Generic revision of the subfamily Cenocoeliinae Szépligeti (Hymenoptera: Braconidae)

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Achterberg, C. van. Generic revision of the subfamily Cenocoeliinae Szépligeti (Hymenoptera: Braconidae).
Zool. Verh. Leiden 292, 15.vii.1994: 1-52, figs 1-133.— ISSN 0024-1652/ISBN 90-73239-31-1.
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Key words: Hymenoptera; Braconidae; Cenocoeliinae; Ussurohelconini; *Ussurohelcon*; Cenocoeliini; *Cenocoelius*; *Lestricus*; *Promachus*; *Aulacodes*; *Foenomorpha*; *Evaniomorpha*; *Capitonius*; *Rattana*; Palaearctic; Nearctic; Neotropical; Indo-Australian; Oriental; Papuan.
The genera of the subfamily Cenocoeliinae Szépligeti are revised, keyed and illustrated. The genera *Capitonius* Brullé, 1846, *Aulacodes* Cresson, 1865, *Lestricus* Reinhard, 1866, *Promachus* Cresson, 1887, and *Evaniomorpha* Szépligeti, 1901, are re-instated. One new genus is described and illustrated: *Rattana* (type species: *Cenocoelius albopilosellus* Cameron, 1901) from Sulawesi, Misoöl, and New Guinea. The genus *Ussurohelcon* Belokobylskij, 1989, is transferred from the Helconinae to the Cenocoeliinae and placed in the new tribe Ussurohelconini. The following new synonyms are given: Iseurini Hedqvist, 1959, with Cenocoeliini Szépligeti, 1901; *Iseura* Spinola, 1853, with *Capitonius* Brullé, 1846; *Cenocoelius bicolor* Szépligeti, 1900, with *Rattana indidiator* (Smith, 1863); *Laccophrys magdalini* Foerster, 1862, and *Cenocoelius hungaricus* Zilahi-Kiss, 1927, with *C. analis* (Nees, 1834); *C. femorator* Tobias, 1973, with *Lestricus secalis* (Linnaeus, 1758). New combinations are: *Bracon medenbachii* (Snellen van Vollenhoven, 1878); *Capitonius tricolor* (Enderlein, 1920), *C. andirae* (Saffer, 1977); *Promachus longius* (Chou & Lee, 1991), *P. taiwanensis* (Chou & Lee, 1991), *P. fortis* (Saffer, 1982); *Rattana albopilosella* (Cameron, 1911), *R. cephalotes* (Smith, 1860), and *R. insidiator* (Smith, 1863).

Contents

Introduction

The subfamily Cenocoeliinae Szépligeti, 1901, has been regarded as a small subfamily consisting mainly of the genus *Cenocoelius* Haliday, 1840, with one additional small genus in the Neotropical region (Shenefelt, 1970). After a closer examination, however, its composition has proved to be more complicated. The Neotropical "*Cenocoelius* " belong mainly to the genus *Capitonius* Brullé, 1846; the Palaearctic species belong to three genera (the genera *Cenocoelius*, *Lestricus* Reinhard, 1866, and *Promachus* Cresson, 1887) and the Indo-Australian species are assigned to two genera: *Ussurohelcon* Belokobylskij, 1989 (originally described in the subfamily Helconinae Foerster, 1862), and *Rattana* gen. nov. The Cenocoeliinae are wide-spread, but are not (yet) known from the Afrotropical region. The largest number of species occur in the New World, with many undescribed species in the Neotropical region.

The nomenclature of the West Palaearctic species is rather confused. In 1973 Dr V.I. Tobias (St. Petersburg) described a new species of genus *Cenocoelius*, possessing a wide flange on the fore femur, as *C. femorator*. Although this species obviously is not closely related to the type species of the genus *Cenocoelius*, it was included in that genus and he indicated that a similar species existed without a flange on the fore femur, which was supposed to be conspecific with the type of *Ichneumon secalis* Linnaeus, 1758. However, the type of this species was not examined by him, and recently, it has proved to have been misinterpreted; it also possesses a flange on the fore femur (information kindly supplied by Mr T. Huddleston, London). This leaves the species without a flange on the fore femur without a name since the only other available name, *Cenocoelius rubriceps* Ratzeburg, 1844, also belongs to the species with a flange on the fore femur. In this paper the species without a flange on the fore femur is named and placed in the genus *Promachus*, and *I. secalis* in the genus *Lestricus*.

The phylogenetic relationships of the subfamily Cenocoeliinae remained comparatively obscure in the analysis by Quicke & van Achterberg (1990). Variably the Cenocoeliinae were associated with the Brulleiini van Achterberg, 1983 (a tribe of the subfamily Helconinae) or were the sister group of the Euphorinae Foerster, 1862 sensu lato, or of the Euphorinae + Sigalphinae Blanchard, 1845 + Trachypetinae Schulz, 1911 sensu lato + Homolobinae van Achterberg, 1979 + Xiphozelinae van Achterberg, 1979. Also in the re-analysis by Wharton et al. (1992) similar results were obtained (their figs 1, 2), but in the strict consensus trees generated by PAUP (their figs 3-5) the Cenocoeliinae are no longer separated from the Helconinae, (and therefore, may have to be incorporated in the Helconinae as a tribe). This agrees with the long-hold view that the Cenocoeliinae are closely related to the Helconinae.

The discovery of a "missing link" between both subfamilies, i.e. the tribe Ussurohelconini nov., indeed shows that most likely the Cenocoeliinae + Ussurohelconini are the sistergroup of the Helconinae. Both subfamilies have a similar biology. This prompted Saffer (1982) even to suggest that the genus *Cenocoelius* sensu lato should be placed in the tribe Helconini of the subfamily Helconinae. However, this is inappropriate, because Cenocoeliinae lack the autapomorphy of the Helconini (the rugose ventral side of the hind femur). The development of the postpectal carina, and of the wide sclerite between the insertions of the metasoma and of the hind coxa, and the reduction of the medio-posterior depression of the scutellum warrant a posi-

tion as a separate subfamily. The recently found difference in the position of the valvilli by Quicke et al. (1992), basal in the Cenocoeliinae and apical in the Helconinae, is another indication that it is unjustified to incorporate the Cenocoeliinae as a tribe in the Helconinae. The position as a sistergroup of the Helconinae is more difficult to ascertain because of the lack of distinct synapomorphies. The deep medial depression of the frons may be considered to be an synapomorphy of the Cenocoeliinae + Helconinae, which implies that it has been lost secondarily in many Helconinae.

The biology is known for some species; they are endoparasites of coleopterous larvae belonging to the families Cerambycidae, Curculionidae, and less commonly Buprestidae and Scolytidae, boring in wood and bark of both deciduous and coniferous trees. In the Neotropical region some species are reported (Saffer, 1977, 1982) to be parasites of seed-eating Curculionidae (*Capitonius andirae* (Saffer, 1977) **comb. nov.** from Costa Rica) and seed-eating Cerambycidae (*Promachus fortis* (Saffer, 1982) **comb. nov.** from Mexico in fruits of *Sapindus sapsonaria*).

For the identification of the subfamily Cenocoeliinae, see van Achterberg (1990, 1993), and for the terminology used in this paper, see van Achterberg (1988, 1993).

Subfamily Cenocoeliinae Szépligeti, 1901

Cenocoelinidae Szépligeti, 1901: 353.
Cenocoelininae; Szépligeti, 1904: 6.
Cenocoelinini; Szépligeti, 1904: 7.
Cenocoeliini; Shenefelt, 1970: 177-186; Capek, 1970: 851; Tobias, 1971: 175 [transl. 1975: 26], 1976: 27, 1986: 150; van Achterberg, 1976: 48; Marsh, 1979: 184.
Cenocoeliinae; van Achterberg, 1984: 53, 1990: 2, 1993: 28.

Diagnosis.— Length of fore wing 3-11 mm; antennal segments 23-45, usually 26-34; labrum flat and hardly or not exposed (fgs 9, 17, 51); clypeus nearly always with small medio-ventral tooth (figs 51, 60, 71) or with three minute tubercles (fig. 17); maxillary and labial palpi with 6 and 4 segments, respectively, but in both the basal segments may be hardly or not separated; head and mandibles comparatively robust (figs 9, 51); frons deeply concave medially (but may be rather shallow in *Ussurohelcon*), smooth or largely so, and with a median carina or lamella (figs 9, 17, 79); occipital carina complete; antescutal depression absent (fig. 46); pronope absent, indistinct or medium-sized and slit-shaped, rarely large and deep (figs 7, 29, 59, 73, 81); vein r-m of fore wing present (figs 1, 23, 44); second submarginal cell comparatively small (fig. 1, 54), frequently trapezoid; postpectal carina present (fig. 56), rarely nearly completely absent in some Neotropical species of the genus *Capitonius*, or carina only medio-ventrally developed (Ussurohelconini; fig. 10); fore spur 0.25-0.50 times fore basitarsus; hind trochanter widened and dorsally extended over trochantellus (figs 3, 76), usually shorter than fore and middle trochanters; sclerite between insertions of metasoma and of hind coxa 0.5-2.1 times length of hind trochanter dorsally (fig. 46); metasoma inserted near level of dorsal face of propodeum, far above hind coxae (figs 4, 46, 67); first metasomal tergite without dorsal carinae (fig. 52) or carinae medium-sized (fig. 8); dorsope absent or nearly so (figs 8, 22, 65, 74, 82); ovipositor as long as metasoma or longer, emerging distinctly removed from apex of metasoma (figs 4, 26, 67).

Biology.— Endoparasites of larvae of wood- and barkboring Coleoptera, and in the Neotropical region also of seed-eating Coleoptera.

Distribution.— Cosmopolitan (but not known from the Afrotropical region).

Key to genera of the subfamily Cenocoeliinae

1. Occipital carina strongly curved towards and joined with hypostomal carina (fig. 11); marginal cell of hind wing wide distally (fig. 1); vein 2A of hind wing present (fig. 1); scutellum with medio-posterior depression (fig. 7); postpectal carina absent in front of middle coxae, present only at end of mesosternal sulcus (fig. 10); head strongly elongate (fig. 9); propodeal spiracle near middle of propodeum (fig. 4); tribe Ussurohelconini ..... ***Ussurohelcon*** Belokobylskij
- Occipital carina straight, not joining hypostomal carina (fig. 26, 46); marginal cell of hind wing strongly narrowed distally (figs 44, 70, 87); vein 2A of hind wing absent (figs 12, 34); scutellum without medio-posterior depression (figs 16, 59), but present in *Aulacodes* (fig. 96); postpectal carina present in front of middle coxae (fig. 56), but absent in some *Capitonius* spp.; head slightly to moderately elongate (figs 17, 51, 60, 71); propodeal spiracle distinctly behind middle of propodeum (figs 26, 35, 67); tribe Cenocoeliini 2
2. Frontal cavity without strong lateral carinae, at most weakly developed anteriorly and frons distinctly convex laterally (figs 17, 18); transverse groove of metapleuron far below level of episternal scrobe (fig. 15); first metasomal tergite slender, 3-4 times its apical width (fig. 22); hind coxa of ♀ without depression at inner side; tarsal claws simple (fig. 21); clypeus with three minute medio-ventral tubercles (fig. 17); anterior part of pronotum protruding dorsad (fig. 15); middle lobe of mesoscutum short (fig. 16); middle trochanter distinctly longer than hind trochanter ..... ***Foenomorpha*** Szépligeti
- At least half of frontal cavity with pair of strong lateral carinae and laterally slightly convex (figs 28, 39, 60); transverse groove of metapleuron (if developed) near level of episternal scrobe or situated above it (figs 26, 35, 77); first tergite less slender, shorter than 2.8 times its apical width (figs 31, 52, 65); hind coxa of ♀ usually with depression at inner side (figs 24, 62, 75, 88); tarsal claws usually with a lobe or lamella (figs 45, 83); clypeus with a small medio-ventral tooth (figs 39, 51, 60), rarely absent (fig. 95); anterior part of pronotum usually hardly or not protruding dorsad (figs 35, 56); shape of middle lobe of mesoscutum (figs 40, 59), and length of middle trochanter variable 3
3. Third metasomal tergite with acute lateral margin (fig. 26) and coarsely sculptured (figs 26, 31); occipital carina strongly and angularly protruding posteriad (fig. 26); first tergite wide subbasally (fig. 31); depression at inner side of hind coxa with carina ventrally (fig. 24); tarsal claws simple (fig. 33) ..... ***Evaniomorpha*** Szépligeti
- Third tergite without acute lateral margin (figs 35, 77) and smooth (fig. 65); occipital carina not conspicuously protruding posteriorly (figs 46, 56, 67); first tergite subpetiolate, gradually narrowed basad (figs 41, 65), but abruptly narrowed in the subgenus *Iseura* of the genus *Capitonius*; depression at inner side of hind coxa without carina or ridge (figs 62, 88); tarsal claws usually with a lobe or lamella ventrally (figs 64, 72, 83) 4

4. Vein M+CU of hind wing 1.2-2.1 times vein 1-M and vein 1-M longer than vein 1r-m (fig. 44); depression at inner side of hind coxa of ♀ ending ventrally just in front of middle of coxa ..... ***Capitonius*** Brullé
- Vein M+CU of hind wing 2.3-6.0 times vein 1-M and vein 1-M shorter than vein 1r-m (figs 54, 70, 80); depression at inner side of hind coxa of ♀ ending ventrally at middle of coxa or more apicad (figs 62, 75, 88) 5
5. Anterior subalar prominence largely crest-shaped (fig. 35); notauli united halfway on mesoscutum and middle lobe of mesoscutum short (fig. 40); marginal cell of fore wing comparatively slender (fig. 34); vein 1r-m of hind wing comparatively long, much longer than vein 2-SC+R (fig. 34); laterope absent (fig. 35); in lateral view mesoscutum with complete oblique carina anteriorly (fig. 35), more or less protruding dorsad; propodeum beside insertion of metasoma with flange-like carinae or distinct flanges (fig. 100); vertex behind stemmaticum flattened to a large extent (figs 35, 37); metanotum completely and coarsely crenulate (fig. 40); vein 1-M of fore wing slightly curved (fig. 34) ..... ***Rattana*** gen. nov.
- Anterior subalar prominence normal, without distinct crest (figs 56, 77); notauli united near posterior margin of mesoscutum and middle lobe of mesoscutum longer (figs 59, 81); marginal cell of fore wing more robust (figs 44, 54); vein 1r-m of hind wing medium-sized, somewhat longer than vein 2-SC+R (figs 70, 80); laterope present (figs 56, 67); in lateral view mesoscutum frequently with an incomplete oblique carina anteriorly (figs 67, 77), and not protruding, or without carina (fig. 56); propodeum beside insertion of metasoma without distinct flanges or wide carinae; vertex behind stemmaticum more or less convex (figs 56, 77); metanotum partly and rather finely crenulate (figs 73, 81); vein 1-M of fore wing straight or nearly so (figs 54, 80) 6
6. Medial length of third metasomal tergite about 1.8 times length of second tergite (figs 93, 98); minute medio-posterior depression of scutellum present (fig. 96); basal half of fore wing much less setose than its apical half, and subbasal cell glabrous; clypeus without teeth or minute tubercles medio-ventrally (fig. 95); precoxal sulcus absent medially (fig. 93); pronotum strongly protruding anterio-dorsad (fig. 93); scapus slender, its length 4.0-4.5 times its width (figs 93, 94); tarsal claws simple (fig. 90) ..... ***Aulacodes*** Cresson
- Medial length of third tergite about equal to length of second tergite (figs 65, 67, 74, 77); medio-posterior depression of scutellum absent (figs 59, 73, 81); basal half of fore wing similarly setose as its apical half, and subbasal cell densely setose; clypeus with a small tooth or minute tubercles medio-ventrally (figs 71, 79); precoxal sulcus present medially (figs 56, 67, 77); pronotum at most somewhat protruding anterio-dorsad (figs 67, 77); scapus less slender, its length less than 3.5 times its width (figs 56, 67, 84); tarsal claws variable, usually with a lamella (figs 73, 83) 7
7. Propleuron with strong scaly, transverse ridge and area behind ridge rather concave (figs 56, 58); second metasomal tergite sculptured basally (figs 56, 65), rarely completely smooth ..... ***Cenocoelius*** Haliday
- Propleuron without scaly, transverse ridge, evenly convex or slightly concave (figs 68, 77); second tergite smooth (figs 74, 77) 8
8. Fore femur with wide obtuse flange (fig. 69); hind basitarsus robust, its length about 4.5 times its width (fig. 76) ..... ***Lestricus*** Reinhard

- Fore femur without obtuse flange; hind basitarsus comparatively slender, its length 5.5-6.2 times its width (fig. 86) ..... ***Promachus*** Cresson

Descriptions

Tribus Ussurohelconini nov.

Diagnosis.— Occipital carina strongly bent towards and joined with hypostomal carina ventrally (fig. 11); posterior flange of propleuron small (fig. 4); propleuron flattened, its medial groove narrow and smooth; medio-posterior depression of scutellum present (fig. 7); postpectal carina absent in front of middle coxae, only with a strongly curved carina at end of mesosternal sulcus (fig. 10); propodeal spiracle near middle of propodeum (fig. 4); marginal cell of hind wing wide apically (fig. 1); vein 2A of hind wing present, strongly inclivous (fig. 1); sclerite between insertions of metasoma and of hind coxa about half as wide as dorsal length of hind trochanter (fig. 119).

Distribution.— East Palaearctic, Oriental. Contains only the genus *Ussurohelcon* Belokobylskij, 1989.

Note.— *Cenocoelius koshunensis* Watanabe, 1934, from Taiwan probably belongs to this genus. It is very similar to *U. longigenis*, e.g. the carinae at the sides of the frontal cavity are absent.

Ussurohelcon Belokobylskij, 1989
(figs 1-11, 106-124)

Ussurohelcon Belokobylskij, 1989: 25. Type species (by original designation): *Ussurohelcon longigenis* Belokobylskij, 1989 [examined].

Diagnosis.— Length of fore wing 3.9-6.3 mm; clypeus with minute tooth medioventrally (fig. 9); frons medially rather shallow to deep, concavity without carinae laterally (fig. 9); head strongly elongate (fig. 9); tarsal claws simple (fig. 5).

Biology.— Unknown.

Distribution.— East Palaearctic, Oriental.

Key to species of the genus *Ussurohelcon*

1. Frons finely punctate laterally and medial depression rather shallow (fig. 2); propodeum without closed areolae (fig. 7); vein r-m of fore wing vertical (fig. 1); clypeus with wide shallow depression (fig. 9); East Palaearctic ..... ***U. longigenis*** Belokobylskij
- Frons coarsely punctate or rugose laterally and medial depression deep (fig. 106); propodeum with closed areolae (fig. 111); vein r-m of fore wing inclivous (figs 113, 118), but subvertical in *U. nigricornis* (fig. 114); clypeus usually without wide shallow depression; Oriental 2
2. Marginal cell of hind wing parallel-sided and comparatively narrow apically (fig. 114); antenna of ♀ without white band; vein 1-SR of fore wing absent or nearly so (fig. 114); vein 1-M of fore wing slightly curved (fig. 114); length of ovipositor sheath 1.2-1.4 times fore wing; Borneo ..... ***U. nigricornis*** spec. nov.

- Marginal cell of hind wing more or less evenly widening apicad and comparatively wide apically (figs 113, 118); antenna of ♀ with white band; vein 1-SR of fore wing short (figs 113, 118); vein 1-M of fore wing distinctly curved (figs 113, 118); length of ovipositor sheath 1.4-1.6 times fore wing 3

3. Body largely yellowish-brown; frons densely punctate laterally, and flat postero-laterally (fig. 116); Borneo ..... ***U. annulicornis*** spec. nov.
- Body black; frons coarsely punctate-rugose laterally, and depressed postero-laterally (fig. 122); South Sulawesi ..... ***U. celebensis*** spec. nov.

Ussurohelcon annulicornis spec. nov.
(figs 106-113)

Material.— Holotype, ♀ (RMNH), "Malaysia-SE Sabah, nr Danum Valley Field C[entre], W12, c. 240 m, Mal. trap 12, 24.ii-18.iii.1987, C. v. Achterberg, RMNH'87". Paratype: 1 ♀ (RMNH), id., but c. 140 m, Mal. trap 13, 24.ii-24.iii.1987.

Holotype, ♀, length of body 9.5 mm, of fore wing 6.3 mm.

Head.— Antennal segments 31, antenna slightly longer than fore wing, length of third segment 1.2 times fourth segment, length of third, fourth, and penultimate segments 2.8, 2.3, and 0.9 times their width, respectively (figs 108, 112); length of scapus 2.6 times its maximum width, in upright position slightly protruding above top level of head (fig. 107); length of maxillary palp 0.6 times height of head, slender (fig. 107); length of eye in dorsal view 2.1 times temple (fig. 106); temple rugose-punctate ventrally and finely punctate dorsally, roundly narrowed posteriad (fig. 106); OOL:diameter of ocellus:POL = 13:5:5; area in front of anterior ocellus finely crenulate (fig. 106); vertex flattened (slightly concave medially), densely and finely punctate; medial depression of frons deep, with few crenulae anteriorly and with strong, complete lamella slightly protruding triangularly above depression, and laterally convex (flat posteriorly), densely and rather coarsely punctate; face with obtuse median ridge, densely rugose-punctate; clypeus mainly densely and finely punctate, slightly depressed medially; occipital flange wide, about 1.5 times as long as basal width of mandible, protruding behind mandible (fig. 107); maximum width of eye 1.1 times length of malar space; length of malar space 2.1 times basal width of mandible; mandible punctate, not twisted.

Mesosoma.— Length of mesosoma 1.5 times its height; pronope rather deep, narrow, slit-shaped; pronotum with no protruding collar; side of pronotum densely punctulate, but crenulate medially; propleuron flattened, densely punctulate; prepectal carinae complete, strong; postpectal carina present only medio-posteriorly, quadrangular (fig. 10); epicnemial area largely smooth, with few crenulae; precoxal sulcus shallowly impressed, smooth; remainder of mesopleuron largely smooth anteriorly and medially, remainder densely punctulate; metapleuron largely smooth and punctulate dorsally, and ventrally coarsely reticulate; propodeum coarsely areolate (fig. 111); notauli rather wide posteriorly, coarsely crenulate; lateral lobes of mesoscutum rather convex and sparsely punctulate; middle lobe of mesoscutum convex antero-medially and densely punctulate, posteriorly with median carina (fig. 111); scutellum convex and punctulate, its medio-posterior depression shallow, semicircular and with some microcrenulae laterally.

Wings.— Fore wing: r:3-SR:SR1 = 6:9:39; 2-SR:3-SR:r-m = 11:9:8; r-m inclivous; m-

cu far antefurcal; cu-a postfurcal, 1-CU1:2-CU1 = 2:7; 1-SR short (fig. 113); 1-M distinctly curved. Hind wing: M+CU:1-M = 39:10; 1-M:1r-m = 10:13; cu-a nearly straight and area basad of it largely glabrous.

Legs.— Tarsal claws simple, large; length of femur, tibia and basitarsus of hind leg 3.7, 7.6, and 7.0 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus; length of fore tarsus 1.4 times fore tibia.

Metasoma.— Length of first tergite 1.6 times its apical width, rather flat, its surface smooth, and dorsal carinae strong basally, up to basal 0.6; second suture absent; length of ovipositor sheath 1.63 times fore wing.

Colour.— Yellowish-brown; fore and middle tibiae, hind tibia subbasally and humeral plate, pale yellowish; fourth and fifth fore tarsal segments, middle tarsus, first epipleuron and three basal sternites, dark brown; apical 0.1 of ovipositor sheath, and 11th-18th antennal segments, whitish; scapus yellowish-brown; pedicellus dark brown; remainder of antenna black; wing membrane rather infuscate, especially near vein r of fore wing.

Variation.— Length of body 5.1-9.5 mm, of fore wing 3.9-6.3 mm; antennal segments of ♀ 28(1) or 31(1); 16th and 19th segments may be brown, and 10th-15th or 11th-18th segments of antenna of ♀ are whitish; maximum width of eye 1.1-1.2 times length of malar space; length of first tergite 1.4-1.6 times its apical width; length of ovipositor sheath 1.47-1.63 times fore wing.

Distribution.— Malaysia (Sabah, NE Borneo).

Ussurohelcon celebensis spec. nov.
(figs 118-122)

Material.— Holotype, ♀ (RMNH), "Indonesia: SE Sulawesi, nr Sanggona Base Camp, Gn. Watuwila, Mal. trap 12, c. 200 m, 19.x-5.xi.1989, C. v. Achterberg, RMNH'89. Paratypes: 3 ♂♂ (MZB, RMNH), id., 14.x.1989, or Mal. trap 6, 15.x-5.xi.1989 (2 ♂♂).

Holotype, ♀, length of body 7.5 mm, of fore wing 5.6 mm.

Head.— Remaining antennal segments 26, apically distinctly geniculate, antenna 0.9 times fore wing, incomplete, length of third segment 1.2 times fourth segment, length of third, and fourth segments 3.4 and 2.9 times their width, respectively (fig. 120); length of scapus 2.9 times its maximum width, in upright position slightly protruding above top level of head (fig. 121); length of maxillary palp 0.5 times height of head, slender; length of eye in dorsal view 2.6 times temple (fig. 122); temple densely punctate and with some rugae ventrally, roundly narrowed posteriad (fig. 122); OOL:diameter of ocellus:POL = 11:4:5; area in front of anterior ocellus finely crenulate; vertex flattened (slightly concave medially), densely and coarsely punctate; medial depression of frons deep, and with strong and complete lamella protruding triangularly above depression, and laterally convex (but postero-laterally depressed, fig. 122), densely and coarsely punctate-rugose; face coarsely vermiculate-rugose, mixed with numerous punctures, and medio-ventrally mainly punctate; clypeus densely and rather coarsely punctate, hardly depressed medially; occipital flange wide (fig. 121); maximum width of eye 1.3 times length of malar space (fig. 121); length of malar space 1.8 times basal width of mandible; mandible hardly twisted.

Mesosoma.— Length of mesosoma 1.4 times its height; pronope rather deep, narrow, slit-shaped, no protruding collar; side of pronotum densely punctulate, but

coarsely crenulate medially; propleuron flattened, densely and finely punctate; prepectal carinae complete, strong; postpectal carina present only medio-posteriorly, quadrangular (cf. fig. 10); epicnemial area largely smooth, with few crenulae; precoxal sulcus shallowly impressed, smooth; remainder of mesopleuron finely punctate, more densely posteriorly; metapleuron reticulate; propodeum coarsely areolate (fig.); notauli rather wide posteriorly, coarsely crenulate; lateral lobes of mesoscutum flattened and rather densely punctulate; middle lobe of mesoscutum subtruncate antero-medially and densely and finely punctate, posteriorly with median carina; scutellum convex and finely punctate, its medio-posterior depression distinct, consisting of two semicircular depressions and with some microcrenulae laterally.

Wings.— Fore wing: r:3-SR:SR1 = 9:18:74; 2-SR:3-SR:r-m = 17:18:21; r-m inclivous; m-cu far antefurcal; cu-a postfurcal, 1-CU1:2-CU1 = 5:16; 1-SR short (fig. 118); 1-M distinctly curved. Hind wing: M+CU:1-M = 4:1; 1-M:1r-m = 10:18; cu-a nearly straight and area basad of it largely glabrous.

Legs.— Tarsal claws simple, large; length of femur, tibia and basitarsus of hind leg 3.9, 8.2, and 7.0 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus; length of fore tarsus 1.3 times length of fore tibia.

Metasoma.— Length of first tergite 1.4 times its apical width, rather flat, its surface smooth, and dorsal carinae strong basally, up to basal 0.6; second suture absent; length of ovipositor sheath 1.43 times fore wing.

Colour.— Black; 11th and 19th antennal segment brown, 12th-18th segments, and apical 0.2 of ovipositor sheath, whitish; remainder of antenna black; palpi (but labial palp paler than maxillary palp) brown; scapus basally, fore and middle legs largely, humeral plate, metasoma ventrally and veins, dark brown; pterostigma blackish; wing membrane slightly infuscate.

Variation.— Males: length of body 4.8-7.0 mm, of fore wing 3.9-5.3 mm; antennal segments 27(1), 30(1), 31(1); length of first tergite 1.5-1.6 times its apical width; colour as of female, but antenna completely black (except the two basal segments, which are more or less brown).

Distribution.— Indonesia (SE Sulawesi).

Ussurohelcon longigenis Belokobylskij, 1989
(figs 1-9)

Ussurohelcon longigenis Belokobylskij, 1989: 25-26, figs 1-7.

Material.— Holotype, ♀(ZMSP), "Primorye, 30 km Juv Ussurjiskja Trevia, 21.x.1987, Antonov", "Holotype *Ussurohelcon longigenis* Belokobylskij".

Holotype, ♀, length of body 6.0 mm, of fore wing 4.7 mm.

Head.— Antenna incomplete, remaining antennal segments 14, length of third segment 1.3 times fourth segment, length of third and fourth segments 3.8 and 3.0 times their width, respectively (fig. 4); scapus long setose ventrally, its length 2.5 times its maximum width, in upright position remaining below top of head (fig. 4); length of maxillary palp 0.6 times height of head, very slender (fig. 4); length of eye in dorsal view 2.1 times temple (fig. 2); temple densely and finely punctate; OOL:diameter of ocellus: POL = 12:3:6; anterior ocellus nearly at same level as posterior ocelli (figs 2, 9); vertex convex, rather sparsely punctate; medial depression of

frons rather shallow, and with medium-sized lamella not protruding above depression, and laterally convex (but flat postero-laterally) and densely finely punctate (fig. 2); face rugose, and densely and finely punctate; clypeus sparsely punctate, with wide triangular and shallow depression (fig. 9); maximum width of eye 1.2 times length of malar space (fig. 4); occipital flange large (fig. 4), about 1.3 times basal width of mandible; length of malar space 2.8 times basal width of mandible; mandible rather twisted.

Mesosoma.— Length of mesosoma 1.4 times its height; pronope narrow and rather slit-like (fig. 7), no protruding collar; side of pronotum finely and densely punctate and with row of crenulae medially (fig. 4); propleuron flat; prepectal carina medium-sized; epicnemial area punctulate and ventrally with some rugae (fig. 4); precoxal sulcus absent, except for a shallow depression posteriorly; remainder of mesopleuron largely finely punctate; metapleuron finely punctate, but with some rugae ventrally; propodeum coarsely punctate-rugose, only with transverse carina anteriorly (fig. 7); notauli comparatively narrow, lateral lobes of mesoscutum rather convex and densely punctulate; middle lobe of mesoscutum convex antero-medially (fig. 7); scutellum convex and punctulate, its medio-posterior depression semicircular (fig. 7).

Wings.— Fore wing: r:3-SR:SR1 = 3:8:31; 2-SR:3-SR:r-m = 7:8:5; r-m vertical; m-cu antefurcal; cu-a far postfurcal, 1-CU1:2-CU1 = 4:9 (fig. 1); 1-M slightly curved. Hind wing: M+CU:1-M = 54:10; 1-M:1r-m = 10:15; cu-a slightly curved; marginal cell somewhat widened apically (fig. 1).

Legs.— Tarsal claws simple, rather robust (fig. 5); hind femur smooth ventrally; length of femur, tibia and basitarsus of hind leg 3.7, 7.9, and 7.0 times their width, respectively; length of hind tibial spurs 0.30 and 0.35 times hind basitarsus; length of fore tarsus 1.4 times fore tibia (fig. 6).

Metasoma.— Length of first tergite 1.7 times its apical width, rather flat, its surface smooth, and dorsal carinae up to basal 0.6 (fig. 8); second suture only medially distinct, narrow and smooth (fig. 8); length of ovipositor sheath 1.51 times fore wing.

Colour.— Black; fore and middle tibiae and tarsi, yellowish-brown; remainder of legs (except black hind coxa), palpi, tegulae, pterostigma, parastigma and veins, dark brown; ovipositor sheath dark brown, but its apical 0.1 ivory.

Distribution.— East Palaearctic (Primorskij kraj).

Ussurohelcon nigricornis spec. nov.
(figs 114-117, 123, 124)

Material.— Holotype, ♀ (RMNH), "Malaysia: SE Sabah, nr Long Pa Sia (West), c. 1200 m, 2-14.iv.1987, Mal. trap 7, RMNH'87, C. v. Achterberg". Paratype: 1 ♀ (RMNH), "Malaysia-SE Sabah, nr Danum Valley Field C[entre], W0N1, c. 140 m, Mal. trap 13, 24.ii-24.iii.1987, C. v. Achterberg, RMNH'87".

Holotype, ♀, length of body 5.6 mm, of fore wing 4.3 mm.

Head.— Antennal segments 28, antenna as long as fore wing, its apical third distinctly geniculate, length of third segment 1.1 times fourth segment, length of third, fourth, and penultimate segments 3.2, 2.8, and 1.0 times their width, respectively (figs 116, 117); length of scapus 2.4 times its maximum width, in upright position reaching top level of head (fig. 115); length of maxillary palp 0.6 times height of head, slender (fig. 115); length of eye in dorsal view 2.7 times temple (fig. 123); tem-

ple coarsely rugose-punctate ventrally and only punctate dorsally, roundly narrowed posteriad (fig. 123); OOL:diameter of ocellus:POL = 13:5:7; anterior ocellus nearly at same level as posterior ocelli; vertex flattened (slightly concave medially), rather densely and coarsely punctate; medial depression of frons deep, with strong and complete lamella protruding triangularly just above depression; frons laterally convex (flattened posteriorly), coarsely rugose-punctate (fig. 123); face coarsely vermiculate and densely punctate laterally, medially only punctate; clypeus densely and rather coarsely punctate, distinctly depressed medially; occipital flange wide; maximum width of eye 1.2 times length of malar space (fig. 115); length of malar space 2.1 times basal width of mandible; mandible distinctly twisted.

Mesosoma.— Length of mesosoma 1.6 times its height; pronope rather deep, narrow, slit-shaped, no protruding collar; side of pronotum densely and finely punctate, but coarsely crenulate medially; propleuron flattened, rather densely punctulate; prepectal carinae complete, strong; postpectal carina present only medio-posteriorly, irregular quadrangular; epicnemial area largely smooth, with few crenulae; precoxal sulcus shallowly impressed, smooth; remainder of mesopleuron rather densely punctulate; metapleuron coarsely reticulate; propodeum coarsely areolate; notauli rather wide posteriorly, coarsely crenulate; lateral lobes of mesoscutum rather convex (but slightly depressed sublaterally) and rather densely punctulate; middle lobe of mesoscutum truncate antero-medially and rather densely punctulate, posteriorly with median carina; scutellum weakly convex and finely punctate, its medio-posterior depression deep, elliptical and with some microcrenulae laterally.

Wings.— Fore wing: r:3-SR:SR1 = 9:18:69; 2-SR:3-SR:r-m = 19:18:12; r-m subvertical; m-cu far antefurcal; cu-a postfurcal, 1-CU1:2-CU1 = 10:29, 1-CU1 slightly widened; 1-SR absent or nearly so (fig. 114); 1-M slightly curved. Hind wing: M+CU: 1-M = 37:10; 1-M:1r-m = 10:13; cu-a nearly straight and area basad of it largely glabrous.

Legs.— Tarsal claws simple, large, and its tooth slender; length of femur, tibia and basitarsus of hind leg 3.4, 7.7, and 6.6 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus; length of fore tarsus 1.4 times fore tibia.

Metasoma.— Length of first tergite 1.4 times its apical width, rather flat, its surface smooth, and dorsal carinae strong basally, up to basal 0.6 (fig. 124); second suture shallow, smooth; length of ovipositor sheath 1.39 times fore wing.

Colour.— Black; fore and middle tibiae and tarsi, brown; palpi, scapus and pedicellus largely, remainder of fore and middle legs, humeral plate, veins, parastigma, pterostigma, metasoma apically and ventrally, dark brown; apical 0.1 of ovipositor sheath whitish; wing membrane slightly infuscate.

Variation.— Length of body 5.4-5.6 mm, of fore wing 3.9-4.3 mm; antennal segments of ♀ 28(1) or 29(1); length of first tergite 1.2-1.4 times its apical width; length of ovipositor sheath 1.18-1.39 times fore wing.

Distribution.— Malaysia (Sabah, NE Borneo).

Tribus Cenocoeliini Szépligeti, 1901

Cenocoelinidae Szépligeti, 1901: 353
Capitoniidae Viereck [in Smith], 1910: 616.
Iseurini Hedqvist, 1959: 486. **Syn. nov.**

Diagnosis.— Occipital carina straight, not joined with hypostomal carina ventrally (figs 26, 46, 104); head slightly to moderately elongate (figs 17, 51, 60, 71); posterior flange of propleuron large, sometimes as long as fore coxa (figs 26, 35, 50); propleuron convex (rarely slightly concave) and medial groove crenulate and usually wide; scutellum without medio-posterior depression (figs 16, 59), except in *Aulacodes* (fig. 96); postpectal carina present in front of middle coxae (figs 35, 56; rarely in some *Capitonius* spp. reduced); propodeal spiracle situated between middle and apex of propodeum (figs 26, 35, 67); sclerite between insertions of metasoma and of hind coxa 1.0-2.1 times as wide as dorsal length of hind trochanter (figs 35, 42); marginal cell of hind wing strongly narrowed apically (figs 44, 70, 87); vein 2A of hind wing absent (figs 12, 34).

Distribution.— Cosmopolitan (except Afrotropical region).

Note.— Within the Cenocoeliini two groups may be recognized: the *Capitonius* group (with vein 1-M of hind wing as long as vein 1r-m or distinctly longer; New World) and the *Cenocoelius* group. The latter has the vein 1-M of hind wing shorter than vein 1r-m and is mainly Holarctic and Palaeotropical.

Aulacodes Cresson, 1865 re-instated
(figs 89-98)

Aulacodes Cresson, 1865: 10; Shenefelt, 1970: 178; Saffer, 1982: 83 (as synonym of *Cenocoelius* Haliday, 1840). Type species (by monotypy): *Aulacodes nigriventris* Cresson, 1865.
Cenocoelius auct. p.p.; Saffer, 1982: 83, 122-125.

Diagnosis.— Length of fore wing 4-5 mm; antenna long, with 26-27 segments; scapus about 4.5 times as long as wide (fig. 94); frontal cavity with pair of strong lateral carinae (fig. 95); frons slightly convex laterally (fig. 92); clypeus without medio-ventral tooth (fig. 95); occipital carina not conspicuously protruding posteriorly (fig. 93); vertex behind stemmaticum convex (figs 92, 93); pronotum distinctly protruding antero-dorsad (fig. 93); propleuron only with strong transverse carina, separating a comparatively short posterior part (fig. 93); anterior subalar prominence normal, slightly convex (fig. 93); in lateral view mesoscutum with strong oblique carina anteriorly (fig. 93), hardly protruding; precoxal sulcus largely absent (fig. 93); episternal scrobe present (fig. 93); notauli united posteriorly on mesoscutum (fig. 96); scutellum with minute medio-posterior depression (fig. 96); metanotum short medially, partly and finely crenulate (fig. 96); propodeum beside insertion of metasoma without protruding carinae (fig. 93); vein 1-M of fore wing slightly curved (fig. 89); marginal cell of fore wing comparatively slender (fig. 89); subbasal cell of fore wing glabrous (in other Cenocoeliini at least sparsely setose); vein 1r-m of hind wing comparatively long, much longer than vein 2-SC+R (fig. 89); vein M+CU of hind wing 3.2-3.9 times vein 1-M, vein 1-M shorter than vein 1r-m (fig. 89); depression at inner side of hind coxa of ♀ very wide, ending behind middle of coxa (fig. 97), without carina or ridge; tarsal claws simple, robust (fig. 90); fore femur normal; middle trochanter somewhat longer than hind trochanter; transverse groove of metapleuron wide, near level of episternal scobe (fig. 93); first tergite moderately slender, its length 1.3-1.8 times its apical width, subpetiolate, gradually narrowed basad (fig. 98); laterope absent (fig. 93); third tergite without acute lateral margin, about 1.8 times as long as second tergite and both smooth (figs 93, 98); length of ovipositor sheath 1.5-1.7 times fore wing.

Distribution.— Neotropical: only the type species known.

Aulacodes nigriventris Cresson, 1865
(figs 89-98)

Aulacodes nigriventris Cresson, 1865: 10; Shenefelt, 1970: 178; Saffer, 1982: 122-125, figs 26-29 (redescription).

Distribution.— Neotropical: Cuba; Key Largo (Florida).

Capitonius Brullé, 1846 re-instated
(figs 44-53, 130-133)

Capitonius Brullé, 1846: 544; Shenefelt, 1970: 178; Saffer, 1982: 83 (as synonym of *Cenocoelius* Haliday, 1840). Type species (by monotypy): *Capitonius bifasciatus* Brullé, 1846 [examined].
Iseura Spinola, 1853: 27; Shenefelt, 1970: 185. Type species (by monotypy): *Iseura ghilianii* Spinola, 1853 [examined]. **Syn. nov.**

Diagnosis.— Length of fore wing 3-11 mm; antenna long, with 26-39 segments; scapus at most 3.5 times as long as wide (fig. 46); at least anterior half of frontal cavity with pair of strong lateral carinae (fig. 51); medio-ventral tooth of clypeus more or less developed (fig. 51); occipital carina not conspicuously protruding posteriad (fig. 46); vertex behind stemmaticum more or less concave (fig. 49); pronotum slightly protruding antero-dorsad (fig. 46); propleuron with or without transverse carina or ridge (fig. 48); anterior subalar prominence normal (fig. 46); in lateral view mesoscutum with complete oblique carina anteriorly (fig. 46), or (largely) absent; precoxal sulcus variable, largely absent to complete; episternal scrobe present (fig. 46), at least as a superficial depression; notauli united on mesoscutum submedially (fig. 53), or notauli only anteriorly impressed; middle lobe of mesoscutum short (fig. 53); scutellum without medio-posterior depression; metanotum moderately to strongly and extensively crenulate (fig. 53); propodeum beside insertion of metasoma variable, with medium-sized carinae (fig. 46) or with distinct flanges, or not protruding at all; vein 1-M of fore wing straight or nearly so (fig. 44), but may be slightly curved (fig. 130); marginal cell of fore wing variable; vein 1r-m of hind wing short, somewhat longer than vein 2-SC+R (fig. 44); vein M+CU of hind wing 1.2-2.1 times vein 1-M, vein 1-M as long as vein 1r-m or distinctly longer (fig. 44); depression at inner side of hind coxa of ♀ ending ventrally just in front of middle of coxa, without carina or ridge; tarsal claws usually with lobe or lamella ventrally (fig. 45); middle trochanter about as long as hind trochanter or somewhat longer; fore femur normal; transverse groove of metapleuron near level of episternal scrobe anteriorly (fig. 46); length of first tergite less 2.5 times its apical width, subpetiolate, gradually narrowed basad (fig. 52, but abruptly narrowed in the subgenus *Iseura*); laterope present (fig. 46); third tergite without acute lateral margin (fig. 46), 1.0-2.4 times medial length of second tergite, and both tergites nearly always smooth (figs 46, 52), rarely striate; length of ovipositor sheath 0.8-1.5 times fore wing.

Distribution.— New World. Medium-sized genus; the Nearctic and Mexican species are revised by Saffer (1982), who included this genus in the genus *Cenocoelius* sensu lato.

Note.— The type species of *Iseura* Spinola, *Iseura ghilianii* Spinola, 1853, is a very aberrant species. It cannot be placed in a separate genus because it originated most likely from a derived lineage within the genus *Capitonius*, sharing with some species the shortened second metasomal tergite. Provisionally, *Iseura* may be used as a subgenus in the genus *Capitonius*, however, it must be realized that no apomorphies are known for the subgenus *Capitonius*, and that most likely the latter is a paraphyletic group. The provisional subgenera may be separated as follows:

1. First metasomal tergite strongly costate, and abruptly narrowed basally (fig. 131); vein m-cu of fore wing distinctly postfurcal (fig. 130); margin of plical lobe of hind wing straight or nearly so (fig. 130); basal half of antenna of ♀ (unknown of ♂) conspicuously widened (fig. 132) ..... subgenus ***Iseura*** Spinola
- First tergite smooth or nearly so, and gradually narrowed basally (fig. 52); vein m-cu of fore wing at most slightly postfurcal (fig. 44), usually subinterstitial or slightly antefurcal; margin of plical lobe of hind wing (slightly) curved (fig. 44); basal half of antenna of ♀ normal ..... subgenus ***Capitonius*** Brullé

Capitonius (C.) bifasciatus Brullé, 1846
(figs 44-53)

Capitonius bifasciatus Brullé, 1846: 545.
Cenocoelius bifasciatus; Shenefelt, 1970: 180.

Material.— Holotype, ♂ (MNHN), "769, 36", "*Capitonius bifasciatus* Br." (old handwritten label; according to description from Brazil, Pará); 1 ♀ (RMNH), "Museum Leiden, Suriname, Brownsberg, 450-480 m, 4.i.1972, G.F. Mees".

Holotype, ♂, length of body 8.7 mm, of fore wing 7.4 mm.

Head.— Antenna incomplete, remaining antennal segments 5 (♀ from Suriname has 32 segments), length of third segment 1.1 times fourth segment, length of third and fourth segments 3.2 and 2.8 times their width, respectively (fig. 46); length of scapus 2.5 times its maximum width, in upright position remaining below top of head (fig. 46); length of maxillary palp 0.8 times height of head, slender; length of eye in dorsal view equal to length of temple (fig. 49); temple smooth; OOL:diameter of ocellus:POL = 10:3:14; anterior ocellus of similar size as lateral ocellus, nearly in same position, but situated much lower in depression (figs 49, 51); vertex medially concave, laterally convex, smooth; medial depression of frons with medium-sized carina not protruding above depression; frons laterally sparsely punctate; face and clypeus punctulate (fig. 51); maximum width of eye about equal to length of malar space (fig. 46); length of malar space 1.4 times basal width of mandible; mandible slightly twisted.

Mesosoma.— Length of mesosoma 1.4 times its height; pronope absent, only with a weak transverse carina behind pubescent and somewhat protruding collar (fig. 46); side of pronotum crenulate-punctate medially and posteriorly, and ventrally punctulate and with carina (fig. 46); propleuron punctate, with strong transverse carina (figs 46, 48); prepectal and postpectal carinae complete and strong; epicnemial area and posterior half of precoxal sulcus crenulate, remainder of precoxal sulcus absent (fig. 46); remainder of mesopleuron sparsely punctulate; metapleuron punctate, but dorsally reticulate; propodeum reticulate; notauli medium-sized, lateral

lobes of mesoscutum rather flat and smooth; middle lobe of mesoscutum slightly concave antero-medially (fig. 53); scutellum convex and smooth.

Wings.— Fore wing: r:3-SR:SR1 = 5:6:41; 2-SR:3-SR:r-m = 11:6:6; m-cu shortly postfurcal; cu-a subinterstitial (fig. 44); 1-M straight. Hind wing: M+CU:1-M = 19:10; 1-M:1r-m = 10:6; cu-a slightly curved (fig. 44).

Legs.— Tarsal claws with medium-sized lobe, and apical tooth slender and bent (fig. 45); length of femur, tibia and basitarsus of hind leg 4.1, 7.9, and 6.8 times their width, respectively; length of hind tibial spurs 0.3 and 0.4 times hind basitarsus.

Metasoma.— Length of first tergite 1.2 times its apical width, rather flat, its surface smooth, its dorsal carinae absent; ♀ from Suriname has length of ovipositor sheath 1.49 times fore wing.

Colour.— Blackish-brown; ventral part of head (below level of eyes), palpi, propleuron, metathorax, propodeum, fore leg, middle tibia and tarsus, and three basal segments of metasoma, brownish-yellow; wing membrane pale yellowish, but near base of fore wing, band below pterostigma, apex of fore wing and subapical band of hind wing, dark brown (fig. 44); pterostigma (except yellowish apex) and parastigma dark brown.

Capitonius (Iseura) ghilianii (Spinola, 1853) comb. nov.
(figs 130-133)

Iseura ghilianii Spinola, 1853: 36; Shenefelt, 1970: 185; Casolari & Casolari Moreno, 1980: 50.

Material.— Holotype, ♀ (Spinola Collection, Turin), only labelled as holotype; 1 ♀ (RMNH), "Museum Leiden, Suriname: Nickerie, KM 212 road to Amotopo, 19-26.xi.1981, HH 228, J. Huijbregts"; "sifted from litter prim. forest".

Holotype, ♀, length of body 10.4 mm, of fore wing 10.3 mm, [in square brackets description from ♀ from Suriname].

Head.— Antenna missing; [antennal segments 32 of ♀ from Suriname, its basal half conspicuously widened and bristly setose (fig. 132), length of third segment 1.2 times fourth segment, length of third, fourth, and penultimate segments 1.9, 1.6 and 1.4 times their width, respectively (figs 132, 133); length of scapus 2.7 times its maximum width, in upright position about reaching top level of head; length of maxillary palp 0.5 times height of head, very slender; length of eye in dorsal view twice length of temple; temple sparsely punctate; OOL:diameter of ocellus:POL = 10:4:14]; anterior ocellus of similar size as lateral ocellus, situated distinctly in front of posterior ocelli and much lower in the frontal cavity; [vertex medially concave, laterally flat, sparsely punctate; medial depression of frons smooth with medium-sized, triangular crest not protruding above depression; occipital carina and lateral carinae of frontal cavity strongly developed, complete; frons laterally, face and clypeus densely and rather coarsely punctate; maximum width of eye 1.2 times length of malar space; length of malar space 1.2 times basal width of mandible; mandible rather twisted].

Mesosoma.— [Length of mesosoma 1.4 times its height]; pronope small; collar rather protruding antero-dorsad; [side of pronotum crenulate medially and posteriorly, and remainder largely smooth; propleuron coarsely reticulate, with strong transverse rugae]; prepectal and postpectal carinae complete and strong; epicnemial area and precoxal sulcus completely crenulate; [remainder of mesopleuron smooth,

except for crenulation medio-dorsally and ventro-posteriorly; metapleuron coarsely reticulate-rugose; propodeum coarsely reticulate]; notauli wide, complete, strongly crenulate; [lateral lobe of mesoscutum with shallow longitudinal depression, and sparsely and finely punctate; middle lobe of mesoscutum with pair of distinct longitudinal grooves, subtruncate antero-medially; scutellum rather flat and sparsely punctulate]; propodeum broadly truncate and with strong lamella posteriorly.

Wings.— Fore wing: r:3-SR:SR1 = 10:17:74; 2-SR:3-SR:r-m = 16:17:9; m-cu distinctly postfurcal; cu-a subinterstitial; marginal cell rather large (fig. 130); 1-M slightly curved. Hind wing: M+CU:1-M = 15:17; 1-M:1r-m = 17:13; cu-a distinctly curved (fig. 130); subbasal cell evenly setose; plical lobe of hind wing virtually straight posteriorly (fig. 130).

Legs.— Tarsal claws with rather small lobe, and its apical tooth slender and bent; [inner side of hind coxa with wide groove; length of femur, tibia and basitarsus of hind leg 3.3, 7.8, and 5.4 times their width, respectively; length of hind tibial spurs 0.4 and 0.5 times hind basitarsus].

Metasoma.— Length of first tergite equal to its apical width, rather flat, its surface strongly costate, its dorsal carinae present up to apical fifth, and abruptly narrowed basad (fig. 131); medial length of third tergite 1.7 times medial length of second tergite (fig. 131); second and third tergites smooth and without lateral crease; ventral margin of upper valve of ovipositor distinctly sinuate; length of ovipositor sheath 1.03 times fore wing; [♀ from Suriname has length of ovipositor sheath 1.07 times fore wing].

Colour.— Brownish-yellow; head dorsally (but frons with pair of elongate yellowish patches sublaterally), scutellum laterally, patch of propodeum medio-dorsally, first tegite medially (but patch widened apically), peculiarly shaped patches of second-fifth tergites (fig. 131), sixth and following tergite largely, ovipositor sheath, apex of hind tibia and whole hind tarsus, black; wing membrane yellowish, but apically darkened (fig. 130); pterostigma and veins yellowish; [antenna black, but most of scapus, and frons medially, pale yellowish].

Cenocoelius Haliday, 1840 sensu stricto
(figs 54-65)

Cenocoelius Haliday [in Westwood], 1840: 62; Shenefelt, 1970: 178; Tobias, 1971: 218 (translation, 1975: 87), 1976: 90, Tobias, 1986: 150-151. Type species (by original designation): *Cenocoelius flavifrons* Haliday [in Westwood], 1840 (= ♂ of *Cenocoelius analis* (Nees, 1834), [examined]).

Caenocoelius Marshall, 1894: 271. Invalid emendation.

Laccophrys Foerster, 1862: 257; Shenefelt, 1970: 178. Type species (by original designation): *Laccophrys magdalini* Foerster, 1862 (= *Cenocoelius analis* (Nees, 1834) **syn. nov.**, [examined]).

Diagnosis.— Length of fore wing 3-4 mm; antenna of ♀ 0.8-0.9 times length of fore wing, with 24-31 segments; scapus 2.0-2.5 times as long as wide (fig. 56); frontal cavity largely bordered with pair of strong lateral carinae (fig. 61); frons slightly convex laterally; medio-ventral tooth of clypeus distinct (fig. 60); occipital carina not conspicuously protruding posteriad (fig. 56); vertex behind stemmaticum flattened (fig. 61); pronotum not protruding antero-dorsad (fig. 56); propleuron with strong scaly transverse ridge (figs 56, 58); anterior subalar prominence normal (fig. 56); in lateral view mesoscutum without oblique carina anteriorly (fig. 56); precoxal sulcus

complete (fig. 56); episternal scrobe shallow (fig. 56); notauli united on mesoscutum near its posterior margin (fig. 59); scutellum without medio-posterior depression; metanotum sparsely crenulate (fig. 59); propodeum beside insertion of metasoma without protruding carinae (fig. 56); vein 1-M of fore wing straight or nearly so (fig. 54); marginal cell of fore wing rather short (fig. 54); vein 1r-m of hind wing rather short, somewhat longer than vein 2-SC+R (fig. 54); vein M+CU of hind wing 4.7-5.7 times vein 1-M, vein 1-M distinctly longer than vein 1r-m (fig. 54); depression at inner side of hind coxa of ♀ rather wide and ending ventrally near middle of coxa, without carina or ridge (fig. 62); tarsal claws with lamella ventrally (fig. 64); middle trochanter about as long as hind trochanter; fore femur normal; transverse groove of metapleuron absent or nearly so (fig. 56); length of first tergite rather robust, 1.1-1.2 times its apical width, subpetiolate, gradually narrowed basad (fig. 65); laterope present (fig. 56); third tergite without acute lateral margin (fig. 56), about as long as second tergite; second tergite (partly) striate, rarely smooth (figs 56, 65); length of ovipositor sheath 0.7-0.8 times fore wing.

Distribution.— Palaearctic. Small genus; the only known West Palaearctic species is *Cenocoelius analis* (Nees, 1834). Tobias (1979) described a second species from the Far East U.S.S.R.; *Cenocoelius kunashiri* Tobias, 1979, which also has the base of the third metasomal tergite striate, and the body is largely black.

Notes.— *Laccophrys medenbachii* Snellen van Vollenhoven, 1878, from the surroundings of Arnhem (Netherlands) was listed by Shenefelt (1970) under *Cenocoelius*, but this species obviously does not belong to the Cenocoeliinae (e.g. metasoma inserted low on the propodeum). Unfortunately, the type is lost, but acccording to the figure and the (too) short description this species most likely belongs to the genus *Bracon* Fabricius, 1804. This assumption is based on the figured angulate first metasomal tergite, the short antenna and the colour pattern of the metasoma. *Bracon medenbachii* (Snellen van Vollenhoven, 1878) is a new combination.

Cenocoelius analis (Nees, 1834)
(figs 54-65)

Bracon analis Nees, 1834: 63.

Cenocoelius analis; Shenefelt, 1970: 178-179; Tobias, 1971: 218 (translation, 1975: 87), 1976: 90, 1986: 151; Čapek et al., 1982: 337.

Cenocoelius flavifrons Haliday, 1840 [in Westwood]: 62; Shenefelt, 1970: 17 [examined].

Laccophrys magdalini Foerster, 1862: 257; Shenefelt, 1970: 184 (as possible synonym of *Ichneumon secalis* Linnaeus, 1758), [examined]. **Syn. nov.**

Cenocoelius hungaricus Zilahi-Kiss, 1927: 17; Shenefelt, 1970: 181 [examined]. **Syn. nov.**

Material.— Specimen figured and redescribed: ♀ (RMNH), "Nederland, Hulshorst (Gld.), 20-22.vi.1975, J. v .d. Vecht, Malaise trap"; 1 ♀ (TMA), "Szilágycseh, Dr. Z. Kiss", "Holotypus ♀, *Cenocoelius hungaricus* Z.-Kiss, 1927, Papp, 1978", "*Caenocoelius hungaricus* n. sp., ♀", "Typus"; 6 ♀♀ (RMNH, USNM), "Nederland, Hulshorst (Gld.), 20-22.vi.1975, J. v.d.Vecht, Malaise trap"; 1 ♀ (RMNH), "Nederland, Waarder (Z.H.), Oosteinde 34, 3.vi.1971, C. van Achterberg", "*Alnus-Salix*-forest on peat in cult[ivated area]."; 3 ♂♂ (RMNH), id., 3.vi.1970; 1 ♀ (RMNH), id., 11-12.v.1971; 4 ♀♀ (RMNH), id., 29-30.v.1971; 2 ♀♀ (RMNH), id., 31.v-1vi.1971; 1 ♀ (RMNH), id., 3.vi.1971; 1 ♀ (RMNH), id., 24.vi.1971; 1 ♀ (RMNH), id., Oosteinde 33, 11-13.vi.1973; 5 ♀♀ (RMNH), id., 17-19.vi.1973; 1 ♀ (RMNH), id., 20-22.vi.1973; 1 ♀ (RMNH), id., 26-28.vi.1973; 1 ♀ (RMNH), id., 27-31.v.1974; 1 ♀ (RMNH), id., 1-3.vi.1974; 4 ♀♀ (RMNH), id., 4-11.vi.1974; 3 ♀♀ (RMNH), id., 12-16.vi.1974; 1 ♀ (RMNH), id., 17-27.vi.1974; 1 ♀ (RMNH), "Nederland, Rockanje (Z.H.), Stekelhoekduin, wet *Salix*-dunes", "3-23.vi.1976, C. v. Achterberg"; 1 ♀ (RMNH), "Nederland, Oostvoorne (Z.-H.), 1-17.vi.1974, C. v. Achterberg"; 1 ♀ (RMNH), "Nederland, Wijster (Dr.), opposite Biol. Stat.,

15-21.vi.1972, C. v. Achterberg"; 2 ♀♀ (RMNH), id., 22-30.vi.1972; 1 ♀ (RMNH), id., 1-14.vii.1972; 1 ♀ (RMNH), id., 1-7.vi.1973; 2 ♀♀ (RMNH), id., 15-21.vi.1973; 1 ♀ (RMNH), id., 10-17.vi.1974; 1 ♀ (RMNH), id., 9-16.vi.1975; 3 ♀♀ (RMNH), id., 16-23.vi.1975; 2 ♀♀ (RMNH), id., 1-7.vii.1975; 1 ♀ (RMNH), id., 4-11.vi.1976; 1 ♀ (RMNH), id., 24-30.vi.1977; 2 ♀♀ (RMNH), id., 2-9.vi.1978; 2 ♀♀ (RMNH), id., 9-16.vi.1978; 1 ♀ (RMNH), "Netherlands: N-B., Kaatsheuvel, Plantloon, 17-21.v.1989, Mal. trap, J.W.A. v.Zuijlen"; 7 ♀♀ (RMNH, Museum Tilburg), "Netherlands: N-B., Udenhout, "De Brand", 19-26.v.1990, UTYM FT 476225, Mal. tr[ap], Ins. W. G. KNNV-Tilburg"; 5 ♀♀+ 1 ♂ (RMNH, Museum Tilburg), id., 26.v-2.vi.1990; 1 ♀ (RMNH), "[Netherlands] Bilthoven, Ut[recht], 5.vi.1954, Dr. C. de Jong"; 1 ♀ (RMNH), "Netherlands (Gld.), Nunspeet, "Mythstee", 5.vii.1984, RMNH'84, R.T. Simon Thomas"; 1 ♀ (RMNH), id., 7.vii.1984; 2 ♀♀ (RMNH), id., 9.vii.1984; 1 ♀ (RMNH), "Hollanbd, Nunspeet, 6.vii.1975, C.J. Zwakhals"; 1 ♀ (RMNH), id., 8.vi.1976; 1 ♀ (RMNH), "Neth.; Zuid-Holland, Wassenaar, Zuydwijk, UTM ET 97, 10-17.vi.1986, MT, leg. P. Thomas"; 1 ♀ (RMNH), "Museum Leiden, [Netherlands], Friesland, Gaasterland, Rijs, 4.vi.1977, D.C. Geijskes"; 1 ♀ (RMNH), "Netherlands, Ov., Hasselt, Stadsgaten, 12.vi.1987, C.J. Zwakhals"; 1 ♀ (RMNH), "Netherlands: L., St. Pietersberg, c. 175 m, 20.v.1990, B. van Aartsen, RMNH'90"; 1 ♀ (RMNH), "Netherlands: Z., Westenschouwen, 10-15.vi.1985, Mal. trap, C.J. Zwakhals, RMNH'90"; 1 ♀ (RMNH), "89", "[Germany], Reinh., Saxon"; 1 ♂ (RMNH), "Bulgaria, ex coll. Zaykov, RMNH, Leiden 1991", "13.v.1967, Trakija Ognijanovo, leg. A. Germanov"; 1 ♀ (RMNH), id., but 15.v.1978, Rhodopi, Gornoslav, leg. A. Zaykov"; 1 ♀ (RMNH), id., 1.v.1977, Iurunovo.

Redescribed ♀ from Hulshorst, length of body 3.9 mm, of fore wing 3.1 mm.

Head.— Antennal segments 24 (excluding more or less differentiated annellus, fig. 55), length of antenna 0.8 times fore wing, length of third segment 1.3 times fourth segment, length of third, fourth, and penultimate segments 2.8, 2.2, and 1.4 times their width, respectively (figs 55-57); length of scapus 2.5 times its maximum width, in upright position remaining far below top of head (fig. 56); length of maxillary palp 0.7 times height of head, rather slender (fig. 56); length of eye in dorsal view 2.2 times temple (fig. 61); temple punctulate, directly narrowed posteriad (fig. 61); OOL:diameter of ocellus:POL = 10:3:12; anterior ocellus nearly at same level as posterior ocelli (fig. 60); vertex convex, punctulate; medial depression of frons deep, and with medium-sized lamella not protruding above depression, and laterally convex and punctulate (fig. 61); face densely and finely punctate; clypeus finely punctate; maximum width of eye nearly equal to length of malar space (fig. 56); length of malar space 1.9 times basal width of mandible; mandible distinctly twisted.

Mesosoma.— Length of mesosoma 1.4 times its height; pronope deep, medium-sized, ovoid (fig. 59), no protruding collar (fig. 56); side of pronotum finely punctate dorsally, rugose medially, and rugulose ventrally (fig. 56); propleuron divided in two parts by a strong transverse scaly ridge (figs 56, 58); prepectal and postpectal carinae complete, strong; epicnemial area crenulate (fig. 56); precoxal sulcus complete, wide, crenulate; remainder of mesopleuron largely smooth; metapleuron and propodeum reticulate; notauli comparatively narrow, lateral lobes of mesoscutum rather convex and sparsely punctulate; middle lobe of mesoscutum convex antero-medially and densely and more coarsely punctate than lateral lobes (fig. 59); scutellum convex and finely punctate.

Wings.— Fore wing: r:3-SR:SR1 = 9:17:66; 2-SR:3-SR:r-m = 18:17:14; m-cu interstitial; cu-a postfurcal, 1-CU1:2-CU1 = 2:13 (fig. 54); 1-M straight. Hind wing: M+CU:1-M = 48:10; 1-M:1r-m = 10:14; cu-a straight (fig. 54).

Legs.— Tarsal claws with large acute lobe, rather robust (fig. 64); length of femur, tibia and basitarsus of hind leg 3.6, 6.5, and 5.2 times their width, respectively; length of hind tibial spurs 0.3 and 0.5 times hind basitarsus; length of fore tarsus 1.1 times fore tibia.

Metasoma.— Length of first tergite 1.2 times its apical width, rather flat, its surface longitudinally striate, and with dorsal carinae up to basal 0.9 (fig. 65); second suture shallow and smooth (fig. 65); length of ovipositor sheath 0.73 times fore wing.

Colour.— Black; scapus (except apically), annellus, femora (but basally darkened), tibiae and tarsi (but telotarsi infuscate), tegulae, metasomal tergites from apex of third segment onwards, yellowish; palpi dark brown; pterostigma (except patch at its base) and parastigma, dark brown; wing membrane slightly infuscate.

Variation.— Antennal segments of ♀ 23(4), 24(22), 25(41), 26(9), and of ♂ 24(1), 25(2); length of body 3.2-4.2 mm, of fore wing 2.6-3.7 mm; length of first metasomal tergite 1.1-1.3 times its apical width; second tergite completely striate medially to only medio-basally finely striate, rarely completely smooth, and frequently yellowish laterally; length of ovipositor sheath 0.65-0.85 times fore wing; length of vein 1-M of hind wing 0.6-0.8 times vein 1r-m; vein M+CU of hind wing 4.4-5.6 times vein 1-M; male has face and most of temples yellowish (rarely face of female is dark brown, but normally it is black), metasoma may be completely dark brown or blackish to completely yellowish-brown (except first tergite and usually second tergite medio-basally), and length of antenna about equal to length of fore wing (of ♀ 0.8-0.9 times fore wing; length of vein 1-SR of fore wing variable, may be straight and short as figured (0.4 times vein 1-M; fig. 54) or 0.7 times as long vein 1-M, and rather curved.

Notes.— According to Tobias (1976, 1986) *C. hungaricus* may be differentiated by the colour of the apex of the metasoma and by the number of antennal segments. However, the colour of the metasoma is variable and the type seems to be a melanistic specimen. More puzzling is the rather peculiar difference in the number of antennal segments (31 according to the original description, instead of the normal 23-26). It may concern a miscount or a misprint. The holotype of *C. hungaricus* is rather large but not exceptionally so, it has length of fore wing 3.6 mm, and of body 4.2 mm; length of ovipositor sheath is 0.74 times fore wing; the metasoma is blackish, and only apically slightly brownish, and the second metasomal tergite is largely smooth.

Laccophrys magdalini Foerster, 1862 is traditionally synonymized with *A. secalis* (Linnaeus, 1758) (Shenefelt, 1970), but the holotype is a normal specimen of *C. analis* (Nees, 1834).

Evaniomorpha Szépligeti, 1901 re-instated
(figs 23-33)

Evaniomorpha Szépligeti, 1901: 356; Shenefelt, 1970: 185 (as synonym of *Iseura* Spinola, 1853). Type species (by monotypy): *Evaniomorpha munda* Szépligeti, 1901 [examined].

Diagnosis.— Length of fore wing about 8.5 mm; scapus about 2.5 times as long as wide (fig. 46); frontal cavity with pair of strong lateral carinae; frons slightly convex laterally (fig. 27); clypeus with medio-ventral tooth (fig. 28); occipital carina strongly and angularly protruding posteriad (fig. 26); vertex behind stemmaticum concave (fig. 27); pronotum not protruding antero-dorsad (fig. 26); propleuron without transverse carina or ridge (fig. 26); anterior subalar prominence normal (fig. 46); in lateral view mesoscutum with complete oblique carina anteriorly (fig. 26); precoxal sulcus complete, crenulate; episternal scrobe present (fig. 26); notauli united on mesoscutum near its posterior margin (fig. 29); scutellum without medio-posterior depres-

sion; metanotum sparsely crenulate (fig. 29); propodeum beside insertion of metasoma with medium-sized flanges (fig. 26); vein 1-M of fore wing curved (fig. 23); marginal cell of fore wing rather elongate (fig. 23); vein 1r-m of hind wing short, somewhat longer than vein 2-SC+R (fig. 23); vein M+CU of hind wing about twice vein 1-M, vein 1-M slightly longer than vein 1r-m (fig. 23); depression at inner side of hind coxa of ♀ ending ventrally near middle of coxa, narrow, with lateral carina (fig. 24); tarsal claws simple (fig. 33); middle trochanter about as long as hind trochanter or somewhat longer; fore femur normal; transverse groove of metapleuron somewhat below level of episternal scrobe (fig. 26); length of first tergite about 0.8 times its apical width, subpetiolate, abruptly narrowed basad (fig. 31); laterope absent (fig. 26); second and third tergites with acute lateral margin (fig. 26), third segment about as long as second tergite and both tergites coarsely sculptured (figs 26, 31); length of ovipositor sheath about 0.9 times fore wing.

Distribution.— Neotropical. Small genus, only the type species from Brazil known. The examined holotype of *Evaniomorpha tricolor* Enderlein, 1920, belongs to the genus *Capitonius* Brullé (**comb. nov.**).

Evaniomorpha munda Szépligeti, 1901
(figs 23-33)

Evaniomorpha munda Szépligeti, 1901: 356.
Iseura munda; Shenefelt, 1970: 185.

Material.— Holotype, ♀ (TAM), "Fonteboa, Brasil", "Holotypus, ♀, *Evaniomorpha munda* Szépl., 1901, det. Papp'67", "*munda*, det. Szépligeti", "Hym. Typ No. 621, Mus. Budapest".

Holotype, ♀, length of body 9.5 mm, of fore wing 8.4 mm.

Head.— Antenna incomplete, remaining antennal segments 23, length of third segment 1.2 times fourth segment, length of third, and fourth segments 3.5 and 2.9 times their width, respectively (fig. 25); length of scapus 2.2 times its maximum width, in upright position not protruding above top of head (fig. 25); length of maxillary palp 0.9 times height of head, basal segments of both maxillary and labial palpi not distinctly differentiated; length of eye in dorsal view 2.3 times temple (fig. 23); temple punctate, its ventral half coarsely so (fig. 26); OOL:diameter of ocellus:POL = 13:6:22; anterior ocellus smaller than lateral ocellus and situated in depression (figs 27, 28); vertex concave medially, sparsely punctate (fig. 27); medial depression of frons with medium-sized lamella, not protruding above depression, and laterally coarsely reticulate (fig. 27); face coarsely reticulate and with fine intermittant punctures; clypeus densely puncate; maximum width of eye 1.5 times length of malar space (fig. 26); length of malar space 1.9 times basal width of mandible; mandible rather twisted.

Mesosoma.— Length of mesosoma 1.5 times its height; pronope obsolescent (fig. 29); pronotum not protruding antero-dorsad (fig. 26); side of pronotum coarsely crenulate-reticulate, but dorsally largely sparsely punctate (fig. 26); propleuron only coarsely reticulate-punctate; prepectal and postpectal carinae complete and strong; epicnemial area and precoxal sulcus completely crenulate, connected to a rugose area dorsally (fig. 26); remainder of mesopleuron sparsely punctate; metapleuron and propodeum coarsely reticulate (fig. 26); notauli normal (fig. 29); mesoscutum sparse-

ly setose, punctate; scutellum rather convex and punctate.

Wings.— Fore wing: r:3-SR:SR1 = 7:22:71; 2-SR:3-SR:r-m = 21:22:13; 1-M rather curved (fig. 23); m-cu postfurcal; cu-a interstitial (fig. 23). Hind wing: M+CU:1-M = 21:10; 1-M:1r-m = 10:8; cu-a curved (fig. 23).

Legs.— Tarsal claws simple (fig. 33); length of femur, tibia and basitarsus of hind leg 2.8, 7.6, and 5.4 times their width, respectively; length of hind tibial spurs 0.2 and 0.4 times hind basitarsus; length of fore spur 0.4 times fore basitarsus (fig. 30).

Metasoma.— Length of first tergite 0.8 times its apical width, its surface coarsely reticulate-punctate, its dorsal carinae present in basal half of tergite (fig. 31), tergite rather convex; length of ovipositor sheath 0.88 times fore wing.

Colour.— Black; palpi, and ventral part of malar space, (rather) pale yellowish; clypeus, fore coxae (except dark base), middle and hind coxae, hind trochanter and trochantellus, metapleuron, propodeum, tegulum (but not humeral plate), first and second metasomal tergites, third tergite laterally, and metasoma ventrally, yellowish-brown; pterostigma and parastigma dark brown; veins yellowish-brown, but brown in dark part of wing; wing membrane subhyaline, except below pterostigma, and fore wing subapically, and hind wing apically and posteriorly, dark brown (fig. 23).

Foenomorpha Szépligeti, 1904
(figs 12-22)

Foenomorpha Szépligeti, 1904: 8; Shenefelt, 1970: 185. Type species (by monotypy): *Foenomorpha bicolor* Szépligeti, 1904 [examined].

Diagnosis.— Length of fore wing 7-9.5 mm; antenna longer than fore wing, with about 44 segments; scapus 2.2-3.0 times as long as wide (fig. 15); frontal cavity without strong lateral carinae; frons distinctly convex laterally (fig. 17); clypeus with three minute medio-ventral tubercles (fig. 17); occipital carina not conspicuously protruding posteriorly (fig. 15); vertex behind stemmaticum slightly convex (fig. 18); pronotum strongly protruding antero-dorsad (fig. 15); propleuron without transverse carina or ridge (fig. 15); anterior subalar prominence normal (fig. 35); in lateral view mesoscutum with complete oblique carina anteriorly (fig. 15), not protruding; precoxal sulcus completely crenulate (fig. 15); episternal scrobe large (fig. 15); notauli united near middle of mesoscutum, resulting in a short middle lobe of mesoscutum (fig. 16); scutellum without medio-posterior depression; metanotum moderately crenulate (fig. 16); propodeum beside insertion of metasoma with distinct flanges; vein 1-M of fore wing slightly curved (fig. 12); marginal cell of fore wing comparatively slender (fig. 12); vein 1r-m of hind wing short, about as long vein 2-SC+R (fig. 12); vein M+CU of hind wing 2-3 times vein 1-M, vein 1-M longer than vein 1r-m (fig. 12); depression at inner side of hind coxa of ♀ absent; tarsal claws simple (fig. 21); fore femur normal; middle trochanter distinctly longer than hind trochanter; metapleuron with low transverse groove, far below level of episternal scrobe (fig. 15); first tergite slender, 3-4 times its apical width, subpetiolate, gradually narrowed basad (fig. 22); laterope absent (fig. 15); third tergite without acute lateral margin (fig. 15), about as long as second tergite and both of these tergites smooth (fig. 22); length of ovipositor sheath about twice length of fore wing.

Distribution.— Neotropical. Small genus, only the type species from Peru has been described. In the RMNH collection is a (damaged) female from Suriname

belonging to another species, which has the malar space much shorter and the first metasomal tergite more elongate.

Foenomorpha bicolor Szépligeti, 1904
(figs 12-22)

Foenomorpha bicolor Szépligeti, 1904: 9; Shenefelt, 1970: 185.

Material.— Holotype, ♀ (TAM), "Sicuani, Peru", "Holotypus, ♀, *Foenomorpha bicolor* Szépl., 1904, Papp 1977".

Holotype, ♀, length of body 11.6 mm, of fore wing 9.5 mm.

Head.— Antennal segments 44, length of antenna 1.2 times fore wing, length of third segment equal to length of fourth segment, length of third, fourth, and penultimate segments 4.2, 4.4 and 2.6 times their width, respectively (figs 13, 14); length of scapus 2.3 times its maximum width, in upright position remaining below top of head (fig. 15); length of maxillary palp 1.3 times height of head, its third segment, and second and third segments of labial palp rather widened; length of eye in dorsal view 1.4 times temple (fig. 18); temple punctulate; OOL:diameter of ocellus:POL = 9:3:8; anterior ocellus of similar size as lateral ocellus, but situated in depression (figs 17, 18); vertex rather convex, smooth, except some punctures; medial depression of frons with medium-sized lamella in its anterior half, not protruding above depression, and laterally sparsely punctate; face densely punctate; clypeus sparsely puncate, smooth ventrally (fig. 17); maximum width of eye 1.2 times length of malar space (fig. 15); length of malar space 2.0 times basal width of mandible; mandible twisted.

Mesosoma.— Length of mesosoma 1.3 times its height; pronope absent; pronotum strongly protruding antero-dorsad because of high curved lamella (fig. 15); side of pronotum reticulate medially, remainder largely punctate (fig. 15); anterior half of propleuron reticulate, its posterior half punctate, without transverse rugae; prepectal and postpectal carinae complete and strong; epicnemial area and precoxal sulcus complete, crenulate (fig. 15); remainder of mesopleuron largely smooth, but dorsally with some elongate punctures (fig. 15); metapleuron punctate, posteriorly and ventrally reticulate; propodeum reticulate; notauli wide; lateral lobes of mesoscutum rather convex and with some punctures; middle lobe of mesoscutum truncate anteromedially (fig. 16); scutellum convex and sparsely punctate.

Wings.— Fore wing: r:3-SR:SR1 = 2:6:38; 2-SR:3-SR:r-m = 12:12:7; m-cu and cu-a shortly antefurcal; 1-M rather curved (fig. 12). Hind wing: M+CU:1-M = 24:10; 1-M:1r-m = 10:6; cu-a straight (fig. 12).

Legs.— Tarsal claws robust and simple (fig. 21); length of femur, tibia and basitarsus of hind leg 4.8, 12.9, and 9.4 times their width, respectively; length of hind tibial spurs 0.15 and 0.20 times hind basitarsus; length of fore spur 0.25 times fore basitarsus (fig. 20).

Metasoma.— Length of first tergite 4.0 times its apical width, ventrally open, its surface smooth (excet for some punctures), evenly convex, its dorsal carinae absent; third-fifth tergites concave posteriorly; length of ovipositor sheath 2.11 times fore wing.

Colour.— Black; head, scapus, and pedicellus, orange-brown; mesosoma anteri-

orly (including mesoscutum), fore leg largely, middle tarsus partly, (dark) reddish-brown; palpi, pterostigma and veins, dark brown; hind tarsus (except telotarsus), ivory; wing membrane subhyaline.

Lestricus Reinhard, 1866
(figs 66-76)

Lestricus Reinhard, 1866: 265; Shenefelt, 1970: 178; Saffer, 1982: 83 (as synonym of *Cenocoelius* Haliday, 1840). Type species (designated by Muesebeck & Walkley, 1951): *Alysia rubriceps* Ratzeburg, 1844. Note. *Lestricus* Reinhard is sometimes dated 1865 (e.g. Shenefelt, 1970), but the issue was published in January 1866 (see p. vi).

Cenocoelius auct. p.p.; Tobias, 1971: 218 [transl. 1975: 87], 1976: 27, 1986: 150-152.

Diagnosis.— Length of fore wing 3-4 mm; antenna slightly longer than fore wing, with 32-33 segments; scapus about 3 times as long as wide (fig. 67); frontal cavity with pair of strong lateral carinae (fig. 68); frons slightly convex laterally; clypeus with minute medio-ventral tooth (fig. 71); occipital carina not conspicuously protruding posteriorly (fig. 67); vertex behind stemmaticum slightly convex (fig. 68); pronotum slightly protruding antero-dorsad (fig. 67); propleuron without transverse carina or ridge (fig. 67); anterior subalar prominence normal (fig. 67); in lateral view mesoscutum with reduced oblique carina anteriorly (fig. 67), not protruding; precoxal sulcus completely crenulate (fig. 67); episternal scrobe obsolescent (fig. 67); notauli united posteriorly on mesoscutum, resulting in a comparatively large middle lobe of mesocutum (fig. 73); scutellum without medio-posterior depression; metanotum moderately crenulate (fig. 73); propodeum beside insertion of metasoma without distinct flanges (fig. 67); vein 1-M of fore wing straight or nearly so (fig. 70); marginal cell of fore wing comparatively short (fig. 70); vein 1r-m of hind wing comparatively long, much longer than vein 2-SC+R (fig. 70); vein M+CU of hind wing about 5 times vein 1-M, vein 1-M distinctly shorter than vein 1r-m (fig. 70); depression at inner side of hind coxa of ♀ narrow, ending ventrally near middle of coxa (fig. 75), without carina or ridge; tarsal claws with medium-sized lamella ventrally (fig. 72); fore femur with wide obtuse flange (fig. 69), maximum width of femur 1.7-1.8 times width of middle femur; middle trochanter about as long as hind trochanter; hind basitarsus robust, its length about 4.5 times its width (fig. 76); metapleuron without low transverse groove (fig. 67); first tergite rather robust, 0.9-1.0 times its apical width, subpetiolate, gradually narrowed basad (fig. 74); laterope present (fig. 67); third tergite without acute lateral margin (fig. 67), about as long as second tergite and both smooth (fig. 74); length of ovipositor sheath 0.6-0.7 times fore wing.

Notes.— Closely related to the genus *Promachus*; females of this genus also have the fore femur comparatively robust, its width 1.1-1.2 times width of middle femur (1.0 times of male).

The genus *Lestricus* was proposed by Reinhard (1866: 265) as a probable synonym of *Laccophrys* Foerster, 1862. Nevertheless, the name remains available, because Reinhard did not really synonymize his *Lestricus* with the latter genus. He only says that the synonymy is not unlikely: "Ich hatte dieselbe früher *Lestricus* genannt, und unter diesem Namen versendet, indessen ist es doch nicht unwahrscheinlich, dass sie mit der Gattung *Laccophrys* identisch sei, ...".

Lestricus secalis (Linnaeus, 1758) comb. nov. (figs 66-76)

Ichneumon secalis Linnaeus, 1758: 567; Fitton, 1978: 374, 379.
Cenocoelius secalis; Shenefelt, 1970: 184; Čapek et al., 1982: 337.
Ichneumon agricolator Linnaeus, 1767: 937; Fitton, 1978: 363, 375 (same holotype specimen as *I. secalis*).
Cenocoelius agricolorator[sic!]; Tobias, 1971: 218 [transl. 1975: 87].
Alysia rubriceps Ratzeburg, 1844: 56, pl. 7-11.
Cenocoelius rubriceps; Shenefelt, 1970: 184 (as synonym of *Cenocoelius secalis*).
Cenocoelius femorator Tobias [in Tobias & Jakimavičius], 1973: 25-27, fig. 1, 1976: 90, 1986: 151 [examined]. **Syn. nov.**

Material.— Figured ♀ (RMNH), "Netherlands, Nunspeet, 8.vi.1976, C.J. Zwakhals"; 1 ♀ (ZMSP), "Teberda z-k, 15.vi.65, T. Guragnova", "na R. kiksela", "Holotypus *Cenocoelius femorator* Tobias"; 1 ♀ (RMNH), "[Netherlands], Assel, 5.vi.1970, J.B. Wolschrijn"; 1 ♀ (RMNH), "Bulgaria, ex coll. Zaykov, RMNH Leiden, 1991", "Rhodopes, Tchig. maric, 21.vi.1981, leg. Zaykov".

Redescribed ♀ from Nunspeet, length of body 4.5 mm, of fore wing 3.7 mm.

Head.— Antennal segments 33, length of antenna 1.1 times fore wing, length of third segment 1.2 times fourth segment, segments near apical third of antenna quadrate (fig. 67), length of third, fourth, and penultimate segments 3.2, 2.6, and 1.5 times their width, respectively (figs 66, 67); length of scapus 3.3 times its maximum width, in upright position remaining far below level of top of head (fig. 67); length of maxillary palp 0.6 times height of head, rather slender (fig. 67); length of eye in dorsal view 1.5 times temple (fig. 68); temples subparallel-sided behind eyes, finely punctate (fig. 68); OOL:diameter of ocellus:POL = 9:3:10; anterior ocellus nearly at same level as posterior ocelli (fig. 71); vertex rather flat, sparsely and finely punctate; medial depression of frons deep, and with medium-sized lamella (posteriorly as carina) not protruding above depression; frons laterally convex and punctate (fig. 71); face rather densely punctate; clypeus with some punctures; maximum width of eye 0.9 times length of malar space (fig. 67); length of malar space 1.8 times basal width of mandible; mandible slightly twisted.

Mesosoma.— Length of mesosoma 1.3 times its height; pronope deep, rather small and near anterior margin of pronotum, round (fig. 73), with slightly protruding collar (fig. 67); side of pronotum largely rugose-punctate (fig. 67); propleuron evenly convex, without transverse ridge, punctate (fig. 67); prepectal and postpectal carinae complete, medium-sized; epicnemial area crenulate (fig. 67); precoxal sulcus complete, wide, crenulate-punctate and partly rugose; remainder of mesopleuron finely punctate ventrally, more coarsely punctate and partly rugose dorsally; metapleuron and propodeum coarsely reticulate; notauli comparatively narrow (fig. 73); lateral lobes of mesoscutum somewhat depressed medially and smooth; middle lobe of mesoscutum convex antero-medially and punctate (fig. 73); scutellum rather convex and with some punctures.

Wings.— Fore wing: r:3-SR:SR1 = 11:16:69; 2-SR:3-SR:r-m = 18:16:15; m-cu interstitial; cu-a postfurcal, 1-CU1:2-CU1 = 1:4 (fig. 70); 1-M nearly straight. Hind wing: M+CU:1-M = 50:10; 1-M:1r-m = 10:16; cu-a inclivous (fig. 70).

Legs.— Tarsal claws with medium-sized, acute lobe, rather robust (fig. 72); length of femur, tibia and basitarsus of hind leg 3.8, 8.2, and 4.4 times their width, respectively; length of hind tibial spurs 0.35 and 0.40 times hind basitarsus; length of fore tarsus 1.1 times fore tibia.

Metasoma.— Length of first tergite 0.9 times its apical width, convex submedially but depressed medially, its surface nearly completely smooth, and dorsal carinae developed in its basal half (fig. 74); second suture obsolescent; length of ovipositor sheath 0.64 times fore wing.

Colour.— Black; head orange-red, with frons medially, face medio-dorsally, stemmaticum and its surroundings, black or dark brown; legs largely, humeral plate, veins, pterostigma, parastigma and metasoma largely, dark brown; tegulum brown; wing membrane infuscate.

Variation.— Antennal segments of ♀ 32(1), 33(1); length of body 4.5-4.7 mm, of fore wing 3.7-4.1 mm; length of first metasomal tergite 0.9-1.0 times its apical width; length of ovipositor sheath 0.60-0.64 times fore wing.

Distribution.— Europe, East Palaearctic (Primorskij kraj).

Note. The holotype of *Ichneumon secalis* Linnaeus, 1785, in the Linnaean collection (London, labelled *"agricolator"* and *"secalis"* with *"rubricator"* written on the reverse side) has been examined by Mr T. Huddleston (London) and he kindly provided me with his notes. The fore femur is flanged, the head is red but the the stemmaticum and antennal scrobes are infuscate, vein r of fore wing is shorter than vein 3-SR, the area above the precoxal sulcus is coarsely punctate. The metasoma is missing.

The lectotype of *Alysia rubriceps* Ratzeburg, 1844 (housed in the Deutsches Entomologisches Institut, Eberswalde), has been examined by Dr A. Taeger. It possesses an obtuse flange on its fore femur, and also agrees well with the other characters mentioned for *A. secalis* in the key.

Promachus Cresson, 1887
(figs 77-88, 125-129)

Promachus Cresson, 1887: 61; Shenefelt, 1970: 178; Saffer, 1982: 83 (as synonym of *Cenocoelius* Haliday, 1840). Type species (designated by Viereck, 1914): *Promachus sanguineiventris* Ashmead, 1889.
Cenocoelius auct. p.p.; Tobias, 1971: 218 [transl. 1975: 87], 1976: 27, 1986: 150-152; Saffer, 1982: 83-165.

Diagnosis.— Length of fore wing 3-8 mm; antenna medium-sized (0.9-1.1 times fore wing), with 26-38 segments; scapus less than 3.5 times as long as wide (figs 77, 128); frontal cavity with pair of strong lateral carinae (fig. 79); frons slightly convex laterally (fig. 78); clypeus with rather minute medio-ventral tooth (fig. 79); occipital carina not conspicuously protruding posteriorly (fig. 77); vertex behind stemmaticum slightly convex (fig. 79); pronotum slightly or not protruding antero-dorsad (fig. 77); propleuron without scaly transverse ridge, at most with a transverse carina, convex (fig. 77); anterior subalar prominence normal (fig. 77); in lateral view mesoscutum with incomplete oblique carina anteriorly (fig. 77), not protruding; precoxal sulcus (largely) crenulate (fig. 77); episternal scrobe obsolescent or distinct (fig. 77); notauli united posteriorly on mesoscutum (fig. 81); scutellum without medio-posterior depression; metanotum rather sparsely crenulate (fig. 81); propodeum beside insertion of metasoma without distinct flanges, but strong carinae may be present (fig. 77); vein 1-M of fore wing slightly curved or straight (fig. 80); marginal cell of fore wing more robust (fig. 80); vein 1r-m of hind wing rather long, much longer than vein 2-SC+R (fig. 80); vein M+CU of hind wing 2.3-6.0 times vein 1-M, vein 1-M shorter than vein 1r-m (figs 80, 125); depression at inner side of hind coxa of ♀ ending ventrally at middle of coxa or distinctly behind it (figs 87, 88), rather wide, with-

out carina or ridge; tarsal claws usually with distinct lamella (fig. 83), but claws of a few species simple; fore femur normal, its maximum width 1.0-1.2 times width of middle femur; middle trochanter about as long as hind trochanter or somewhat longer; hind basitarsus comparatively slender, its length 5.6-6.2 times its width (fig. 86); metapleuron without low transverse groove (fig. 77); first tergite robust, 0.8-1.8 times its apical width, subpetiolate, gradually narrowed basad (figs 82, 126); laterope present (fig. 77); third tergite without acute lateral margin (fig. 77), about as long as second tergite and both of these tergites smooth (fig. 77); length of ovipositor sheath 0.6-2.3 times fore wing.

Note.— Medium-sized genus; the Nearctic species are revised by Saffer (1982), who included this genus in the genus *Cenocoelius* sensu lato. The Taiwanese species are keyed by Chou & Lee (1991). The only known European species is described below.

Distribution.— Neotropical; Holarctic (including Himalayan area); NE Oriental.

Promachus aartseni spec. nov.
(figs 125-129)

Cenocoelius secalis; Tobias, 1976: 90, 1986: 151.

Material.— Holotype, ♀ (RMNH), "Netherlands: Dr., Mantingerbos, 14-17.vi.1992, Mal. trap, C.J. Zwakhals, RMNH'93". Paratypes: 1♂+1♀(RMNH): 1♀, same label data as holotype; 1♂, "Italia-Mar., prov. Macerata, M.J. Gijswijt", "Sarnano, 850 m, 23.v.1993".

Holotype, ♀, length of body 4.2 mm, of fore wing 4.1 mm.

Head.— Antennal segments 31, length of antenna 0.9 times fore wing, length of third segment (including annellus) 1.2 times fourth segment, segments near apical quarter quadrate (fig. 128), length of third, fourth, and penultimate segments 3.6, 2.7, and 1.5 times their width, respectively (figs 128, 129); length of scapus 2.5 times its maximum width, in upright position remaining below level of top of head (fig. 127); length of maxillary palp 0.8 times height of head, rather slender; length of eye in dorsal view 1.3 times temple; temples parallel-sided behind eyes, sparsely punctate; OOL:diameter of ocellus:POL = 9:3:8; anterior ocellus just in depression, distinctly below level of posterior ocelli; vertex convex, sparsely and finely punctate; medial depression of frons deep, and with medium-sized lamella, triangular protruding, but not above depression and absent posteriorly; frons laterally convex and rather sparsely punctate; face densely and finely punctate; clypeus coarsely punctate and with some rugae; maximum width of eye 1.1 times length of malar space (fig. 127); length of malar space 1.8 times basal width of mandible; mandible distinctly twisted.

Mesosoma.— Length of mesosoma 1.4 times its height; pronope deep, rather small, round, no protruding collar; side of pronotum reticulate-rugose, but largely smooth ventrally; propleuron convex, punctate (and posteriorly rugose), without transverse ridge; prepectal and postpectal carinae complete, weak; epicnemial area crenulate, connected to vertical crenulate depression medio-dorsally; precoxal sulcus complete, wide, coarsely crenulate; remainder of mesopleuron largely smooth, sparsely punctulate; metapleuron and propodeum reticulate; notauli moderately wide, lateral lobes of mesoscutum rather convex (except for shallow sublateral depression) and sparsely punctate; middle lobe of mesoscutum subtruncate antero-

medially and densely and more coarsely punctate than lateral lobes; scutellum slightly convex, finely punctate laterally, and subapically microsculptured.

Wings.— Fore wing: r:3-SR:SR1 = 9:11:56; 2-SR:3-SR:r-m = 14:11:9; m-cu far antefurcal; cu-a postfurcal, 1-CU1:2-CU1 = 5:28 (fig. 125); 1-M nearly straight. Hind wing: M+CU:1-M = 56:10; 1-M:1r-m = 10:20; cu-a straight (fig. 125).

Legs.— Tarsal claws with large acute lobe, rather slender (fig.); length of femur, tibia and basitarsus of hind leg 4.1, 7.2, and 5.0 times their width, respectively; length of hind tibial spurs 0.35 and 0.40 times hind basitarsus; length of fore tarsus 1.1 times fore tibia.

Metasoma.— Length of first tergite equal to its apical width, rather flat, its surface smooth, but medio-basal area rugose, and its dorsal carinae present in basal quarter of tergite, converging (fig. 126); second suture absent; length of ovipositor sheath 0.65 times fore wing.

Colour.— Black; head orange-brown; pedicellus, palpi, tegulae, pterostigma, parastigma, veins, tarsi and hind tibia slightly, dark brown; wing membrane slightly infuscate.

Variation.— Length of body 4.1-4.5 mm, of fore wing 3.7-4.5 mm; antennal segments of ♀ 30(1) or 31(1), of ♂ 29(1); antenna of ♂ as long as fore wing, and segments of apical third of antenna slender; vein 1-CU1 of fore wing widened or slender; length of first metasomal tergite 1.0-1.3 times its apical width; length of ovipositor sheath 0.63-0.65 times fore wing.

Distribution.— Europe, north to Sweden, southeast to Caucasia (Tobias, 1986).

Etymology.— It is a great pleasure to name this species after Mr B. van Aartsen for his enormous contribution to the knowledge of the Dutch hymenopteran fauna.

Note.— The new species can be separated from the other Old World species of the Cenocoeliini with reddish or yellowish-brown head (*Lestricus secalis*, *Promachus longius* (Chou & Lee, 1991) **comb. nov.**, and *P. taiwanensis* (Chou & Lee, 1991) **comb. nov.**) by the far antefurcal vein m-cu of fore wing. From both Taiwanese species by the shorter ovipositor (0.7-1.0 times fore wing in both species), and the short vein 1-M of hind wing (distinctly shorter than vein 1r-m of hind wing in *P. aartseni*, about as long in both Taiwanese spp.). Both European species of Cenocoeliini are rather similar and can be separated as follows:

1. Fore femur simple; head of both sexes completely red; vein m-cu of fore wing far antefurcal (fig. 125); vein r of fore wing about as long as vein 3-SR or vein r-m; second submarginal cell of fore wing small; vein 2-SR distinctly longer than vein r-m; area above precoxal sulcus smooth ..... ***Promachus aartseni*** spec. nov.
- Fore femur with wide obtuse flange; head black (♂) or dark brown or black medio-dorsally (♀); vein m-cu of fore wing subinterstitial (fig.); vein r of fore wing shorter (0.6-0.7 times) than vein 3-SR or vein r-m; second submarginal cell of fore wing somewhat larger; vein 2-SR about as long as vein r-m; area above precoxal sulcus distinctly punctate ..... ***Lestricus secalis*** (Linnaeus)

Rattana gen. nov.
(figs 34-43, 99-105)

Type species: *Cenocoelius albopilosellus* Cameron, 1911.

Etymology.— Derived from the locality of one of the specimens, and is appropri-

ate because species of this genus often occur in habitats where rattan occurs. Gender: feminine.

Diagnosis.— Length of fore wing 9-13 mm; antenna long, with 42-45 segments; scapus 2.0-4.0 times as long as wide (fig. 35); frontal cavity with pair of strong lateral carinae (fig. 39); clypeus with minute medio-ventral tooth (fig. 39); occipital carina not conspicuously protruding posteriorly (fig. 35); vertex behind stemmaticum flattened to a large extent (figs 35, 37); pronotum slightly protruding antero-dorsad (fig. 35); propleuron without transverse carina or ridge (fig. 35); anterior subalar prominence largely crest-shaped (fig. 35); in lateral view mesoscutum with complete oblique carina anteriorly (fig. 35), more or less protruding; precoxal sulcus completely crenulate or medially interrupted (fig. 35); episternal scrobe absent (fig. 35), at most with a superficial depression; notauli united near middle of mesoscutum (figs 40, 100), resulting in a short middle lobe of mesoscutum; scutellum without medio-posterior depression; metanotum completely and coarsely crenulate (figs 40, 100); propodeum beside insertion of metasoma with carinae or distinct flanges (fig. 100); vein 1-M of fore wing slightly curved (figs 34, 99); marginal cell of fore wing comparatively slender (figs 34, 99); vein 1r-m of hind wing comparatively long, much longer than vein 2-SC+R (figs 34, 99); vein M+CU of hind wing 2.4-6.0 times vein 1-M, vein 1-M shorter than vein 1r-m (figs 34, 99); depression at inner side of hind coxa of ♀ ending ventrally just behind middle of coxa (fig. 101), wide, without carina or ridge (fig. 38); tarsal claws with small to medium-sized lobe or lamella ventrally (fig. 43); fore femur normal; middle trochanter distinctly longer than hind trochanter; metapleuron without low transverse groove (fig. 35); first tergite less slender, 1.4-2.2 times its apical width, subpetiolate, gradually narrowed basad (fig. 41); laterope absent (fig. 35); third tergite without acute lateral margin (fig. 35), about as long as second tergite and both of these tergites smooth (figs 35, 41); length of ovipositor sheath 0.8-0.9 times fore wing.

Key to species of the genus *Rattana*

1. Oblique anterior carina of mesoscutum forming a pair of horn-like protrusions (fig. 102); propodeum normally setose, with underlying sculpture well visible; antenna of ♀ with pale brownish-yellow band near its apical third (fig. 103, but absent in ♂); scapus and pedicellus yellowish-brown; propodeum with wing-like flanges beside insertion of metasoma (fig. 100); vein cu-a of hind wing straight or nearly so (fig. 99); frons coarsely and densely punctate laterally; scapus slender, 3.5-4.0 times its width, and long, in upright position protruding above upper level of head (fig. 104); propodeum and hind leg black(ish); Sulawesi ..... ***R. cephalotes*** (Smith)

- Oblique anterior carina of mesoscutum forming a pair of crests, but not protruding horn-like (fig. 35); propodeum long and densely setose, obscuring underlying sculpture; antenna of ♀ completely dark brown, including scapus and pedicellus; propodeum with only wide flange-like carina besides insertion of metasoma (fig. 35); vein cu-a of hind wing distinctly curved (fig. 34); frons sparsely and finely punctate laterally; scapus less slender, about 2.5 times its width, and shorter, in upright position at most reaching somewhat above upper level of head (figs 35, 105); colour of propodeum and hind leg variable 2

2. Scapus in upright position not reaching upper level of head, and more robust (fig. 35); precoxal sulcus distinct medially; vein cu-a of fore wing (sub)interstitial (fig. 34); propodeum and hind leg yellowish-brown; New Guinea ..... ***R. albopilosella*** (Cameron)
- Scapus in upright position reaching upper level of head, and more slender (fig. 105); precoxal sulcus interrupted medially; vein cu-a of fore wing distinctly postfurcal; propodeum black and hind leg dark brown; Misoöl, New Guinea ..... ***R. insidiator*** (Smith)

Rattana albopilosella (Cameron, 1911) comb. nov.
(figs 34-43)

Cenocoelius albopilosellus Cameron, 1911: 248; Shenefelt, 1970: 178.

Material.— Lectotype, ♀ (ZMA), "Z. Nieuw Guinea, Lorentz 1909-10, Noord Rivier, ix.[19]09", "*Cenocoelius albopilosellus* Cam., Type"; 1 ♂ paralectotype (ZMA), "New Guinea, Bivak Eiland, i.[19]10"; 1 ♀ (RMNH), "Neth. Ind.-American New Guinea Exped., Rattan Camp, 1200 m, ii-iii.1939, L.J. Toxopeus".

Lectotype, ♀, length of body 10.7 mm, of fore wing 9.8 mm.

Head.— Antenna incomplete, remaining antennal segments 38, length of third segment 1.3 times fourth segment, length of third, and fourth segments 4.0 and 3.0 times their width, respectively (fig. 35); length of scapus 2.5 times its maximum width, in upright position not protruding above top of head (fig. 35); length of maxillary palp 0.8 times height of head, its third segment, and second and third segments of labial palp rather widened; length of eye in dorsal view 1.4 times temple (fig. 37); temple smooth; OOL:diameter of ocellus:POL = 19:6:13; anterior ocellus of similar size as lateral ocellus and situated just in depression (fig. 39); vertex rather flat, smooth, except of some punctures laterally; medial depression of frons with medium-sized lamella, not protruding above depression, and laterally sparsely punctate; face medially densely and coarsely punctate (interspaces less than diameter of punctures) and more sparsely punctate laterally; clypeus sparsely puncate, smooth ventrally (fig. 39); maximum width of eye 0.9 times length of malar space; length of malar space 1.9 times basal width of mandible; mandible not distinctly twisted.

Mesosoma.— Length of mesosoma 1.2 times its height; pronope deep and large, elliptical, posteriorly bordered by carina and situated just in front of middle of pronotum; pronotum somewhat protruding antero-dorsad (fig. 35); side of pronotum coarsely crenulate-reticulate medially and posteriorly, remainder largely coarsely punctate (fig. 35); propleuron punctate, without transverse rugae; prepectal and postpectal carinae complete and strong; epicnemial area and precoxal sulcus completely crenulate, connected to a short vertical crenulate depression dorsally (fig. 35); remainder of mesopleuron densely punctulate posteriorly and ventrally, dorsally largely smooth; metapleuron and propodeum very coarsely reticulate, but propodeum anteriorly only transversely rugose (fig. 40); propodeum beside insertion of metasoma with only strong carinae; propodeum long and densely adpressed setose, pale yellowish, obscuring underlying sculpture; notauli wide, lateral lobe of mesoscutum less oblique than of *R. cephalotes*, without distinct depression, densely setose, punctulate; middle lobe of mesoscutum truncate medially and punctulate, posterior-

ly bordered by V-shaped carina (fig. 40); scutellum rather convex (but less than in *R. cephalotes*) and finely punctate.

Wings.— Fore wing: r:3-SR:SR1 = 9:18:64; 2-SR:3-SR:r-m = 10:9:8; m-cu and cu-a interstitial (fig. 34). Hind wing: M+CU:1-M = 27:10; 1-M:1r-m = 10:14; cu-a curved (fig. 34).

Legs.— Tarsal claws with medium-sized ventral lobe (fig. 43); length of femur, tibia and basitarsus of hind leg 3.9, 8.0, and 8.0 times their width, respectively; length of hind tibial spurs 0.25 and 0.30 times hind basitarsus; fore tarsus as long as fore tibia.

Metasoma.— Length of first tergite 1.4 times its apical width, its surface smooth, its dorsal carinae present in basal 0.6 of tergite, tergite rather flattened; length of ovipositor sheath 0.90 times fore wing.

Colour.— Brownish-yellow; antenna, hind tibia and tarsus, pterostigma and veins largely, propodeum laterally, and metasoma, dark brown or blackish; base of vein C+SC+R of fore wing yellowish; hind coxa, trochanter and trochantellus infuscate dorsally; wing membrane dark brown, with small subhyaline patch below pterostigma (fig. 34).

Variation.— Length of body 9.6-10.7 mm, of fore wing 8.9-9.8 mm; antennal segments of ♀ 45(1), of ♂ 44 or 45(1); anterior half of precoxal sulcus may be absent; V-shaped carina of mesoscutum may be absent posteriorly; dorsal carinae of first tergite may be restricted to basal third of tergite; hind coxa may be completely dark brown; vein m-cu of fore wing interstitial or shortly antefurcal; notauli crenulate or largely smooth.

Rattana cephalotes (Smith, 1860) comb. nov.
(figs 99-104)

Cenocoelius cephalotes Smith, 1860: 65; Shenefelt, 1970: 180; van Achterberg & O'Toole, 1993: 12 (lectotype designation).

Material.— Lectotype, ♀(OUM), "Mak. [= Makassar (now Ujung Pandang), probably from near Maros, Bantimurung]", "Coll. Smith, 1879", "*Cenocoelius cephalotes* Smith"; 1♂ paralectotype, (OUM), "Mak."; 2♂♂ (RMNH), "Indonesia: C Sulawesi, nr Luwuk, Salodik, 400 m, 5.xi.1989, C. v. Achterberg & M. Tulung, RMNH'89"; 1♂ (RMNH), "Indonesia: C Sulawesi, nr Luwuk, Bunga, c 300 m, 1-14.xi.1989, Mal. trap 15, C. v. Achterberg , RMNH'89"; 1♀ (RMNH), "Indonesia: C Sulawesi, nr Batui, Seseba, c 375 m, 24.x-6.xi.1989, Mal. trap 19, C. v. Achterberg, RMNH'89"; 3♂♂ (MZB, RMNH), "Indonesia: SE Sulawesi, nr Kendari, Moramo Falls Forest, c 175 m, 16.xi.1989, on log, C. v. Achterberg & I. Ladamay, RMNH'89"; 1♂ + 1♀ (MZB, RMNH), "Indonesia: SE Sulawesi, nr Sanggona, Mt Watuwila Base Camp, c 200 m, 14 (♂) & 15 (♀).xi.1989, C. v. Achterberg , RMNH'89"; 1♂ (RMNH), id., but 13-15.xi.1989, Mal. trap 13; 3♂♂ (RMNH), "Indonesia: [SW] Sulawesi, nr Bantimurung, Pattunuang Asue, c 60 m, 17-20.iv.1991, C. v. Achterberg , RMNH'91"; 1♀ (RMNH), "Indonesia: [SW] Sulawesi, nr Maros, Sumbang Bita, c 150-200 m, 21.iv.1991, C. v. Achterberg , RMNH'91".

Redescribed ♀ from Southwest Sulawesi (Sumpang Bita, near Maros), length of body 10.0 mm, of fore wing 9.8 mm.

Head.— Antennal segments 42, antenna about as long as fore wing, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.8, 3.3 and 2.0 times their width, respectively (figs 103, 104); length of scapus 4.2 times its maximum width, in upright position distinctly protruding above top of

head (fig. 104); maxillary palp as long as height of head, its third segment, and second and third segments of labial palp rather widened; length of eye in dorsal view 1.9 times temple; temple sparsely punctate; OOL:diameter of ocellus:POL = 11:3:6; anterior ocellus of similar size as lateral ocellus and situated slightly lower; vertex flat, smooth, except some punctures laterally; medial depression of frons largely smooth and with medium-sized truncate lamelliform horn, slightly protruding above depression (fig. 104), and laterally coarsely and densely punctate; face medially and clypeus (but latter smooth ventrally) densely and coarsely punctate (interspaces less than diameter of punctures) and more sparsely punctate laterally; maximum width of eye 0.9 times length of malar space (fig. 104); length of malar space 1.9 times basal width of mandible; mandible striate and somewhat twisted.

Mesosoma.— Length of mesosoma 1.3 times its height; pronope rather deep and large; pronotum somewhat protruding antero-dorsad; side of pronotum coarsely crenulate-reticulate medially and posteriorly, finely punctate dorsally and remainder largely smooth; anterior half of propleuron punctate-rugose, medially with some transverse rugae and its posterior half largely smooth, crenulate medial groove strongly widened anteriorly; oblique carina of mesoscutum protruding horn-like (fig. 102); prepectal and postpectal carinae complete and strong; epicnemial area and precoxal sulcus completely crenulate, connected to a short vertical crenulate depression dorsally (cf. fig. 35); remainder of mesopleuron densely and finely punctate, sparsely and rather coarsely punctate near precoxal sulcus; metapleuron and propodeum very coarsely reticulate; propodeum with pair of large flanges beside insertion of metasoma (fig. 100); propodeum long erect setose, not obscuring underlying sculpture; notauli very wide; surface of lateral lobe of mesoscutum oblique, with distinct depression, sparsely punctate; middle lobe of mesoscutum concave medially and coarsely punctate (fig. 100); scutellum distinctly convex and coarsely punctate.

Wings.— Fore wing: r:3-SR:SR1 = 10:12:71; 2-SR:3-SR:r-m = 16:12:16; m-cu slightly antefurcal; cu-a distinctly postfurcal. Hind wing: M+CU:1-M = 38:10; 1-M:1r-m = 10:18; cu-a straight (fig. 99).

Legs.— Tarsal claws with small ventral lobe; length of femur, tibia and basitarsus of hind leg 4.5, 8.2, and 7.0 times their width, respectively; length of hind tibial spurs 0.30 and 0.35 times hind basitarsus; length of fore tarsus 1.1 times fore tibia.

Metasoma.— Length of first tergite 1.6 times its apical width, its surface smooth, its dorsal carinae present in basal 0.6 of tergite, tergite rather flattened; length of ovipositor sheath 0.84 times fore wing.

Colour.— Black; scapus, pedicellus, palpi (but labial palp infuscate), tegula (but humeral plate dark brown), mesosoma (except metapleuron and propodeum), fore and middle legs, rather dark yellowish-brown; 21st-28th antennal segments pale yellowish, remainder of antenna black; wing membrane dark brown, except pale patch below pterostigma; pterostigma and veins dark brown or blackish.

Variation.— Length of body 9.8-11.2 mm, of fore wing 9.8-12.7 mm; antennal segments of ♀ 42(2), of ♂ 40(1), 42(3), 43(5) and 45(1); length of first metasomal tergite 1.4-2.2 times its apical width; length of ovipositor sheath 0.79-0.88 times fore wing; antenna of ♂ (except both basal segments) black, but 29th-31st segments may be brownish; of ♀ 20th-29th segments may be more or less pale yellowish; maxillary palp may be more or less infuscate; mesosoma may be black, except prothorax, mesoscutum, scutellum medially, mesosternum partly, yellowish-brown; outer side

of middle coxa, ventral side of hind coxa, hind trochanter and trochantellus and hind femur may be more or less brown.

Distribution.— Central and South Sulawesi.

Rattana insidiator (Smith, 1863) comb. nov.
(fig. 105)

Cenocoelius insidiator Smith, 1863: 12; Shenefelt, 1970: 181; van Achterberg & O'Toole, 1993: 21.
Cenocoelius bicolor Szépligeti, 1900: 63; Shenefelt, 1970: 180 (lectotype designation). **Syn. nov.**

Material.— Holotype, ♀(OUM), "M [= Misoöl, island near New Guinea]", "*Cenocoelius insidiator* Smith".

Distribution.— Misoöl, Papua New Guinea.

Note.— The lectotype of *C. bicolor* was examined by Dr J. Papp (TMA) with aid of the key published in this paper and he kindly informed me that this species is certainly a junior synonym of *C. insidiator*.

Acknowledgements and abbreviations

I wish to thank T. Huddleston (London), Dr J. Papp (Budapest), and Dr A. Taeger (Eberswalde) for the examination of types in their custody, Mr C. O'Toole (Oxford) for the hospitality during my stay in Oxford, Dr J.P. O'Connor (Dublin), Mr T. Nuhn (Washington), Dr P. Oosterbroek (Amsterdam), Dr J. Papp, and, Prof. Dr A. Rolando (Turin) for the loan of types or other specimens, B. van Aartsen ('t Harde), Dr T. van Dijk (Wijster), H. Huijbregts (Leidschendam), D. van der Laan (Oostvoorne), Dr R.T. Simon Thomas (Nunspeet), the late Prof. Dr J. van der Vecht (Putten), J.B. Wolschrijn (Apeldoorn), and C.J. Zwakhals (Arkel) for the donation of specimens, Dr M.R. Shaw (Edinburgh) for his comments on the first draft, and Dr E. DeConinck (Tervuren) and T. Huddleston (London) for information about the eventual presence of Afrotropical Cenocoeliinae in the collections in their custody.

MNHN = Muséum National d'Histoire Naturelle, Paris; MZB = Museum Zoologicum Bogoriense, Bogor; OUM = University Museum, Oxford; RMNH = Nationaal Natuurhistorisch Museum, Leiden; TMA = Természettudományi Múzeum Allattára, Budapest; ZMSP = Zoological Museum, St. Petersburg.

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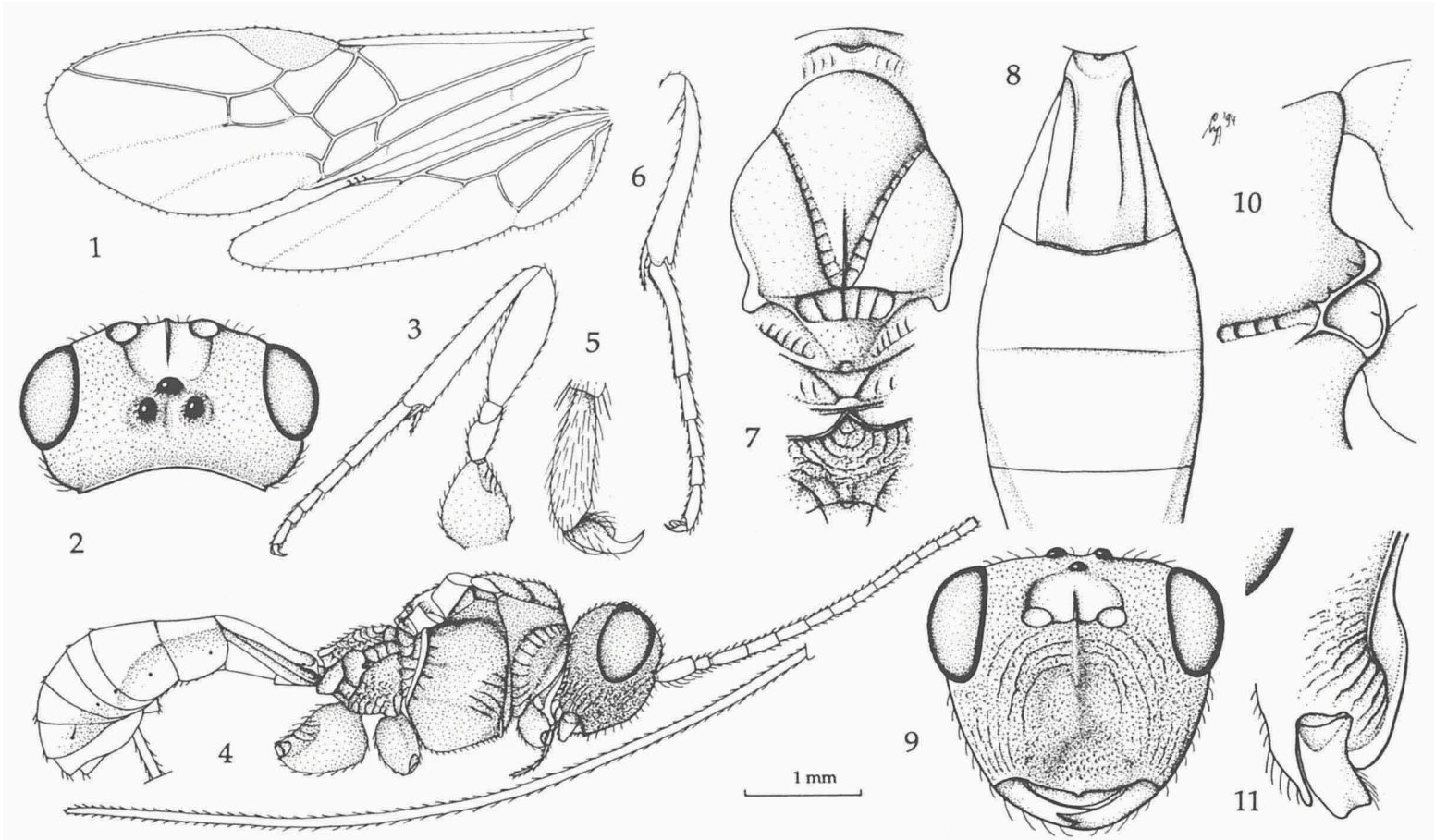
Received: 19.iv.1994
Accepted: 19.v.1994
Edited: R. de Jong



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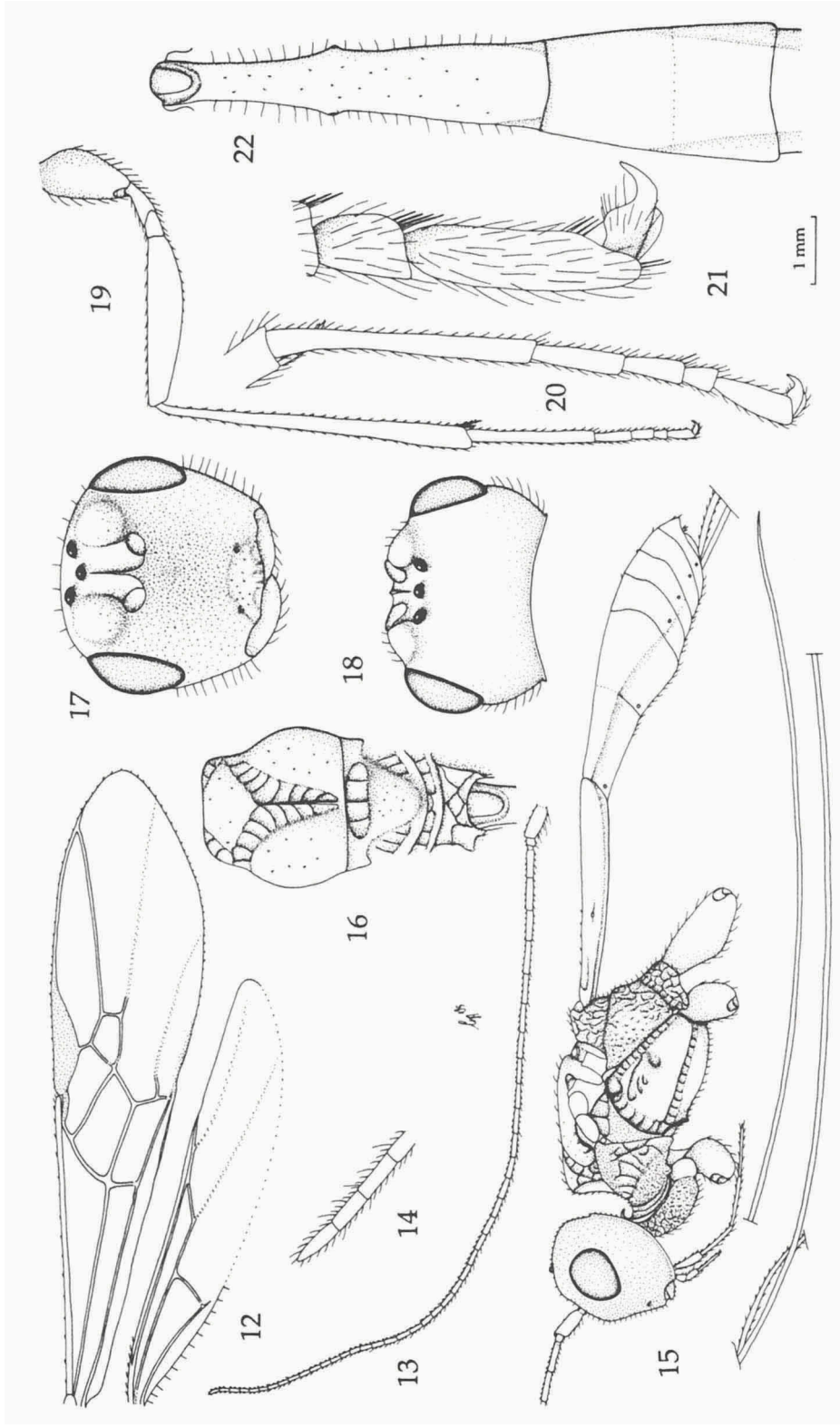

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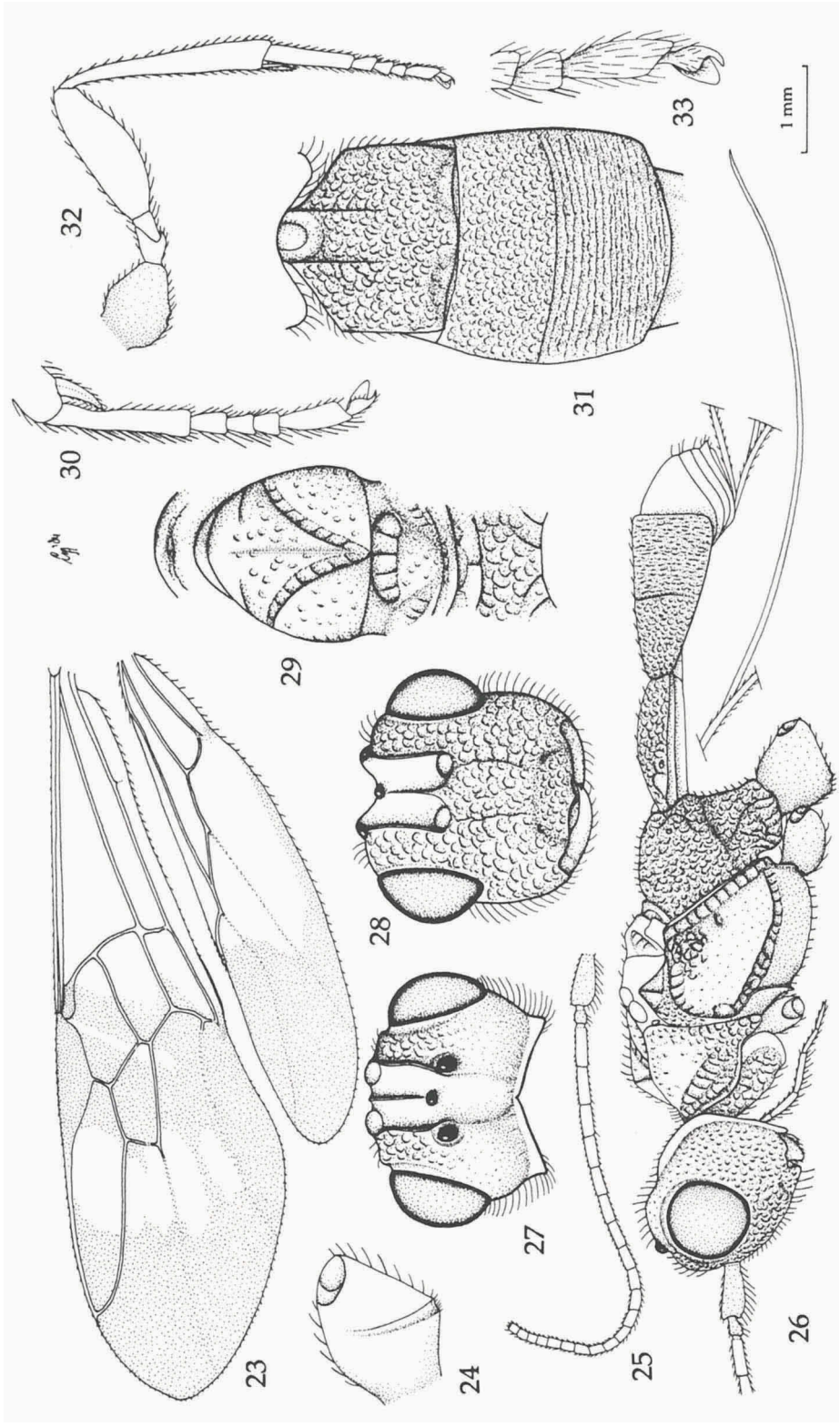

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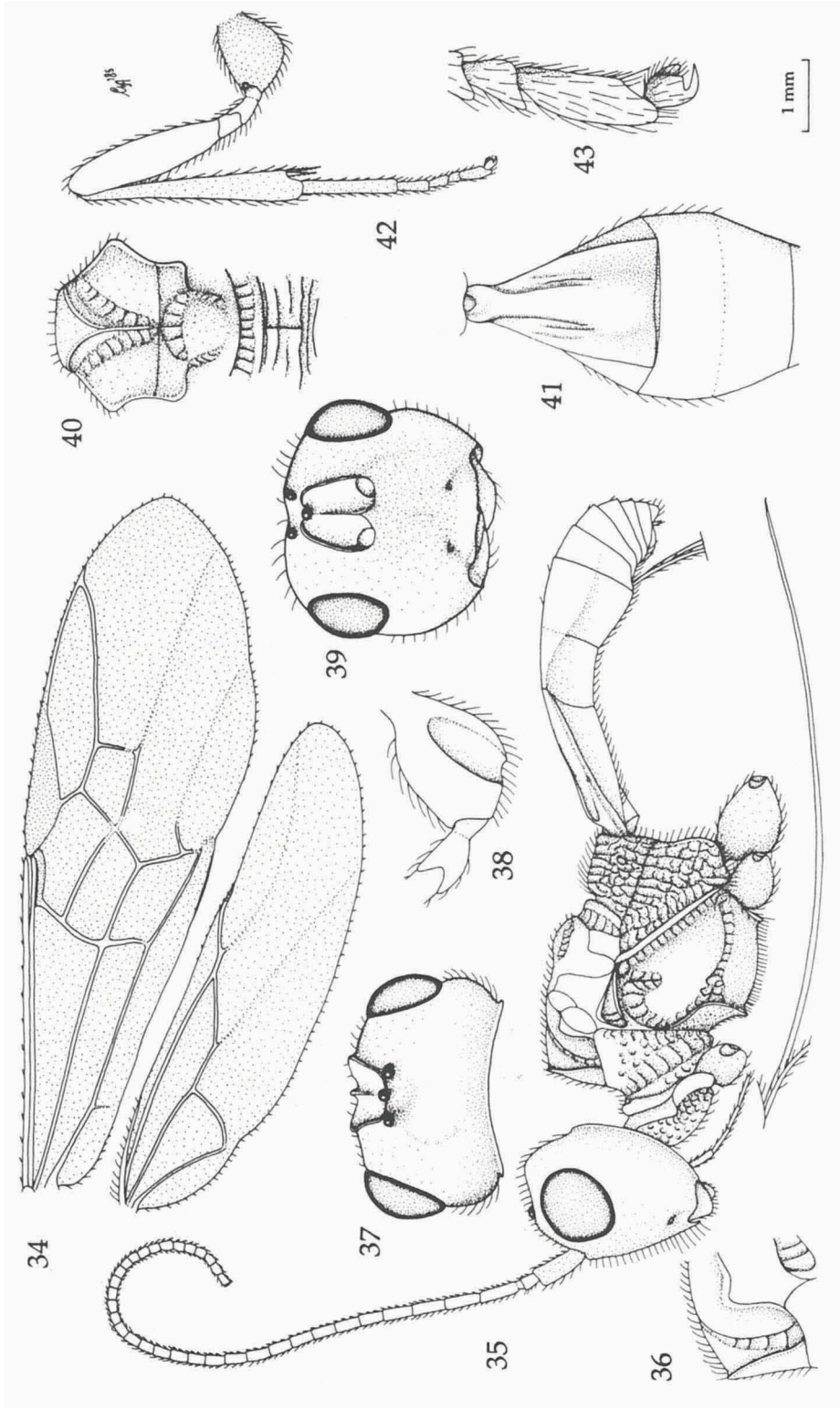

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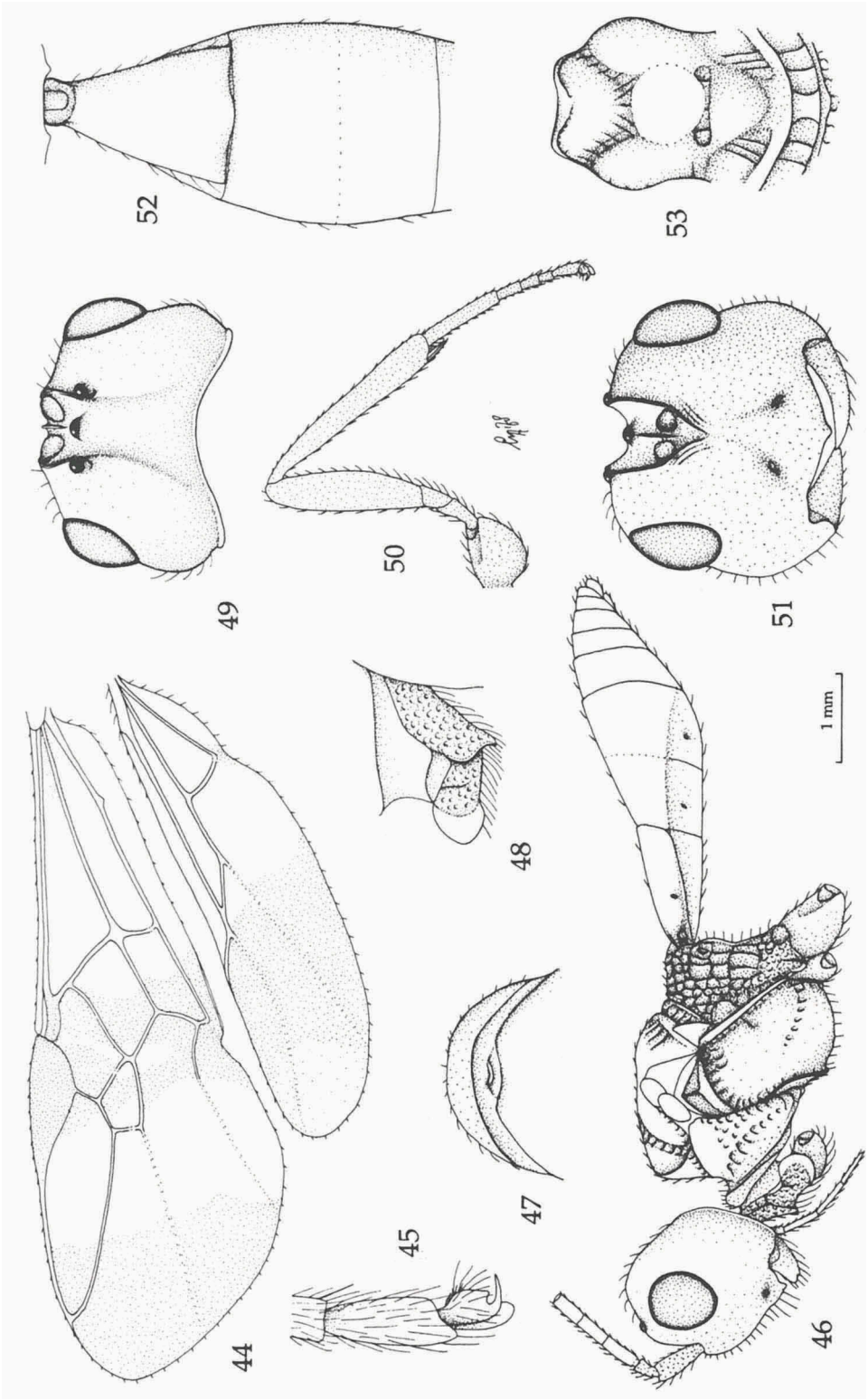

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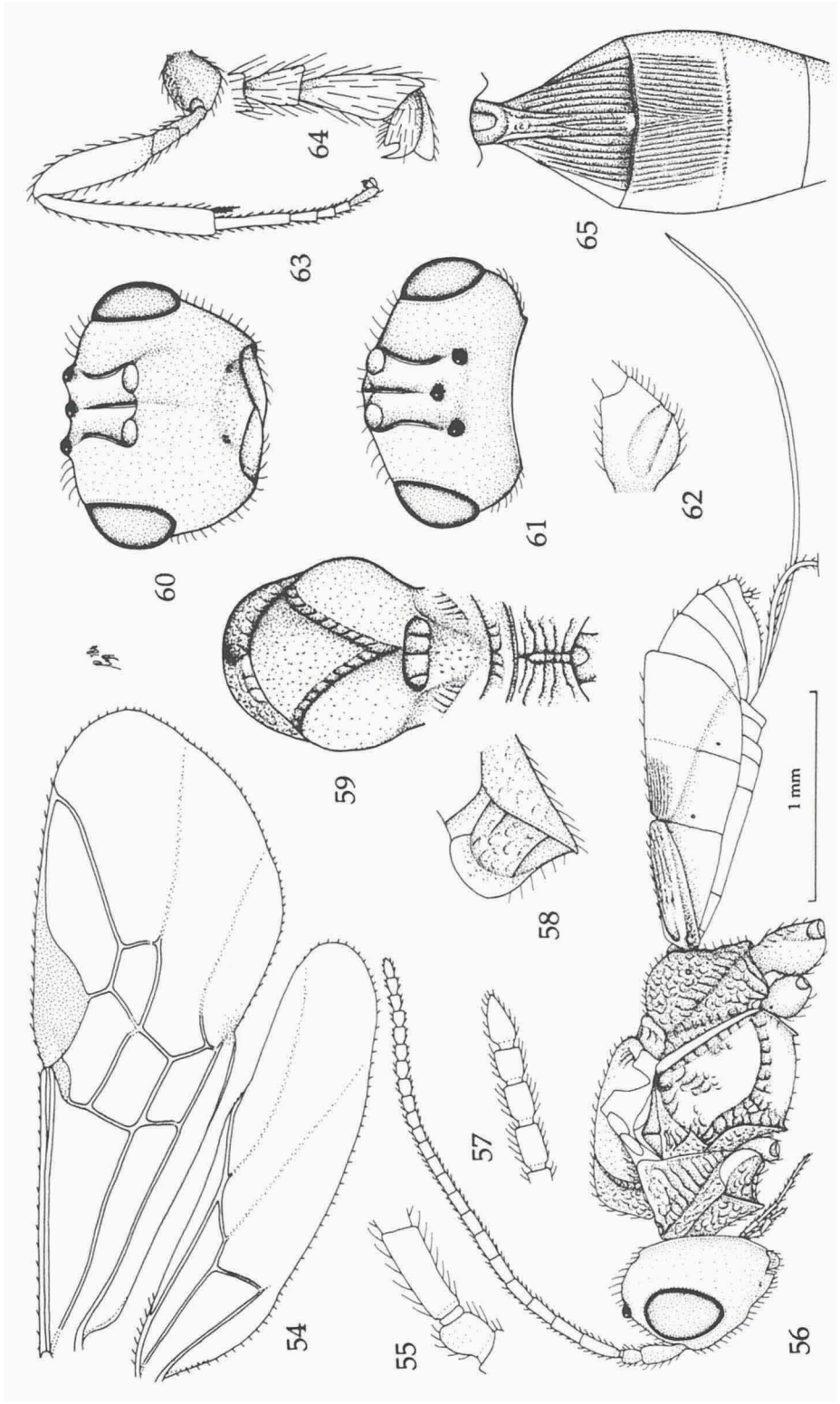

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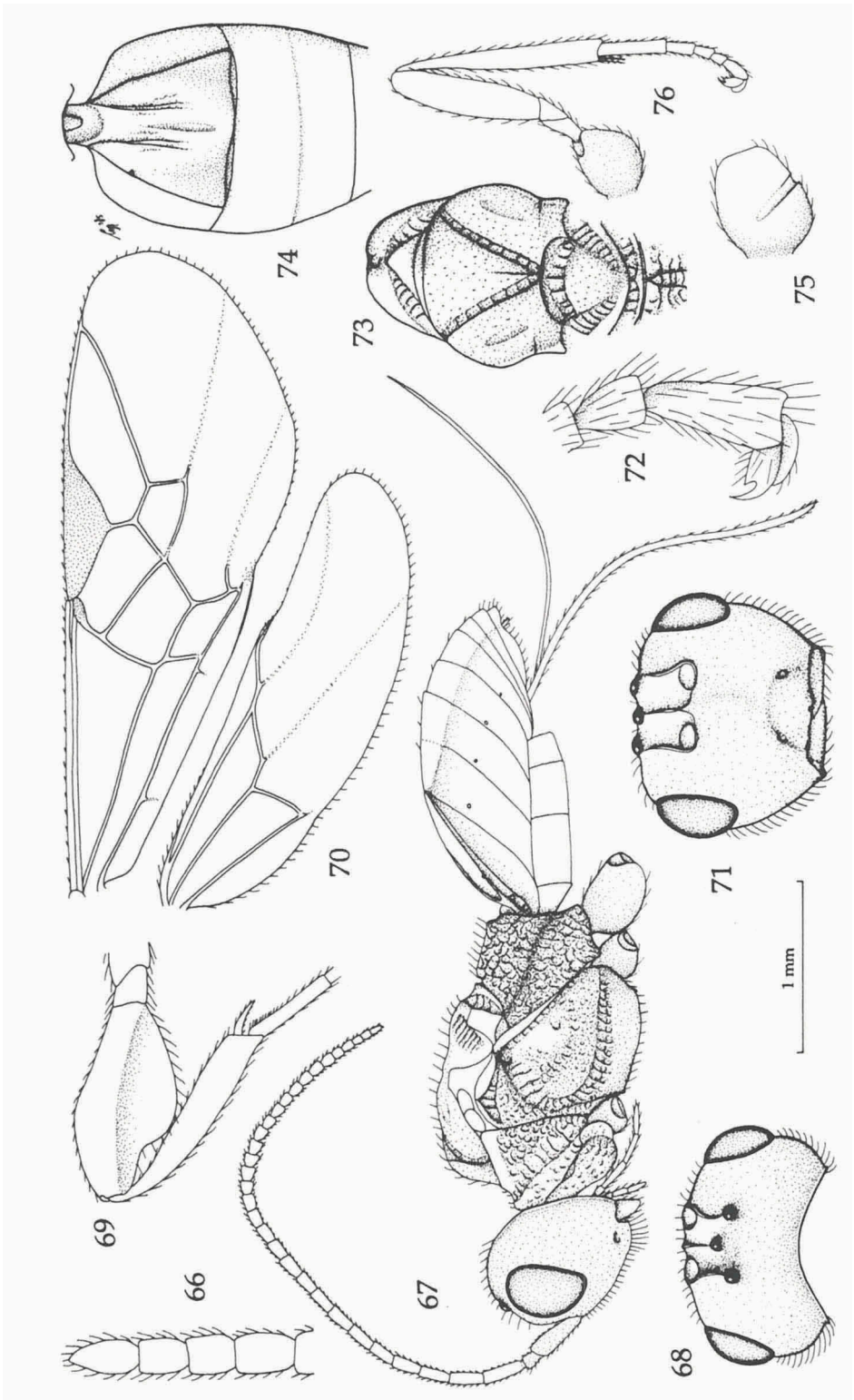

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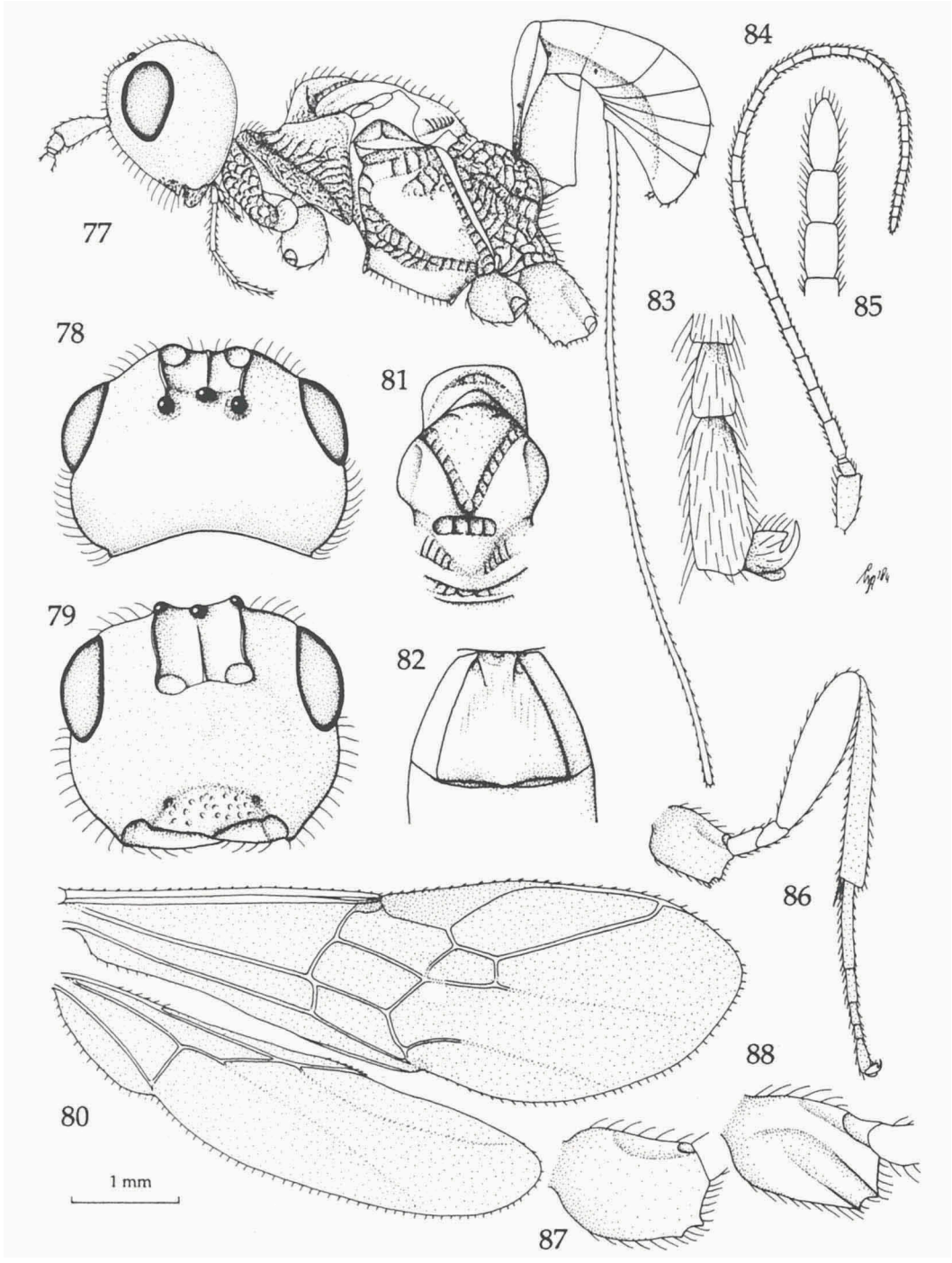

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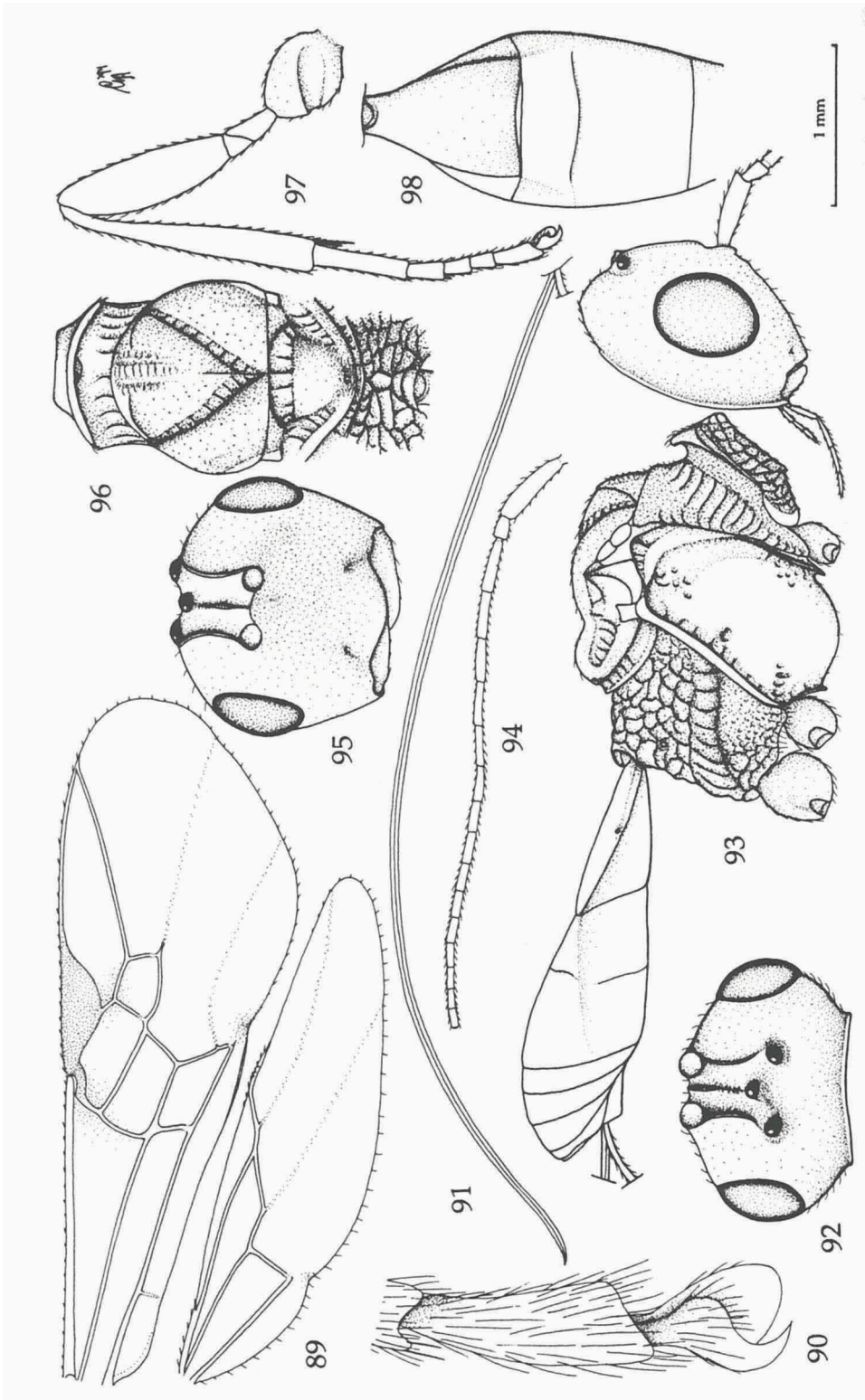

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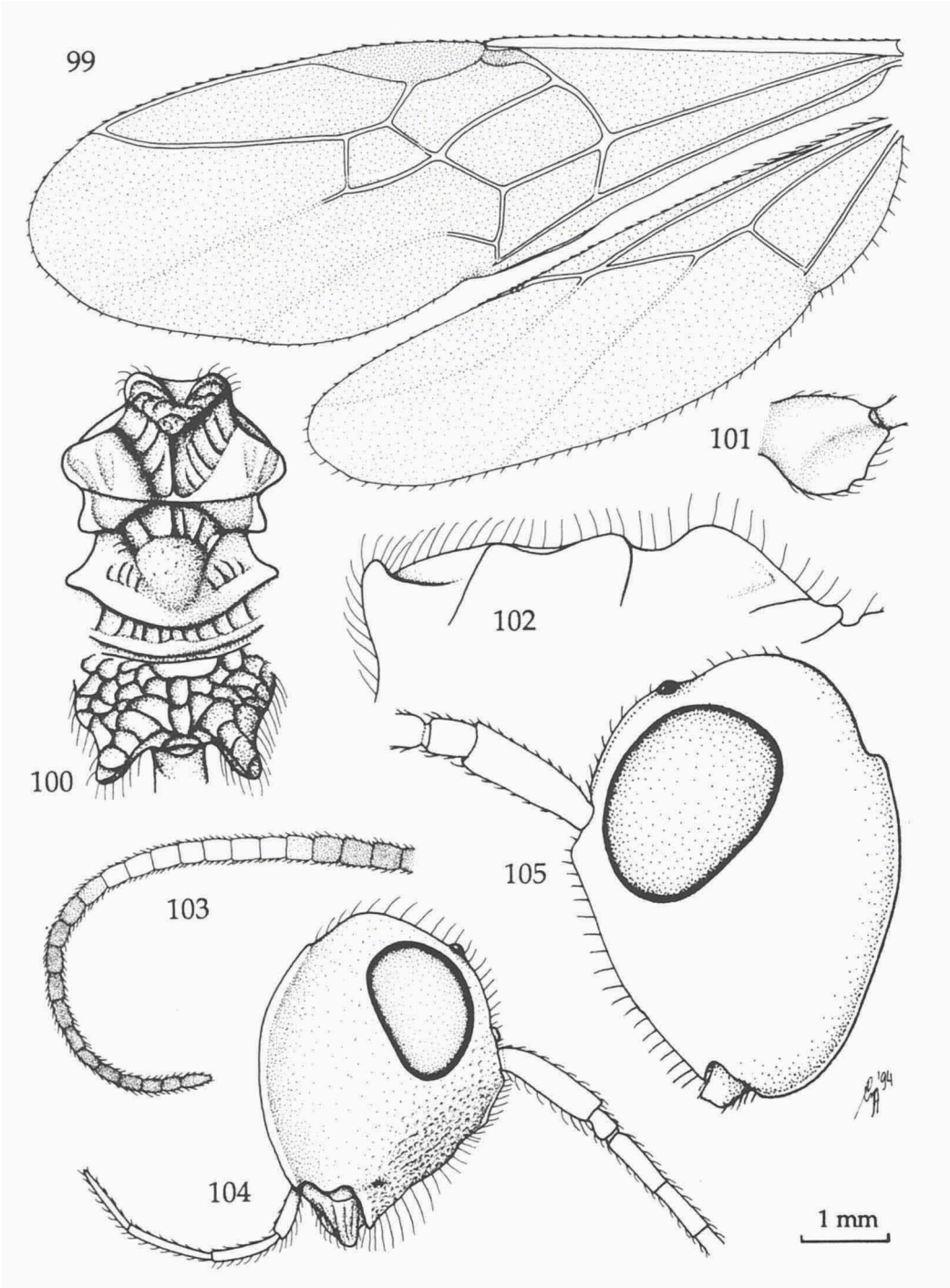

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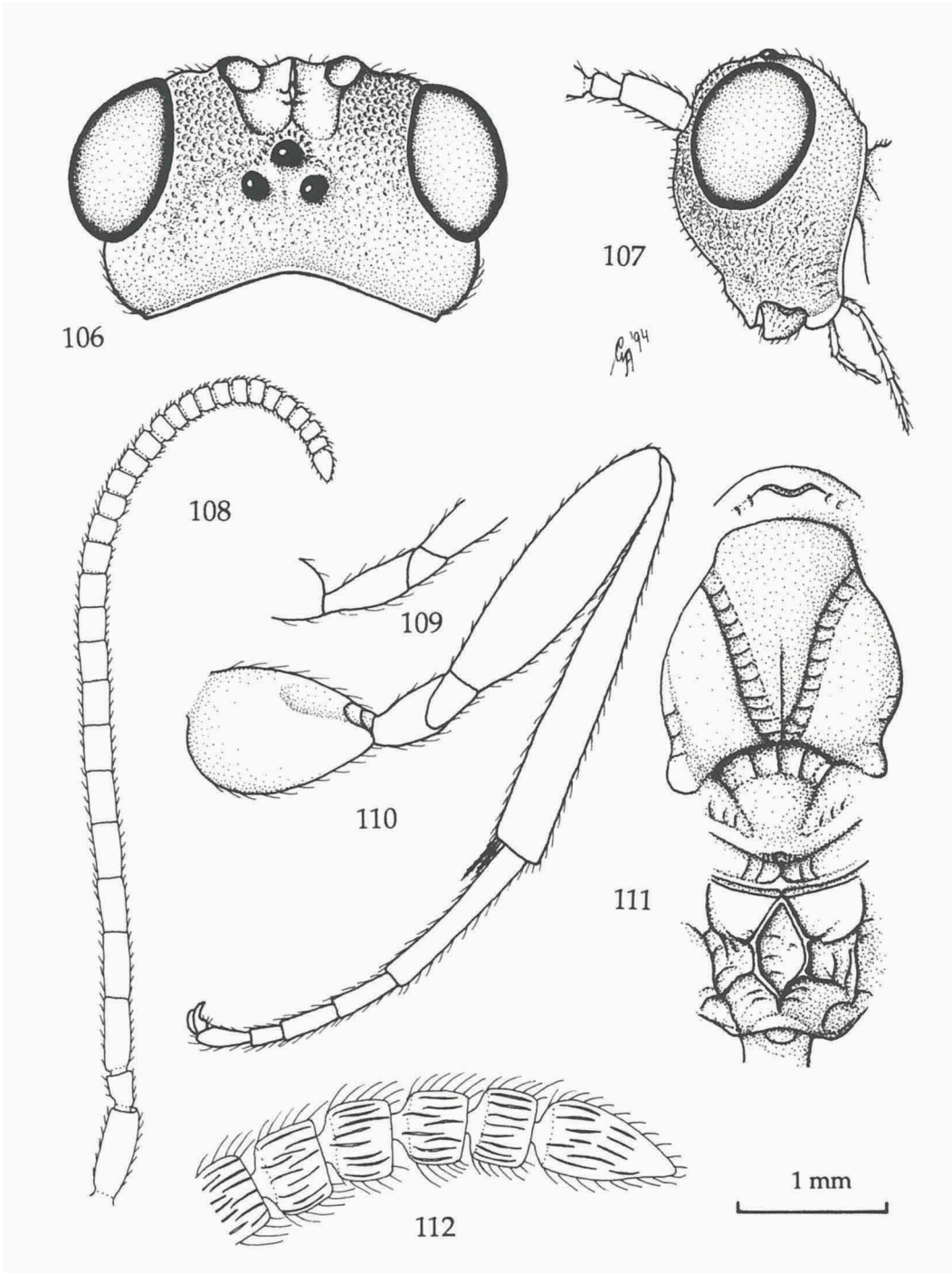

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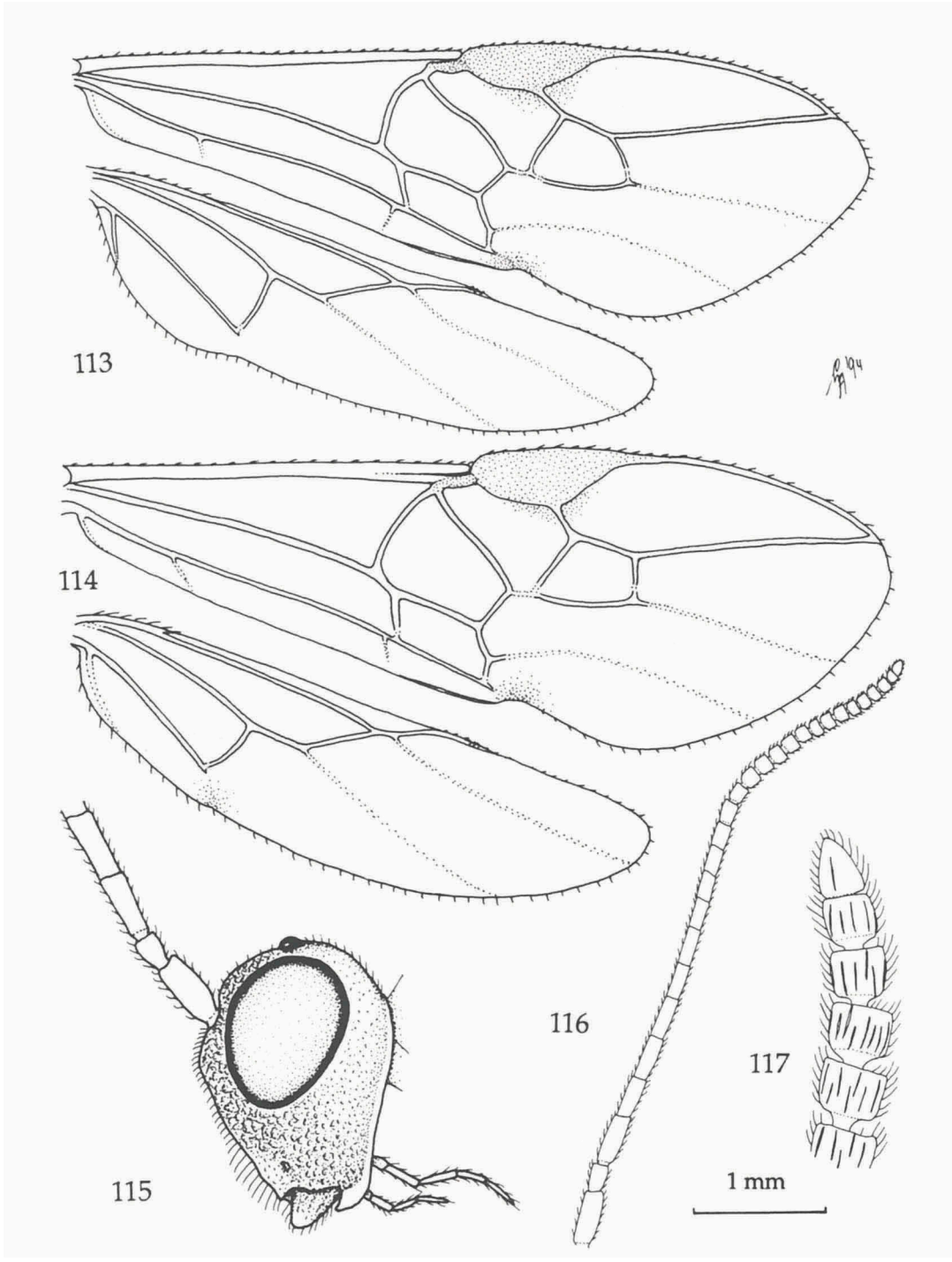

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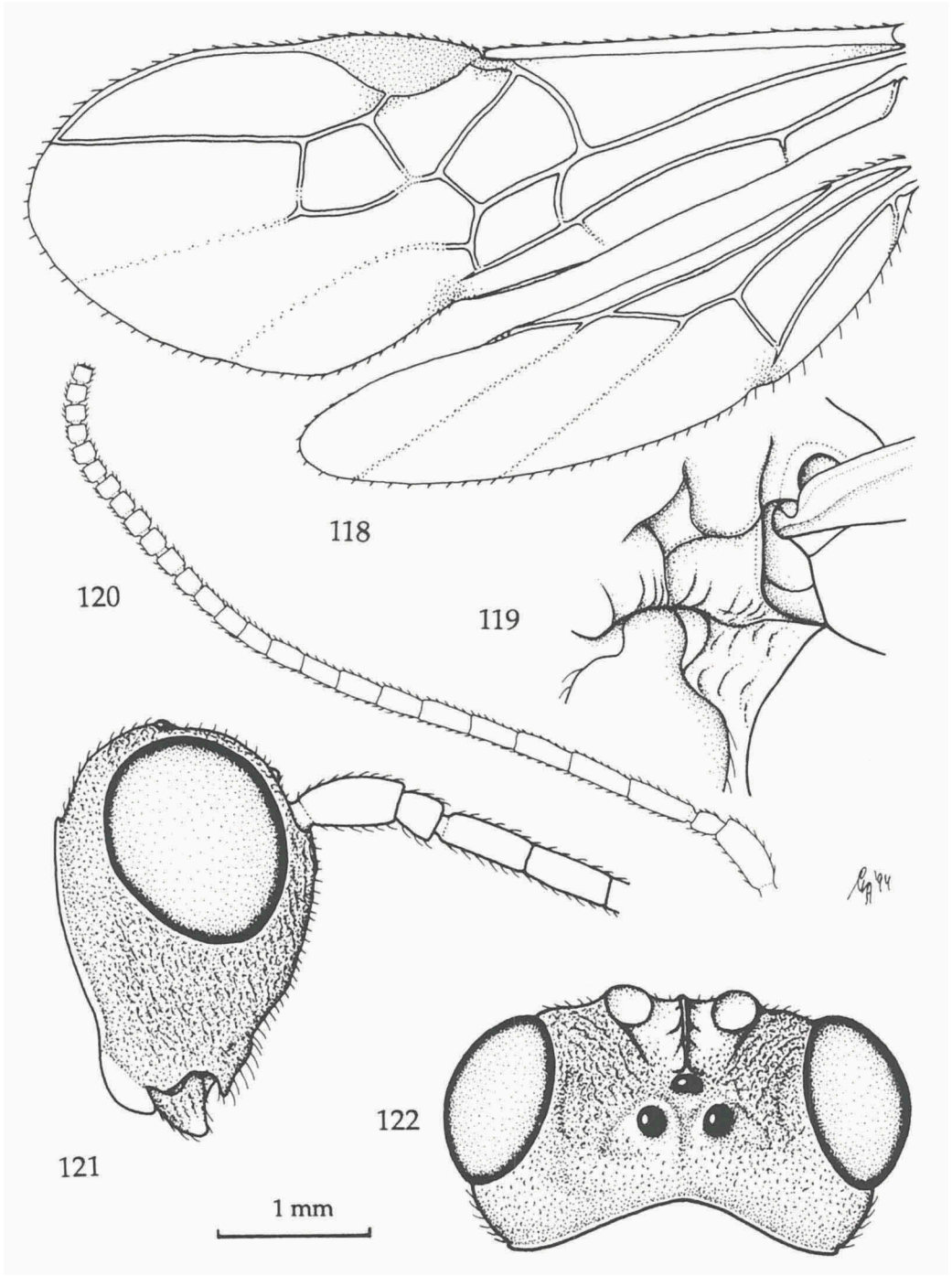

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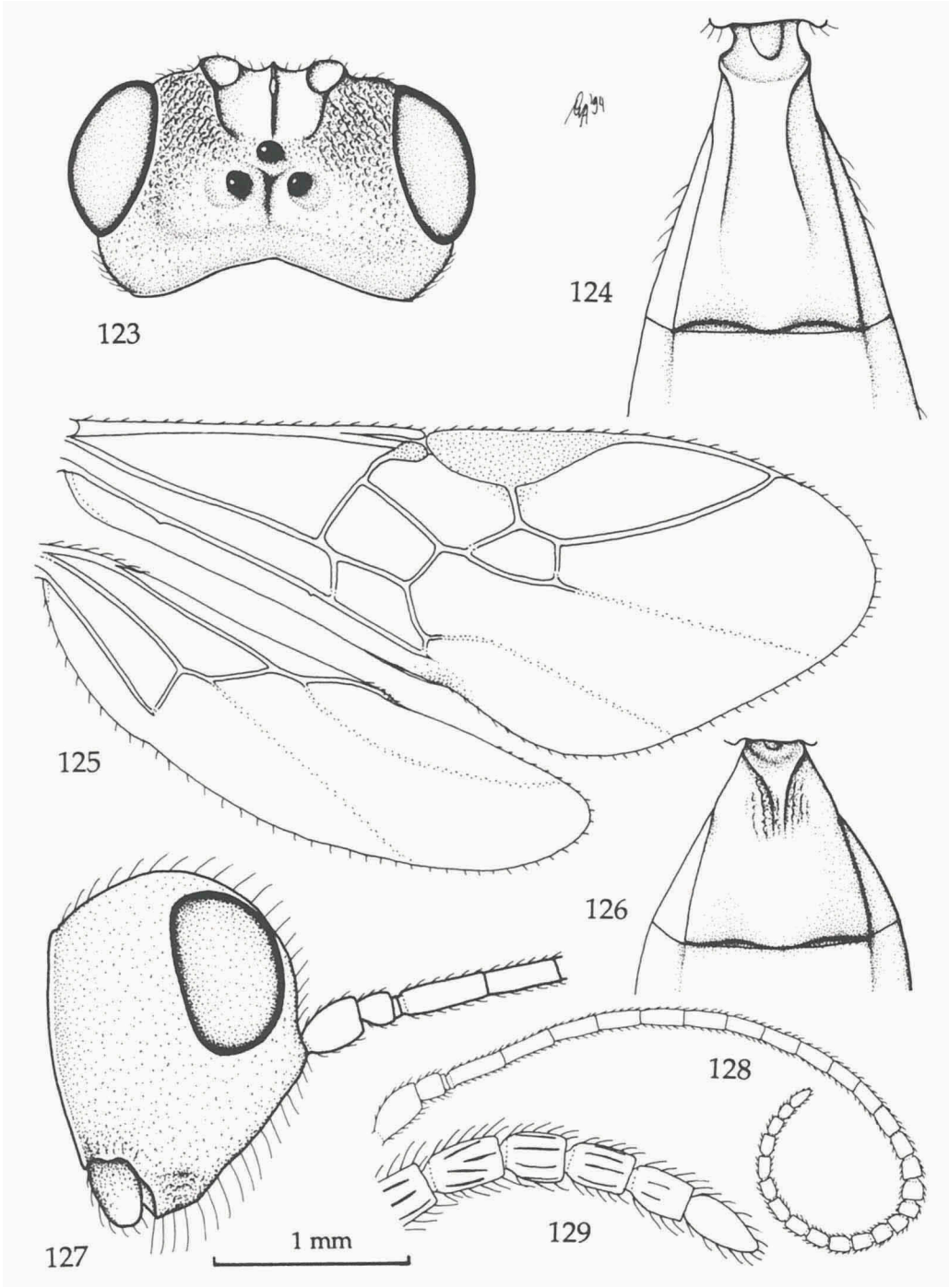

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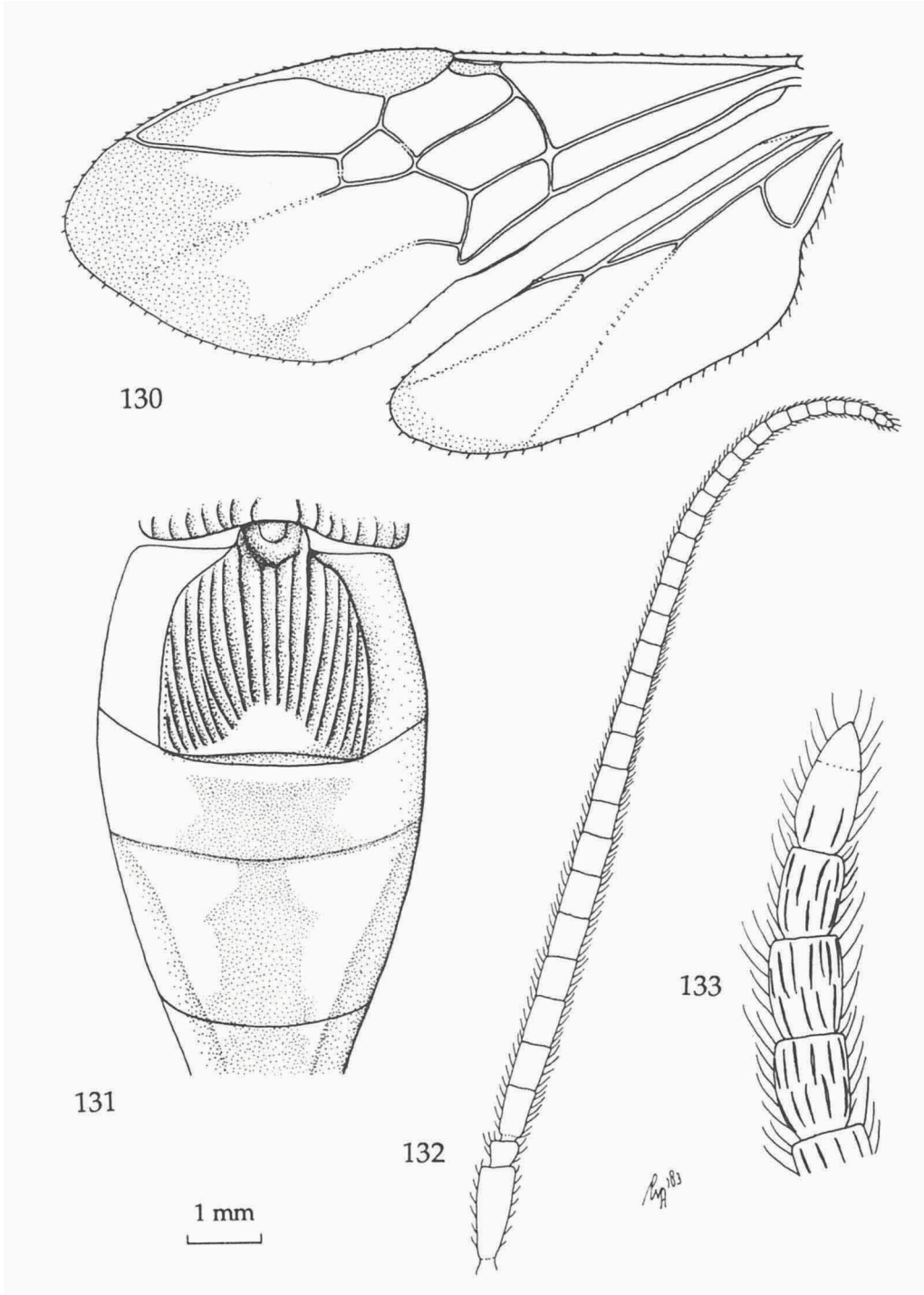

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