times diameter of posterior ocellus (cf. fig. 83); medio-basal area of second tergite comparatively large and triangular (cf. fig. 56); (W. Africa) ..... ***M. nigriceps*** (Szépligeti)
5. Vein r of fore wing 0.3-0.4 times vein 3-SR and vein 3-SR about as long as vein r-m (fig. 84); first metasomal tergite less narrowed basally (fig. 91); hypopygium of ♀ partly closed posteriorly (fig. 99) ..... ***M. macrocellatum*** spec. nov.
- Vein r of fore wing about 0.5 times vein 3-SR and vein 3-SR somewhat longer than vein r-m (fig. 87); first tergite more narrowed basally (fig. 88); hypopygium of ♀ open posteriorly ..... ***M. macrocellatum*** form A
6. Tarsal claws with distinct lobe, which remains far removed from apical tooth (fig. 66); frons and vertex smooth (fig. 55); pterostigma completely yellow; meso-

scutum completely yellowish-brown; mesopleuron largely smooth anteriorly (fig. 57) 7

- Tarsal claws with minute lobe (fig. 95); frons obliquely striate (fig. 94); vertex rugose (fig. 94); apical half of pterostigma of ♀ infuscated; mesoscutum at least partly dark brown or infuscate; mesopleuron distinctly rugose anteriorly ..... ***M. striatum*** spec. nov.

7. Second metasomal tergite with indistinct triangular medio-basal area (fig. 56); vein 2-SC+R of hind wing quadrate (fig. 54); maxillary palp of ♂ slender, similar to palp of ♀ (fig. 57); mesoscutal lobes and scutellum largely smooth (fig. 60); (continental Africa) ..... ***M. persimile*** (Szépligeti)

- Second tergite with wide and short medio-basal area (cf. fig. 79); vein 2-SC+R of hind wing longitudinal (cf. fig. 84); maxillary palp of ♂ strongly inflated (fig. 89), but ♀ unknown; mesoscutal lobes and scutellum superficially punctate or punctulate; (Malagasy) ..... ***M. voeltzkowi*** (Szépligeti)

Myocron albitarsus (Szépligeti, 1911) comb. nov.
(figs 80-83, 93)

Megarhogas albitarsus Szépligeti, 1911: 410.
Cystomastax albitarsus; Shenefelt, 1975: 1195.

Material.— Lectotype here designated, ♂ (ZMB), "Exped.: Herzog Adolf Friedrich z. Mecklenburg", "[E. Zaire], Nördl. v. Alb. Edw. See, Ruwensori Fuss, Westseite, 2.[19]08", "Type", "*Megarhogas albitarsus* m. (in Szépligeti's handwriting)". The only paralectotype, a ♂ from Tanzania was not examined. 3 ♀♀ (BMNH, RMNH), "Uganda, Ruwenzori Range, Bugoye, 4500 ft, 5-10.ix.1952, D.S. Fletcher", "Ruwenzori Exped., B.M. 1952-566".

Description.— (If not specified, then similar to *M. persimile*), length of body 8.7 mm, of fore wing 6.3-6.4 mm.

Head.— Frons and vertex smooth; ocelli large (fig. 83), OOL:diameter of ocellus:POL = 2:7:1 (♀) or 1:10:1 (♂); length of eye in dorsal view 4.4-4.7 times temple (fig. 83); length of maxillary palp 1.7-2.0 times height of head; face near clypeus longitudinally depressed.

Mesosoma.— Mesoscutum with some superficial punctures; antescutal depression present, rather narrow to medium-sized; precoxal and pleural sulci somewhat more sculptured than in *M. persimile*.

Wings.— Fore wing: r:3-SR:SR1 = 11:22-28:66-73; 2-SR:3-SR:r-m = 10-11:11:7; 1-CU1:2-CU1 = 1:11-12. Hind wing: 2-SC+R longitudinal (fig. 80).

Legs.— Tarsal claws with minute lobe (fig. 82); length of femur, tibia and basitarsus of hind leg 6.7-7.2, 11.2-11.7, and 17 times their width, respectively; length of both hind tibial spurs about 0.2 times hind basitarsus.

Metasoma.— Length of first tergite 2.2 times its apical width, its dorso-lateral carina narrow baso-laterally and carinae in dorsal view protruding as tubercles (fig. 93); medio-basal area of second tergite narrow; hypopygium of ♀ more convex ventrally than in *M. persimile*, ovipositor strongly curved downwards; length of ovipositor sheath 0.06 times fore wing.

Colour.— Black; apex of first tergite, second (except medially) and following ter-

gites orange-brown; hind tarsus (except base) dark brown; hind coxa, hind trochantellus and base of hind tibia black, but remainder of legs, tegulae and antenna more or less dark brown; palpi ivory (but bases and apices brownish); pterostigma and veins brown; wing membrane rather infuscated.

Note.— The lectotype is badly damaged: the metasoma, all claws, left fore wing and part of antennae are missing.

Myocron antefurcale spec. nov.
(figs 67-79, 97, 98)

Material.— Holotype, ♀ (RMNH), "Museum Leiden, S. Africa, Transvaal, Pafuri, Krug. Nat. Park, L. Braack", "22°27'S,31°17'E, 17.v.-9.vi.1979, Malaise-trap". Paratypes: 9 ♀♀ + 6 ♂♂; 2 ♀♀ (Quicke Collection), "Voi River Valley, Pipeline Roads, Kenya, vii.1977, D. Quicke"; 6 ♀♀ + 5 ♂♂ (BMNH, RMNH), "S. Africa, R.E. Turner, Brit. Mus. 1923/24", "Port St. John, Pondoland, iii.25-31, 1923" (2 ♂♂), iv.1-5, 1923 (1 ♀), vi.12-30, 1923 (2 ♀♀), x.1923 (2 ♀♀ + 2 ♂♂), xi.1923 (1 ♂) or xii.1923 (1 ♀); 1 ♀ + 1 ♂ (BMNH), "Natal, Durban, J.P. Cregoe, 1904-06".

Holotype, ♀, length of body 8.5 mm, of fore wing 6.3 mm.

Head.— Antennal segments 50, length of third segment 1.4 times fourth segment, length of third, fourth and penultimate segments 3.8, 2.8, and 1.9 times their width, respectively; scapus strongly oblique apically (fig. 70); length of maxillary palp 1.7 times height of head; length of eye in dorsal view 2.9 times temple (fig. 68); OOL:diameter of ocellus:POL = 2:5:3; frons smooth; vertex coarsely punctate, but rugose-striate near stemmaticum (fig. 68); face rugose, but medio-ventrally smooth (fig. 71); length of malar space 0.6 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; precoxal sulcus impressed only medially, narrow and finely crenulate (fig. 70), remainder of mesopleuron smooth, except for some minute punctures; mesoscutal lobes sparsely punctate; scutellum smooth; surface of propodeum rugulose, with coarse irregular median carina, medio-posteriorly transversely rugose, and with some short crenulae posteriorly (fig. 78).

Wings.— Fore wing: r:3-SR:SR1 = 7:11:13; cu-a distinctly antefurcal and vertical (fig. 67); 2-M+CU1:1+2-CU1 = 2:25; subbasal cell sparsely but regularly setose; 2-SR:3-SR:r-m = 9:11:6. Hind wing: M+CU slightly shorter than 1-M (fig. 67); 2-SC+R subquadrate (fig. 72).

Legs.— Hind coxa sparsely punctulate; tarsal claws with acute lobe (fig. 74); length of femur, tibia and basitarsus of hind leg 6.4, 10.4 and 12 times their width, respectively; length of hind tibial spurs 0.25 and 0.3 times hind basitarsus.

Metasoma.— Length of first tergite 1.8 times its apical width, its surface rugose and its dorsal carinae absent (fig. 79); dorsope deep; second-fifth tergites coarsely longitudinally rugose; medio-basal area of second tergite minute and transverse (fig. 79); sixth tergite coriaceous; seventh tergite emarginate dorso-apically, smooth and largely retracted (fig. 70); length of ovipositor sheath 0.07 times fore wing; hypopygium enlarged, convex and closed ventrally (fig. 70).

Colour.— Yellowish-brown (including pterostigma); ovipositor sheath (except basally) and stemmaticum largely dark brown; wing membrane subhyaline.

Variation.— Antennal segments of ♀ 50(1), 53(1), 55(1), of ♂ 53(1) or 56(1); length

of fore wing 6.3-8.0 mm, of body 8.1-9.5 mm; pedicellus of ♂ infuscated and enlarged (fig. 97); one paratype has vein cu-a of fore wing reclivous and vein 2-SR straight; frons may be striate laterally; length of first tergite 1.5-2.1 times its apical width; length of ovipositor sheath 0.06-0.08 times fore wing.

Myocron macrocellatum spec. nov.
(figs 84-86, 91, 99)

Material.— Holotype, ♀ (BMNH), "Nairobi, Karura Forest, 13.xii.1970", "Kenya, A.E. Stubbs, B.M. 1972-211".

Description.— (If not specified, then similar to *M. persimile*), length of body 7.6 mm, of fore wing 6.3 mm.

Head.— Antenna incomplete, remaining segments 41; frons and vertex smooth; ocelli large (fig. 85), OOL:diameter of ocellus:POL = 5:12:4; length of eye in dorsal view 4.0 times temple (fig. 85); length of maxillary palp 1.7 times height of head; face shallowly impressed laterally.

Mesosoma.— Mesoscutum sparsely punctate; antescutal depression narrow; precoxal sulcus similar to sulcus of *M. persimile*.

Wings.— Fore wing: r:3-SR:SR1 = 7:18:70; 1-CU1:2-CU1 = 1:11; 2-SR:3-SR:r-m = 13:9:9. Hind wing: 2-SC+R longitudinal (fig. 84).

Legs.— Tarsal claws with minute lobe (fig. 86); length of femur, tibia and basitarsus of hind leg 7.2, 10.6 and 15 times their width, respectively; length of hind spurs 0.25 and 0.20 times hind basitarsus.

Metasoma.— Length of first tergite 2.1 times its apical width, its dorso-lateral carinae somewhat widened baso-laterally, and in dorsal view carinae protruding as tubercles; medio-basal area of second tergite narrow; hypopygium of ♀ slightly curved ventrally, partly closed posteriorly, its ventral margin angular subapically (fig. 99); length of ovipositor sheath 0.06 times fore wing.

Colour.— Yellowish-brown; stemmaticum, ovipositor sheath, telotarsi, veins C+SC+R and basal half of 1+2A of fore wing dark brown; flagellum and hind tibia infuscate; palpi pale yellowish, but infuscate apically; pterostigma largely pale yellowish; wing membrane subhyaline.

Myocron macrocellatum spec. nov. form A
(figs 87, 88, 90)

Material.— 1 ♀ (BMNH), "Kenya; Meru, 5100 ft, vii.1943", "V.G.L. van Someren Collection, Brit. Mus. 1959-468".

Description.— (If not specified, then similar to *M. macrocellatum*), length of body 7.4 mm, of fore wing 6.6 mm.

Head.— OOL:diameter of ocellus:POL = 5:12:3; length of eye in dorsal view 5.4 times temple (fig. 90).

Mesosoma.— Antescutal depression medium-sized and deep; precoxal sulcus smooth.

Wings.— Fore wing: r:3-SR:SR1 = 6:11:34; 2-SR:3-SR:r-m = 12:11:8; 1-CU1:2-CU1 = 2:23. Hind wing: 2-SC+R short longitudinal (fig. 87).

Legs.— Length of femur, tibia and basitarsus of hind leg 7.3, 13.5 and 15 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus.

Metasoma.— Length of first tergite 2.3 times its apical width, its dorso-lateral carinae slightly widened baso-laterally and in dorsal view nearly rectangular (fig. 88); medio-basal area of second tergite narrow; hypopygium of ♀ distinctly convex ventrally and open posteriorly; length of ovipositor sheath 0.05 times fore wing.

Colour.— As of typical *M. macrocellatum*.

Note.— May be a species distinct from *M. macrocellatum* but because only one specimen is available it seems better to refrain from naming it now.

Myocron nigriceps (Szépligeti, 1914) comb. nov.

Megarhogas nigriceps Szépligeti, 1914b: 203.
Cystomastax nigriceps; Shenefelt, 1975: 1196.

Material.— Holotype, ♂ (ZMB), "W-Afrika, I. Fernando-Poo, L. Conradt S.V.", "*Megarhogas nigriceps* Sz. (in Szépligeti's handwriting)".

Description.— (If not specified, then similar to *M. macrocellatum*), holotype, ♂, length of body 7.2 mm, of fore wing 5.8 mm.

Head.— Antenna incomplete, remaining segments 11, length of third antennal segment 1.3 times fourth segment, length of third and fourth segments 4.6 and 3.6 times their width, respectively; frons and vertex smooth; ocelli larger than those of *M. macrocellatum*, OOL:diameter of ocellus:POL = 2:11:2; length of eye in dorsal view 4.6 times temple; length of maxillary palp 1.8 times height of head; segments of labial palp slender; third and fourth segments of maxillary palp somewhat widened, but still cylindrical; length of malar space 0.2 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; antescutal depression indistinct; mesoscutum and scutellum smooth.

Wings.— Fore wing: r:3-SR:SR1 = 10:19:57; 1-CU1:2-CU1 = 3:40; cu-a nearly as oblique as 3-CU1; 2-SR:3-SR:r-m = 23:19:15. Hind wing: 2-SC+R quadrate; M+CU as long as 1-M.

Legs.— Tarsal claws with minute lobe (cf. fig. 86); length of femur, tibia and basitarsus of hind leg 7.1, 10.3 and 13 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus.

Metasoma.— Length of first tergite 1.9 times its apical width, its median carina distinct; medio-basal area of second tergite comparatively large and triangular (cf. fig. 56); first-sixth tergites granulate-rugose, but fifth tergite apically, posterior half of sixth and seventh tergites only granulate.

Colour.— Yellowish-brown (including pterostigma); head (but malar space, clypeus ventrally and mandibles pale yellowish), fore and middle telotarsi, and hind telotarsi dorsally, dark brown; palpi, tegulae and remainder of hind tarsus (except its brownish base) pale yellowish or ivory; wing membrane slightly infuscate.

Myocron persimile (Szépligeti, 1914) comb. nov.
(figs 54-66, 100)

Megarhogas persimilis Szépligeti, 1914b: 203.
Cystomastax persimilis; Shenefelt, 1975: 1197.

Material.— Holotype, ♀ (ZMB), "Nyassa-See [= SW. Tanzania], Langenburg, iv.[18]98, Fülleborn S.", "*Megarhogas persimilis* m. (in Szépligeti's handwriting)"; 1 ♀ (RMNH), "Museum Leiden, Ghana: Kumasi: Campus U.S.T., at light, 1979, A.B. Stam, no. 11.008"; 1 ♂ (RMNH), "Africa, Tchad, Bebidija, 400 m, near Moundou, L[ight], 13.x.1970, J.H. & M. Lourens".

Holotype, ♀, length of body 7.6 mm, of fore wing 6.4 mm.

Head.— Remaining antennal segments 29 (complete in the ♀ from Ghana with 47 segments), length of third segment 1.1 times fourth segment, length of third and fourth antennal segments 4.2 and 3.8 times their width, respectively (penultimate segment of ♀ from Ghana 1.5 times); scapus strongly oblique apically (fig. 58); length of maxillary palp 1.7 times height of head; length of eye in dorsal view 4.0 times temple (cf. fig. 55); OOL:diameter of ocellus:POL = 7:10:5; frons and vertex smooth; face largely transversely rugulose, but smooth medio-ventrally (fig. 63); length of malar space 0.2 times basal width of mandible;

Mesosoma.— Length of mesosoma 1.4 times its height; precoxal sulcus present (except posteriorly), narrow, finely crenulate and shallow (fig. 57), remainder of mesopleuron smooth; mesoscutal lobes largely smooth; scutellum smooth; surface of propodeum largely densely micro-sculptured, and with some transverse rugae, and its median carina short, connected to pair of irregular rugae, more separated than figured non-type specimen (fig. 60), and carina indistinct posteriorly.

Wings.— Fore wing: r:3-SR:SR1 = 11:22:67; cu-a postfurcal and vertical (fig. 54); 1-CU1:2-CU1 = 3:53; subbasal cell normally setose; 2-SR:3-SR:r-m = 22:22:17. Hind wing: M+CU:1-M = 21:18; 2-SC+R small and quadrate (fig. 54).

Legs.— Hind coxa smooth; tarsal claws with distinct lobe, which remains far removed from apical tooth (fig. 66); length of femur, tibia and basitarsus of hind leg 7.2, 10.8 and 14 times their width, respectively; length of hind tibial spurs 0.20 and 0.25 times hind basitarsus.

Metasoma.— Length of first tergite 1.7 times its apical width, its surface rugose, but anteriorly more densely sculptured and rugulose, its median carina obsolescent anteriorly and distinct posteriorly (fig. 57); dorsope deep (fig. 56); medio-basal area of second tergite rather small and triangular, connected to a median carina (fig. 56); second-fifth tergites longitudinally rugose and granulate; sixth tergite granulate (fig. 57); length of ovipositor sheath 0.06 times fore wing; hypopygium enlarged, ventrally nearly straight and closed (fig. 57).

Colour.— Yellowish-brown; stemmaticum largely, antenna (except scapus, pedicellus, and annellus), ovipositor sheath and telotarsi dark brown; meso- and metasoma slightly darker dorsally than ventrally; veins brown; ptero- and parastigma, and apex of vein C+SC+R yellow; wing membrane slightly infuscated.

Variation.— The male has the length of the fore wing 7.1 mm, of body 9.6 mm, the precoxal sulcus largely smooth, vein m-cu of fore wing distinctly antefurcal, pedicellus normal (fig. 100), third and fourth segments of maxillary palp rather widened, but smooth and not inflated; length of first tergite 2.0 times its apical

width; sixth metasomal terite striate; apical half of pterostigma infuscated. The female from Ghana has OOL 0.8 times diameter of posterior ocellus, length of maxillary palp 1.5 times height of head, length of eye in dorsal view 5.2 times temple, and third antennal segment 1.2 times fourth segment.

Myocron striatum spec. nov.
(figs 92, 94-96)

Material.— Holotype, ♀ (BMNH), "Cameroun: Nkoemvon, 2.xi-13.xii.[19]80, D. Jackson". Paratype: 1 ♀ (RMNH): topotypic and same date.

Holotype, ♀, length of body 9.1 mm, of fore wing 7.5 mm. If not specified in the following description then similar to *M. persimile*.

Head.— Remaining antennal segments 37; frons coarsely obliquely striate (fig. 94); vertex rugose (fig. 94), and with distinct medio-longitudinal groove; OOL:diameter of ocellus:POL = 5:9:7; length of eye in dorsal view 4.0 times temple (fig. 94); length of maxillary palp 2.0 times height of head; face slightly convex laterally.

Mesosoma.— Mesoscutum rather densely punctulate; antescutal depression narrow; precoxal sulcus distinctly sculptured and mesopleuron distinctly rugose anteriorly.

Wings.— Fore wing: r:3-SR:SR1 = 9:15:40; 2-SR:3-SR:r = 12:15:8; 1-CU1:2-CU1 = 2:27. Hind wing: 2-SC+R quadrate (fig. 92).

Legs.— Tarsal claws with minute lobe, which remains far removed from apical tooth (fig. 95); length of femur, tibia and basitarsus of hind leg 7.0, 10.3, and 12.5 times their width, respectively; hind tibial spurs 0.25 and 0.30 times hind basitarsus.

Metasoma.— Length of first tergite 1.9 times its apical width, its dorso-lateral carinae somewhat widened baso-laterally and carinae in dorsal view distinctly protruding as tubercles (fig. 96); mediobasal area of second tergite small and triangular (fig. 96); sixth tergite distinctly rugose; hypopygium of ♀ distinctly convex ventrally (more than in *M. persimile* (fig. 57)), and open posteriorly; length of ovipositor sheath 0.06 times fore wing.

Colour.— Yellowish-brown; stemmaticum black; antenna basally (but scapus medially and pedicellus apically yellowish), vertex and occiput medially, mesoscutum largely, apical half and posterior rim of pterostigma, vein 1+2A of fore wing, and ovipositor sheath dark brown; face, temple, palpi completely, pronotum, tegulae, all tibiae and tarsi, mesosoma laterally and ventrally, metasoma ventrally pale(r) yellowish; wing membrane rather infuscate.

Variation.— Paratype: antennal segments 57; length of body 7.6 mm, of fore wing 6.4 mm; length of first metasomal tergite 2.0 times its apical width; mesoscutum largely only infuscate; vertex and occiput yellowish; scapus and pedicellus nearly completely yellowish.

Myocron voeltzkowi (Szépligeti, 1913) comb. nov.
(fig. 89)

Cystomastax voeltzkowi Szépligeti, 1913: 424; Shenefelt, 1975: 1197.

Material.— Holotype, ♂ (ZMB), "Madagascar, Fénérivo, vii.1904, Voeltzkow S.", "Type", "*Cystomastax Voeltzkowi* n. sp. [in Szépligeti's handwriting]".

Holotype, ♂, length of body 7.0 mm, of fore wing 5.5 mm.

Head.— Remaining antennal segments 9, length of third segment 1.3 times fourth segment, length of third and fourth segments 5.2 and 4.0 times their width, respectively; scapus strongly oblique apically and shape of pedicellus normal; length of maxillary palp 1.9 times height of head; segments of labial palp slender, but third-fifth segments of maxillary palp strongly inflated with their surface smooth (fig. 89); length of eye in dorsal view 2.8 times temple; OOL:diameter of ocellus:POL = 4:6:4; frons and vertex smooth; face transversely rugulose and medially largely smooth, slightly convex near clypeus; length of malar space 0.3 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.3 times its height; antescutal depression deep and medium-sized; precoxal sulcus shallowly crenulate and posteriorly absent; remainder of mesopleuron smooth; mesoscutal lobes superficially punctate; scutellum punctulate; surface of propodeum finely and densely rugulose, with transverse rugae and an irregular median carina.

Wings.— Fore wing: r:3-SR:SR1 = 10:26:88; cu-a postfurcal and vertical; 1-CU1:2-CU1 = 2:23; subbasal cell setose; 2-SR:3-SR:r-m: 24:20:15. Hind wing: M+CU:1-M = 21:18; 2-SC+R short and longitudinal.

Legs.— Hind coxa smooth; tarsal claws with distinct lobe, which remains far removed from apical tooth; length of femur, tibia and basitarsus of hind leg 6.8, 9.8 and 13.4 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus.

Metasoma.— Length of first tergite 1.6 times its apical width, its surface coarsely rugose, with distinct median carina; dorsope large and deep; medio-basal area of second tergite wide and short, transverse and connected to distinct median carina; second-fifth tergites longitudinally rugose; apex of fifth, sixth and seventh tergites mainly granulate.

Colour.— Yellowish-brown; stemmaticum dark brown; tegulae, para- and pterostigma, and veins pale yellowish; wing membrane subhyaline; flagellum basally, and apex of hind tibia slightly infuscate.

Note.— Closely related to *M. persimile* from continental Africa, but *M. persimile* has the medio-basal area of the second tergite distinctly triangular (fig. 56), the vein 2-SC+R of the hind wing quadrate (fig. 54), the mesoscutum and the scutellum smooth, and the maxillary palp segments of the male slender, similar to the palp of the female, fig. 57).

Myoporhogas Brues, 1926
(figs 243-253)

Microrhogas Szépligeti, 1914a: 183 (nec Cameron, 1910); Shenefelt, 1975: 1204. Type species (by monotypy): *Microrhogas ocellaris* Szépligeti, 1914 [examined].
Myoporhogas Brues, 1926: 384, replacement name.

Diagnosis.— Antennal segments about 38, its apical segment with spine (figs 246, 250); maxillary and labial palp normal (fig. 247); hpystomal carina joining occipital carina ventrally; occipital carina incomplete, medio-dorsally interrupted; vertex coriaceous; frons smooth; malar suture absent; eyes distinctly emarginate and strongly enlarged (figs 244, 245); ocelli large (fig. 244); antescutal depression narrow; prepectal carina complete; precoxal sulcus absent (fig. 247); notauli largely absent on mesoscutal disc (fig. 248); median carina of metanotum complete (fig. 248); propodeal areola and median carina absent; propodeal tubercles absent, but propodeum shortened and posterior corners angulate (fig. 247); vein 1-SR of fore wing short and nearly continuous with vein 1-M (fig. 243); vein m-cu of fore wing antefurcal, straight, angled with vein 2-CU1, and distinctly converging to vein 1-M posteriorly (fig. 243); vein r of fore wing long; vein 3-SR of fore wing somewhat longer than vein 2-SR (fig. 243); first subdiscal cell of fore wing medium-sized (fig. 243), vein 1-CU1 short and horizontal; vein cu-a of fore wing inclivous; vein M+CU1 of fore wing straight; marginal cell of hind wing parallel-sided; vein 1r-m of hind wing rather short and comparatively less oblique (fig. 243); vein m-cu of hind wing absent; tarsal claws setose and without lobe (fig. 249); middle and hind tibial spurs straight and setose (fig. 252); apex of hind tibia without comb of specialized setae at inner side (fig. 252); first tergite with medium-sized dorsope, without basal flanges, and its dorsal carinae united but not arched (fig. 253); second tergite without medio-basal triangular area or medio-longitudinal carina; second-fourth tergites with sharp lateral crease (fig. 247); hypopygium of female small, ventrally straight and apically truncate; ovipositor sheath slender and short (fig. 247).

Distribution.— Afrotropical: only the type species from Kenya is known.

Biology.— Unknown.

Note.— I refrain from including *Myoporhogas* in *Aleiodes* (despite its similarity), because of its slender ovipositor sheath (fig. 247), and because the vein m-cu of fore wing is posteriorly more converging to vein 1-M than in *Aleiodes*.

Orthorhogas Granger, 1949
(figs 25-36)

Cystomastax subgenus *Orthorhogas* Granger, 1949: 159. Type species (designated by Shenefelt, 1975): *Cystomastax seyrigi* Granger, 1949 [examined].
Orthorhogas; Shenefelt, 1969: 99-100 & 1975: 1205.

Diagnosis.— Antennal segments 54-58, apical segment without distinct spine (fig. 26); maxillary and labial palpi of female normal, of male second and third labial palp segments and fourth maxillary palp segment vesiculate; hypostomal carina about joining occipital carina ventrally; occipital carina complete, but weakly developed ventrally; frons and vertex flat and smooth (figs 27, 30); malar suture shallow dorsally, and deeper ventrally; eyes emarginate; antescutal depression narrow and deep; prepectal carina completely absent (fig. 27); precoxal sulcus narrow and hardly impressed (fig. 27); notauli rather wide and complete (fig. 33); median carina of metanotum complete; propodeal areola present, but narrow; propodeal tubercels absent; vein 1-SR of fore wing medium-sized, continuous with vein 1-M (fig. 25);

vein m-cu of fore wing just antefurcal, straight, angled with vein 2-CU1, and subparallel with vein 1-M (fig. 25); vein r of fore wing discontinuous with posterior border of pterostigma; vein 3-SR of fore wing much longer than vein 2-SR (fig. 25); first subdiscal cell of fore wing medium-sized and vein 1-CU1 short (fig. 25); vein cu-a of fore wing medium-sized and nearly vertical; vein M+CU1 of fore wing straight; marginal cell of hind wing parallel-sided; vein 1r-m of hind wing rather short (fig. 25); tarsal claws setose and without lobe (fig. 34); tarsi of males slender, similar to tarsi of female (fig. 35); middle and hind tibial spurs largely setose (figs 31, 32); apex of hind tibia with comb of dark specialized setae at inner side (fig. 31); first tergite with large dorsope, its dorsal carinae united and enclosing a triangular area (fig. 36), and without basal flanges (fig. 36); second tergite with wide medio-basal triangular area and with part of medio-longitudinal carina (fig. 36); second-fifth tergites with sharp lateral crease (fig. 27); hypopygium of female large, slightly surpassing apex of metasoma, convex ventrally and truncate apically (fig. 27); ovipositor strongly curved (fig. 27); ovipositor sheath rather slender (fig. 27) and about 0.09 times fore wing.

Distribution.— Afrotropical: only the type species from Malagasy is known.

Biology.— Unknown.

Pholichora gen. nov.
(figs 216-233)

Type species: *Hemigyroneuron madagascariensis* Granger, 1949.

Etymology.— From "pholis" (Greek for "spot") and "chora" (Greek for "space"), because of the spotted large subdiscal cell of fore wing (figs 216, 227, 229, 232). Gender: feminine.

Diagnosis.— Antennal segments 65-75, densely setose, with many tyloids, its apical segment with spine (fig. 219); scapus dorsally somewhat longer than ventrally (fig. 221); maxillary and labial palpi slender (fig. 221); hypostomal carina not joining occipital carina ventrally; occipital carina incomplete, absent ventrally and obsolescent medio-basally; vertex sculptured, aciculate, punctate or rugose (figs 224, 233); frons largely smooth; malar suture absent; eyes distinctly emarginate; antescutal depression narrow or obsolescent; prepectal carina complete; precoxal sulcus absent; notauli shallow and medium-sized (fig. 222); median carina of metanotum short to long, not protruding; propodeal areola and propodeal tubercles absent; propodeal spiracle oval to wide elliptical; vein 1-SR of fore wing short to long, continuous with vein 1-M (figs 216, 228, 231); vein m-cu of fore wing antefurcal, straight, angled with vein 2-CU1 and parallel with vein 1-M posteriorly or slightly diverging (figs 216, 228, 231); vein r of fore wing long, discontinuous with posterior margin of pterostigma; vein 3-SR of fore wing somewhat longer than vein 2-SR (figs 216, 231); subbasal cell rather widened, largely glabrous and with one or pair of scleromes or patches (figs 216, 228, 231, 232); vein 1-1A of fore wing curved subapically; first subdiscal cell of fore wing rather robust and short, vein 1-CU1 more or less oblique (figs 216, 228, 231); vein cu-a of fore wing distinctly curved to base of wing posteriorly (figs 226, 229, 232); vein M+CU1 of fore wing with weak subapical bend (figs 216, 231); vein m-cu of hind wing absent; vein M+CU of hind wing distinctly longer than vein 1-M;

marginal cell of hind wing strongly widened apically (fig. 228); vein 1r-m of hind wing long and oblique; vein 2-SC+R of hind wing very short and subquadrate (figs 216, 231); tarsal claws pectinate and without lobe (figs 218, 230); tarsi of males normal, similar to tarsi of females (fig. 225); apex of hind tibia without comb of specialized setae at inner side (fig. 217); middle and hind tibial spurs straight and setose (fig. 217); first tergite with large dorsope, its dorsal carinae united near level of spiracles and without basal flanges (fig. 223); second tergite with distinct medio-basal triangular area, connected to medio-longitudinal carina; second and base of third tergite with sharp lateral crease (fig. 221); hypopygium of female medium-sized, ventrally straight and apically truncate (fig. 221); ovipositor sheath robust (fig. 221) and its length 0.05-0.1 times fore wing

Distribution.— Afrotropical: three species.

Biology.— Unknown.

Note.— The wing venation of *Pholichora* resembles that of *Gyroneuron* Kokujev, 1901, but *Gyroneuron* has a distinct comb at the inner side of the hind tibia apically, the tarsal claws with distinct lobe and pecten, the vein M+CU1 of fore wing strongly sinuate, the dorsal carinae of first tergite remaining more or less separated, the propodeum with small tubercles and the subbasal cell of fore wing setose.

Key to species of the genus *Pholichora* nov.

1. Vein cu-a of fore wing curved and widened (figs 227, 232); median carina of propodeum at least posteriorly absent (fig. 223); antennal segments of ♀ 71-75 (unknown for *P. bipanna*); second metasomal tergite (punctate-)rugose (figs 221, 223); prepectal carina interrupted dorsally (fig. 221); vein 1-SR of fore wing robust (figs 216, 231); subbasal cell of fore wing with one large or a pair of well-defined sclerotized sclerome (figs 226, 232) 2
- Vein cu-a of fore wing straight and slender (fig. 229); median carina of propodeum complete; antennal segments of ♀ 65-67; second tergite striate; prepectal carina complete dorsally; vein 1-SR of fore wing slender (fig. 228); subbasal cell of fore wing without well-defined sclerome, only with a pair of small vaguely limited and yellow patches (fig. 229); (Malagasy) ..... ***P. inopina*** spec. nov.
2. Subbasal cell of fore wing with one large, distinctly sclerotized sclerome (figs 216, 226); vein 1-CU1 of fore wing straight (fig. 216); pectination of tarsal claws short (fig. 218); length of eye in dorsal view about 2.5 times temple (fig. 224); temples sparsely punctate (fig. 224); posterior ocelli distinctly removed from eyes (fig. 224); frons with curved carina in front of anterior ocellus (figs 224, 227); first subdiscal cell of fore wing comparatively slender (fig. 216); (Malagasy) ..... ***P. madagascariensis*** (Granger)
- Subbasal cell of fore wing with a pair of small sclerome (figs 231, 232); vein 1-CU1 of fore wing curved (figs 231, 232); pectination of tarsal claws longer (fig. 230); length of eye in dorsal view about 4 times temple (fig. 233); temples finely rugose (fig. 233); posterior ocelli close to eyes (fig. 233); frons without curved carina posteriorly (fig. 233); first subdiscal cell of fore wing comparatively high and short (fig. 231); (W. Africa) ..... ***P. bipanna*** spec. nov.

Pholichora bipanna spec. nov.
(figs 230-233)

Material.— Holotype, ♀ (BMNH), "N. Nigeria: Zaria, Samaru. 15.ix.1969, S.A. Ogidi, Light trap".

Description.— (If not specified then similar to type species), holotype, ♀, length of body 9.5 mm, of fore wing 7.6 mm.

Head.— Remaining antennal segments 39, length of third segment 1.3 times fourth segment, length of third and fourth segments 1.5 and 1.2 times, respectively; length of maxillary palp 1.1 times height of head; length of eye in dorsal view 3.8 times temple; temples directly narrowed behind eyes (fig. 233); occipital carina narrowly interrupted dorsally (fig. 233), and not meeting hypostomal carina ventrally; OOL:diameter of posterior ocellus:POL = 1:13:9; face and clypeus densely and finely rugose; frons flat and smooth; vertex finely rugose; length of malar space 0.5 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; antescutal depression rather deep and narrow; pronotum largely rugulose dorsally and remainder punctulate; pleural sulcus finely crenulate; metapleuron rugose; metapleural flange wide and obtuse; mesoscutum densely rugulose-coriaceous (coarser than in *P. madagascariensis*) and matt; notauli shallow and rugose; scutellar sulcus deep, wide, and with five longitudinal carinae; scutellum rugulose-coriaceous; side of scutellum coarsely and irregularly rugose; median carina only distinct in anterior half of metanotum and not protruding; propodeum coarsely and densely vermiculate-rugose and its median carina absent.

Wings.— Fore wing: 1-SR rather wide (fig. 231); r:3-SR:SR1 = 10:15:39; m-cu slightly diverging from 1-M posteriorly (fig. 231); 2-SR:3-SR:r-m = 12:15:9; 1-CU1:2-CU1 = 13:11; 1-CU1 distinctly curved (fig. 231); cu-a curved to base of wing and widened medially (fig. 231); subbasal cell with pair of well-defined pale scleromes and largely glabrous (fig. 232); M+CU1 rather curved apically (figs 231, 232); first subdiscal cell high and short (fig. 231). Hind wing: M+CU:1-M = 25:15.

Legs.— Hind coxa largely rugulose; all tarsal claws with comparatively long pectination (fig. 230); length of femur, tibia and tarsus of hind leg 4.7, 8.9 and 5.1 times their width, respectively; length of hind tibial spurs 0.4 and 0.5 times hind basitarsus.

Metasoma.— Length of first tergite 0.8 times its apical width, its surface irregular dense rugose, dorsope medium-sized, and dorsal carinae united near level of spiracles, connected to a complete median carina; medio-basal area of second tergite triangular, rather large and connected to a complete median carina; second tergite irregularly and densely rugose; third tergite largely rugulose; following tergites microsculptured and rather matt; length of ovipositor sheath 0.09 times fore wing.

Colour.— Yellowish-brown; antenna (except annellus) and ovipositor sheath (except yellowish base) dark brown; stemmaticum black; ptero- and parastigma, and veins brownish-yellow; scleromes of fore wing pale yellowish; wing membrane slightly yellowish.

Note.— May be closely related to *Hemigyroneuron apicale* Brues, 1926 (references: *H. apicale* Brues, 1926: 256-257; Shenefelt, 1975: 1199) from Natal, South Africa. Unfortunately the holotype (Durban Museum and Art Gallery, Durban) was not available

for study. According to the original description *Pholichora apicale* (Brues) **comb. nov.** differs by the more transverse head (in dorsal view about 3 times as wide as long; in *P. bipanna* about twice), the much longer eyes (8 times as long as malar space), the smooth fourth and following metasomal tergites, the longer first tergite (slightly longer than wide), the infuscated telotarsi, and the more antefurcal vein m-cu of the fore wing (vein 2-SR+M is longer than half length of vein m-cu).

Pholichora inopina spec. nov.
(figs 228, 229)

Hemigyroneuron madagascariensis Granger, 1949: 184 (p.p., nec lectotype (!)).

Material.— Holotype, ♀ (MNHN), "Madagascar, Antsirabé", "Museum Paris, xi.[19]36, A. Seyrig". Paratypes: 2 ♀♀ (MNHN, RMNH), topotypic and same date.

Description.— (If not specified then similar to type species), holotype, ♀, length of body 7.9 mm, of fore wing 8.9 mm.

Head.— Antennal segments 65, length of third segment 1.3 times fourth segment, length of third, fourth, and penultimate segments 1.6, 1.2 and 1.6 times their width, respectively; length of maxillary palp 1.2 times height of head; length of eye in dorsal view 2.6 times temple; OOL:diameter of posterior ocellus:POL = 0:8:4; frons largely smooth, and with some microsculpture laterally; vertex aciculate; length of malar space 0.5 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; prepectal carina complete and comparatively strong dorsally; metapleuron largely rugose; mesoscutum rugulose-coriaceous; scutellum longitudinally rugose laterally; propodeum densely rugose and with median carina complete.

Wings.— Fore wing: r:3-SR:SR1 = 11:21:55; 1-SR slender (fig. 228); cu-a straight and slender (fig. 229); subbasal cell with pair of vaguely limited small and yellow patches (fig. 229); 1-CU1 slightly widened and subhorizontal (fig. 228); first subdiscal cell rather robust (fig. 228); 2-SR:3-SR:r-m = 13:21:12; 1-CU1:2-CU1 = 8:7.

Legs.— Hind coxa punctate and with some rugae dorsally; length of femur, tibia and tarsus of hind leg 4.4, 9.0, and 5 times their width, respectively; length of hind tibial spurs 0.4 and 0.5 times hind basitarsus.

Metasoma.— Length of first tergite 1.1 times its apical width and coarsely longitudinally striate; second tergite slightly irregular, longitudinally striate; basally third tergite finely striate, and remainder of it largely densely punctate; remainder of metasoma smooth; length of ovipositor sheath 0.06 times fore wing.

Colour.— Yellowish-brown; head, tegulae, pterostigma, palpi, fore and middle legs, hind trochanter and trochantelles, prothorax largely, mesopleuron dorsally and anteriorly, metapleuron anteriorly and ventrally light yellowish; antenna (except annellus and scapus basally), stemmaticum and ovipositor sheath blackish; wing membrane subhyaline and apically slightly infuscate.

Variation.— Antennal segments of ♀ 65(1), 66(1) or 67(1); length of fore wing of ♀ 8.4-9.0 mm.

Note.— I have seen in the BMNH collection a male from Kenya ("Meru, van

Someren, 7/43"), which is similar to this species but it has the body dark brown, except for the yellowish dorsal part of the metasoma. The wings are yellowish with its apex infuscated.

Pholichora madagascariensis (Granger, 1949) comb. nov.
(figs 216-227)

Hemigyroneuron madagascariensis Granger, 1949: 184, fig. 189; Shenefelt, 1975: 1199-1200.
Material.— Lectotype (here designated), ♀ (MNHN), "Madagascar, Behara", "Múseum Paris, xi.[19]38, A. Seyrig", "75", "Type". Paralectotypes: 7 ♀♀ + 3 ♂♂ (MNHN), all from Malagasy: Anjozorobi (1 ♀), Antsirabé (4 ♀♀), Bekily (1 ♀+ 2 ♂♂) and Behara (1 ♀+ 1♂).

Lectotype, ♀, length of body 10.0 mm, of fore wing 9.1 mm.

Head.— Antennal segments 75, length of third segment 1.5 times fourth segment, length of third, fourth and penultimate segments 1.6, 1.1 and1.4 times, respectively; length of maxillary palp 1.1 times height of head; length of eye in dorsal view 2.6 times temple (fig. 224); temples sparsely punctate and directly narrowed posteriorly (fig. 224); OOL:diameter of posterior ocellus:POL = 3:11:6; frons with curved carina along emargination of eye, with few rugulae and with a curved carina in front of anterior ocellus (fig. 227); vertex rugose medially, laterally sparsely finely punctate (fig. 224); face transversely rugose; clypeus finely rugose; antennal tentorial pits rather close to eyes (fig. 227); length of malar space 0.5 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal sides densely rugose, dorsally and posteriorly crenulate (fig. 221); prepectal carina interrupted dorsally (fig. 221); mesopleuron punctulate; metapleuron punctate medially and rugose ventrally; mesoscutum densely setose, with rugae at inner side of notauli, and rugulose-coriaceous (fig. 222), medio-posteriorly with rugae; scutellar sulcus deep and with six carinae; scutellum flat and partly longitudinally rugose (fig. 222), with lateral carina present, except posteriorly; side of scutellum rugose-crenulate; propodeum coarsley and densely reticulate-rugose with its median carina only anteriorly developed.

Wings.— Fore wing: r:3-SR:SR1 = 12:16:11; 1-SR robust (fig. 216); cu-a curved to base of wing and widened (fig. 226); subbasal cell with one large and well-sclerotized sclerome (fig. 226); 1-CU1 widened, straight and oblique; first subdiscal cell comparatively slender (fig. 216); 2-SR:3-SR:r-m = 14:17:10; 1-CU1:2-CU1 = 13:14.

Legs.—Hind coxa punctate dorsally; length of femur, tibia and tarsus of hind leg 4.3, 8.3 and 6 times their width, respectively; length of hind tibial spurs 0.4 and 0.45 times hind basitarsus.

Metasoma.— Length of first tergite equal to its apical width, its surface coarsely longitudinally rugose; second tergite longitudinally (puunctate-)rugose; third tergite reticulate-punctate and anteriorly with rugae (fig. 221); remainder of metasoma largely smooth, only somewhat pimply; ovipositor straight; length of ovipositor sheath 0.05 times fore wing.

Colour.— Yellowish-brown; head, tegulae, legs, pterostigma and vein 1-SR+M of fore wing light yellowish; stemmaticum, antenna (except annellus) and ovipositor sheath black(ish); wing membrane slightly infuscated and darker near part of veins (fig. 216).

Variation.— Part of the type series belongs to *P. inopina* spec. nov. The remainder is very similar to the lectotype. Antennal segments of ♀ 71(1) or 75(2), of ♂ 66(1) or 67(1); length of fore wing of ♀ 8.6-9.1 mm; of ♂ 7.1-7.5 mm.

Rectivena gen. nov.
(figs 136-167)

Type species: *Cystomastax madagascariensis* Granger, 1949.

Etymology.— From "rectus" (Latin for "upright") and "vena" (Latin for "vein") because of the vertical vein 1r-m of hind wing. Gender: feminine.

Diagnosis.— Antenna about twice as long as fore wing (figs 136, 148); antennal segments 60-75, apical segment with spine (fig. 141); maxillary and labial palpi slender, but third and fourth segments of maxillary palp and second and third segments of labial palp somewhat widened (figs 140, 161); hypostomal carina joining occipital carina ventrally or occipital carina reduced ventrally; occipital carina incomplete, at least medio-dorsally absent (fig. 138); frons and vertex smooth and flat; malar suture present (fig. 143); eyes distinctly emarginate; mandibles with narrow ventral carina and depressions between first and second teeth moderately deep to deep; antescutal depression virtually absent; prepectal carina complete; precoxal sulcus medially (fig. 146) and usually also anteriorly present, crenulate; notauli narrow (fig. 139); anterior half of median carina of metanotum present (fig. 139), not protruding dorsally; propodeal areola absent, with depression in front of spiracle distinct (fig. 140); propodeal tubercles absent; vein 1-SR of fore wing medium-sized, continuous with vein 1-M (fig. 136); vein m-cu of fore wing antefurcal, curved, gradually merging into vein 2-CU1, and somewhat converging to vein 1-M posteriorly (fig. 136); vein r of fore wing discontinuous with posterior margin of pterostigma (figs 136, 149, 155); vein 3-SR of fore wing medium-sized, distinctly longer than vein 2-SR (figs 136, 155); first subdiscal of fore wing elongate, vein 1-CU1 short; vein 1-SR+M of fore wing straight or slightly sinuate (figs 136, 164); vein cu-a of fore wing vertical to slightly inclivous; vein M+CU1 of fore wing straight, at most slightly carved basally (fig. 136); vein 1-M of hind wing slightly curved to straight (fig. 136); marginal cell of hind wing narrowed near basal third and distally parallel-sided (figs 136, 164) or nearly so; vein SR of hind wing moderately curved basally; vein 1r-m of hind wing vertical (figs 136, 137), at most slightly reclivous (fig. 149); tarsal claws with large and thin medio-basal, lobe subtruncate to rather acute apically (fig. 144); tarsi of males normal, similar to tarsi of females; middle and hind tibial spurs setose and slightly curved or straight (fig. 142); apex of hind tibia with distinct comb of specialized setae at inner side (fig. 147); first metasomal tergite with large dorsope, its dorsal carinae united subbasally, without basal flanges (figs 145, 154, 165), and its dorso-lateral carinae narrow to somewhat widened basally (fig. 140); second tergite with medium-sized to small medio-basal triangular area and area connected to a medio-longitudinal carina (figs 145, 153, 165); second-fifth tergites with sharp lateral crease, in lateral view flat to slightly convex (fig. 140); length of fourth tergite in dorsal view 0.3-0.5 times its basal width; hypopygium of female large, evenly sclerotized and pigmented, straight to slightly convex (figs 140, 160, 167) and apically truncate (fig. 140) to rather pointed (fig. 160); ovipositor sheath slender and its length 0.1-0.2 times fore wing.

Distribution.— Afrotropical (including Malagasy): six species.
Biology.— Parasites of Limacodidae.

Key to species of the genus *Rectivena* nov.

1. Ocelli comparatively small (fig. 150), OOL of ♀ about 0.8 times diameter of posterior ocellus; stemmaticum yellowish; vein 1r-m of hind wing slightly reclivous (fig. 149); pterostigma dark brown; wing membrane slightly infuscated; (W. Africa) ..... *R. intermediata* spec. nov.
- Ocelli large (figs 138, 156, 163), OOL of ♀ less than 0.8 times diameter of posterior ocellus; stemmaticum black(ish); vein 1r-m of hind wing vertical (figs 136, 164); pterostigma (largely) yellowish; wing membrane subhyaline 2
2. Mesosoma (except mesonotum largely) and metasoma blackish medially; pterostigma completely pale yellowish; antenna bicolourous, basally (including scapus largely) dark brown and remainder pale yellowish; mesoscutum low anteriorly (fig. 157) ..... *R. lineata* spec. nov.
- Mesosoma (except sometimes mesonotum and scutellum) and metasoma yellowish medially, but third tergite may be black anteriorly or posteriorly, or only a small dark spot present anteriorly; pterostigma brownish-yellow and more or less infuscated apico-posteriorly; antenna usually unicolourous, or if bicolourous then scapus yellowish-brown; mesoscutum less depressed anteriorly (figs 140, 162) 3
3. Mesopleuron largely coriaceous; third metasomal tergite with black patch anteriorly; length of first metasomal tergite about 2.5 times its apcial width; (Malagasy) ..... *R. antennata* (Granger)
- Mesopleuron largely smooth; third tergite without black patch anteriorly, but may be black apically; length of first tergite 1.0-1.8 times its apical width (figs 154, 159) 4
4. Propodeum largely punctulate (fig. 140); vein SR of hind wing partly sclerotized (fig. 136); antenna blackish (except scapus); antennal segments of ♀ about 60; hypopygium of ♀ weakly curved ventrally (fig. 140); (Malagasy) ..... *R. madagascariensis* (Granger)
- Propodeum largely rug(ul)ose (fig. 166); vein SR of hind wing completely unsclerotized (fig. 164); at least apical half of antenna yellowish; antennal segments of ♀ 70-75; hypopygium of ♀ variable 5
5. Antenna completely yellowish-brown; basal half of pterostigma brownish-yellow; precoxal sulcus distinctly crenulate; vein SR1 of fore wing yellowish-brown; metasomal tergites and mesosoma completely brownish-yellow; hypopygium of ♀ straight ventrally (fig. 160); (W. Africa) ..... *R. limacodiphaga* (Shenefelt)
- Basal third of antenna (except scapus and pedicellus) dark brown; basal half of pterostigma (except basally) dark brown; precoxal sulcus with only some indistinct crenulae; vein SR1 of fore wing nearly unpigmented; all exposed metasomal tergites (except fifth) with black patch; mesoscutum (except medially) and scutellum black; hypopygium of ♀ slightly curved ventrally (fig. 167); (C. Africa) ..... *R. punctata* spec. nov.

Rectivena antennata (Granger, 1949) comb. nov.

Cystomastax (Orthorhogas) antennatus Granger, 1949: 166-167.
Orthorhogas antennatus; Shenefelt, 1975: 1205.

Similar to *R. limacodiphaga* because of the sculpture of the propodeum and of its colour (except for the third tergite and antenna). The sculpture of the mesopleuron and the slender first metasomal tergite separates it from all other species.

Rectivena intermediata spec. nov.
(figs 149-153)

Material.— Holotype, ♀ (BMNH), "Cameroun: Nkoemvon, 25.ix-19.xi.1979, D.Jackson".

Holotype, ♀, length of body 5.8 mm, of fore wing 4.9 mm.

Head.— Remaining antennal segments 27, length of third segment 1.1 times fourth segment, length of third and fourth segments 4.0 and 3.6 times their apical width, respectively; scapus somewhat longer dorsally than ventrally; length of maxillary palp 1.7 times height of head, its third and fourth segments rather flattened and somewhat widened; length of eye in dorsal view 4.2 times temple (fig. 150); temples strongly retracted behind eyes (fig. 150); occipital carina widely interrupted medio-dorsally, reduced ventrally and not connected to hypostomal carina; OOL: diameter of ocellus:POL = 8:10:5; face and clypeus sparsely punctate, interspaces largely smooth and shiny, but partly micro-sculptured; distance between anterior tentorial pit and eye longer than diameter of pit; frons and vertex largley smooth and nearly flat; malar suture shallow and strongly curved; length of malar space equal to basal width of mamdible.

Mesosoma.— Length of mesosoma 1.3 times its height; antescutal depression deep; pronotal sides widely crenulate medio-anteriorly, ventrally granulate and dorsally smooth; precoxal sulcus moderately widely crenulate, strongly oblique and absent in front of middle coxa; remainder of mesopleuron sparsely punctate; pleural sulcus indistinctly crenulate; metapleuron only ventrally rugose, largely smooth amd shiny dorsally; mesoscutum shiny and and with some setiferous punctures; notauli deep and distinctly crenulate; scutellar sulcus deep and wide, with one longitudinal carina; scutellum smooth and weakly convex; side of scutellum rugose, both sides connected by a narrow and finely crenulate depression subposteriorly on scutellum; median carina of metanotum rather long, but absent posteriorly; propodeum coarsely reticulate, but laterally somewhat less developed.

Wings.— Fore wing: 1-SR+M slightly sinuate; r:3-SR:SR1 = 5:13:31; SR1 slightly curved; 2-SR:3-SR:r-m = 9:13:5; r-m inclivous (fig. 149); 1-CU1:2-CU1 = 1:14; cu-a inclivous. Hind wing: 1r-m rather oblique (fig. 149); M+CU:1-M = 1:2; marginal cell parallel-sided, but absent apically; SR completely unsclerotized.

Legs.— Hind coxa largely smooth, with some striae apico-dorsally; all tarsal claws with large acute ventral lobe-shaped lamella; length of femur, tibia and basitarsus of hind leg 5.5, 9.7 and 11.4 times their width, respectively; length of fore and hind tarsus 1.2 and 1.3 times fore and hind femur, respectively; length of hind

tibial spirs 0.2 and 0.3 times hind basitarsus.

Metasoma.— Length of first tergite 1.2 times its apical width, its surface longitudinally carinate, with interspaces micro-sculptured, dorsope large (fig. 153) and dorsal carinae connected to a complete median carina; medio-basal area of second tergite wide and short (fig. 153); second-sixth tergites rather dull, micro-sculptured and longitudinally costate-carinate, but absent on most of apical halves of fourth and fifth tergites and most of sixth tergite; epipleura of second-sixth tergites distinctly differentiated from their nota; hypopygium rather convex ventrally; length of ovipositor sheath 0.12 times fore wing.

Colour.— Body dorsally (including stemmaticum) brownish-yellow; metasoma largely whitish ventrally; antenna brown basally and remainder dark brown; pterostigma and most of veins dark brown; wing membrane slightly infuscated; parastigma largely white; remainder of body pale yellowish (including tegulae and palpi).

Rectivena limacodophaga (Shenefelt, 1969) comb. nov.
(figs 154, 159, 160, 162, 163)

Orthorhogas limacodiphaga Shenefelt, 1969: 100 & 1975: 1205.
O. gerardi Shenefelt, 1969: 100-101 & 1975: 1205. **Syn. nov.**

Material.— Eight ♀♀ (BMNH, RMNH) from Camerouns, Nkoemvon, and collected in the periods iv-viii. (1979/80) and xi-xii. (1980) by D. Jackson.

All specimens in the type series of both nominal species (respectively 2 ♀ ♀+1♂ and 2 ♀ ♀) originated from *Theobroma cacao* Linnaeus with a species of Limacodidae as probable host and have the same type locality (Nigeria, Ibadan). The holotypes should be in the Natural History Museum (BMNH), London, but both are missing. No paratypes are present in the Shenefelt Collection (Gainesville) (Townes, in litt.), and the author himself is unsure of the actual depository (Shenefelt, in litt.).

O. gerardi Shenefelt is synonymized because the observed variation in the examined series from the Cameroons is sufficient to match both the (deficient) descriptions by Shenefelt (1969).

Variation.— Antennal segments of ♀ 70(1) or 75(1, but incomplete); length of fore wing 5.8-9.5 mm; length of first tergite 1.1-1.7 times its apical width, its shape is comparatively variable (figs 154, 159); precoxal sulcus may be widely finely striate, indistinctly sculptured or completely smooth except for some short crenulae; length of ovipositor sheath 0.7-1.3 mm (according to Shenefelt (1969) up to 2 mm).

Biology.— Parasite of Limacodidae on cocoa.

Rectivena lineata spec. nov.
(figs 155-158, 161)

Material.— Holotype, ♀ (BMNH), "Cameroun: Nkoemvon, 2.xi-13.xii.[19]80, D. Jackson". Paratype: 1 ♂ (BMNH), same locality and date.

Holotype, ♀, length of body 7.0 mm, of fore wing 6.3 mm.

Head.— Antennal segments 71, tyloids conspicuous, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 2.4, 2.2, and 3.7 times their width, respectively; apex of antenna with distinct spine; scapus somewhat longer dorsally than ventrally; length of maxillary palp 1.9 times height of head, its third and fourth segments slender and somewhat flattened; length of eye in dorsal view 4.2 times temple (fig. 156); occipital carina with moderately wide interruption dorsally and nearly reaching hypostomal carina ventrally; OOL:diameter of ocellus:POL = 2:5:2; face medially moderately convex, its lateral parts and clypeus rather flat, face with some rugulae sublaterally, remainder of face and clypeus largely smooth; diameter of anterior tentorial pit equal to distance between pit and eye; frons and vertex flat and smooth; malar suture subtransverse and shallow; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.3 times its height; antescutal depression deep; pronotum anteriorly and latero-ventrally coriaceous and rather matt, medially crenulate and dorsally largely smooth and shiny; precoxal sulcus moderately widely crenulate and sinuate, and absent in front of midle coxa; remainder of mesopleuron smooth; pleural sulcus inconspicuously crenulate; metapleuron coriaceous and rather matt, ventrally with some rugae; mesoscutum shiny and with some setiferous punctures, low anteriorly (fig. 157); notauli deep and micro-sculptured; scutellar sulcus deep and wide, with one longitudinal carina; scutellum rather flat, with some punctures, and with transverse, finely crenulate depression subposteriorly; side of scutellum crenulate; median carina of metanotum medium-sized, absent in posterior half and not protruding dorsally; propodeum rugose medially and posteriorly, granulate and with some rugulae antero-laterally.

Wings.— Fore wing: 1-SR+M slightly sinuate; r:3-SR:SR1 = 10:32:53; SR1 slightly curved (fig. 155); 2-SR:3-SR:r-m = 20:32:ca 12; r-m somewhat inclivous; 1-CU1:2-CU1 = 6:29; cu-a vertical. Hind wing: 1r-m vertical; M+CU:1-M = 2:3; marginal cell subparallel-sided subapically, but apically absent; SR completely unsclerotized.

Legs.— Hind coxa shiny and rather coriaceous; all tarsal claws with large acute ventral lobe-shaped lamella; length of femur, tibia and basitarsus of hind leg 6.0, 9.7 and 11 times their width, respectively; length of fore and hind tarsus 1.1 and 1.2 times fore and hind tibia, respectively; length of both hind tibial spurs 0.15 times hind tarsus, nearly straight and setose.

Metasoma.— Length of first tergite 1.5 times its apical width, its surface longitudinally rugose, with interspaces micro-sculptured, its dorsope large (fig. 154), and dorsal carinae united and connected to complete median carina; medio-basal area of second tergite wide and short (fig. 154); second-fifth tergites longitudinally rugose, matt, and its interspaces micro-sculptured; sixth tergite only anteriorly rugose and its main part granulate; second tergite 1.8 times longer than third tergite medially; epipleura of second-sixth tergites distinctly differentiated from their nota; hypopygium straight ventrally; length of ovipositor sheath 0.09 times fore wing.

Colour.— Pale yellowish; basal quarter of antenna (but scapus and pedicellus largely dark brown), stemmaticum, pronotum and mesoscutum anteriorly, scutellum laterally and posteriorly, metanotum largely, propodeum largely, metasoma medially (including semi-circular patch on second tergite posteriorly blackish; ovipositor sheath and most veins brownish; pterostigma pale yellowish; parastigma largely white; wing membrane subhyaline.

Variation.— Paratype very similar to holotype. Antennal segments 58, length of body 6.0 mm, of fore wing 5.3 mm, pedicellus yellowish-brown, palpi only slightly widened (fig. 161).

Rectivena madagascariensis (Granger, 1949) comb. nov.
(figs 136-148)

Cystomastax (Orthorhogas) madagascariensis Granger, 1949: 166, fig. 177.
Orthorhogas madagascariensis; Shenefelt, 1975: 1205.

Material.— Lectotype (here designated), ♀ (MNHN), "Madagascar, Bekily, iii.[19]30, A. Seyrig", "60", "Type". Paralectotypes: 2 ♀♀ (MNHN), one topotypic and one from Behara, Malagasy.

Lectotype, ♀, length of body 6.5 mm, of fore wing 6.2 mm.

Head.— Antennal segments 60, long setose, length of third antennal segment 1.4 length of fourth segment, length of third, fourth, and penultimate segments 3.0, 2.2, and 3.0 times their width, respectively (figd 141, 148); scapus longer dorsally than ventrally (fig. 148); length of maxillary palp 1.7 times height of head, third and fourth maxillary palp segments, and second and third labial palp segments somewhat widened (fig. 140); length of eye in dorsal view 3.8 times temple (fig. 138); temples strongly retracted behind eyes (fig. 140); occipital carina absent just above hypostomal carina and widely interrupted medio-basally (fig. 138); OOL:diameter of posterior ocellus:POL = 6:9:5; face punctulate, with some rugulae near antennal sockets (fig. 143); clypeus smooth; distance between antennal tentorial pit and eye more than diameter of pit; malar suture shallow; length of malar space 1.1 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.3 times its height; antescutal depression very narrow; pronotal sides crenulate medio-anteriorly and remainder smooth; precoxal sulcus only medially present, shallow and with short crenulae (fig. 140); remainder of mesopleuron largely punctulate; metapleuron punctulate; mesoscutum punctulate and sparsely setose, with crenulate medio-longitudinal depression (fig. 139); notauli deep and finely crenulate, but smooth posteriorly; scutellar sulcus destroyed by pin; scutellum punctulate and flat, medio-posteriorly smooth and laterally rugose; median carina of metanotum present in anterior half of metanotum; propodeum largely punctulate, medio-anteriorly with some fine rugae and laterally with an incomplete longitudinal carina (fig. 140).

Wings.— Fore wing: 1-SR+M straight; r:3-SR:SR1 = 5:17:29; SR1 nearly straight; 2-SR:3-SR:r-m = 12:17:8; r-m slightly inclivous (fig. 136); 1-CU1:2-CU1 = 7:33; cu-a vertical. Hind wing: 1r-m vertical (fig. 137); M+CU:1-M = 18:23; marginal cell parallel-sided; SR subbasally sclerotized.

Legs.— Hind coxa punctulate; all claws with large lobe (fig. 144); length of femur, tibia and basitarsus of hind leg 5.2, 9.1, and 9.2 times their width, respectively; length of hind tibial spurs 0.25 and 0.3 times hind basitarsus.

Metasoma.— Length of first tergite equal to its apical width, its surface longitudinally rugose, its dorsal carinae united near level of spiracles and connected to a median carina, and dorsope large (fig. 145); medio-basal area of second tergite com-

paratively large and triangular (fig. 145); second and base of third tergite rugose; remainder of metasoma punctulate and slightly coriaceous (fig. 140); ovipositor curved ventrad (fig. 140); length of ovipositor sheath 0.16 times fore wing.

Colour.— Brownish-yellow; antenna (but scapus and pedicellus dark brown, radix and annellus yellowish), and stemmaticum black(ish); head, palpi, tegulae and legs light yellowish; ovipositor sheath brown; pterostigma and most veins brown, only vein C+SC+R of fore wing yellowish; wing membrane slightly infuscate.

Rectivena punctata spec. nov.
(figs 164-167)

Material.— Holotype, ♀ (BMNH), "[Uganda], D56A, Bred from Limacodid larva (?*Parasa*), Damba Island, Victoria Nyanza, D.G.S.H. Carpenter", "Pres. by Imp. Bur. Ent. 1921-129".

Holotype, ♀, length of body 11.8 mm, of fore wing 11.3 mm.

Head.— Remaining antennal segments 71, with short tyloids distinct and long setose, length of third segment 1.2 times fourth segment, length of third and fourth segments 2.7 and 2.2 times their apical width, respectively; length of antenna at least 1.4 times fore wing; scapus dorsally distinctly longer than ventrally; length of maxillary palp 1.8 times height of head, its third and fourth segments slender and flattened; length of eye in dorsal view 4.0 times temple; temple strongly retracted behind eyes; occipital carina with moderately wide interruption dorsally and strong ventrally, and connected to hypostomal carina; OOL:diameter of posterior ocellus: POL = 2:6:3; face medially moderately convex, lateral parts and clypeus rather flat; face long setose, with some rugulae sublaterally, and remainder shiny and micro-sculptured; diameter of anterior tentorial pit equal to distance between pit and eye; frons slightly convex and with pair of incomplete striae and remainder smooth; vertex strongly declivous, smooth, and with shallow median groove; malar suture oblique and shallow; length of malar space 0.4 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.3 times its height; antescutal depression deep and narrow; pronotum anteriorly and latero-ventrally minutely granulate, antero-medially coarsely crenulate, and remainder largely smooth and shiny; precoxal sulcus with some indistinct crenulae, but largely smooth, shallow and posteriorly absent; mesopleuron antero-dorsally coarsely transversely striate and remainder of mesopleuron smooth; pleural sulcus inconspicuously crenulate; metapleuron with some coarse rugae ventrally and remainder rather matt and indistinctly micro-sculptured; mesoscutum anteriorly high, its surface strongly shiny and with some punctures; notauli deep and micro-sculptured; scutellar sulcus deep and wide, with one longitudinal carina; scutellum moderately convex and with some punctures, its subposterior transverse depression narrow, shallow and largely smooth; side of scutellum coarsely crenulate; median carina of metanotum medium-sized, absent in posterior half and not protruding; propodeum with complete median carina and with some coarse rugae medially and posteriorly, largely granulate, and with some crenulae anteriorly.

Wings.— Fore wing: 1-SR+M slightly sinuate; r:3-SR:SR1 = 9:24:48; SR1 slightly curved (fig. 164); 2-SR:3-SR:r-m = 16:24:7; r-m vertical; 1-CU1:2-CU1 = 4:21; cu-a

rather inclivous (fig. 164). Hind wing: 1r-m vertical; M+CU:1-M = 22:31; marginal cell subparallel-sided subapically, but apically absent (fig. 164); SR completely unsclerotized.

Legs.— Hind coxa shiny and superficially granulate; all tarsal claws with large acute ventral lobe-shaped lamella; length of femur, tibia and basitarsus of hind leg 7.6, 11.5 and 11.6 times their width, respectively; length of fore, middle and hind tarsi 1.2, 1.0 and 1.1 times their respective tibiae; length of hind tibial spurs 0.2 and 0.3 times hind tarsus, nearly straight and setose.

Metasoma.— Length of first tergite 1.8 its apical width (fig. 165), its surface longitudinally and coarsely rugose-striate, with interspaces micro-sculptured, dorsope large (fig. 165), and dorsal carina united and connected to complete median carina; medio-basal area of second tergite rather small and short (fig. 165); second tergite coarsely longitudinally rugose-striate, and 1.8 times longer than third tergite (fig. 165); third tergite comparatively weakly rugose and mainly matt, and minutely granulate; fourth and following tergites minutely granulate and matt (but apical segments rather shiny); epipleura of second-fifth tergites differentiated from their nota; hypopygium slightly convex ventrally (fig. 167); length of ovipositor sheath 0.08 times fore wing.

Colour.— Pale yellowish; basal third of antenna (except scapus, pedicellus and pterostigma (except its base)) dark brown; stemmaticum, pronotum largely anteriorly, mesoscutum (except middle lobe largely), scutellum, propodeum posteriorly, a small patch both on first and second tergites, apical margin of third and fourth tergites, apico-lateral patch of sixth tergite, seventh and eighth tergites largely, and basal half of ovipositor sheath black; remainder of ovipositor sheath pale yellowish; remainder of fourth-seventh tergites and of antenna yellowish-brown; parastigma, base of pterostigma and most veins yellowish, but veins r and 2-SR of fore wing dark brown, and veins distad of both veins nearly unpigmented; wing membrane subhyaline.

Biology.— Parasite of Limacodidae (possibly *Parasa* spec.).

Rogas Nees, 1818
(figs 114-124)

Rogas Nees, 1818: 306; van Achterberg, 1982b: 138. Type species (designated by Curtis, 1834): *Ichneumon testaceus* Fabricius, 1798 [examined; nec *I. testaceus* Gmelin, 1790; = *Rogas luteus* Nees, 1834].

Pelecystoma Wesmael, 1838: 91; Shenefelt, 1975: 1206-1209; Tobias, 1976: 89; Marsh, 1979: 178; Tobias, 1986: 84-85 (included in *Rogas* auct.). Type species (designated by Foerster, 1862): *Rogas luteus* Nees, 1834 [type lost].

Rhogas Agassiz, 1846: 325 (invalid emendation).

Diagnosis.— Antennal segments 53-71, its apical segment with spine (fig. 117); third maxillary palp segment strongly enlarged and flattened, second labial palp segment moderately enlarged and rather vesiculate, and other segments slender (fig. 116); hypostomal carina joining occipital carina ventrally or nearly so; occipital carina complete; frons and vertex flat and smooth (fig. 119); malar suture present (fig. 116); eyes distinctly emarginate; antescutal depression deep and narrow; prepectal carina complete; precoxal sulcus only medially impressed, narrow and superficially crenulate (fig. 116); notauli narrow (fig. 121); median carina of metanotum long, not

or slightly protruding (fig. 121); propodeal areola irregular, rather narrow and incomplete (fig. 121); propodeal tubercles absent, but carinae somewhat protruding (fig. 116); vein 1-SR of fore wing long, continuous with vein 1-M (fig. 114); vein m-cu of fore wing just antefurcal, curved, and gradually merging into vein 2-CU1, and converging to vein 1-M posteriorly (fig. 114); vein r of fore wing not continuous with posterior margin of pterostigma (fig. 114); vein 3-SR of fore wing medium-sized, distinctly longer than vein 2-SR (fig. 114); first subdiscal cell of fore wing elongate, vein 1-CU1 medium-sized; vein cu-a of fore wing oblique as vein 3-CU1 (fig. 114); vein M+CU1 of fore wing nearly straight (fig. 114); marginal cell of hind wing parallel-sided apically, and vein SR slightly curved basally (fig. 114); vein 1r-m of hind wing oblique; cu-a of hind wing distinctly curved toward base of wing (fig. 114); tarsal claws with large and truncate thin lobe (fig. 123); tarsi of males normal, similar to tarsi of femlaes; middle and hind tibial spurs straight and setose; apex of hind tibia with distinct comb of specialized setae at inner side (fig. 122); first tergite with large dorsope, its dorsal carinae up to apex of tergite, may be united posteriorly, and tergite without basal flanges (fig. 124); second tergite with irregular and partly sculptured medio-basal area and without medio-longitudinal carina (fig. 124); second-fifth tergites with sharp lateral crease (fig. 116); hypopygium of female medium-sized, ventrally straight and apically truncate.

Distribution.— Palaearctic; only the type species in Europe.

Biology.— Parasite of Limacodidae and Papilionidae; the records from Geometridae and Tortricidae need to be confirmed.

Notes.— Small genus, to which two Afrotropical species have been assigned. *Pelecystoma africanum* Enderlein, 1920 (Tanzania) and *P. hova* Granger, 1949 (Malagasy). The types of the three Enderlein spp. assigned to *Pelecystoma* have been examined: *P. africanum* belongs to *Aleiodes* (*A. africanus* (Enderlein, 1920) **comb. nov.**), as well as two Neotropical "*Pelecystoma*" species, *Aleiodes bicoloratus* (Enderlein, 1920) **comb. nov.** and *A. nigripes* (Enderlein, 1920) **comb. nov.** The position of *P. hova* is uncertain but most likely it also does not belong in *Rogas* (e.g. because of the presence of the median carina of the propodeum).

I inlude in this genus two E. Palaearctic species: *R. nigrovenosus* (Vojnovskaja-Krieger, 1935) **comb. nov.** and *R. roxanus* (Telenga, 1941) **comb. nov.** The other species listed by Shenefelt (1975: 1206-1209) mostly belong to the genus *Triraphis* Ruthe. Among these are the Nearctic *Triraphis harrisinae* (Ashmead, 1889) **comb. nov.** [type examined] and *T. discoideus* (Cresson, 1869) **comb. nov.**

Scoporogas gen. nov.
(figs 234-242)

Scopophthalmus Szépligeti, 1914a: 182 (nec Agassiz, 1846); Shenefelt, 1975: 1256. Type species (by monotypy): *Scopophthalmus jeanneli* Szépligeti, 1914 [examined].

Etymology.— Based on the combination of the two generic names *Scopophthalmus* and *Rogas*. Gender: masculine.

Diagnosis.— Antennal segments about 64 (♂), its apical segment with spine; maxillary and labial palpi slender (fig. 23); hypostomal carina joining occipital carina

ventrally; occipital carina incomplete, and medio-dorsally widely interrupted; vertex coriaceous; frons largely smooth to finely striate; malar suture absent; eyes distinctly emarginate and enlarged; ocelli large (fig. 237); antescutal depression narrow; prepectal complete (fig. 236); precoxal sulcus absent; median carina of metanotum absent posteriorly (fig. 238); propodeal areola absent except for small triangular area posteriorly; propodeal tubercles absent; vein 1-SR of fore wing short, continuous with vein 1-M (fig. 234); vein m-cu of fore wing antefurcal, straight, angled with vein 2-CU1 and slightly converging to vein 1-M posteriorly (fig. 234); vein r of fore wing long, discontinuous with posterior margin of pterostigma; vein 3-SR of fore wing distinctly longer than vein 2-SR (fig. 234); first subdiscal cell of fore wing rather slender, vein 1-CU1 horizontal (fig. 234); subbasal cell of fore wing narrow and setose; vein cu-a of fore wing inclivous; vein M+CU1 of fore wing rather sinuate (fig. 234); marginal cell of hind wing widened apically, with vein r present and vein SR distinctly curved and its basal 0.4 sclerotized (fig. 234); vein 1r-m of hind wing rather short and comparatively less oblique (fig. 234); vein m-cu of hind wing usually distinct; wing membrane partly infuscated; tarsal claws pectinate and without lobe (fig. 242); tarsi of males similar to tarsi of females (fig. 235); apex of hind tibia without distinct comb of specialized setae at inner side (fig. 239); first tergite with large dorsope, its dorsal carinae united in front of level of spiracles and tergite without basal flanges (fig. 241); second tergite with medium-sized medio-basal triangular area connected to medio-longitudinal carina(fig. 241); second and third tergites with sharp lateral crease (fig. 236); hypopygium of female small, ventrally straight and apically truncate (fig. 236); ovipositor sheath slender and short (fig. 236); ovipositor straight.

Distribution.— Afrotropical: only the type species known.

Biology.— Unknown.

Notes.— The lectotype of *S. jeanneli* (Szépligeti, 1914) **comb. nov.** is here designated: ♀ (MNHN), "Afrique or. allemande, Kilimandjaro, versant sud-est, Alluaud et Jeannel", "Zone infèrieur, Rivière Himo, 1000 m, Mars 1912, St. 66". Paralectotypes: 1 ♀+1♂ (MNHN), "Afrique orient. anglaise, Tavéta, Alluaud & Jeannel, Mars 1912-750 m, St. 65" (♀, rather damaged legs), and "Afrique orient. anglaise, Voi, Alluaud & Jeannel; Mars 1911-800 m, St. 60" (♂). Additionally I have examined the specimen (♀, MNHN) from Tanzania ("Kilimandjaro, Neu-Moschi, 800 m") figured in this paper and identified by Szépligeti (and labelled as "*Scopophthalmus Jeanneli* m."). I have seen one male from W. Africa (RMNH: "N. Senegal, Rd. Toll, 18.vii.1989, H.v.d.Valk, RMNH'90, no. B2M"). The variation within the type species is considerable: the frons may be largely smooth, the lateral carina of scutellum may be scarcely developed, the vein m-cu of hind wing may be absent, the vein cu-a of fore wing may be parallel to vein 3-CU1, and the clypeus may be longer than figured (fig. 240). More material is needed to decide if more than one species is involved.

Triraphis Ruthe, 1855 stat. nov.
(figs 184-195)

Triraphis Ruthe, 1855: 292; Shenefelt, 1975: 1207 (as synonym of *Pelecystoma*). Type species (by monotypy): *Exothecus discolor* Ruthe, 1855 (= *T. tricolor* (Wesmael, 1838); examined).

Pelecystoma auct. p.p.; Tobias, 1971: 218 (transl. 1975: 86); Tobias, 1976: 89-90; Marsh, 1979: 178-179.

Diagnosis.— Antennal segments 33-43 (♀) or about 23 (♂), its apical segment with spine (fig. 187); maxillary and labial palpi normal (fig. 188); hypostomal carina not joining occipital carina ventrally; occipital carina incomplete, widely interrupted dorsally, and ventrally absent; vertex and frons smooth; clypeus flattened, not protruding, and apically thick (figs 185, 188); malar suture distinct; eyes distinctly emarginate (fig. 185); antescutal depression obsolescent; prepectal carina complete; precoxal sulcus only medially distinct (fig. 188); notauli narrow and connected with short medio-posterior depression (fig. 195); median carina of metanotum short (fig. 195); propodeal areola present, but surrounding carinae rather weak and irregular (fig. 195); propodeal tubercles absent; vein 1-SR of fore wing long, continuous with vein 1-M (fig. 184); vein m-cu of fore wing antefurcal, curved, gradually merging into vein 2-CU1, and converging to vein 1-M posteriorly (fig. 184); vein r of fore wing discontinuous with posterior border of pterostigma; vein 3-SR of fore wing longer than vein 2-SR; first subdiscal cell of fore wing medium-sized, vein 1-CU1 short (fig. 184); vein 1-SR+M of fore wing slightly curved; vein cu-a of fore wing (sub)vertical, less oblique than vein 3-CU1 (fig. 184); vein M+CU1 of fore wing straight; marginal cell of hind wing subparallel-sided (fig. 184); vein 1r-m of hind wing rather short and oblique; wing membrane subhyaline; tarsal claws with rather acute lobe (fig. 190); telotarsi normal and slender (fig. 191); tarsi of male normal, similar to tarsi of female; middle and hind tibial spurs setose and straight (figs 189, 192); apex of hind tibia with distinct comb of specialized setae at inner side (fig. 192); first tergite with medium-sized dorsope (fig. 194), its dorsal carinae usually not united, median carina present and tergite without basal flanges (fig. 194); second tergite without a medio-basal triangular area and no medio-longitudinal carina (fig. 194); second-sixth tergites with sharp lateral crease (fig. 188); hypopygium of female rather large, ventrally straight and apically truncate (figs 188, 193); ovipositor sheath slender (fig. 193); ovipositor nearly straight (fig. 188).

Distribution.— Holarctic, Oriental, and Neotropical: small genus.

Biology.— Endoparasite of Limacodidae and Zygaenidae. At least one species (*T. gregarius* (Watanabe, 1970) **comb. nov.** is a gregarious parasite, but others (e.g. the Nearctic *T. harrisinae* (Ashmead, 1889)) are solitary parasites of Zygaenidae.

Note.— The only W. European species is the type species: *T. tricolor* (Wesmael, 1838), described from one male and one female. In the Wesmael Collection (Brussels) only the male syntype could be found. It is conspecific with the holotype of *Exothecus discolor* Ruthe, 1855 (♂ (BMNH), "101, 591, Ruthe, Germany", "*Cl. tricolor* Wesm.", "Ruthe Coll., 59.101"); this holotype is a peculiarly small specimen with length of fore wing only 2.3 mm.

Also conspecific is *Diachasma rimulosa* Marshall, 1898 **syn. nov.**: holotype ♀ (not ♂ as indicated by Marshall) in the Museum Civico, Genova: "Genova M., 13.vii.1894, G. Mantero", "exemplare figurato", "Genova, N.S. del Monte, 13.vii.1894, G. Mantero", "*rimulosa* Marsh.", "*Diachasma rimulosa* Marshall n.sp., Typus", "non *Diachasma*, non *Opius*, det. Fischer", "*Pelecystoma* sp. det. Fischer", "Typus". The holotype has 35 antennal segments (not 38 as stated by Marshall). Additionally to the figured specimen from the *Netherlands (Venlo; RMNH) I have seen a ♀ from *Bulgaria (Zaykov Collection). The species is reported new to the fauna of The Netherlands because the reference made by Snellen van Vollenhoven (1873: 193) is erroneous. The latter concerns specimens of *Trachyusa aurora* (Haliday, 1838).

Xenolobus Cameron, 1911
(figs 13-24)

Xenolobus Cameron, 1911: 199; Shenefelt & Marsh, 176: 1333. Type species (by monotypy): *Xenolobus rufus* Cameron, 1911 [examined].

Diagnosis.— Antennal segments 99-104, and its apical segment without spine; maxillary and labial palpi less robust than of *Bequartia* (fig. 16); hypostomal carina not joining occipital carina ventrally; occipital carina nearly complete, only near hypostomal carina reduced; vertex smooth; frons concave rugose or largely smooth (fig. 18); malar suture present (fig. 17); eyes distinctly emarginate; antescutal depression deep and narrow; prepectal carina partly reduced (fig. 16) to nearly complete; precoxal sulcus not impressed (fig. 16); notauli narrow and complete; median carina of metanotum short (fig. 14); propodeum of male with pair of deep semi-circular depressions below a fatty substance (fig. 14); propodeum of female with a sinuate transverse carina and no depressions; propodeal areola absent; propodeal tubercles absent, but propodeum somewhat angled posteriorly (fig. 16); vein 1-SR of fore wing medium-sized, and continuous with vein 1-M (fig. 13); vein m-cu of fore wing interstitial or slightly antefurcal, angled with vein 2-CU1 and slightly diverging from vein 1-M posteriorly (fig. 13); vein r of fore wing continuous with baso-posterior margin of pterostigma; vein 3-SR of fore wing somewhat longer than vein 2-SR (fig. 13); first subdiscal cell of fore wing narrow and discal cell very large, and vein 1-CU1 long (fig. 13); vein cu-a of fore wing short and vertical; vein CU1b of fore wing short, but distinct (fig. 13); vein M+CU1 of fore wing nearly straight; marginal cell of hind wing widened (fig. 13); vein 1r-m of hind wing long and straight (fig. 13); tarsal claws yellowish pectinate basally and without lobe (fig. 24); tibial spurs setose and straight; middle and hind tarsi of male swollen; apex of hind tibia without distinct comb of specialized setae at inner side; semi-circular area at base of first tergite obliquely connected to dorsal face of tergite (figs 16, 20); first tergite with large dorsope, its dorsal carinae united and tergite without basal flanges (fig. 19); second tergite with medium-sized medio-basal triangular area and with medio-longitudinal carina (fig. 19); second and third tergites with sharp lateral crease (fig. 16); hypopygium of female large, ventrally straight, and apically truncate; ovipositor sheath slender; length of ovipositor sheath 0.02-0.05 times fore wing.

Distribution.— S. & C. Africa. Three species are known (of which the types have been examined): *Xenolobus fuliginosus* (Shenefelt, 1979) **comb. nov.** from Zaire (holotype, its paratype belongs to another species!) with nearly completely infuscate wings; *X. promiscus* (Shenefelt, 1979) **comb. nov.** from Uganda; and the type species from S. Africa, Zimbabwe and Malawi. *X. promiscus* differs from *X. rufus* by the dark brown basal half of the wings.

Acknowledgements

I wish to express my gratitude to the following person for providing (type) specimens: Dr D. Brothers (Pietermaritzburg), Mrs J. Casewitz-Weullerse and the late Mr B. Sigwalt (Paris), Mrs M.A. Cochrane (Cape Town), Dr J. Decelle (Tervuren), Dr P. Dessart (Brussels), Dr E. Haeselbarth (München), Dr K.-J. Hedqvist (Stockholm), Mr T. Huddleston (London), Dr E. Kierych (Warsaw), Dr F.

Koch, Mrs I. Wegener and Ms A. Kleine-Möllhoff (Berlin), Dr J.P. O'Connor (Dublin), Dr P.M. Marsh (Washington), Dr J. Papp (Budapest), Dr B. Petersen (Copenhagen), Dr R. Poggi (Genua), Dr D.J.L. Quicke (Sheffield), Dr V.I. Tobias and Dr S.A. Belokobylskij (Leningrad), Mr R.T.A. Schouten (Oegstgeest), and Dr R. Toms (Pretoria). Dr R.D. Shenefelt (Madison) and the late Dr H.K. Townes (Gainesville) provided additional information about the types described by Shenefelt (1969); and Dr S.A. Belokobylskij about the *Acanthormius* species described by him. Dr M.R. Shaw (Edinburgh) provided useful remarks on the first draft.

Abbreviations

BMNH = The Natural History Museum, London.
MNHN = Muséum National d'Historie Naturelle, Paris.
PAN = Polska Akademia Nauk, Warsaw.
RMNH = Nationaal Natuurhistorisch Museum, Leiden.
TMA = Természettudomanyi Múzeum Allatára, Budapest.
USNM = U.S. National Museum of Natural History, Washington D.C.
ZMB = Zoologisches Museum der Humboldt-Universität, Berlin.

References

Achterberg, C. van, 1980. Three new Palaearctic genera of Braconidae (Hymenoptera).— Ent. Ber., Amst. 40: 72-80, figs 1-33.

Achterberg, C. van, 1982a. A new genus of the Rogadinae-Lysitermini from Kazakhstan (Hymenoptera, Braconidae).— Ent. Ber., Amst. 42: 125-128, figs 1-11.

Achterberg, C. van, 1982a. Notes on some type-species described by Fabricius of the subfamilies Braconinae, Rogadinae, Microgastrinae and Agathidinae (Hymenoptera, Braconidae).— Ent. Ber., Amst. 42: 133-139, figs 1-9.

Achterberg, C. van, 1985. The *Aleiodes dispar*-group of the Palaearctic region (Hymenoptera: Braconidae: Rogadinae).— Zool. Med. Leiden 59: 178-187, figs 1-20.

Achterberg, C. van, 1988a. Revision of the subfamily Blacinae Foerster (Hymenoptera, Braconidae).— Zool. Verh. Leiden 249: 1-324, figs 1-1250.

Achterberg, C. van, 1988b. Parallelisms in the Braconidae (Hymenoptera) with special reference to the biology.— Advances Par. Hym. Res.: 85-115, figs. 1-101.

Achterberg, C. van, 1990. Illustrated key to the subfamilies of the Holarctic Braconidae (Hymenoptera: Ichneumonoidea).— Zool. Med. Leiden 64: 1-20, figs 1-26.

Agassiz, L.J.R., 1846. Nomenclator Zoologicus Index Universalis, ...II. Nomina Systematica Generum Hymenopterorum: i-viii, 1-360.— Recognoverunt.

Ashmead, W.H., 1906. Descriptions of new Hymenoptera from Japan.— Proc. U. S. nat. Mus. 30: 169-201.

Baker, C.F., 1917a. Ichneumonoid parasites of the Philippines. i. Rhogadinae.— Philipp. J. Sci. (D)12: 281-327.

Baker, C.F., 1917b. Ichneumonoid parasites of the Philippines. ii. Rhogadinae (Braconidae). The genus *Rhogas*.— Philipp. J. Sci. (D)12: 383-422.

Belokobylskij, S.A., 1986. Novye vidy brakonid iz nadtriby Exothecidii (Hymenoptera, Braconidae) s juga dalnego vostoka SSSR.— Systematika i ekologija nasekomych dalnego vostoka: 58-69, figs 1-30.

Belokobylskij, S.A., 1987. Palaearktitseskie bidy brakonid podsemejsiva Doryctinae (Hymenoptera, Braconidae), opisannye ts. Watanabe (Dr. Ch. Watanabe) iz Japonii.— Novye dannye po sistematike nasekomych dalnego bostoka: 79-87, figs 1-25.— Vladivostok.

Belokobylskij, S.A., 1988. Brakonidy nadtriby Exothecidii (Hymenoptera, Braconidae, Doryctinae) ostrova Taiwan.— Trydy zool. Inst. Leningr. 175: 3-37, figs 1-67.

Belokobylskij, S.A., 1989. Novyi rod brakonid iz podsemeistva Doryctinae (Hymenoptera, Braconidae) s ostrova Taivan.— Zool. Zhurnal 68: 145-148, figs 1-10.

Belokobylskij, S.A., 1990. Materialy k faune brakonid nadtriby Exothecidii (Hymenoptera, Braconidae, Doryctinae) Vetnama.— Trydy zool. Inst. Leningr. 209: 115-140, figs 1-60.

Belokobylskij, S.A. & V.I. Tobias, 1986. Doryctinae: p. 21-72. In: Medvedev, G.S. (ed.). Opredelitel Nasekomych Evrospeiskoi Tsasti SSSR 3, Peredpontdatokrylye 4.— Opr. Faune SSSR 145: 1-501, figs 1-263.

Boucek, Z., 1956. On a new genus of Braconidae (Hymenoptera), with remarks on the wing venation.— Sborn. ent. Odd. nár. Mus. Praze 30: 441-446.

Brues, C.T., 1926. Studies on Ethiopian Braconidae, with a catalogue of the African species.— Proc. Am. Acad. Arts Sci. 61: 205-436.

Cameron, P., 1910. On some Asiatic species of the subfamilies Spathiinae, Doryctinae, Rhogadinae, Cardiochilinae and Macrocentrinae in the Royal Berlin Zoological Museum.— Wien. ent. Ztg 29: 93-100.

Cameron, P., 1911. On the parasitic Hymenoptera collected by Mr. A.J.T Janse, Transvaal.— Ann. Transv. Mus, 2: 173-217.

Enderlein, G., 1912a. Zur Kenntnis der Spathiinen und einiger verwandter Gruppen.— Arch. Naturgesch. 78 (A): 1-37.

Enderlein, G., 1912b. H. Sauter's Formosa-Ausbeute. Braconidae, Proctotrupidae und Evaniidae (Hym.)— Ent. Mitt. 1: 257-267.

Enderlein, G., 1912c. Neue Gattungen und Arten von Braconiden.— Arch. Naturgesch. 78A: 94-100.

Enderlein, G., [1918]1920. Zur Kenntniss aussereuropäischer Braconiden.— Arch. Naturgesch. 84A: 51-224

Fahringer, J., 1936. Über einige merkwürdige und seltene Hymenopteren-Gattungen aus Afrika.— Festschr. 60. Geburtst. E. Strand 1: 568-590.— Riga.

Foerster, A., 1862. Synopsis der Familien und Gattungen der Braconen.— Verh. naturh. Ver. preuss. Rheinl. 19: 225-288.

Fullaway, D.T., 1919. New genera and species of Braconidae, mostly Malayan.— J. Straits Brch Asiat. Soc. 80: 39-59.

Gauld, I.D. & T. Huddleston, 1976. The nocturnal Ichneumonoidea of the British Isles, including a key to genera.— Entomologist's Gaz. 27: 35-49, figs 1-20.

Granger, C., 1949. Braconides de Madagascar.— Mem. Inst. scient. Madagascar A, 2: 1-428, figs 1-426.

Haliday, A.H., 1833. An essay on the classification of the parasitic Hymenoptera of Britain, which correspond with the Ichneumones minuti of Linnaeus.— Ent. Mag. 1: 259-276.

He(d)qvist, K.-J., 1957. Studien über Braconiden. III. *Paracedria* n. gen., eine neue Gattung der Hormiinae aus Schweden.— Ent. Tidskr. 77: 219-220.

Hedqvist, K.-J., 1963. Notes on Hormiinae with description of new gnera and species (Hym., Ichneumonoidea, Braconidae).— Ent. Tidskr. 84: 30-61, figs 1-12.

Kriechbaumer, J., 1894. Hymenoptera ichneumonidea a medico nautico Dr. Joh. Brauns in itinere ad oras Africae occidentalis lecta.— Berl. ent. Z. 39: 43-68.

Malác, A., 1941. *Heterogamus* (*Jirunia*) *farmakena* n. subgen. et n. sp., Braconidae: Hymenoptera.— Ent. Listy 4: 136-139, figs 1-7.

Marsh, P.M., 1979. Braconidae, Aphididae. In: Krombein, K.V. et al. (eds). Catalog of Hymenoptera in America North of Mexico, 1: 144-313.— Washington.

Marshall, T.A., 1872. A catalogue of British Hymenoptera: Chrysididae, Ichneumonidae, Braconidae and Evaniidae. 4, Braconidae.— Ent. Soc. Lond.: 96-132.

Muesebeck, C.F.W., 1928. In: M.D. Leonard. List of the insects of New York.— Mem. Cornell Univ. agric. Exp. Stn 110: 895-920.

Nees von Esenbeck, C.G., 1818. Appendiox ad J.L.C. Gravenhorst conspectum generum et familiarum Ichneumonidum, genera et familias Ichneumonidum adscitorum exhibens.— Nova Acta Acad. Caesar. Leop. Carol. 9: 299-310.

Papp. J., 1985a. Contributions to the Braconid fauna of Hungary, VII. Rogadinae (Hymenoptera: Braconidae).— Folia ent. hung. 46: 143-164.

Papp, J., 1985b. Braconidae (Hymenoptera) from Korea, VII.— Acta zool. hung. 31: 341-365, figs 1-37.

Papp, J., 1986. Three new *Acanthormius* Ashmead species from India (Hymenoptera, Braconidae: Exothecinae).— Acta zool. hung. 32: 343-349, figs 1-12.

Papp, J., [1988]1989. A contribution of the Braconid fauna of Israel (Hymenoptera), 2.— Israel J. Ent. 22: 45-59, figs 1-8.

Quicke, D.L.J. & C. van Achterberg, 1990. Phylogeny of the subfamilies of the family Braconidae (Hymenoptera: Ichneumonoidea).— Zool. Verh. Leiden 258: 1-95, figs 1-180.

Rohwer, S.A., 1924. Hymenoptera of the Siju Cave, Garo Hills, Assam. II. Description of a new Braconid.— Rec. Indian Mus. 26: 124-125.

Ruthe, J.F., 1855. Beiträge zur Kenntnis der Braconiden. (*Exothecus, Ascogaster*).— Stett. ent. Ztg 16: 291-294.

Shaw, M.R. & T. Huddleston, 1991. Classification and biology of braconid wasps (Hymenoptera: Braconidae).— Handbk Ident. Br. Ins. 7(11): 1-126, figs 1-126.

Shenefelt, R.D., [1968]1969. Some previously undescribed Nigerian Braconidae.— Bull. ent. Soc. Nigeria 1: 98-101.

Shenefelt, R.D., 1975. Braconidae, 8.— Hym. Cat. (nov. ed.) 12: 1115-1262.

Shenefelt, R.D., 1979. Some unusual Braconidae (Hymenoptera).— Proc. ent. Soc. Wash. 81: 125-134, figs 1-20.

Shenefelt, R.D. & P.M. Marsh, 1976. Braconidae, 9.— Hym. Cat. (nov. ed.) 13: 1263-1424.

Shestakov, A., 1940. Zur Kenntnis der Braconiden Ostsibiriens.— Ark. Zool. 32A (19): 1-21.

Snellen van Vollenhoven, S.C., 1873. Nieuwe naamlijst van de Nederlandsche vliesvleugeligen insecten (Hymenoptera), tweede stuk.— Tijdschr. Ent. 16: 147-208.

Szépligeti, G., 1906. Braconiden aus der Sammlung des ungarischen National-Museums, 1.— Annls hist. nat. Mus. natn. hung. 4: 547-618.

Szépligeti, G., 1911. Braconidae der I. Zentral-Afrika-Expedition.— Wiss. Ergebn. dtsch. Zent. Afr. Exped.: 393-418.

Szépligeti, G., 1913. Braconidae von Madagascar und anderen Inseln Ostafrikas. In: A. Voeltzkow. Reise nach Ostafrika in den Jahren 1903-1905.— Wissenschaftliche Ergebnisse 3: 419-423.

Szépligeti, G., 1914a. Braconidae. In: Voyage de Ch. Alluaud et R. Jeannel en Afrique orientale 1911-1912.— Résultats scientifiques, Hymenoptera, 4: 165-198.

Szépligeti, G., 1914b. Afrikanische Braconiden des Königl. Zoologischen Museums in Berlin.— Mitt. zool. Mus. Berlin 7: 153-230.

Tobias, V.I., [1967]1968. Voprosy klassifikatsii i filogenii sem. Braconidae (Hymenoptera).— Chteniya Pamyati N.A. Kholodkovskogo (Moscow-Leningrad): 3-43.

Tobias, V.I., 1971. Obzor naezdnikov-brakonid (Hymenoptera) fauny SSR.— Trudy vses. ent. Obshch. 54: 156-268, figs 1-112. Translation (1975): A review of the Braconidae (Hymenoptera) of the USSR: 1-164, figs 1-112.— New Delhi.

Tobias, V.I., 1976. Brakonidy Kavkaza (Hymenoptera, Braconidae).— Opred. Faune SSSR 110: 1-287, pls 1-67.

Tobias, V.I., 1986. Rogadinae: p. 72-85. In: Medvedev, G.S. (ed.). Opredelitel Nasekomych Evrospeiskoi Tsasti SSSR 3, Peredpontdatokrylye 4.— Opr. Faune SSSR 145: 1-501, figs 1-263.

Tobias, V.I. & S.A. Belokobylskij, 1981. Novye dlja nauku u fauny SSSR rody brakonid (Hymenoptera, Braconidae) iz Primorskoga Kraja.— Ent. Obozr. 60: 354-363, figs 1-9.

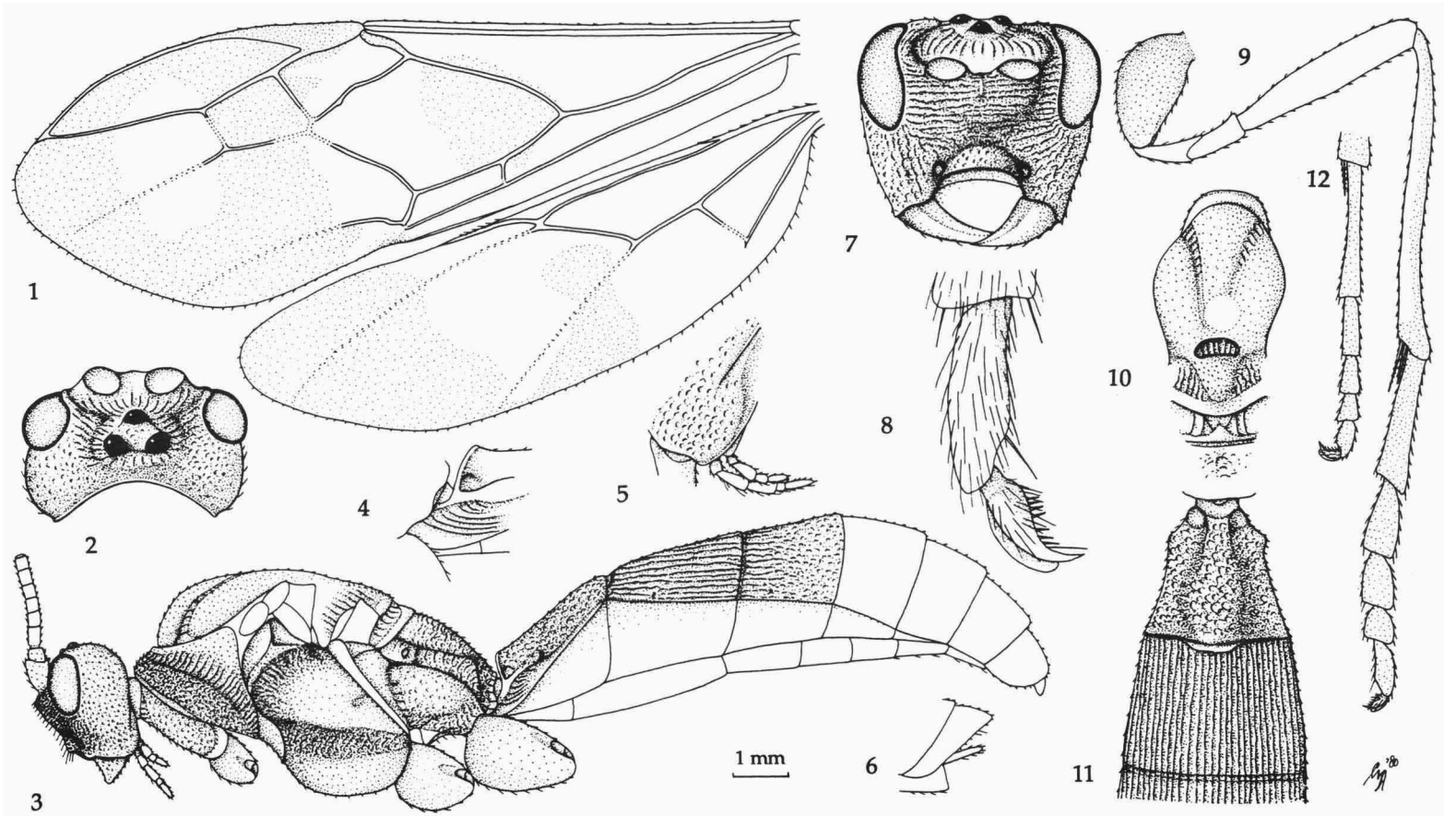
Viereck, H.L., 1918. A list of families and subfamilies of Ichneumon-flies or the super-family Ichneumonoidea (Hymenoptera).— Proc. biol. Soc. Wash. 31: 69-74.

Walker, F., 1860. Characters of some apparently undescribed Ceylon insects.— Ann. Mag. nat. Hist. (3) 5: 304-311.

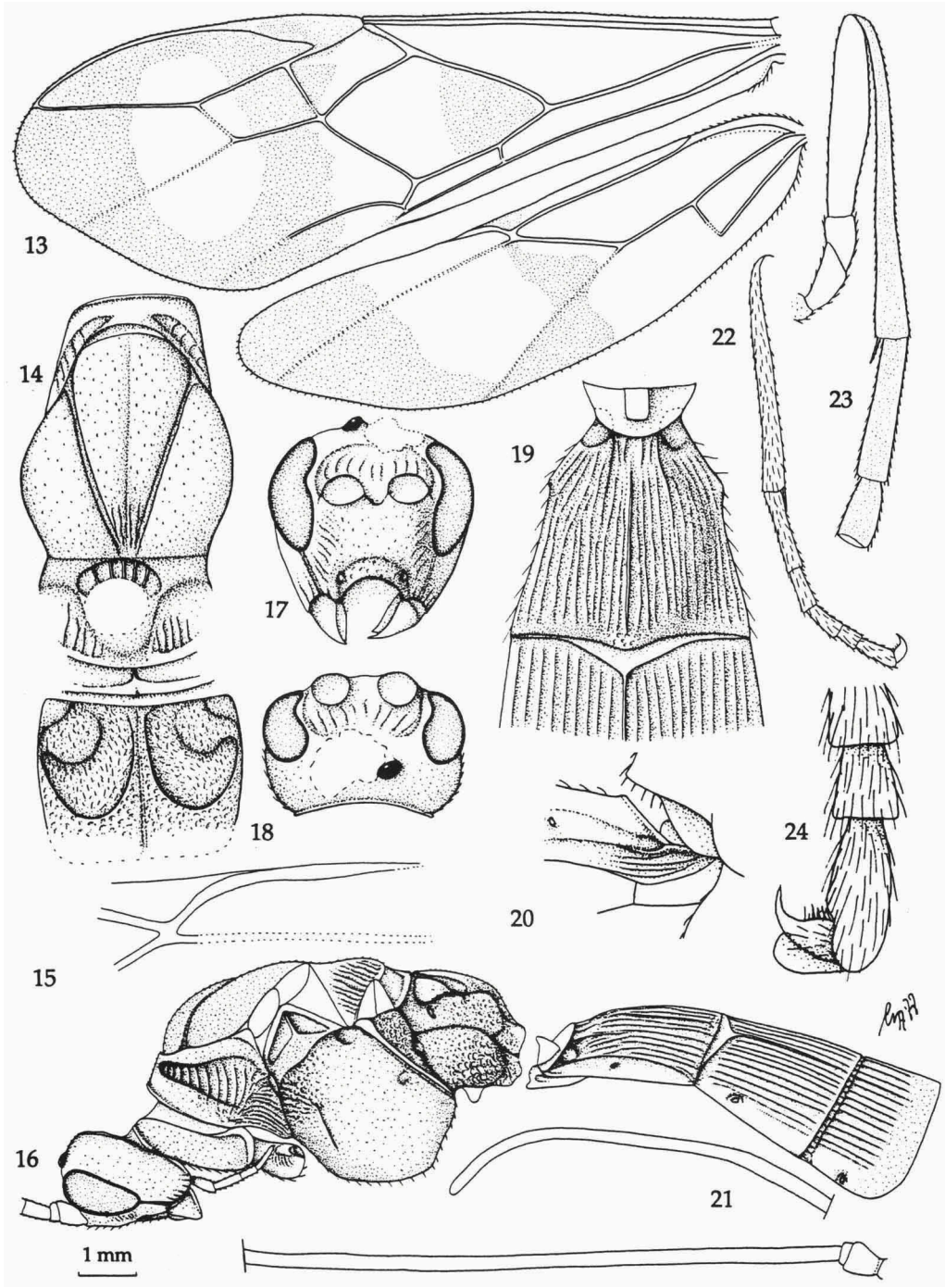
Watanabe, C., 1968. A revision of the genus *Acanthormius* Ashmead, with descriptions of six new species (Hymenoptera, Braconidae).— Insecta Matsumurana 30: 57-68, figs 1-15.

Wesmael, C., 1838. Monographie des Braconides de Belgique, 4.— Nouv. Mém. Acad. sci. R. Bruxelles 11: 1-166.

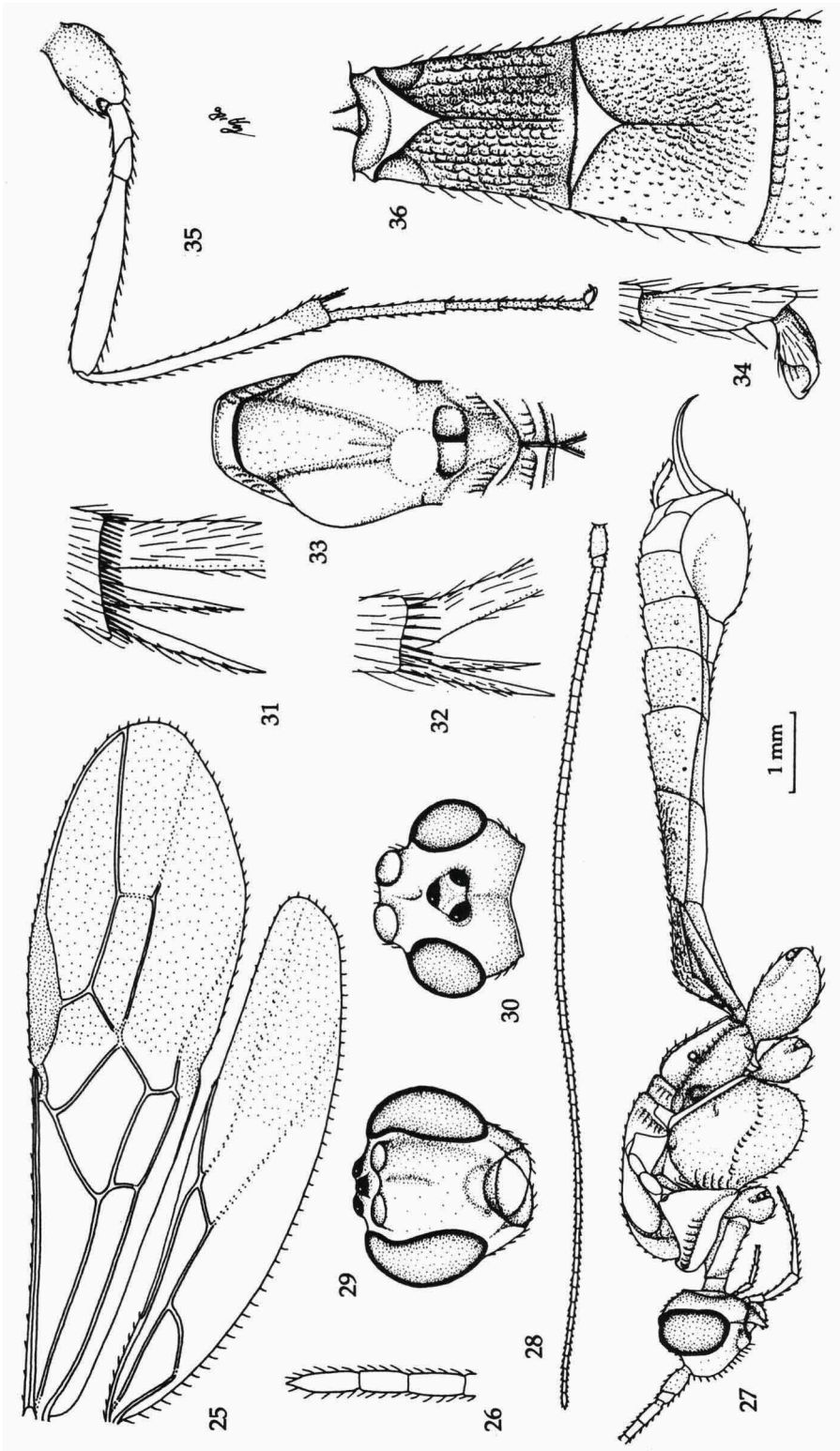
Received: 2.viii.1991
Accepted: 14.x.1991
Edited: M.J.P. van Oijen



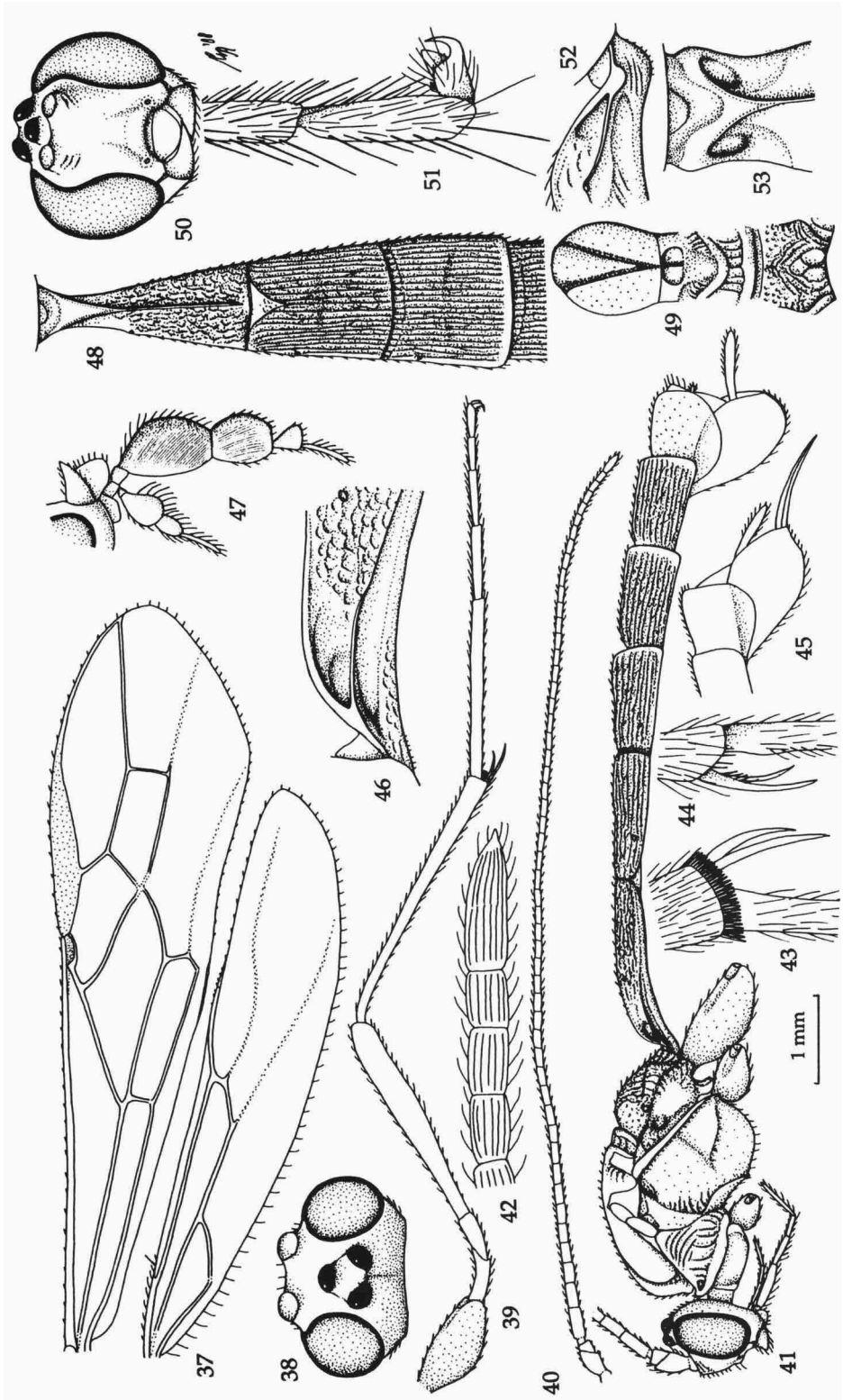
Figs 1-12, *Bequartia gigantea* Fahringer, ♂, holotype, but 6 and 12 of ♀, Zaire, Lulua. 1, wings; 2, head, dorsal aspect; 3, habitus, lateral aspect; 4, base of first metasomal tergite, lateral aspect; 5, palpi; 6, apex of metasoma, lateral aspect; 7, head, frontal aspect; 8, inner hind claw; 9, hind leg; 10, mesosoma, dorsal aspect; 11, first and second metasomal tergites, dorsal aspect; 12, hind tarsus, lateral aspect. 1, 3, 6, 9-12: scale-line (= 1 ×); 2, 4, 5, 7: 2 ×; 8: 5 ×.



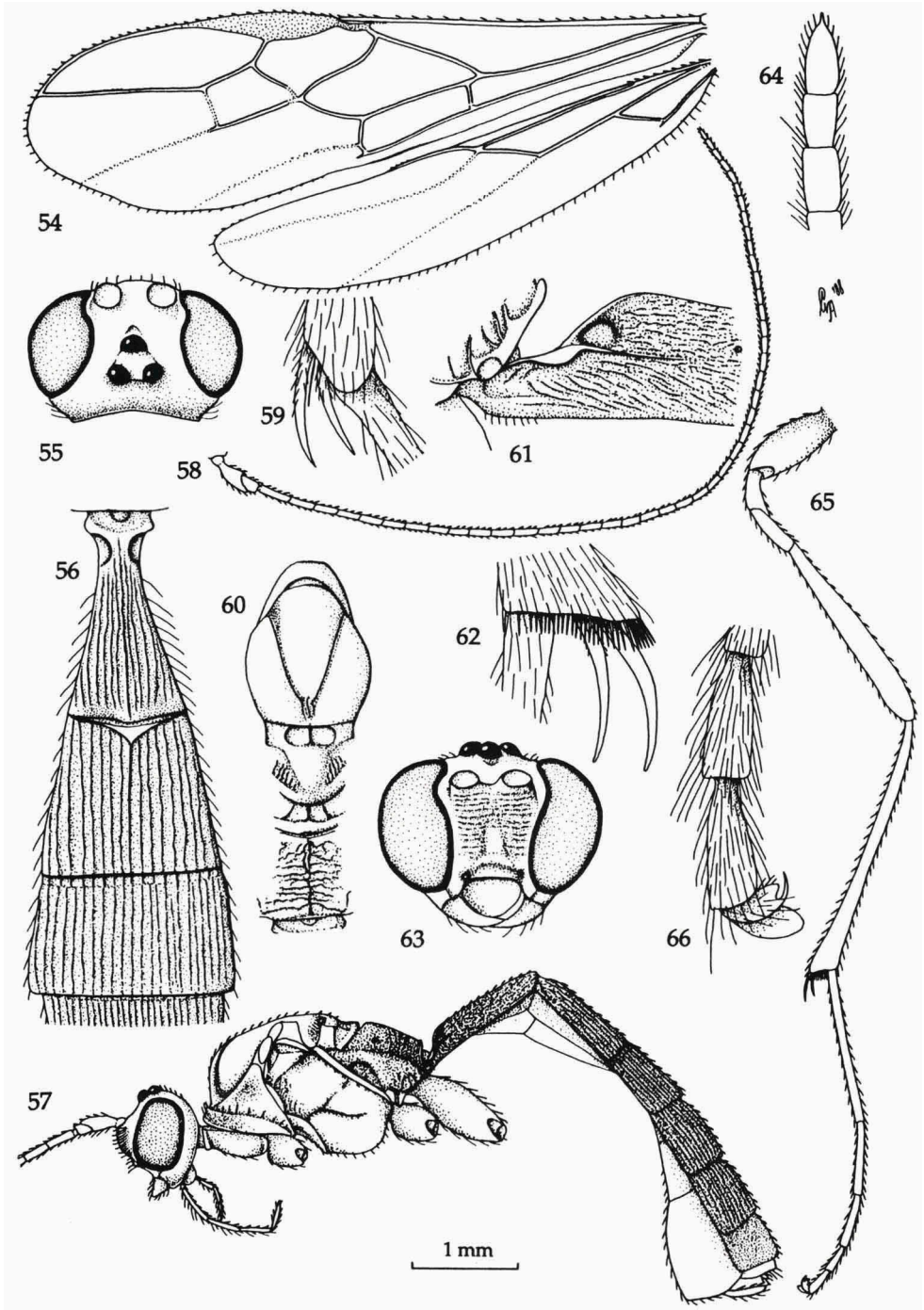
Figs 13-24, *Xenolobus rufus* Cameron, ♂, holotype, but 20 of ♀, Zimbabwe, Salisbury. 13, wings; 14, mesosoma, dorsal aspect; 15, detail of vein SC+R1 of hind wing; 16, habitus, lateral aspect; 17, head, frontal aspect; 18, head, dorsal aspect; 19, first metasomal tergite, dorsal aspect; 20, base of first tergite, lateral aspect; 21, antenna; 22, fore tibia and tarsus; 23, hind leg; 24, middle claw. 13, 16, 21, 23: scale-line (= 1 ×); 14, 17-19: 1.5 ×; 15: 2.5 ×. 20: 2.6 ×; 22: 1.3 ×; 24: 4 ×.



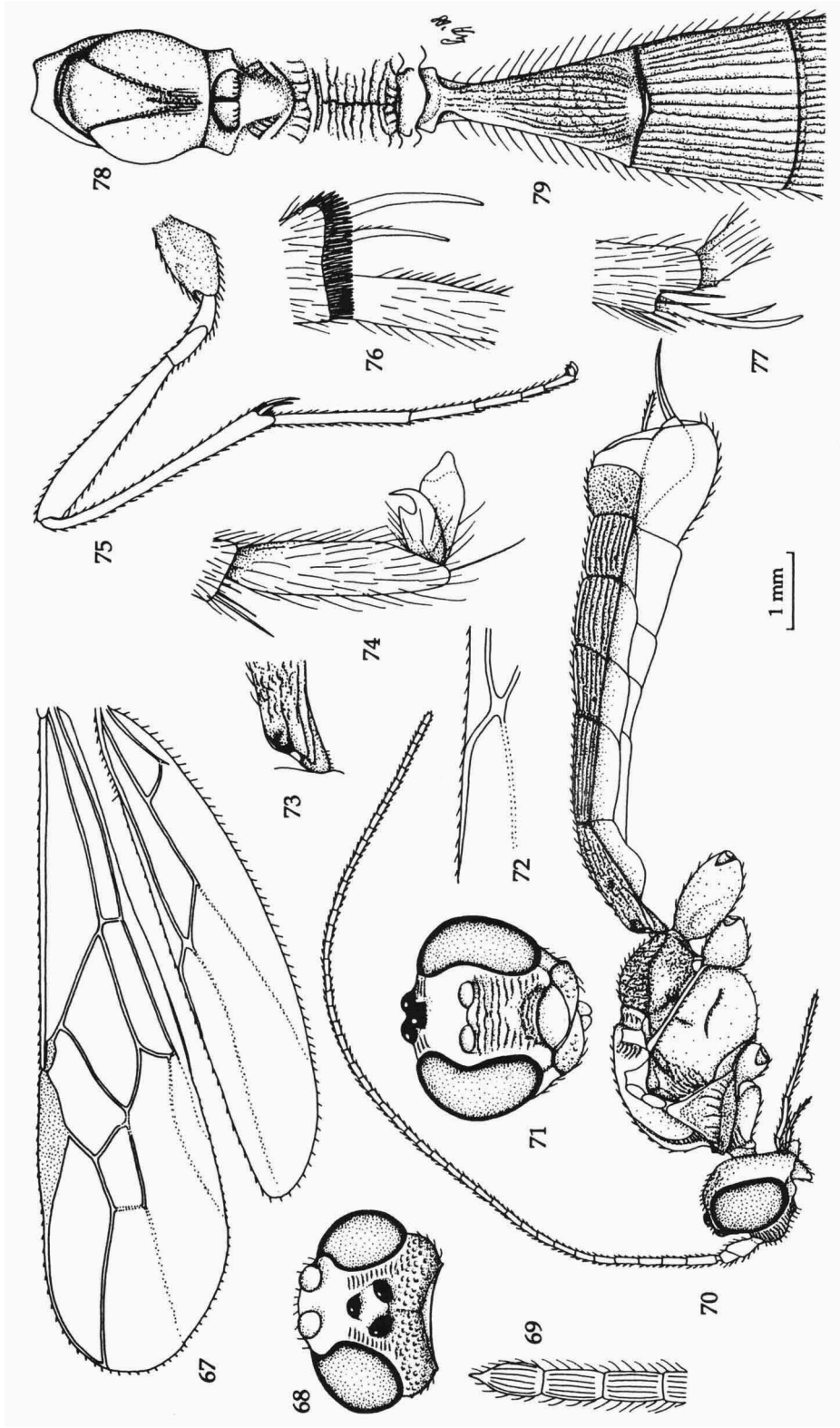
Figs 25-36, *Orthorhogas seyrigi* (Granger), ♀, lectotype. 25, wings; 26, apex of antenna; 27, habitus, lateral aspect; 28, antenna; 29, head, frontal aspect; 30, head, dorsal aspect; 31, hind tibial spurs, inner aspect; 32, middle tibia, inner aspect; 33, mesosoma, dorsal aspect; 34, inner hind claw; 35, hind leg; 36, first and second metasomal tergites, dorsal aspect. 25, 27, 28, 35: scale-line (= 1 ×); 26, 31, 32, 34: 5 ×; 29, 30, 33, 36: 2 ×.



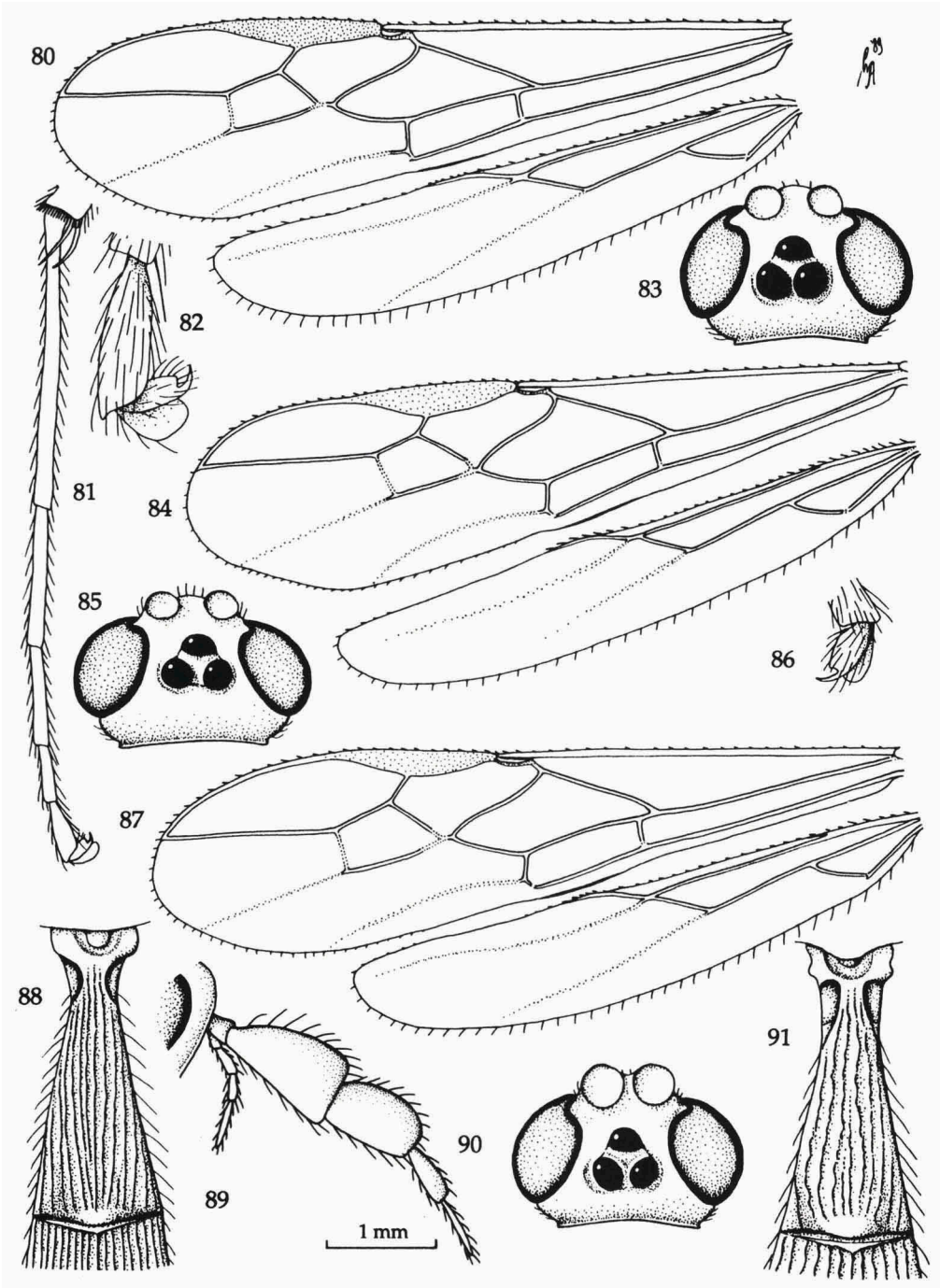
Figs 37-51, *Colastomion bicoloricorne* (Granger), ♀, lectotype, but 45 of ♀ and 47 of ♂ paratypes; figs 52-53, *Macrostomion longicornis* (Cameron), ♀, lectotype. 37, wings; 38, head, dorsal aspect; 39, hind leg; 40, antenna; 41, habitus, lateral aspect; 42, apex of antenna; 43, hind tibial spurs, inner aspect; 44, middle tibial spurs, inner aspect; 45, apex of metasoma; 46, 52, base of first metasomal tergite, lateral aspect; 47, palpi, lateral aspect; 48, first-third tergites, dorsal aspect; 49, mesosoma, dorsal aspect; 50, head, frontal aspect; 51, hind claw; 52, base of first tergite, dorsal aspect. 37, 39-41, 45: scale-line (= 1 ×); 38, 50: 1.5 ×; 42, 51: 5 ×; 43, 44, 46, 52, 53: 3.3 ×; 47: 2 ×; 48, 49: 1.2 ×.



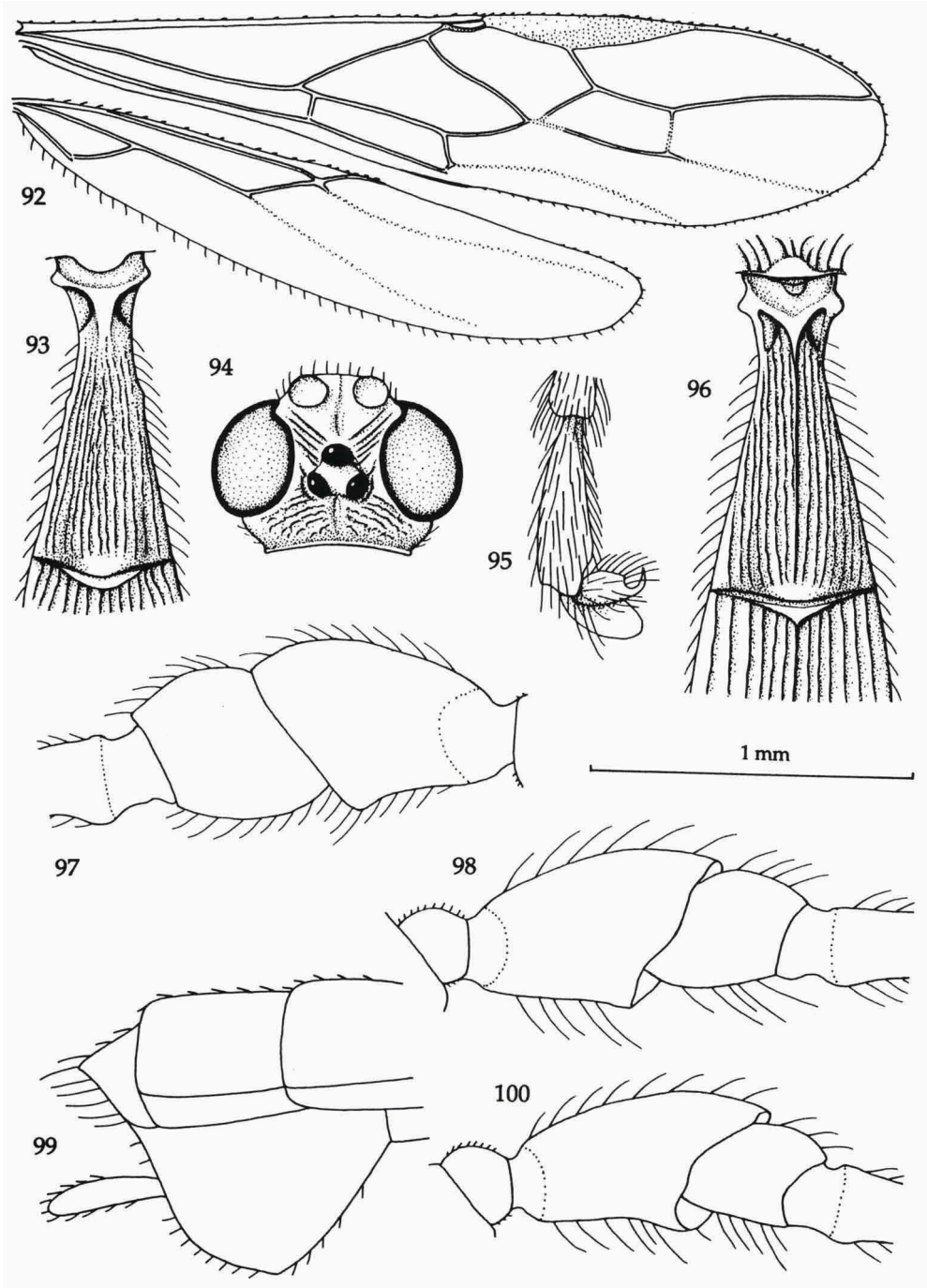
Figs 54-66, *Myocron persimile* (Szépligeti), ♀, Ghana, Kumasi. 54, wings; 55, head, dorsal aspect; 56, first-third metasomal tergites, dorsal aspect; 57, habitus, lateral aspect; 58, antenna; 59, middle tibial spurs; 60, mesosoma, dorsal aspect; 61, base of first tergite, lateral aspect; 62, hind tibial spurs, inner aspect; 63, head, frontal aspect; 64, apex of antenna; 65, hind leg; 66, outer hind claw. 54, 57, 58, 65: scale-line (= 1 ×); 55, 63: 2 ×; 56, 60: 1.5 ×. 59, 61, 62, 64, 66: 5 ×.



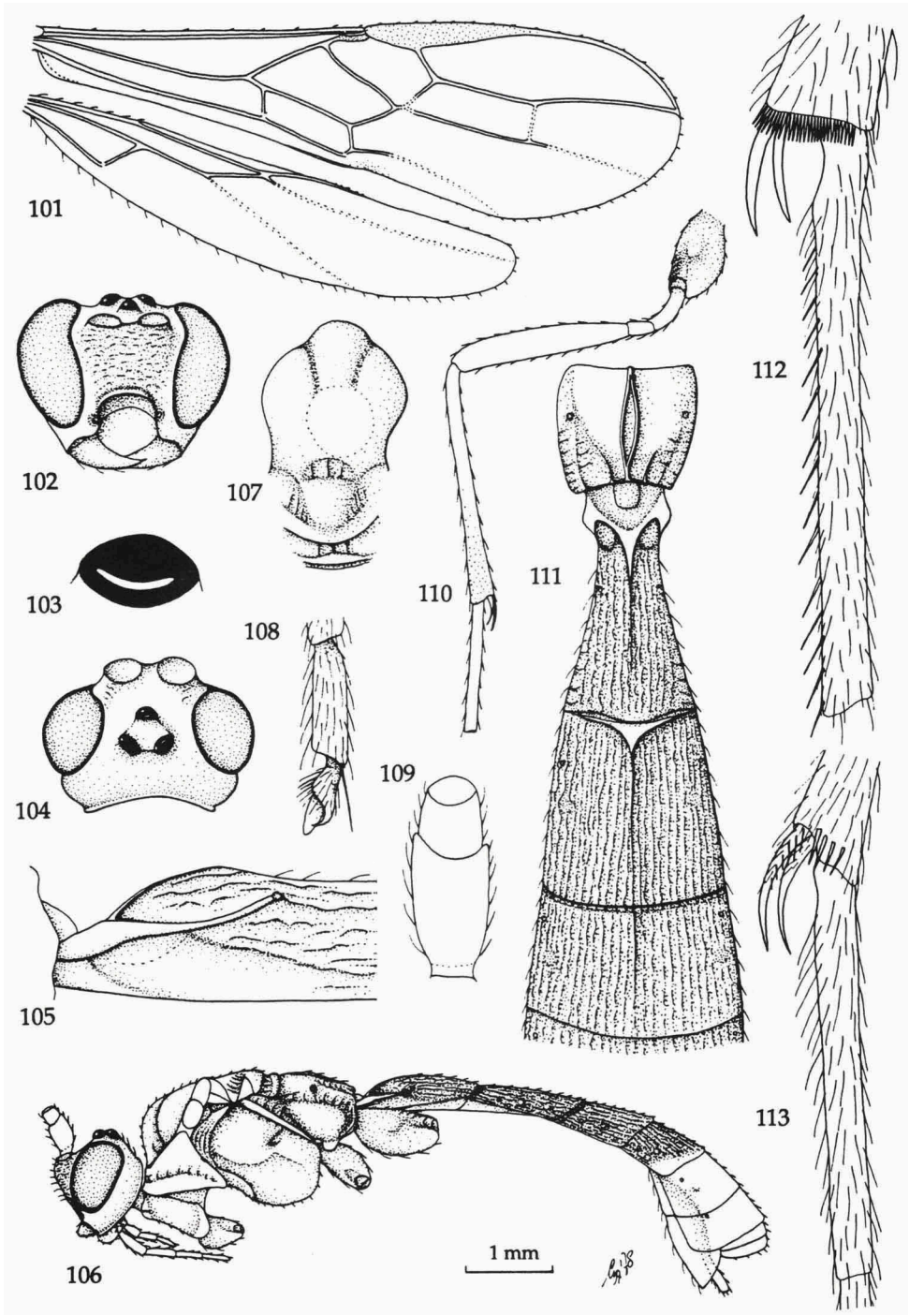
Figs 67-79, *Myocron antefurcale* gen. nov. & spec. nov., ♀, holotype. 67, wings; 68, head, dorsal aspect; 69, apex of antenna; 70, habitus, lateral aspect; 71, head, frontal aspect; 72, detail of vein SC+R1 of hind wing; 73, base of first tergite, lateral aspect; 74, hind claw; 75, hind leg; 76, hind spurs, inner aspect; 77, middle spurs, inner aspect; 78, mesosoma, dorsal aspect; 79, first and second metasomal tergites, dorsal aspect. 67, 70, 75: scale-line (= 1 ×); 68, 71, 78, 79: 1.5 ×; 69, 76, 77: 5 ×; 72, 73: 2 ×; 74: 8.8 ×.



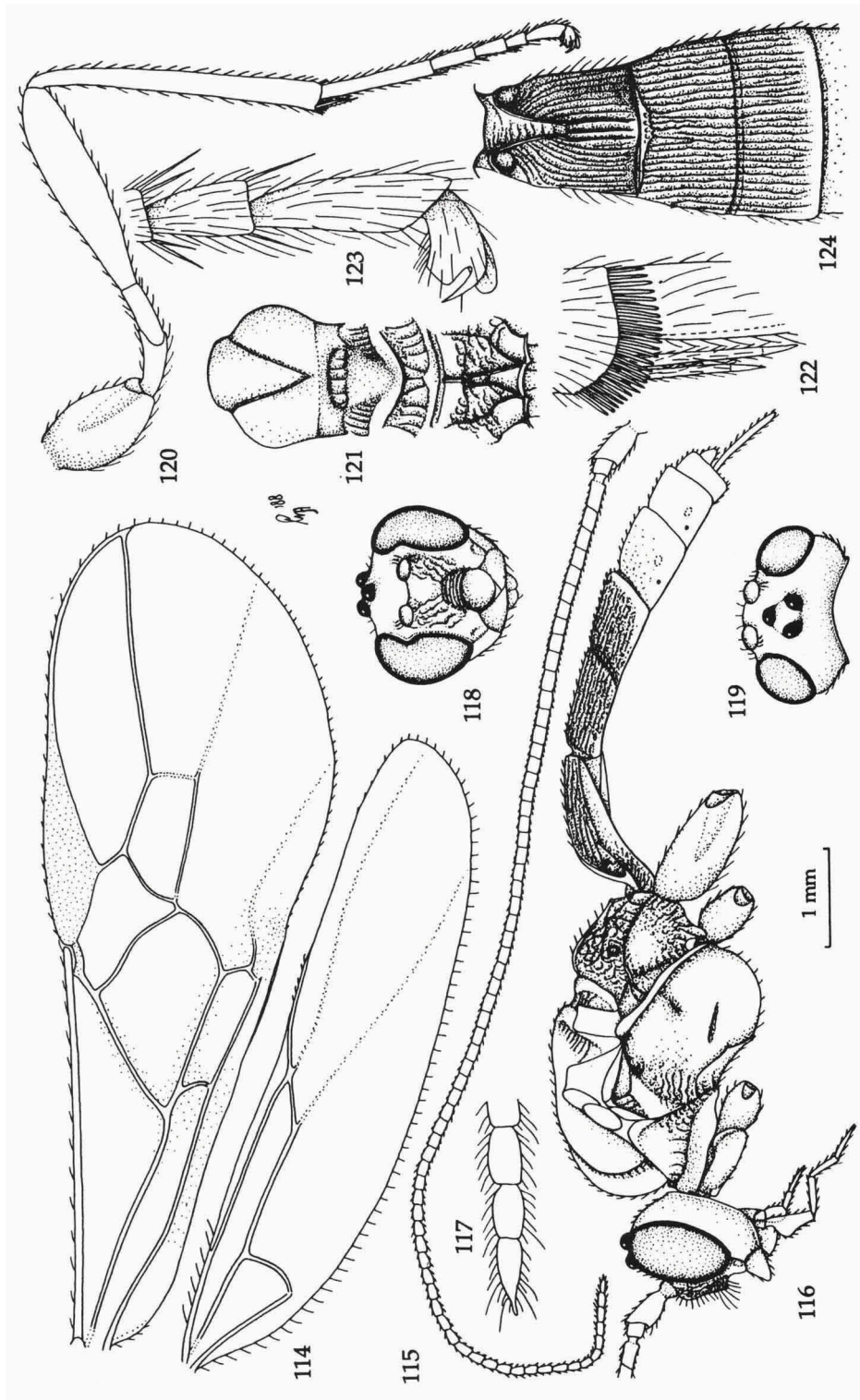
Figs 80-83, *Myocron albitarsus* (Szépligeti), ♀, Uganda, Bugoye; figs 84-86, 91, *M. macrocellatum* gen. nov. & spec. nov., ♀, holotype; figs 87, 88, 90, *M. macrocellatum* form A, ♀, Kenya, Meru; fig. 89, *M. voeltzkowi* (Szépligeti), ♂, holotype. 80, 84, 87, wings; 81, hind tarsus; 82, hind claw; 83, 85, 90, head, dorsal aspect; 86, middle claw; 88, 91, first metasomal tergite, dorsal aspect; 89, palpi, lateral aspect. 80, 84, 87: scale-line (= 1 ×); 81, 85, 88, 90, 91: 2 ×; 82, 86: 5 ×; 83: 4.4 ×; 89: 2.3 ×.



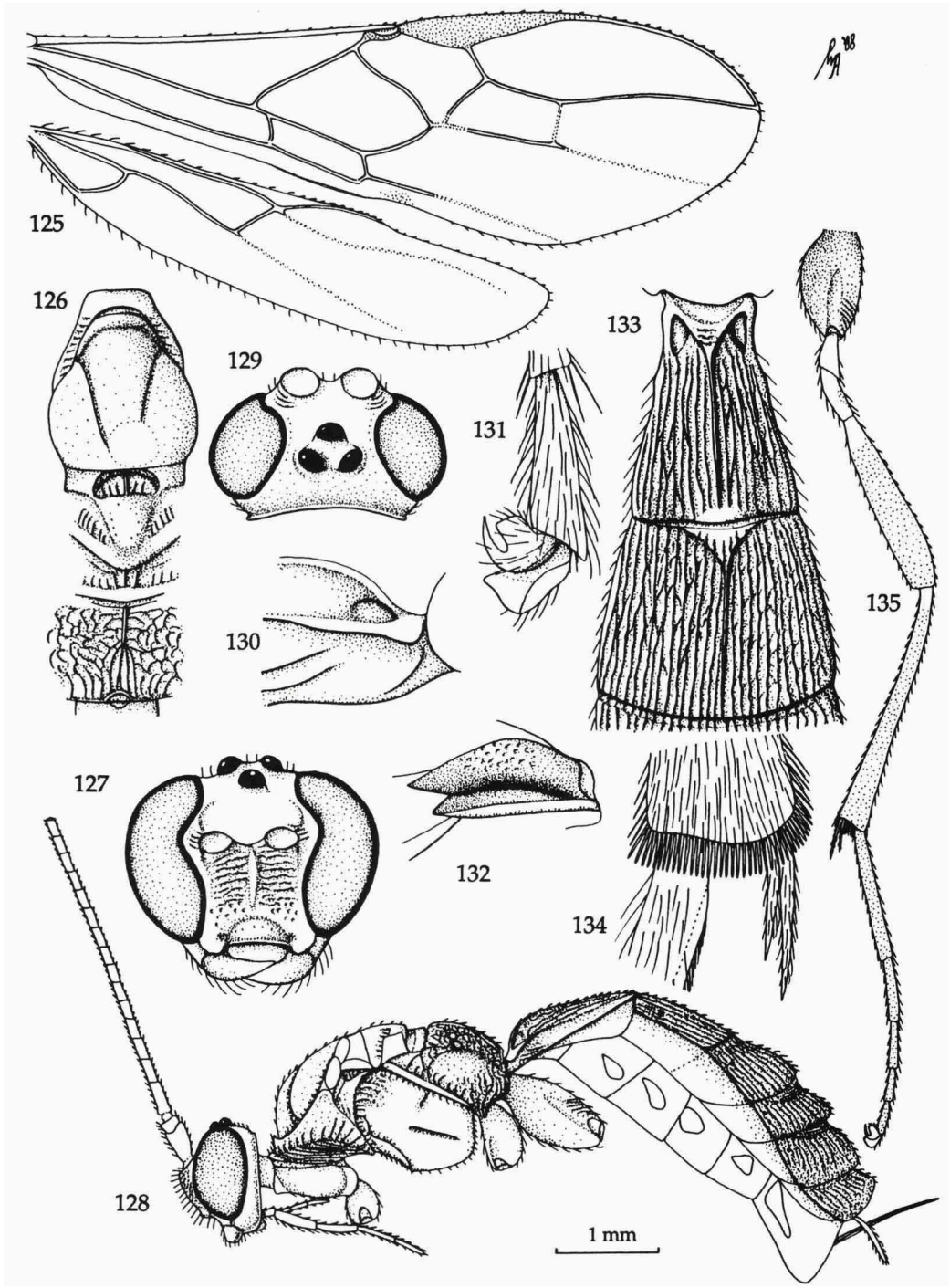
Figs 92, 94-96, *Myocron striatum* gen. nov. & spec. nov., ♀, holotype; fig. 93, *M. albitarsus* (Szépligeti), ♀, Uganda, Budoye; figs 97, 98, *M. antefurcale* gen. nov. & spec. nov., 97 of ♂, paratype, South Africa, Port St. John, 98 of ♀, holotype; fig. 99, *M. macrocellatum* gen. nov. & spec. nov., holotype, ♀; fig. 100, *M. persimile* (Szépligeti), ♀, Ghana, Kumasi. 92, wings; 93, 96, first metasomal tergite, dorsal aspect; 94, head, dorsal aspect; 95, outer hind claw; 97, 98, 100, scapus and pedicellus, lateral aspect; 99, apex of metasoma, lateral aspect. 92: 0.3 ×; 93, 94, 96: 0.7 ×; 95: 1.8 ×; 97, 98, 100: 2.3 ×; 99: scale-line (= 1 ×).



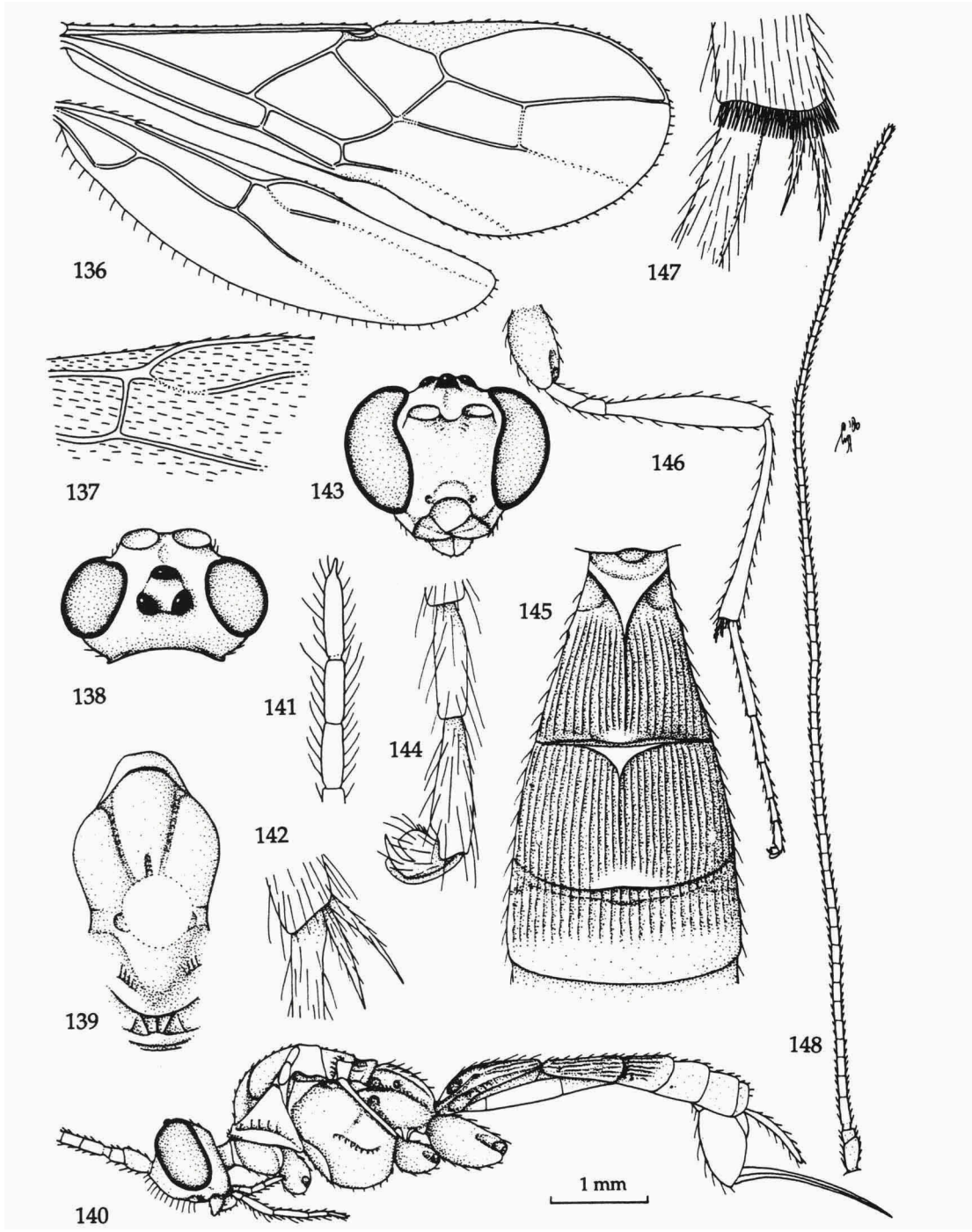
Figs 101-113, *Macrostomion bicolor* Szépligeti, ♀, paralectotype, but 108 of ♀, Indonesia, Java, Radjamadaka. 101, wings; 102, head, frontal aspect; 103, posterior ocellus; 104, head, dorsal aspect; 105, base of first metasomal tergite, lateral aspect; 106, habitus, lateral aspect; 107, thorax, dorsal aspect; 108, inner hind claw; 109, scapus and pedicellus, frontal aspect; 110, hind leg; 111, propodeum and first-third metasomal tergites, dorsal aspect; 112, hind tibial spurs and basitarsus, inner aspect; 113, middle tibial spurs and basitarsus, inner aspect. 101, 106, 110: scale-line (= 1 ×); 102, 104, 107, 111: 2 ×; 103: 10 ×; 105, 108, 109, 112, 113: 5 ×.



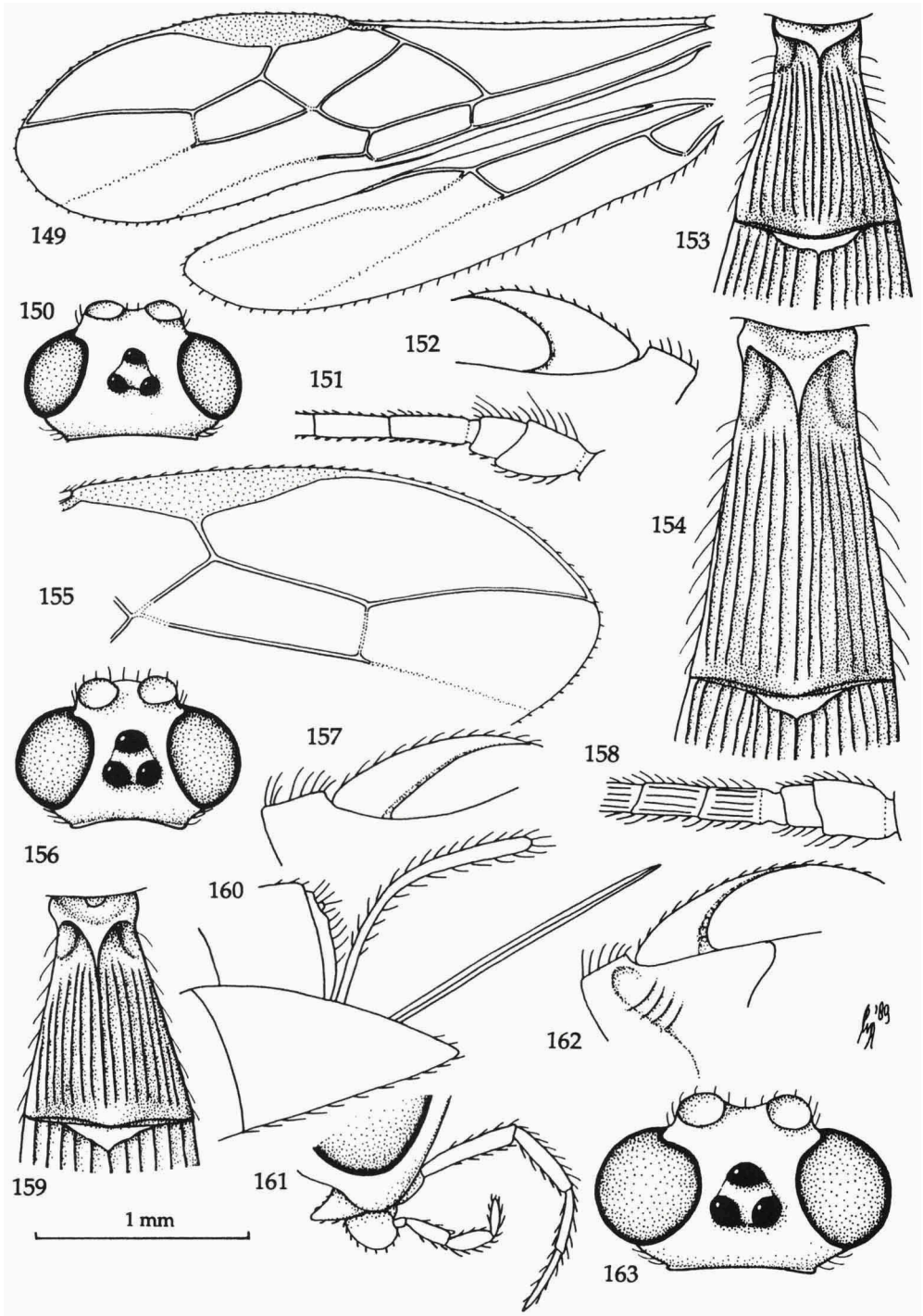
Figs 114-124, *Rogas luteus* Nees, ♀, Netherlands, Bussum. 114, wing; 115, antenna; 116, habitus, lateral aspect; 117, apex of antenna; 118, head, frontal aspect; 119, head; 120, hind leg; 121, mesosoma, dorsal aspect; 122, hind tibial spurs, inner aspect; 123, hind claw; 124, first-third metasomal tergites, dorsal aspect. 114-116, 118-121, 124: scale-line (= 1 ×); 117, 122, 123: 5 ×.



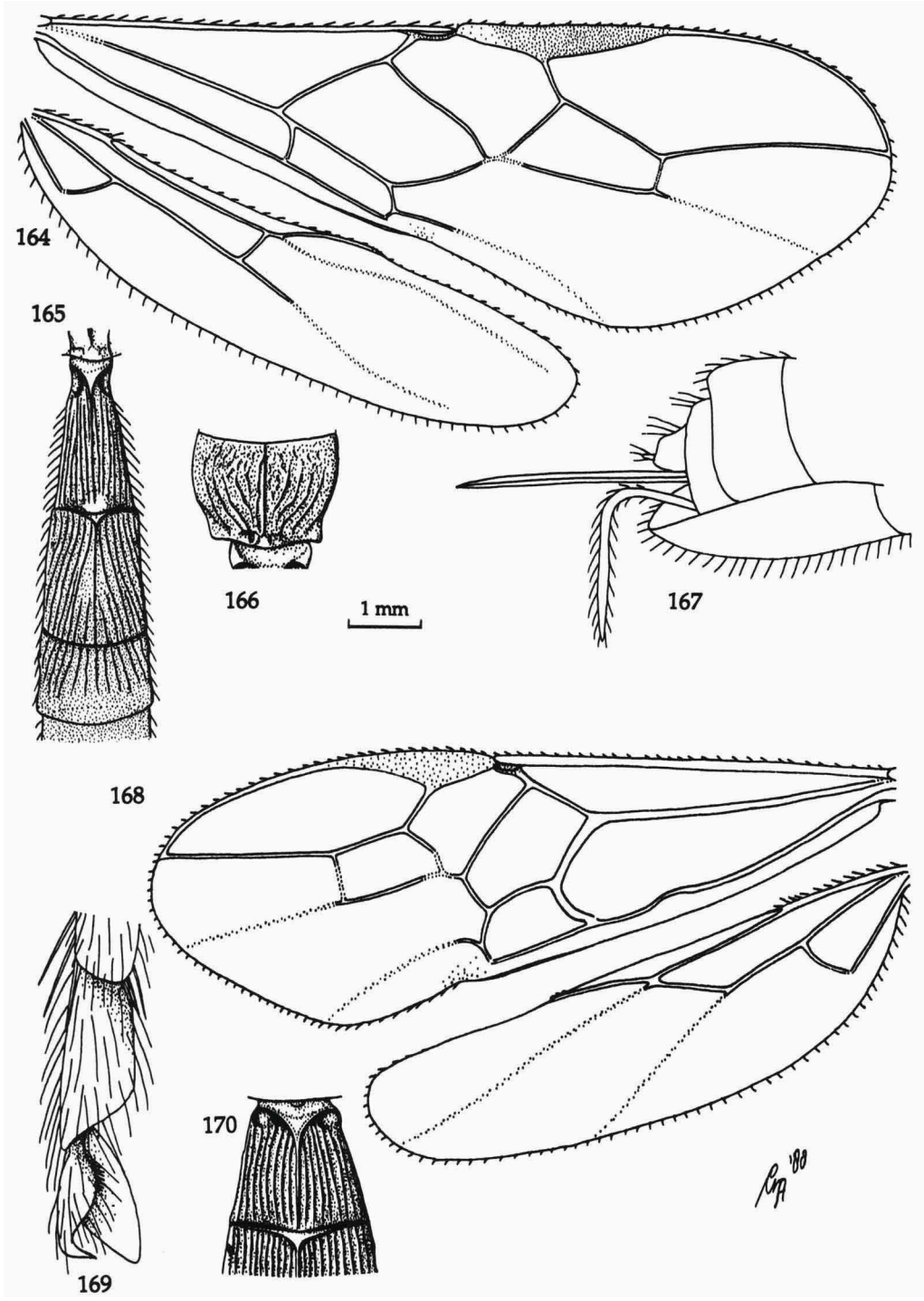
Figs 125-135, *Korupia curvinervis* gen. nov. & spec. nov., ♀, holotype. 125, wings; 126, mesosoma, dorsal aspect; 127, head, frontal aspect; 128, habitus, lateral aspect; 129, head, dorsal aspect; 130, base of first tergite, lateral aspect; 131, hind claw; 132, mandible, antero-ventral aspect; 133, first and second metasomal tergites, dorsal aspect; 134, hind tibial spurs, inner aspect; 135, hind leg. 125, 128, 135: scale-line (= 1 ×); 126, 133: 1.5 ×; 127, 129: 2 ×; 130-132, 134: 5 ×.



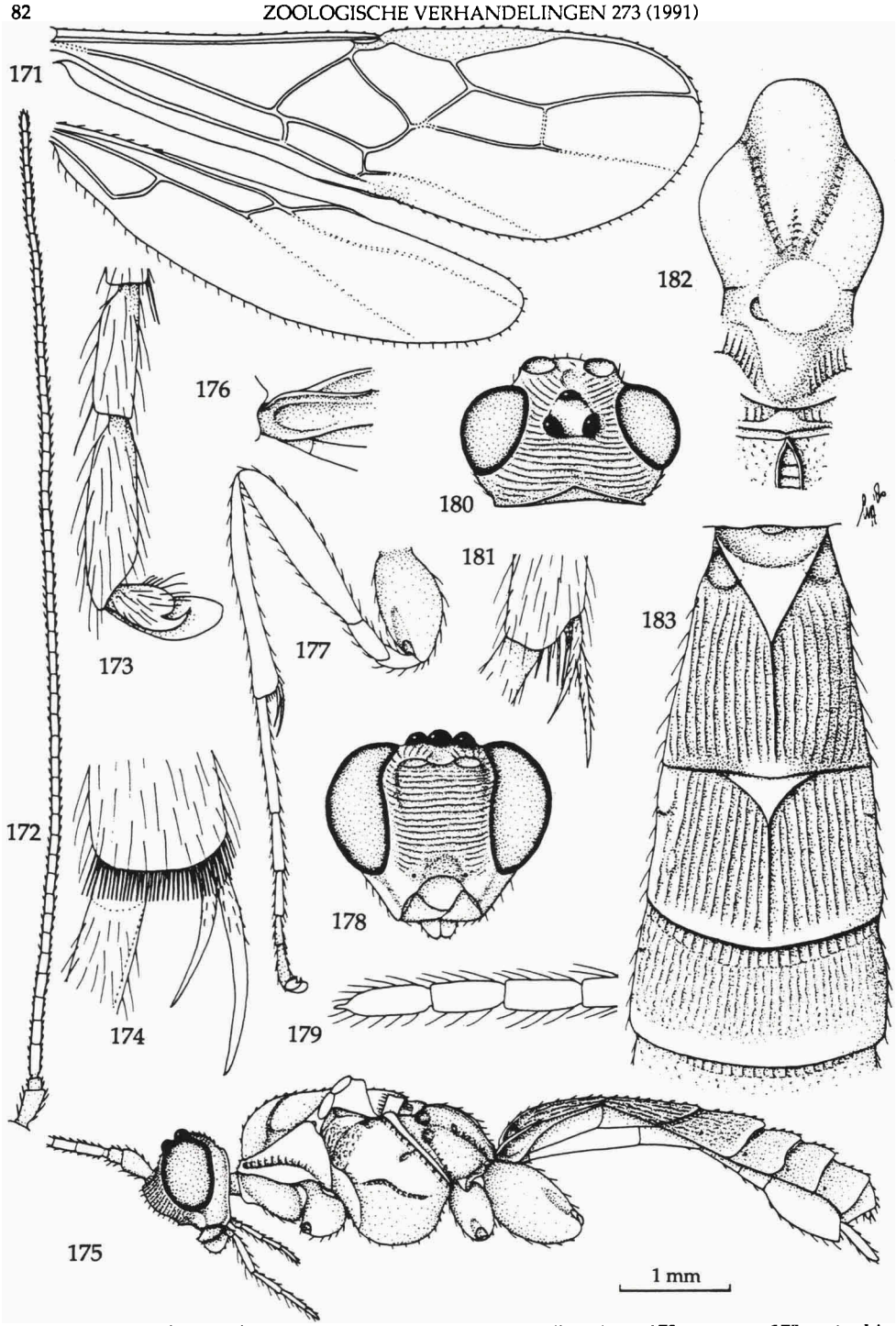
Figs 136-148, *Rectivena madagascariensis* (Granger), ♀, lectotype. 136, wings; 137, detail of vein 1r-m of hind wing; 138, head, dorsal aspect; 139, thorax, dorsal aspect; 140, habitus, lateral aspect; 141, apex of antenna; 142, middle tibial spurs, inner aspect; 143, head, frontal aspect; 144, outer hind claw; 145, first-third metasomal tergites, dorsal aspect; 146, hind leg; 147, hind tibial spurs, inner aspect; 148, antenna. 136, 140, 146, 148: scale-line (= 1 ×); 137-139, 143, 145: 2 ×; 141, 142, 144, 147: 5 ×.



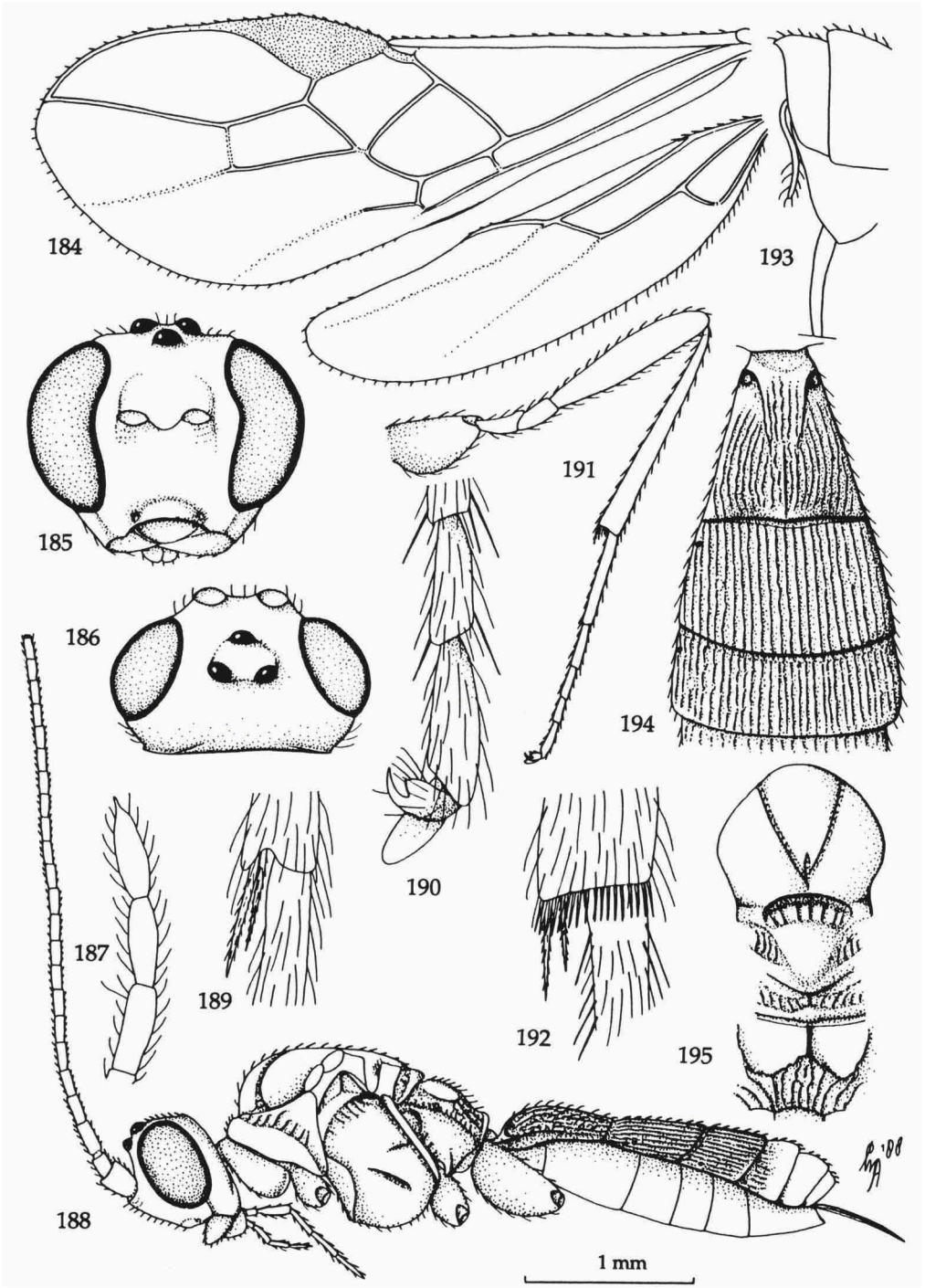
Figs 149-153, *Rectivena intermedia* gen. nov. & spec. nov., ♀, holotype; figs 155-158, 161, *R. lineata* gen. nov. & spec. nov., ♀, holotype, but 161 of ♂, paratype; figs 154, 159, 160, 162, 163, *R. limacodiphaga* (Shenefelt), ♀, Cameroons, Nkoenvom. 149, wings; 150, 156, 163, head, dorsal aspect; 151, 158, base of antenna; 152, 157, 162, anterior part of pronotum and mesoscutum, lateral aspect; 153, 154, 159, first metasomal tergite, dorsal aspect; 155, apex of fore wing; 160, apex of metasoma, lateral aspect; 161, palpi. 149, 155: 0.7 ×; 150, 153, 156, 159, 160, 163: scale-line (= 1 ×); 151, 152, 157, 158, 161, 162: 1.4 ×; 154: 1.8 ×.



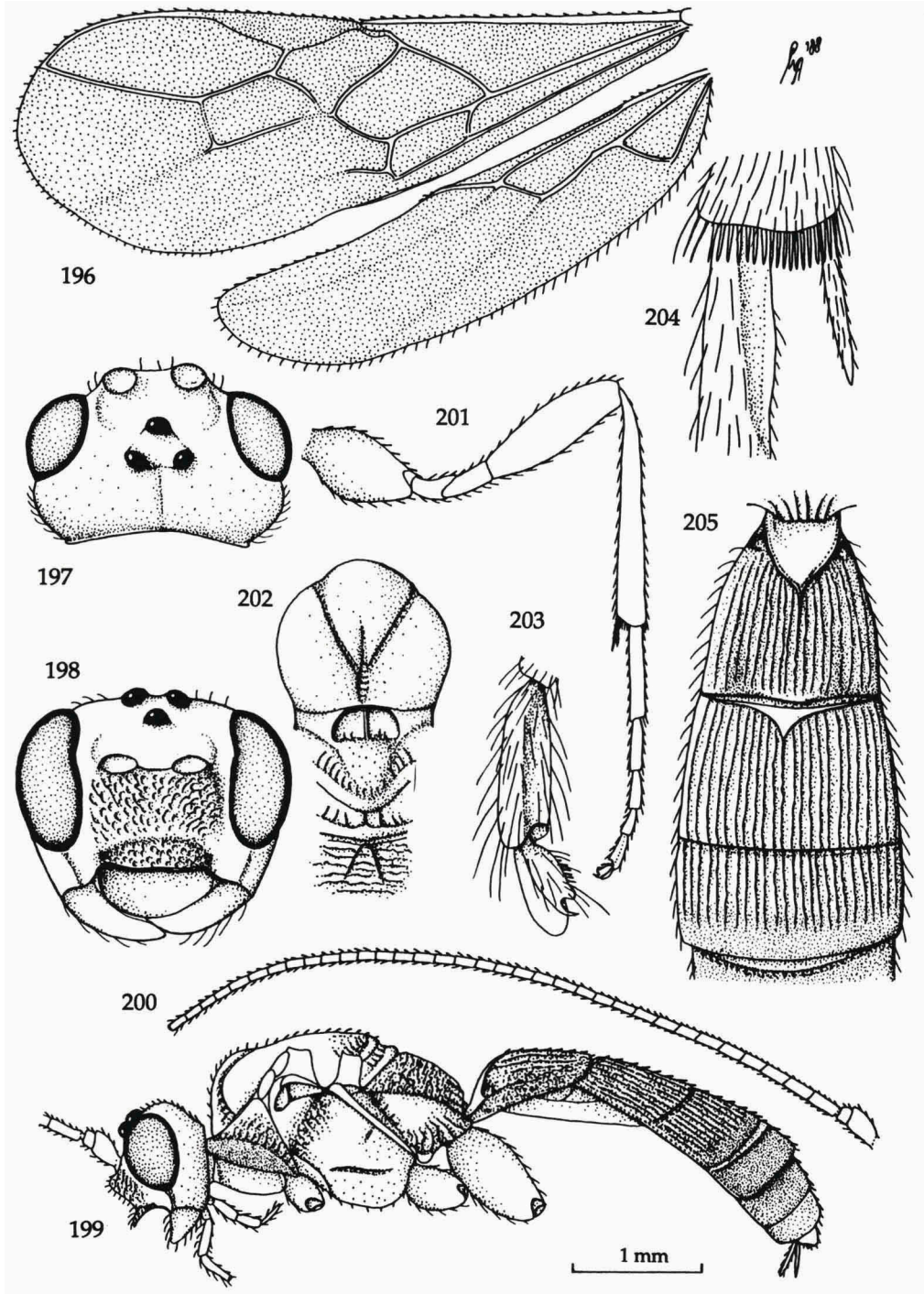
Figs 164-167, *Rectivena punctata* gen. nov. & spec. nov., ♀, holotype; figs 168-170, *Hemigyroneuron certum* spec. nov., ♂, paratype. 164, 168, wings; 165, first-third metasomal tergites, dorsal aspect; 166, propodeum, dorsal aspect; 167, apex of metasoma, lateral aspect; 169, hind claw; 170, first tergite, dorsal aspect. 164, 165: scale-line (= 1 ×); 166: 1.7 ×; 167: 4.5 ×; 168: 1.4 ×; 169: 6.5 ×; 169: 6.5 ×; 170: 2.8 ×.



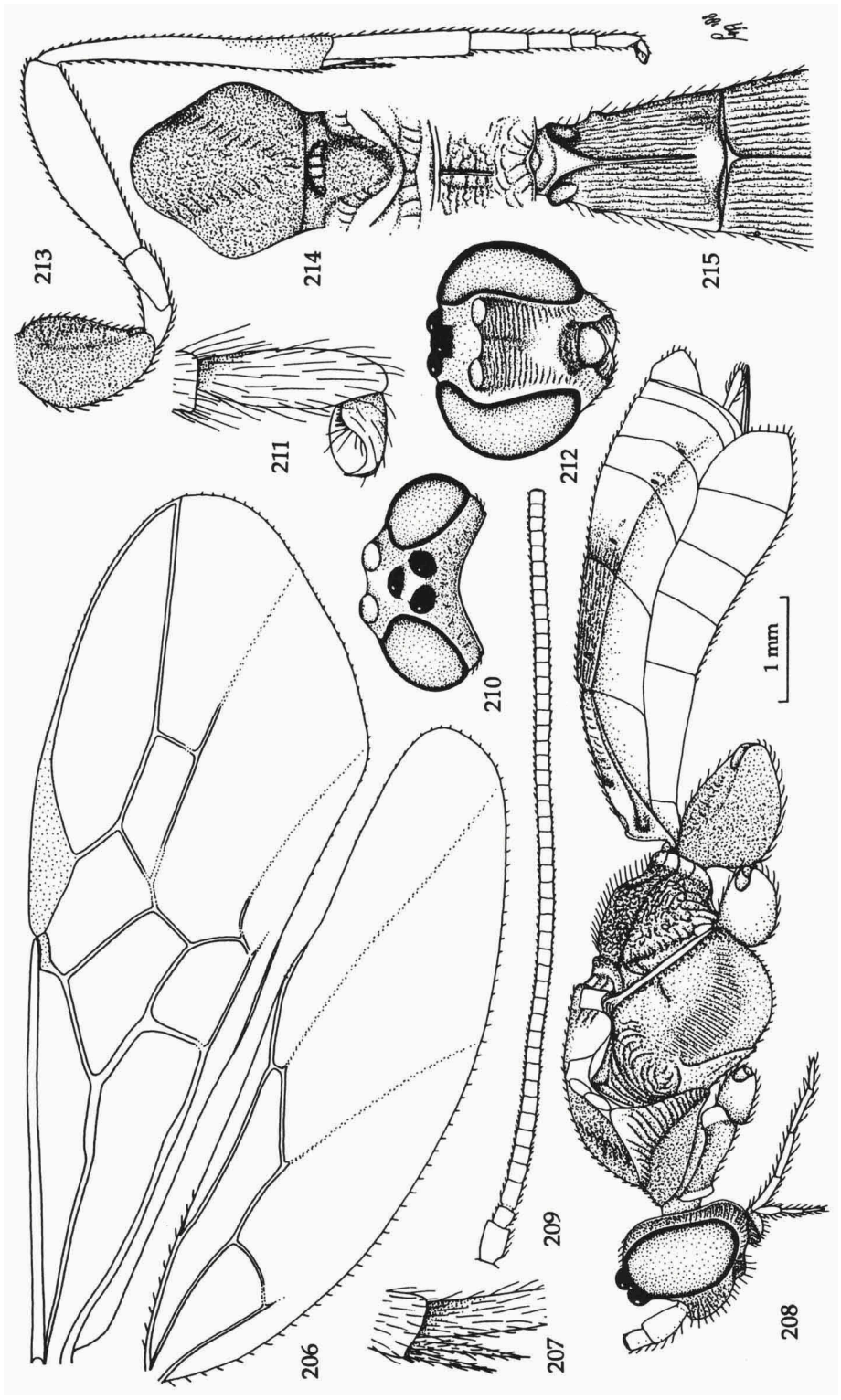
Figs 171-183, *Iporhogas infuscatipennis* Granger, ♀, lectotype. 171, wings; 172, antenna; 173, outer hind claw; 174, hind tibial spurs, inner aspect; 175, habitus, lateral aspect; 176, base of first metasomal tergite, lateral aspect; 177, hind leg; 178, head, frontal aspect; 179, apex of antenna; 180, head, dorsal aspect; 181, middle tibial spurs, inner aspect; 182, mesosoma, dorsal aspect; 183, first-third tergites, dorsal aspect 171, 172, 175, 177: scale-line (= 1 ×); 173, 174, 179, 181: 5 ×; 176, 178, 180, 182, 183: 2 ×.



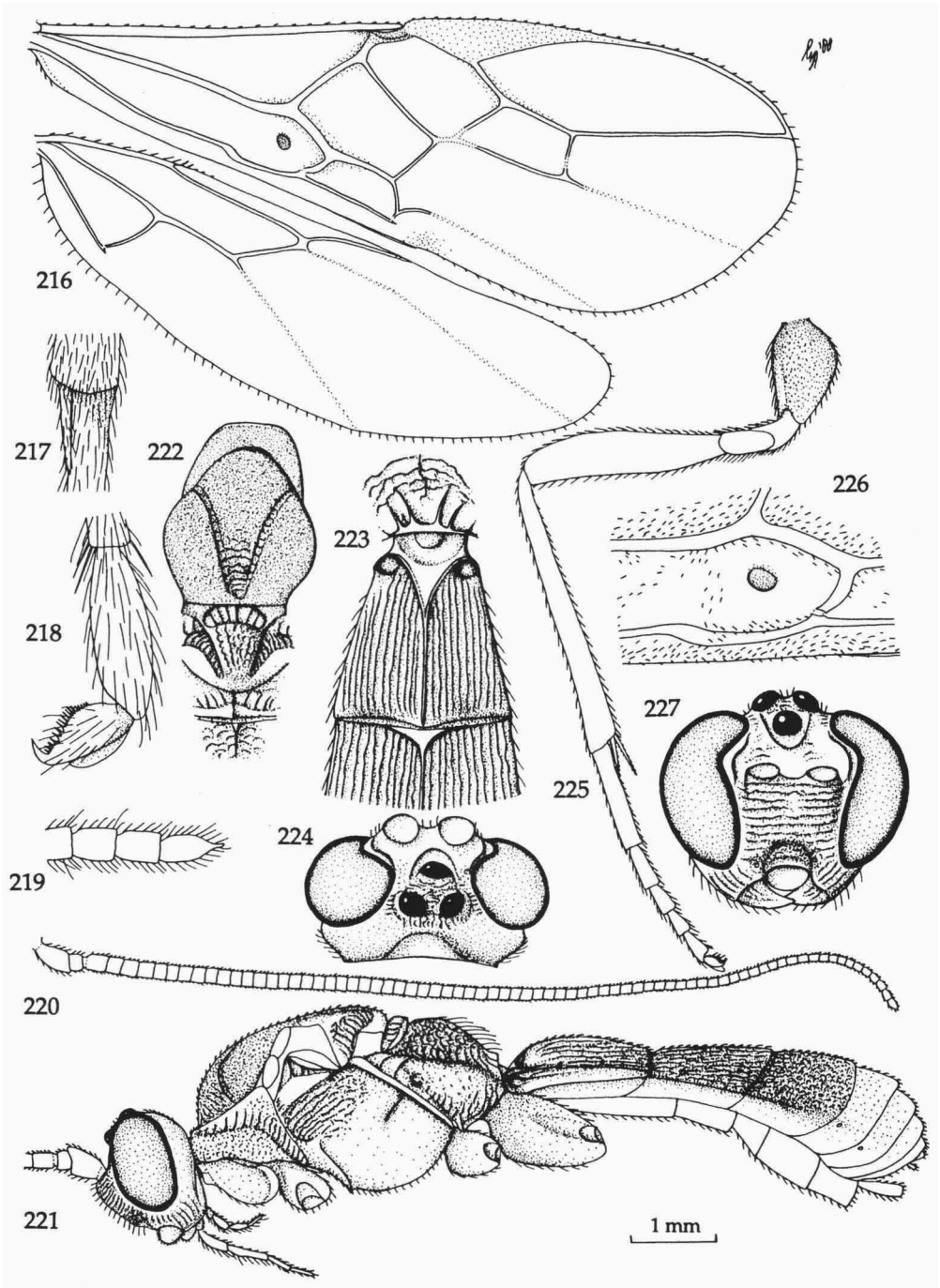
Figs 184-195, *Triraphis tricolor* (Wesmael), ♀, Netherlands, Venlo, but 187 and 193 of holotype of *T. rimulosa* (Marshall). 184, wings; 185, head, frontal aspect; 186, head, dorsal aspect; 187, apex of antenna; 188, habitus, lateral aspect; 189, middle tibial spurs, inner aspect; 190, hind claw; 191, hind leg; 192, hind tibial spurs, inner aspect; 193, apex of metasoma; 194, first-third metasomal tergites, dorsal aspect; 195, mesosoma, dorsal aspect. 184, 188, 191: scale-line (= 1 ×); 185, 186, 193: 2 ×; 187, 189, 190, 192: 5 ×; 194, 195: 1.5 ×.



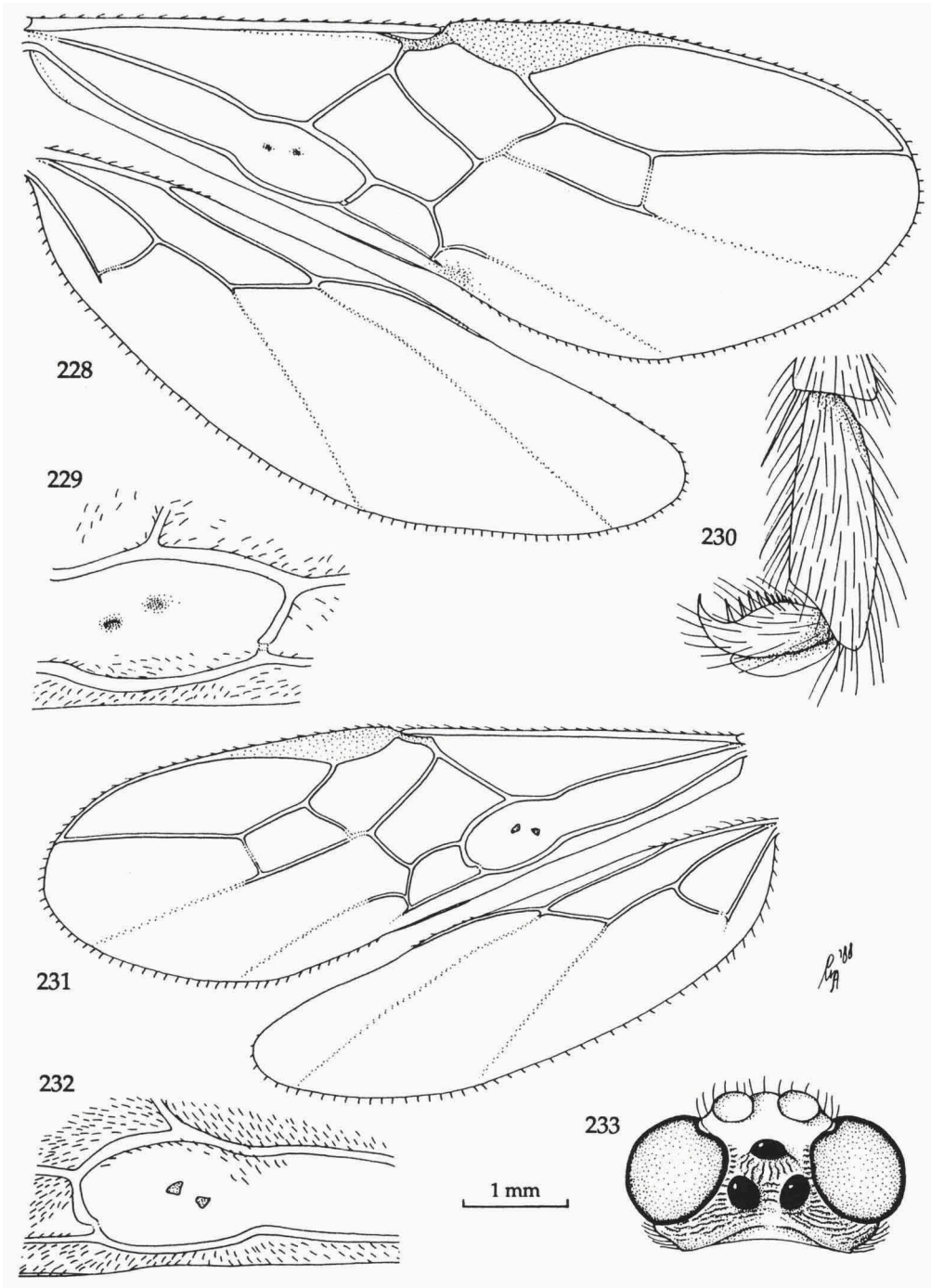
Figs 196-205, *Aspidorogas fuscipennis* gen. nov. & spec. nov., ♀, holotype. 196, wings; 197, head, dorsal aspect; 198, head, frontal aspect; 199, habitus, lateral aspect; 200, antenna; 201, hind leg; 202, mesosoma, dorsal aspect; 203, inner hind claw; 204, apex of hind tibia, inner aspect; 205, first-third metasomal tergites, dorsal aspect. 196, 199, 200, 201: scale-line (= 1 ×); 197, 198: 2 ×; 202, 205: 1.9 ×; 203, 204: 5 ×.



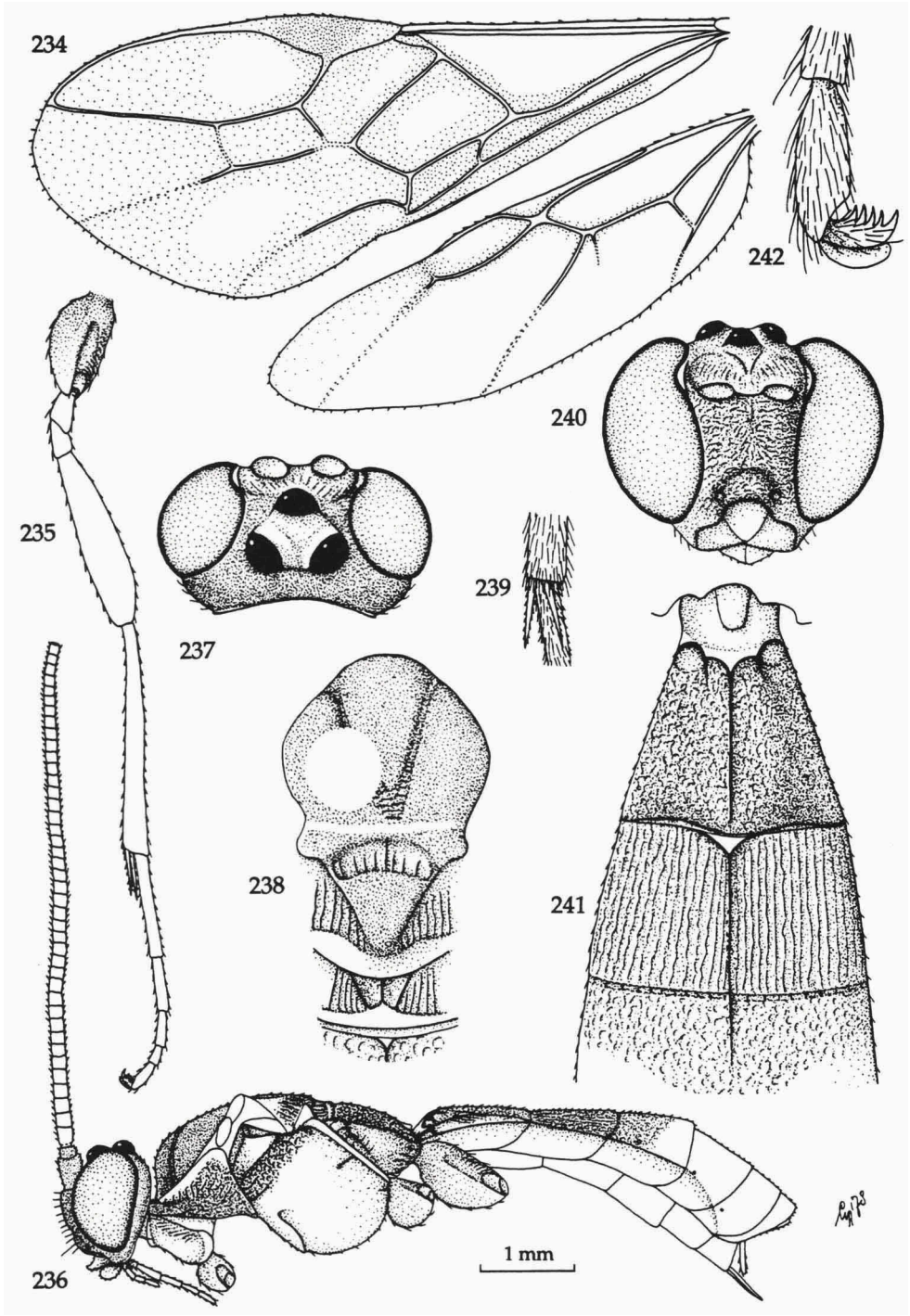
Figs 206-215, *Hemigyroneuron speciosus* Baker, ♀, holotype. 206, wings; 207, hind tibial spurs, inner aspect; 208, habitus, lateral aspect; 209, antenna; 210, head, dorsal aspect; 211, inner hind claw; 212, head, frontal aspect; 213, hind leg; 214, mesosoma, dorsal aspect; 215, first metasomal tergite, dorsal aspect. 206, 208, 209, 213, 215: scale-line (= 1 ×); 207: 2 ×; 210, 212, 214: 1.2 ×; 211: 5 ×.



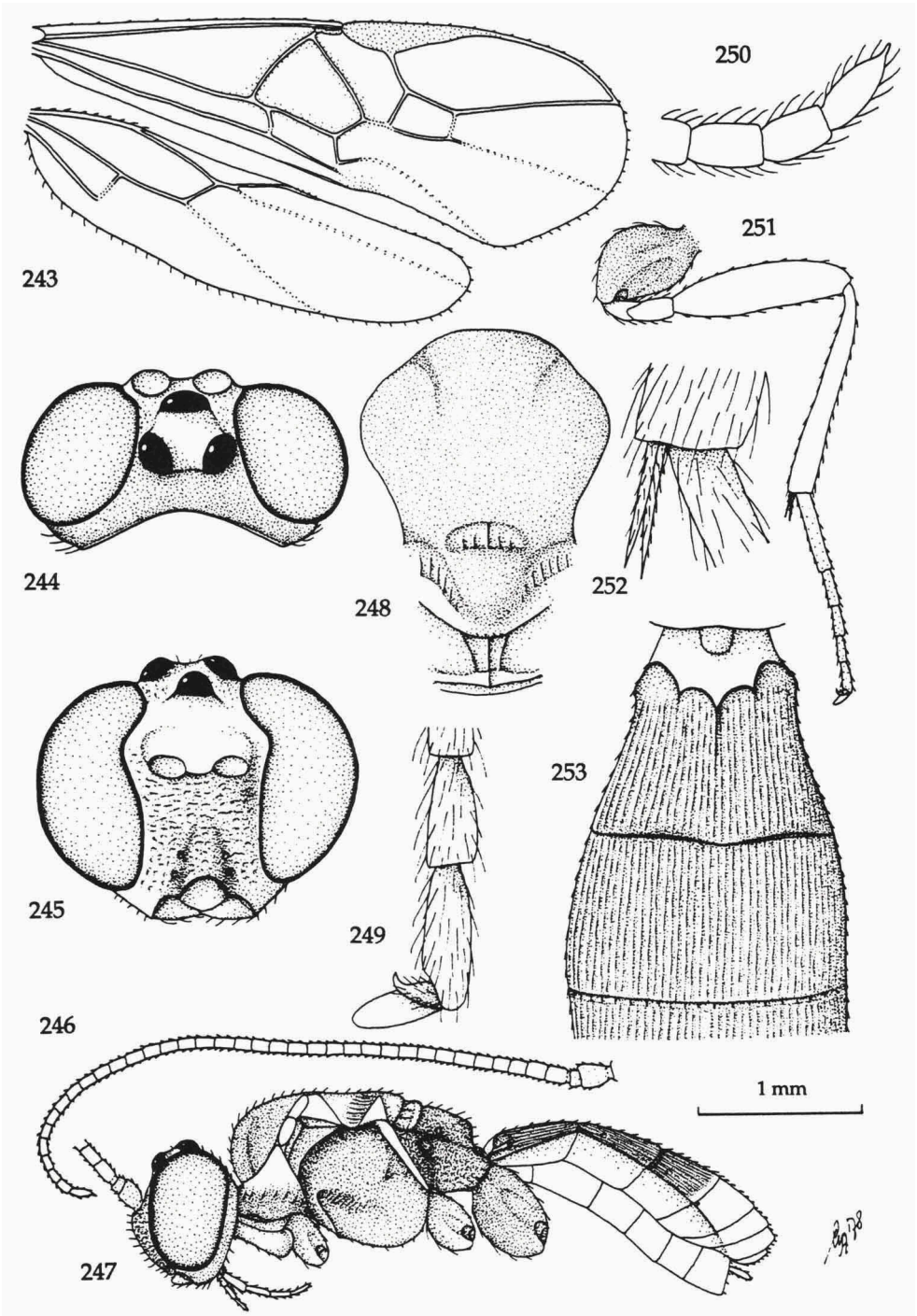
Figs 216-227, *Pholichora madagascariensis* (Granger), ♀, lectotype. 216, wings; 217, apex of hind tibia, inner aspect; 218, inner hind claw; 219, apex of antenna; 220, antenna; 221, habitus, lateral aspect; 222, mesosoma, dorsal aspect; 223, first tergite, dorsal aspect; 224, head, dorsal aspect; 225, hind leg; 226, apex of subbasal cell of fore wing; 227, head, dorsal aspect. 216, 220, 221, 225: scale-line (= 1 ×); 217, 226: 2 ×; 218, 219: 5 ×; 222, 223: 1.1 ×; 224, 227: 1.5 ×.



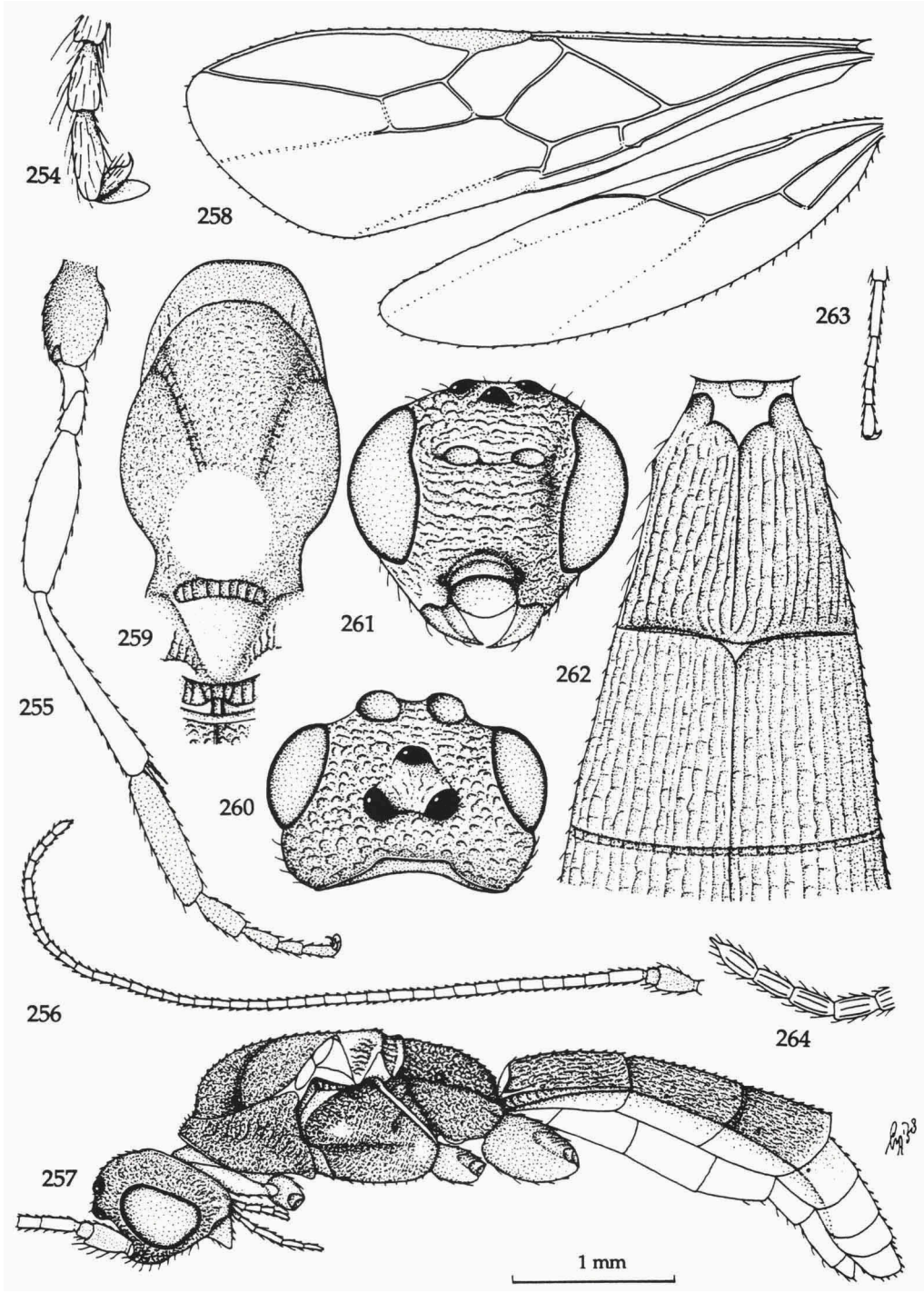
Figs 228, 229, *Pholichora inopina* gen. nov. & spec. nov., ♀, holotype; figs 230-233, *P. bipanna* gen. nov. & spec. nov., ♀, holotype. 228, 231, wings; 229, 232, apex of subbasal cell of fore wing; 230, outer hind claw; 233, head, dorsal aspect. 228, 233: scale-line (= 1 ×); 229: 2.2 ×; 230: 6.8 ×; 231: 0.9 ×; 232: 2 ×.



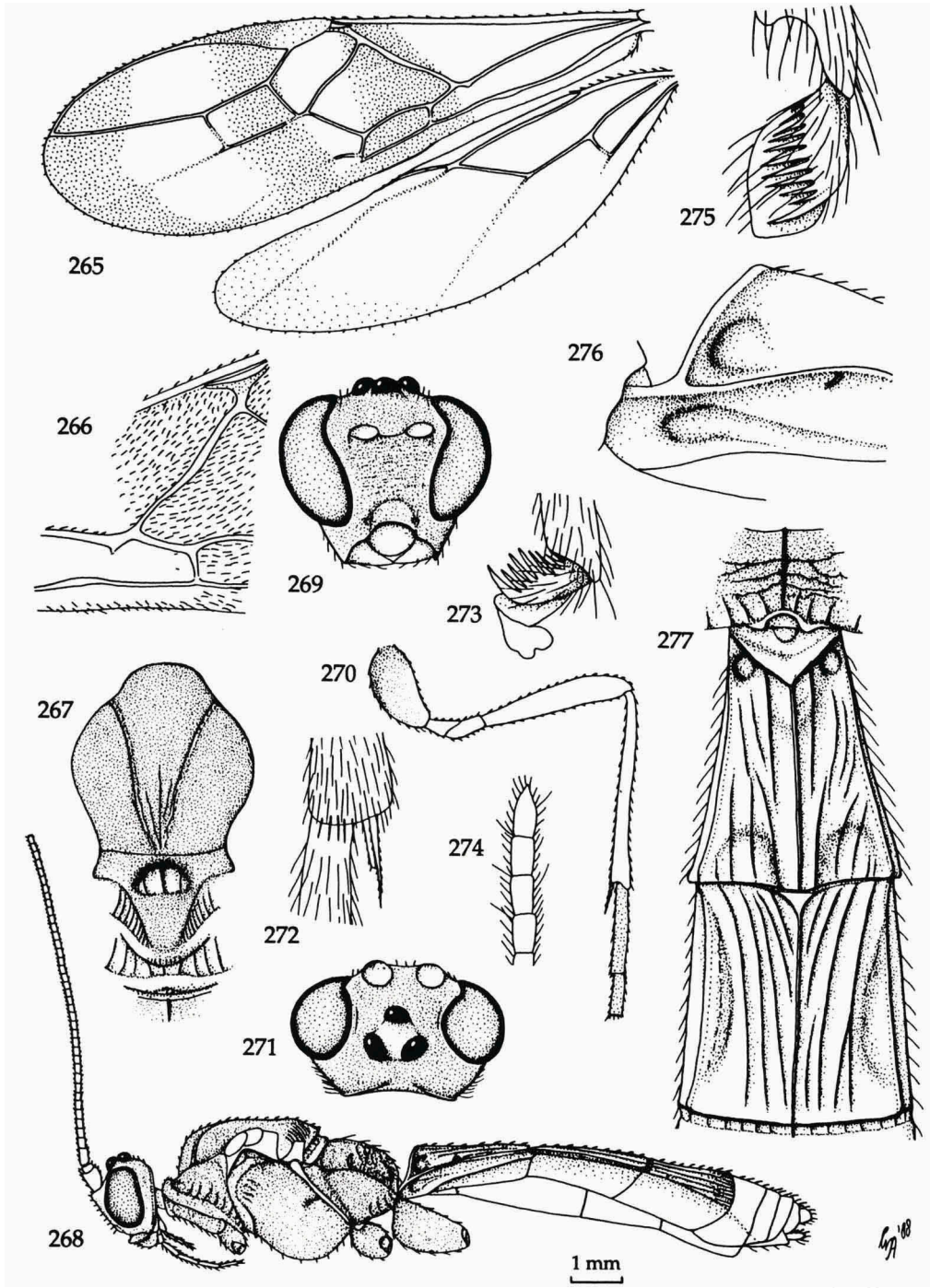
Figs 234-242, *Scoporogas jeanelli* (Szépligeti), ♀, Tanzania, Kilimandjaro. 234, wings; 235, hind leg; 236, habitus, lateral aspect; 237, head, dorsal aspect; 238, mesosoma, dorsal aspect; 239, apex of hind tibia, inner aspect; 240, head, frontal aspect; 241, first and second metasomal tergites, dorsal aspect; 242, inner hind claw. 234-236: scale-line (= 1 ×); 237-241: 2 ×; 242: 5 ×.



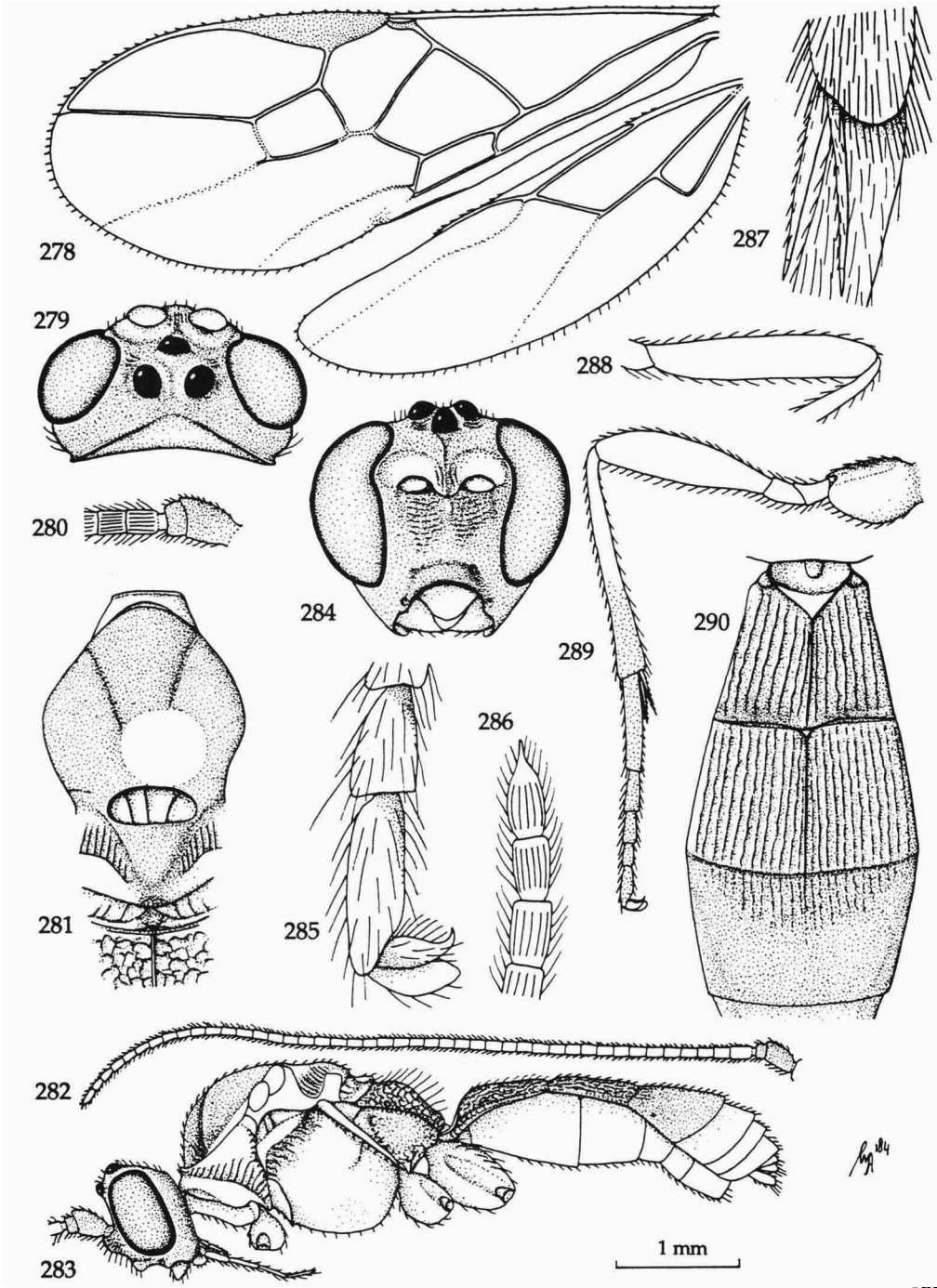
Figs 243-253, *Myoporhogas ocellaris* (Szépligeti), ♀, holotype. 243, wings; 244, head, dorsal aspect; 245, head, frontal aspect; 246, antenna; 247, habitus, lateral aspect; 248, thorax, dorsal aspect; 249, inner hind claw; 250, apex of antenna; 251, hind leg; 252, apex of hind tibia, inner aspect; 253, first and second metasomal tergites, dorsal aspect. 243, 246, 247, 251: scale-line (= 1 ×); 244, 245, 248, 253: 2 ×; 249, 250, 252: 5 ×.



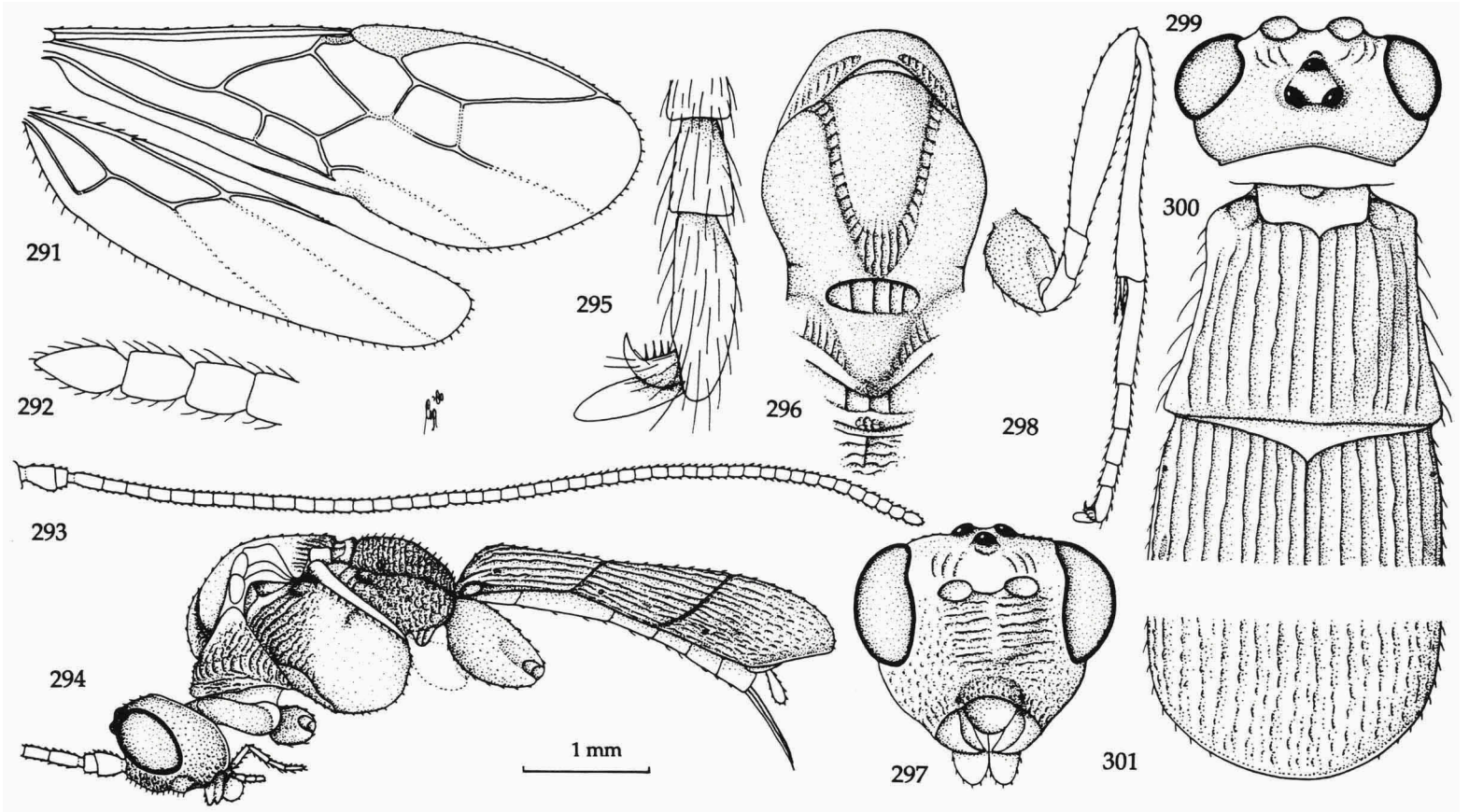
Figs 254-264, *Cratodactyla unicolor* Szépligeti, ♀, holotype. 254, inner hind claw; 255, hind leg; 256, antenna; 257, habitus, lateral aspect; 258, wings; 259, mesosoma, dorsal aspect; 260, head, dorsal aspect; 261, head, frontal aspect; 262, first and second metasomal tergites, dorsal aspect; 263, fore tarsus; 264, apex of antenna. 254, 264: 2.5 ×; 255-258, 263: scale-line (= 1 ×); 259-262: 1.8 ×.



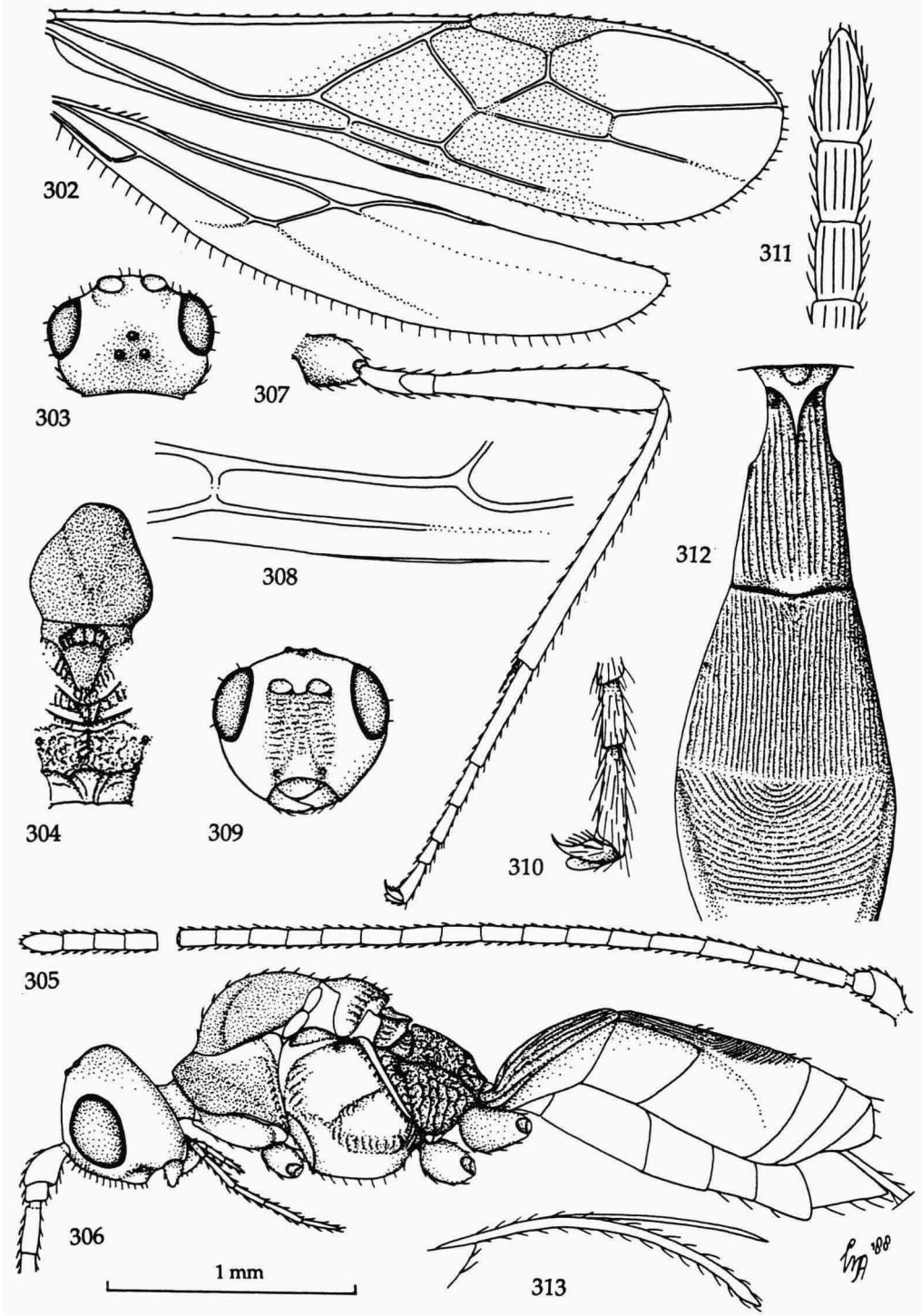
Figs 265-277, *Cordylorhogas trifasciatus* Enderlein, ♀, holotype, but 273, 274, and 276 of ♀, Kenya, Mwatata. 265, wings; 266, detail of apex of subbasal cell and of vein 1-M of fore wing; 267, mesosoma, dorsal aspect; 268, habitus, lateral aspect; 269, head, frontal aspect; 270, hind leg; 271, head, dorsal aspect; 272, apex of hind tibia, inner aspect; 273, hind claw; 274, apex of antenna; 275, fore claw; 276, base of first metasomal tergite, lateral aspect; 277, propodeum, first and second tergites, dorsal aspect. 265, 268, 270: scale-line (= 1 ×); 266, 267, 269, 271, 277: 2 ×; 272: 4.3 ×; 273, 274, 276: 6.2 ×; 275: 9.5 ×.



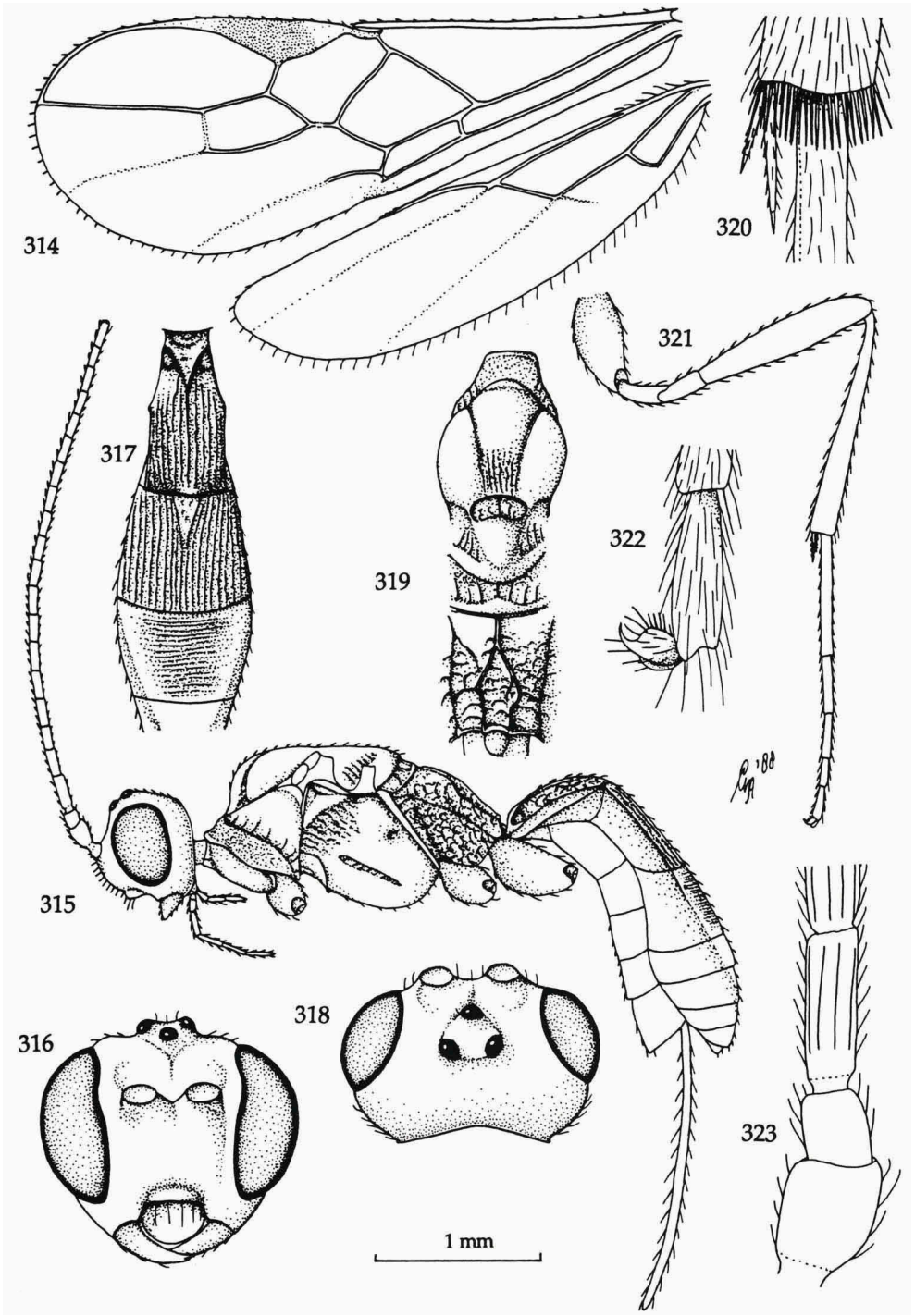
Figs 278-290, *Aleiodes* (*A.*) *heterogaster* Wesmael, ♀, holotype, but 287 of ♀, Netherlands, Tongeren. 278, wings; 279, head, dorsal aspect; 280, base of antenna, lateral aspect; 281, mesosoma, dorsal aspect; 282, antenna; 283, habitus, lateral aspect; 284, head, frontal aspect; 285, hind claw; 286, apex of antenna; 287, apex of hind tibia, inner aspect; 288, fore femur, lateral aspect; 289, hind leg; 290, first-third metasomal tergites, dorsal aspect. 278, 282, 283, 289: scale-line (= 1 ×); 279, 280, 284, 288: 2 ×; 281, 290: 1.3 ×; 285, 286: 5 ×; 287: 4.5 ×.



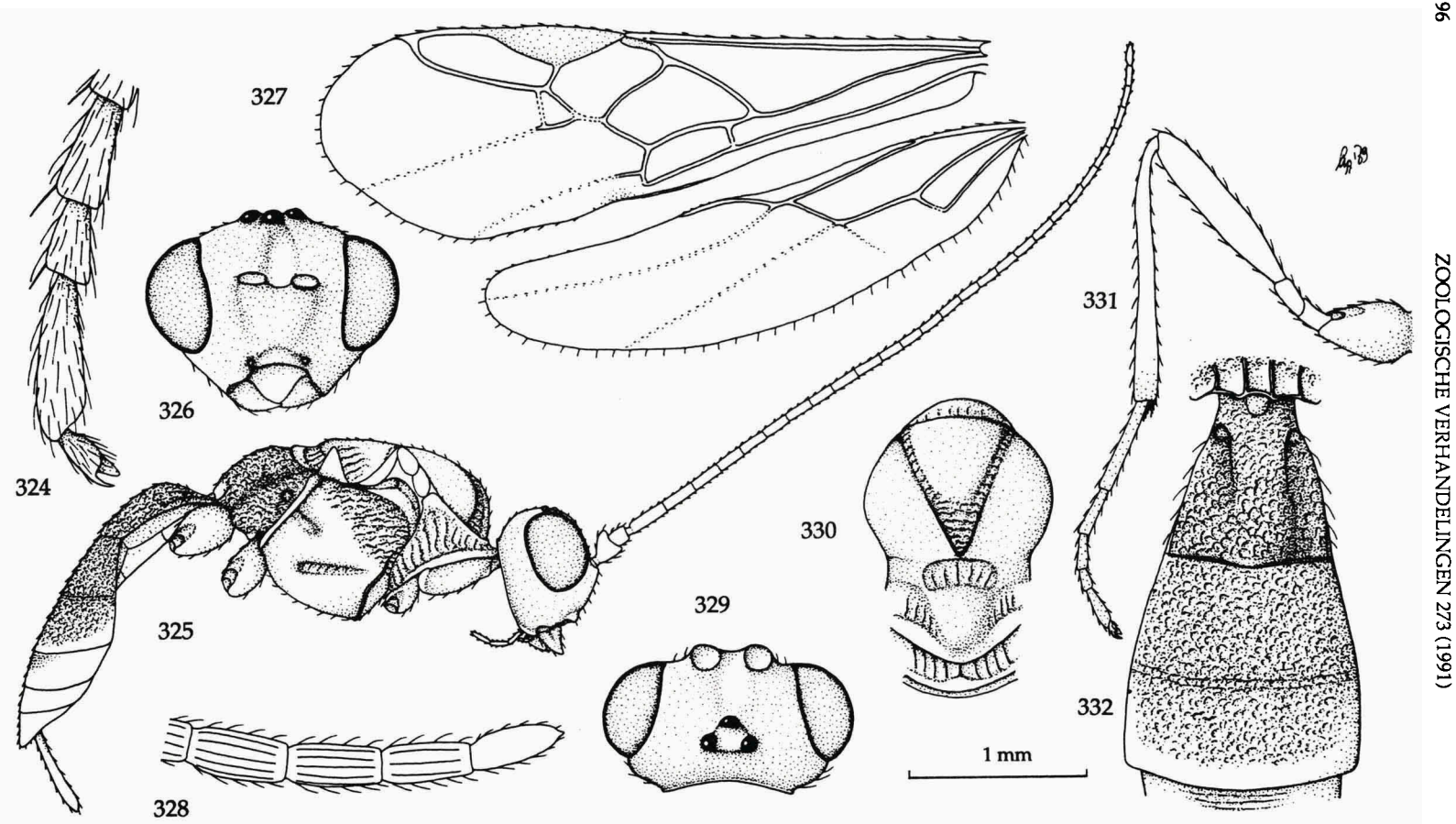
Figs 291-301, *Aleiodes* (*Chelonorhogas*) *rufithorax* (Enderlein; = *A. convexus* nom. nov.), ♀, lectotype. 291, wings; 292, apex of antenna; 293, antenna; 294, habitus, lateral aspect; 295, outer hind claw; 296, mesosoma, dorsal aspect; 297, head, frontal aspect; 298, hind leg; 299, head, dorsal aspect; 300, first metasomal tergite, dorsal aspect; 301, apex of third tergite, dorsal aspect. 291, 293, 294, 298: scale-line (= 1 ×); 292, 295: 5 ×; 296, 297, 299-301: 2 ×.



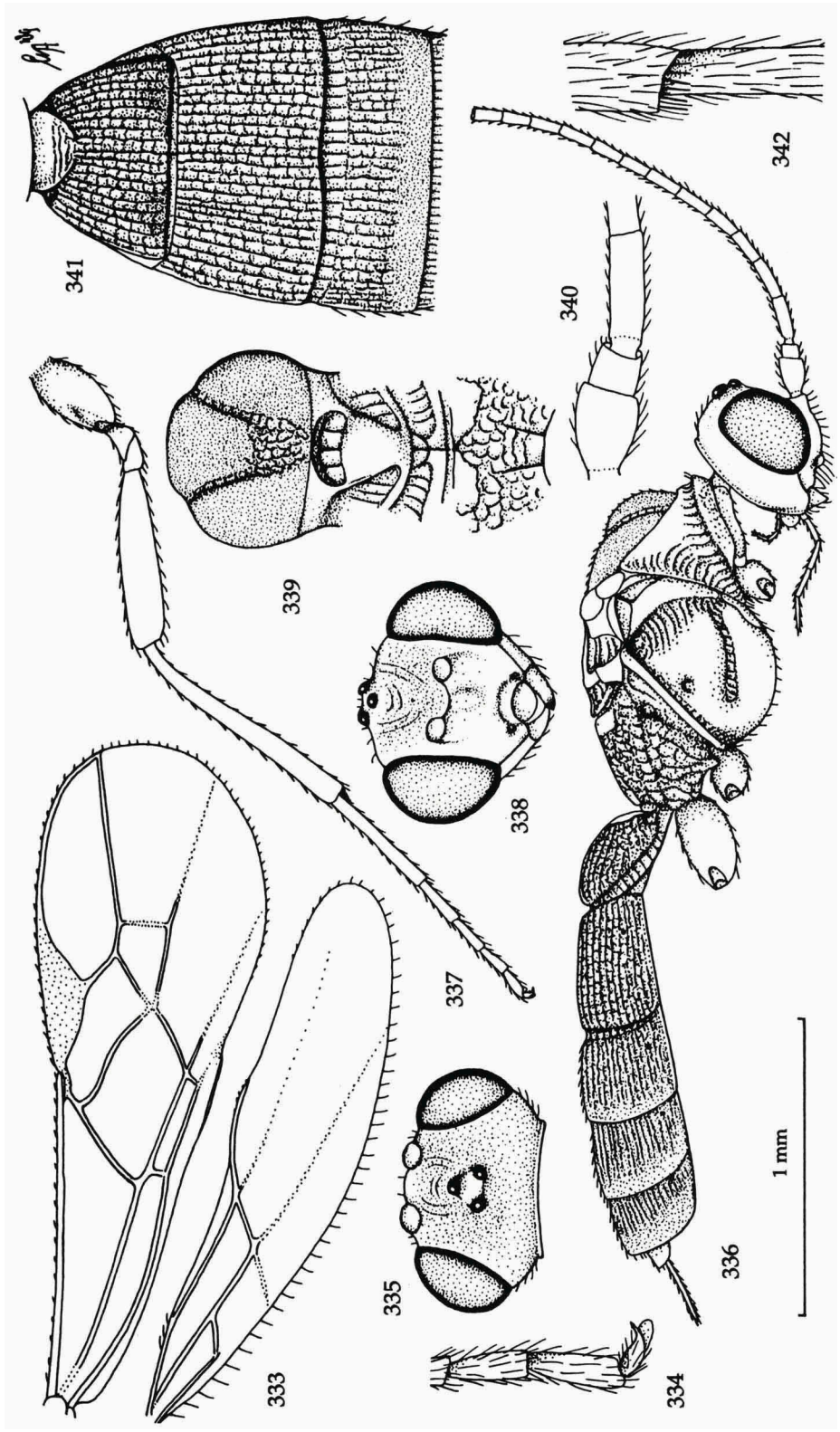
Figs 302-313, *Tebennotoma typica* (Rohwer), ♀, holotype. 302, wings; 303, head, dorsal aspect; 304, mesosoma, dorsal aspect; 305, antenna; 306, habitus, lateral aspect; 307, hind leg; 308, first subdiscal cell of fore wing; 309, head, frontal aspect; 310, outer middle claw; 311, apex of antenna; 312, first-third metasomal tergites, dorsal aspect; 313, ovipositor. 302-307, 309, 313: scale-line (= 1 ×); 308, 310, 311: 2.5 ×; 312: 1.4 ×.



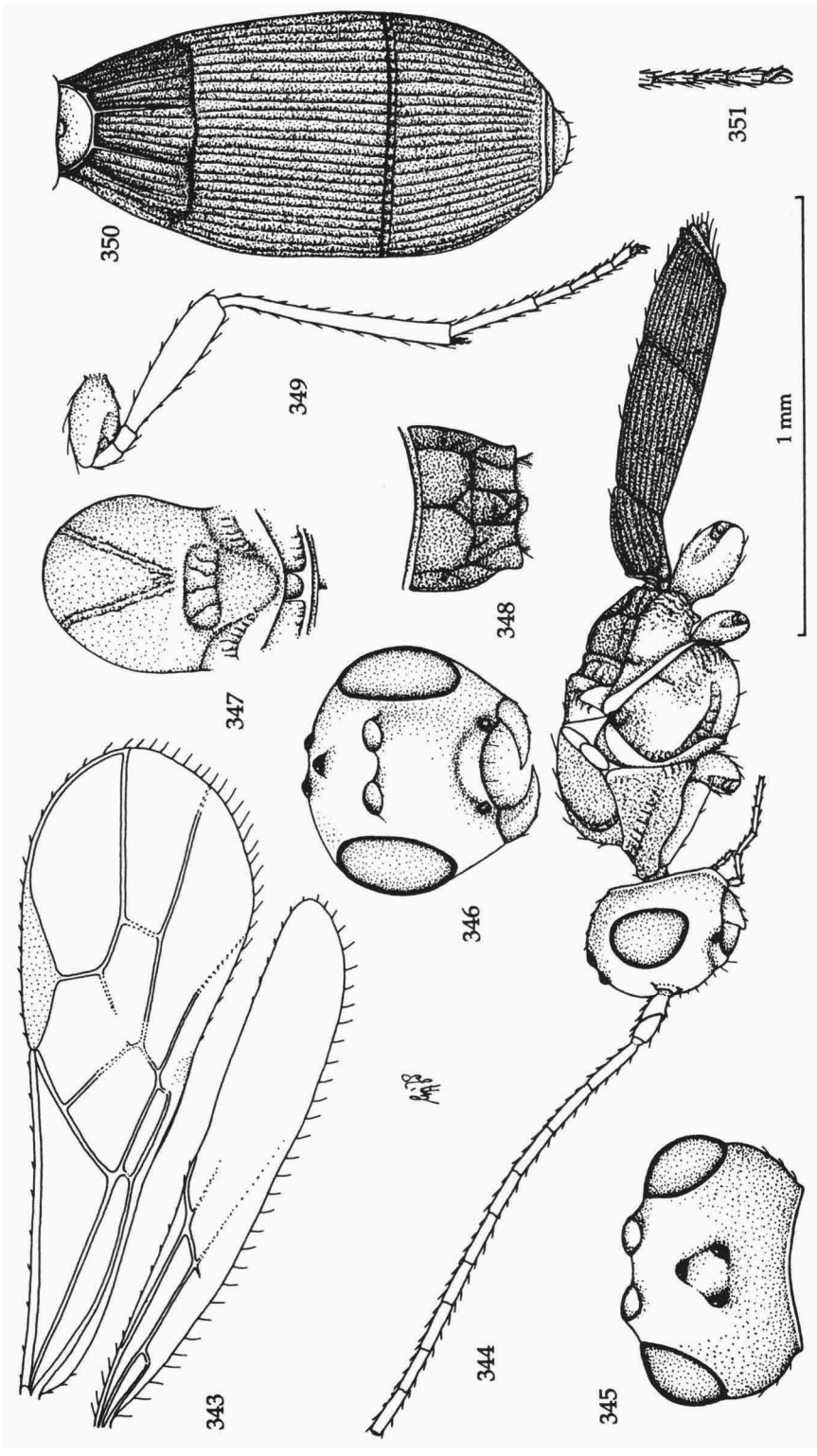
Figs. 314-323, *Clinocentrus umbratilis* Haliday, ♀, Netherlands, Kemperberg. 314, wings; 315, habitus, lateral aspect; 316, head, frontal aspect; 317, first-third metasomal tergites, dorsal aspect; 318, head, dorsal aspect; 319, mesosoma, dorsal aspect; 320, apex of hind tibia, inner aspect; 321, hind leg; 322, hind claw; 323, base of antenna, outer aspect. 314, 315, 321: scale-line (= 1 ×); 316, 318: 2 ×; 317, 319: 1.5 ×; 320, 322, 323: 5 ×.



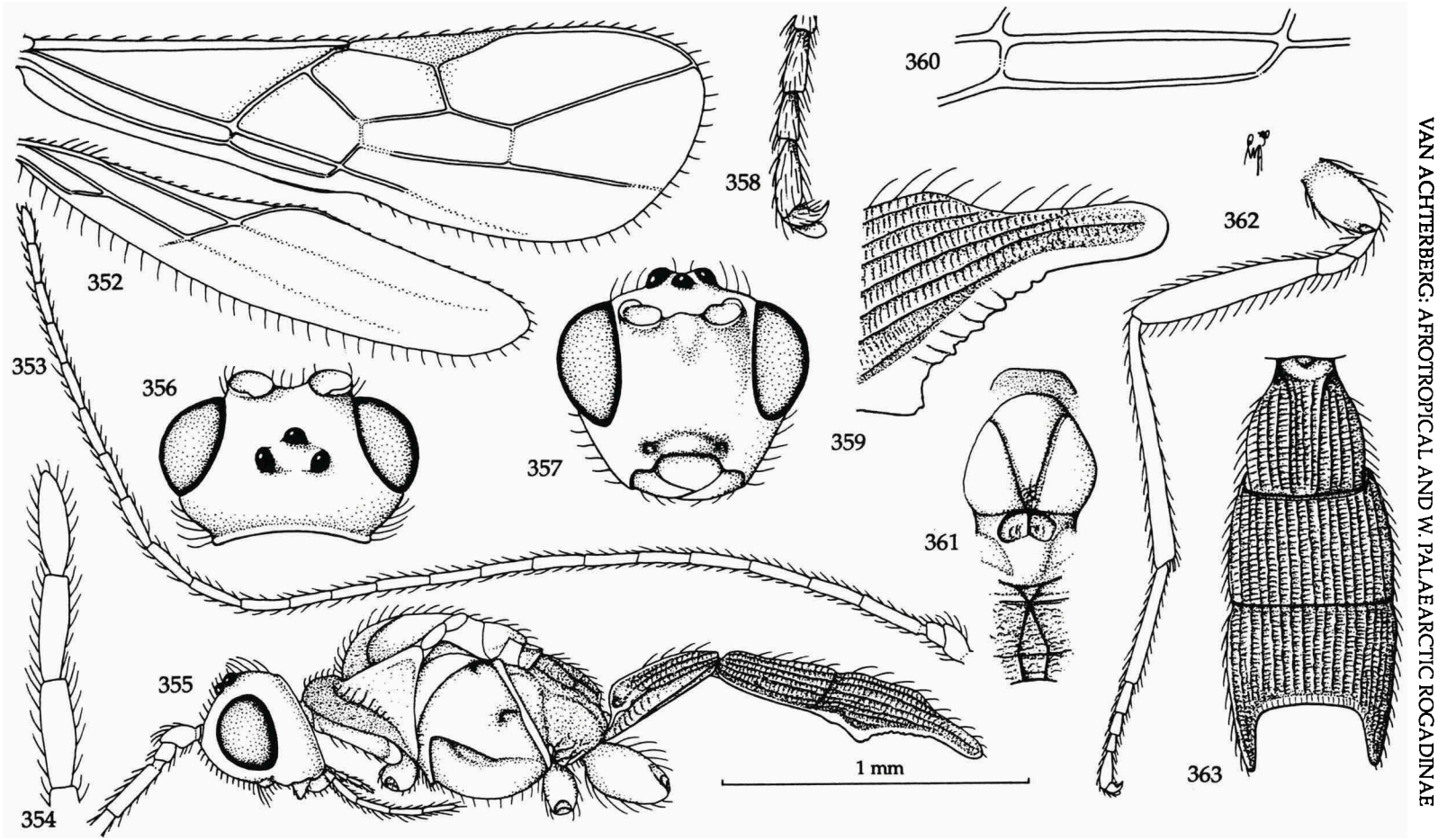
Figs 324-332, *Artocella brevipalpis* van Achterberg, ♀, holotype. 324, outer middle claw; 325, habitus, lateral aspect; 326, head, frontal aspect; 327, wings; 328, apex of antenna; 329, head, dorsal aspect; 330, thorax, dorsal aspect; 331, hind leg; 332, first-third metasomal tergites, dorsal aspect. 324, 328: 5 ×; 325, 327, 331: scale-line (= 1 ×); 326, 329, 330, 332: 1.5 ×.



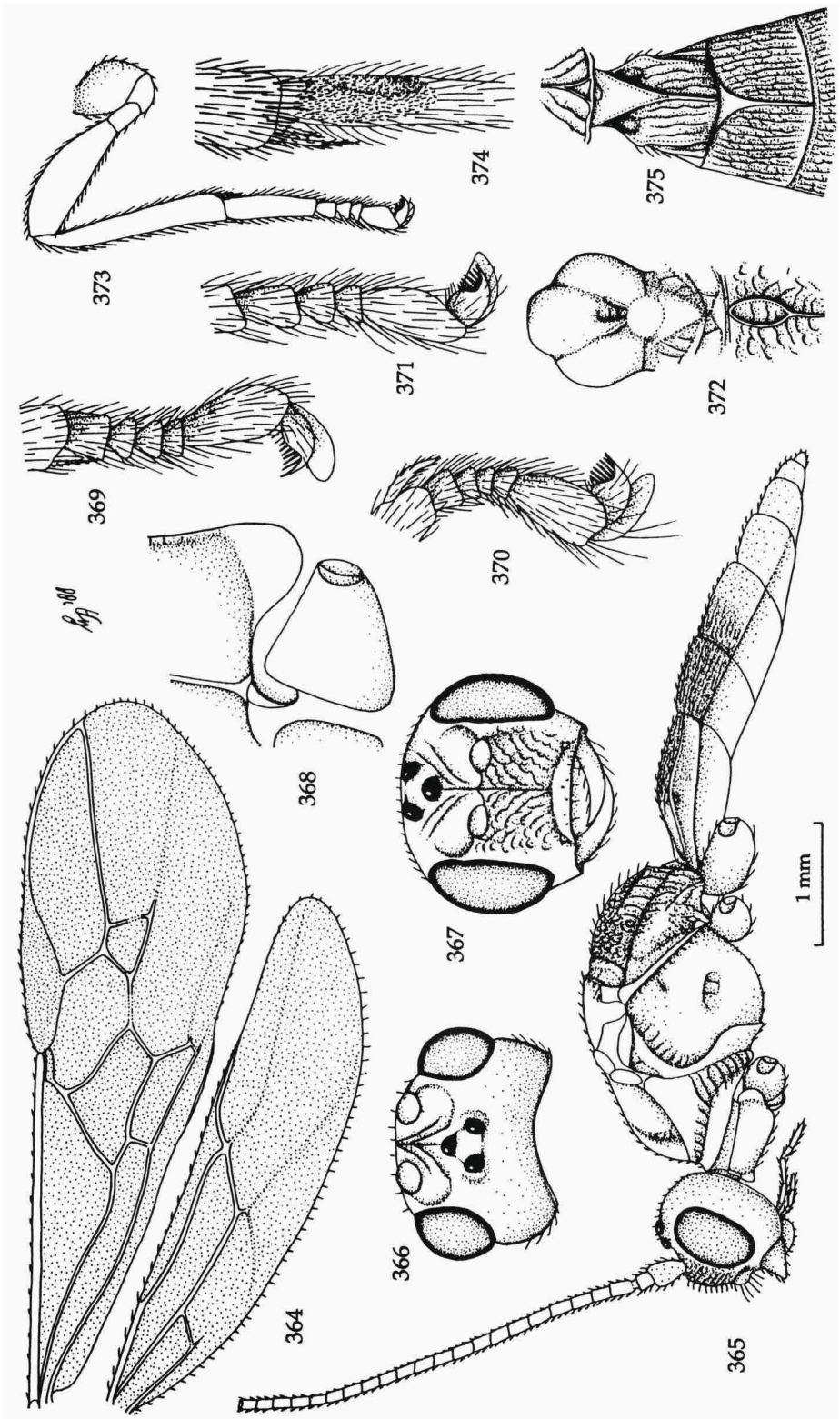
Figs 333-342, *Pentatermus striatus* (Szépligeti), ♀, holotype of *P. carinatus* Hedqvist. 333, wings; 334, hind claw; 335, head, dorsal aspect; 336, habitus, lateral aspect; 337, hind leg; 338, head, frontal aspect; 339, mesosoma, dorsal aspect; 340, base of antenna, outer aspect; 341, first-third metasomal tergites, dorsal aspect; 342, apex of hind tibia, inner aspect. 333, 336, 337: scale-line (= 1 ×); 334, 340, 342: 2.8 ×; 335, 338, 339, 341: 1.2 ×.



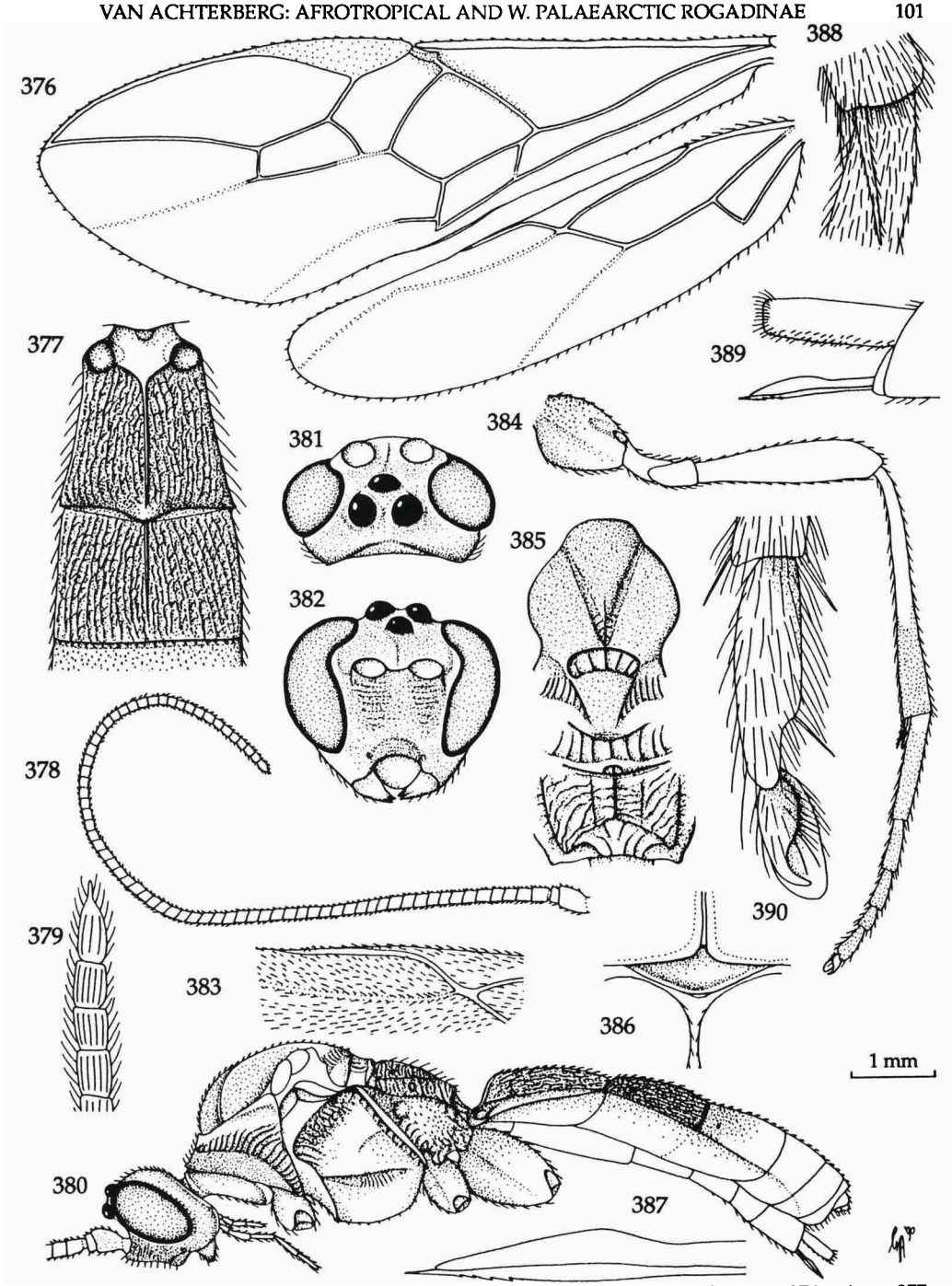
Figs 343-351, *Lysitermus pallidus* Foerster, ♂, paratype of *L. talitzkii* (Tobias). 343, wings; 344, habitus, lateral aspect; 345, head, dorsal aspect; 346, head, frontal aspect; 347, thorax, dorsal aspect; 348, propodeum, dorsal aspect; 349, hind leg; 350, metasoma, dorsal aspect; 351, hind claw. 343, 344, 349: scale-line (= 1 ×); 345-348, 350, 351: 1.3 ×.



Figs 352-363, *Acanthormius sumatrensis* spec. nov., ♂, holotype. 352, wings; 353, antenna; 354, apex of antenna; 355, habitus, lateral aspect; 356, head, dorsal aspect; 357, head, frontal aspect; 358, outer hind claw; 359, apex of third metasomal tergite, lateral aspect; 360, first subdiscal cell of fore wing; 361, mesosoma, dorsal aspect; 362, hind leg; 363, metasoma, dorsal aspect. 352, 353, 355, 361-363: scale-line (= 1 ×); 354, 358-360: 2.5 ×; 356, 357: 1.5 ×.



Figs 364-375, *Yelicones violaceipennis* Cameron, ♂, holotype. 364, wings; 365, habitus, lateral aspect; 366, head, dorsal aspect; 367, head, frontal aspect; 368, detail of prosternum, latero-ventral aspect; 369, middle tarsus, lateral aspect; 370, fore tarsus, lateral aspect; 371, hind tarsus, lateral aspect; 372, mesosoma, dorsal aspect; 373, hind leg; 374, hind basitarsus and apex of hind tibia, inner aspect; 375, first and second metasomal tergites, dorsal aspect. 364, 365, 372, 373, 375: scale-line (= 1 ×); 366, 367: 1.5 ×; 368: 3.2 ×; 369-371, 374: 2.6 ×.



Figs 376-390, *Aleiodes* (*Neorhogas*) *praetor* (Reinhard), ♀, Netherlands, Naardermeer. 376, wings; 377, first and second metasomal tergites, dorsal aspect; 378, antenna; 379, apex of antenna; 380, habitus, lateral aspect; 381, head, dorsal aspect; 382, head, frontal aspect; 383, detail of vein SC+R1 of hind wing; 384, hind leg; 385, mesosoma, dorsal aspect; 386, prosternum, ventral aspect; 387, apex of ovipositor; 388, apex of hind tibia, inner aspect; 389, ovipositor sheath, lateral aspect; 390, inner hind claw. 376, 378, 380, 384: scale-line (= 1 ×); 377, 385: 1.2 ×; 379: 5 ×; 381, 382: 1.5 ×; 383: 2 ×; 386, 388: 3.6 ×; 387: 8.3 ×; 389, 390: 5.6 ×.