New Indo-Australian subgenera and species of the genera *Xynobius* Foerster and *Ademoneuron* Fischer (Hymenoptera: Braconidae: Opiinae)

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Key words: Hymenoptera; Braconidae; Opiinae; *Xynobius*; *Paraxynobius*; *Sulcynobius*; *Atormus*; *Ademoneuron*; New Zealand; Indonesia; Sulawesi; Halmahera; new subgenus; new species; Australian; Wallacean.
Two new subgenera of the genus *Xynobius* Foerster, 1862, from the Southern Hemisphere are described and illustrated: *Paraxynobius* (type species *Xynobius granulatus* spec. nov. from New Zealand), and *Sulcynobius* (type species *X. latisulcus* spec. nov. from Sulawesi). One new species of the genus *Ademoneuron* Fischer, 1988, is added: *A. yasirae* spec. nov. from Indonesia (Halmahera).

Introduction

The worldwide subfamily Opiinae Blanchard, 1845 (family Braconidae Nees, 1811) contains koinobiont endoparasitoids of larvae of Diptera-Cyclorrhapha, principally (but not exclusively) of leaf miners and of hosts living in fruits. A derived habitat is rotting organic matter, e.g. rotting leaves, mushrooms or fruits. Some species are ovo-larval parasitoids, probably when the larvae are less accessible for parasitization (e.g. deep in rotting organic matter). The species living in mining hosts are usually small (body length often less than 4 mm) and dull-coloured; species living in fruits are usually larger and more brightly coloured. As can be expected from their habitus, members of the genera *Xynobius* Foerster, 1862, and *Atormus* van Achterberg, 1997, are koinobiont endoparasitoids of leaf miners; *Xynobius* of Anthomyiidae (species of the genus *Pegomya* Robineau-Desvoidy, 1830) and Scatophagidae (species of the genus *Parallelomma* Becker, 1894 (= *Chylizosoma* Hendel, 1924) and *Atormus* of Agromyzidae (members of the genera *Agromyza* Fallén, 1810, *Liriomyza* Mik, 1894, *Phytomyza* Fallén, 1810, *Cerodontha* Rondani, 1861, *Chromatomyia* Hardy, 1849, *Amauromyza* Hendel, 1936, and *Aulagromyza* Enderlein, 1936). According to Wharton (1988) *Xynobius* is a synonym of the genus *Opius* Wesmael, 1837, but it has a distinct dorsope and usually (at least in the type species) normal mandibles and, therefore, it is not closely related to the genus *Opius* Wesmael, 1835. The genera *Ademoneuron* and *Atormus* are closely related but have a modified propleuron and a protruding hypostomal carina.

The Braconidae faunas of New Zealand and Indonesia are hardly known. For instance, up to now only one species of Opiinae is known from New Zealand which is not included in the overview by Fischer (1987): *Fopius carpocapsae* (Ashmead, 1900). It belongs to a group that is not related to the genera *Xynobius* Foerster, *Ademoneuron* Fischer and *Atormus* van Achterberg treated in this paper. From Indonesia 29 species of Opiinae are known (Fischer, 1987) but none seems to be related to the taxa described in this paper.

For the identification of the subfamily Opiinae, see van Achterberg (1993, 1997a); the genus *Xynobius* is recognized by the combination of distinct dorsope, distinct hypoclypeal depression and vein r distinctly shorter than vein 2-SR of fore wing, propleuron without transverse carina, hind coxa rounded basally and sternaulus below precoxal sulcus absent. The genus *Ademoneuron* is similar but has a curved carina on the propleuron (fig. 61), vein SR1 of the fore wing reduced apically (fig. 41) and has the hypostomal flange protruding. For the terminology used in this paper, see van Achterberg (1988).

Abbreviations: NZAC stands for the New Zealand Arthropod Collection, Auckland, New Zealand and RMNH for the National Museum of Natural History, Leiden, The Netherlands.

Key to the subgenera of the genus *Xynobius* Foerster and to the related genera *Ademoneuron* Fischer and *Atormus* van Achterberg

1. Propleuron with curved transverse carina (figs 52, 61); hypostomal flange protruding (figs 52, 61); marginal cell of fore wing open (fig. 41) or second metasomal tergite evenly setose (fig. 57) 5
- Propleuron evenly convex, without transverse carina (fig. 29); hypostomal flange not protruding (fig. 24); marginal cell of fore wing closed (fig. 17); second tergite with row of setae; genus *Xynobius* Foerster 2
2. Occipital carina complete dorsally (fig. 3); mesopleuron completely granulate (fig. 10); vein r emitted from beyond middle of pterostigma (fig. 1); vein 3-SR of fore wing about as long as vein 2-SR (fig. 1); frons with a more or less pit-shaped depression (fig. 3), rarely absent; medio-posterior depression of mesoscutum obsolescent (fig. 2); New Zealand ..... subgenus ***Paraxynobius*** nov.
- Occipital carina at least narrowly interrupted medio-dorsally (fig. 20); mesopleuron largely smooth (except for the more or less crenulate precoxal sulcus); vein r emitted from middle of pterostigma or more basally (figs 16, 17, 30); vein 3-SR of fore wing distinctly longer than vein 2-SR (figs 17, 30); frons without medial pit; medio-posterior depression of mesoscutum present (figs 25, 33) 3
3. Mesosternal sulcus wide ovoid and smooth (fig. 26); vein 3-SR of fore wing about 1.7 times vein 2-SR (fig. 17); pterostigma triangular (fig. 17); malar suture curved (fig. 18); vein CU1b of fore wing reduced (fig. 17); occipital carina narrowly interrupted medio-dorsally (fig. 20); Wallacea (Sulawesi) ..... subgenus ***Sulcynobius*** nov.
- Mesosternal sulcus narrow groove-like and crenulate (cf. fig. 51); vein 3-SR of fore wing about twice vein 2-SR (figs 16, 30), if shorter than malar suture absent and pterostigma elliptical; malar suture, if present, straight or nearly so (fig. 31); vein CU1b of fore wing often completely sclerotized (figs 16, 30); occipital carina often widely interrupted medio-dorsally; mainly Northern Hemisphere 4
4. Pterostigma subparallel-sided and more or less widened apically (fig. 16) ..... subgenus ***Stigmatopoea*** Fischer
- Pterostigma elliptical or triangular, narrowed apically (fig. 30) ..... subgenus ***Xynobius*** Foerster
5. Vein SR1 of fore wing absent apically, resulting in an open marginal cell of fore wing (fig. 41); postpectal carina strongly developed (fig. 51); second metasomal tergite

without a pair of depressions basally (fig. 47); notauli and precoxal sulcus present (figs 48, 52); hind wing narrow and vein m-cu not indicated (fig. 41); scutellar sulcus wide (fig. 48); malar suture wide (fig. 43); second and third tergites sparsely setose; propodeum coarsely reticulate and its dorsal face angularly connected with posterior face of propodeum (fig. 52); Australasia ..... ***Ademoneuron*** Fischer

- Vein SR1 of fore wing present apically, resulting in a closed marginal cell of fore wing (fig. 53); postpectal carina absent (fig. 64); second tergite with a pair of depressions basally (fig. 57); notauli and precoxal sulcus absent (figs 56, 64); hind wing normal and with vein m-cu indicated (fig. 53); scutellar sulcus narrow (fig. 56); malar suture rather narrow (fig. 62); second and third tergites usually largely setose; propodeum largely smooth and its dorsal face gradually merging into posterior face of propodeum (fig. 64); Palaearctic ..... ***Atormus*** van Achterberg

Descriptions

Genus *Xynobius* Foerster, 1862 stat. nov.

(figs 1-40)

Xynobius Foerster, 1862: 235. Type species (by original designation): *Xynobius pallipes* Foerster, 1862 (= *Opius caelatus* Haliday, 1837) [examined].

Aclisis Foerster, 1862: 267. Type species (by original designation): *Aclisis isomera* Foerster, 1862 (= *Opius caelatus* Haliday, 1837) [examined].

Biophthora Foerster, 1862: 260. Type species (by original designation): *Opius bajulus* Haliday, 1837 [examined].

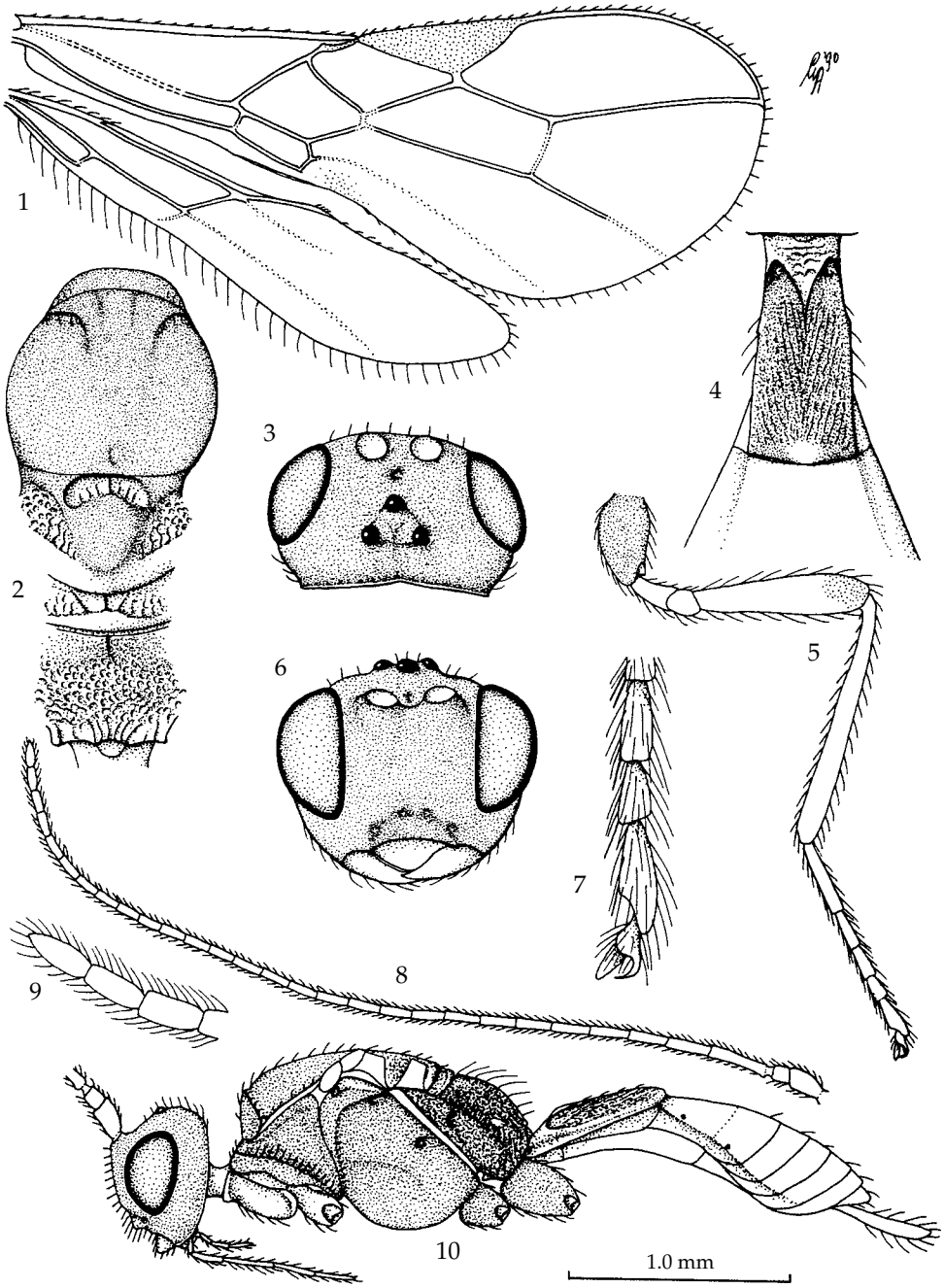
Holconotus Foerster, 1862: 259 (nec Schmidt-Göbel, 1846). Type species (by original designation): *Opius comatus* Wesmael, 1835) [examined].

Aulonotus Ashmead, 1900: 268 (new name for *Holconotus* Foerster). Type species (by original designation): *Opius comatus* Wesmael, 1835) [examined].

Eristernaulax Viereck, 1914: 362. Type species (by original designation): *Eristernaulax leucotaenia* Viereck, 1914) [examined].

Stigmatopoea Fischer, 1986: 610-611 (as subgenus of the genus *Opius*), 1998: 25 (key to species); Wharton, 1988: 356-357 (as subgenus of the genus *Eurytenes* Foerster, 1862). Type species (by original designation): *Opius macrocerus* Thomson, 1895 [examined]. **Syn. nov.**

Note.— The genus *Xynobius* may be easily confused with members of the subfamily Exothecinae because of the subcyclostome shape of the hypoclypeal depression: the clypeus may be more or less concave ventrally and with dorsal border of the hypoclypeal depression above the level of the upper condyli of the mandibles (subgenus *Paraxynobius*: fig. 6), the labrum is glabrous and often slightly concave. Both have the dorsope present and are parasitoids of leaf miners. *Xynobius* can be separated by the short and more or less subvertical pronotum anteriorly and the lack of a distinct laterope. In addition, *Xynobius* species are endoparasitoids of dipterous larvae, and members of Exothecinae are ectoparasitoids of hymenopterous, lepidopterous, coleopterous and also dipterous larvae. The subcyclostome condition is to be expected in basal lineages of the Opiinae because the Opiinae arose from within the cyclostomes (like Exothecinae) and this is considered to be the plesiomorphous state.



Figs 1-10, *Xynobius* (*Paraxynobius* subgen. nov.) *granulatus* spec. nov., ♀, holotype. 1, wings; 2, mesosoma, dorsal aspect; 3, head, dorsal aspect; 4, first and second metasomal tergites, dorsal aspect; 5, hind leg; 6, head, anterior aspect; 7, outer hind claw; 8, antenna; 9, apex of antenna; 10, habitus, lateral aspect. 1, 5, 8, 10: 1.0 x scale-line; 2-4, 6: 1.5 x; 7, 9: 2.5 x.

Subgenus *Paraxynobius* nov.

(figs 1-10, 13)

Type species: *Xynobius granulatus* spec. nov.

Etymology.— From "para"(Greek for "near") and the generic name *Xynobius* because it is near *Xynobius* s.s. Gender: masculine.

Diagnosis.— Occipital carina complete medio-dorsally (fig. 3) and remaining far from hypostomal carina ventrally; antenna 1.3 times as long as fore wing; frons with a more or less developed medial pit (fig. 3), rarely absent; clypeus moderately wide (fig. 6); mandible gradually widened subbasally (fig. 10); anterior tentorial pits normal (fig. 6); hypoclypeal depression moderately wide (fig. 6); medio-posterior depression of mesoscutum obsolescent (fig. 2); mesosternal sulcus deep, rather wide and distinctly crenulate; postpectal carina absent; mesopleuron completely granulate (fig. 10); vein 3-SR of fore wing about as long as vein 2-SR (fig. 1); vein r emitted from beyond middle of pterostigma (fig. 1); vein r angled with vein 3-SR of fore wing (fig. 1); vein CU1b of fore wing sclerotized; basal half of vein M+CU1 of fore wing largely unsclerotized; pterostigma triangular and narrow basally (fig. 1); first tergite comparatively slender and its dorsope distinct (fig. 4); second tergite without basal depressions (fig. 4).

Biology.— Unknown.

Distribution.— Australian (New Zealand), two species.

Key to species of the subgenus *Paraxynobius* nov.

1. Palpi, coxae, trochanters, trochantelli and femora basally white or ivory; length of fore wing 2.5-2.6 mm, length of body 2.2-2.3 mm; middle lobe of mesoscutum more or less dark brown; fourth segment of hind tarsus of ♀ more robust (fig. 12); North Island ..... ***X. albobasalis*** spec. nov.
- Palpi, coxae, trochanters, trochantelli and femora basally pale yellowish; length of fore wing 2.8-3.4 mm, length of body 2.5-3.4 mm; middle lobe of mesoscutum yellowish-brown; fourth segment of hind tarsus of ♀ less robust (fig. 13); South Island ..... ***X. granulatus*** spec. nov.

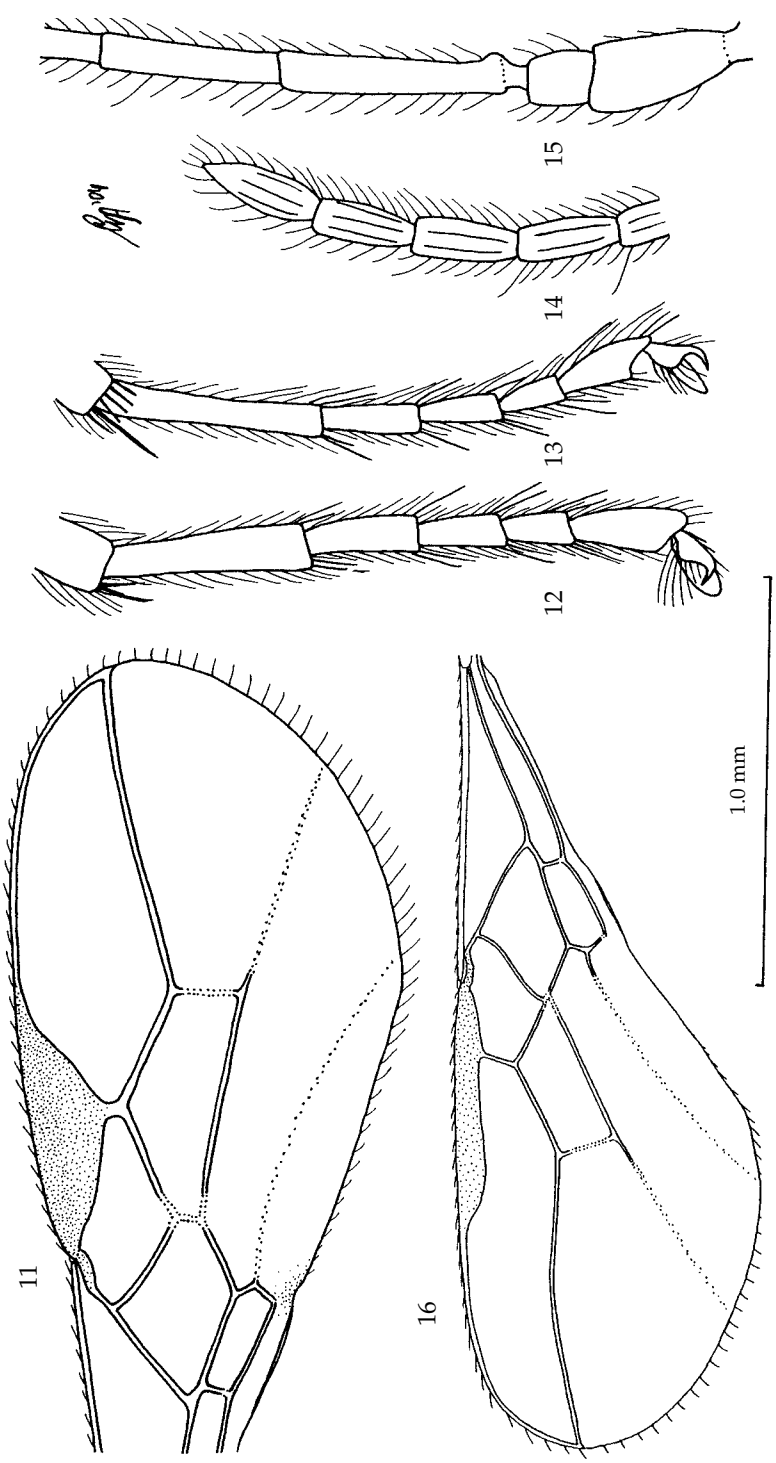
Xynobius (Paraxynobius) granulatus spec. nov.

(figs 1-10, 13)

Material.— Holotype, ♀ (RMNH), "Museum Leiden, **New Zealand**, S. Island (Canterbury), Christchurch (43º32'S-172º38'E)", "betw[een] Thorington Road & Heathcote River, 8.ii.1976, Ph. Pronk (76.031)". Paratypes: 33 ♀♀ (RMNH, NZAC), 10 ♀♀ with same data; 23 ♀♀, id., but 16.ii.1976.

Holotype, ♀, length of body and of fore wing 3.4 mm.

Head.— Antenna with 30 segments, third antennal segment 1.5 times fourth segment, length of third, fourth and penultimate segments 5.3, 3.7 and 2.2 times their width, respectively (figs 8, 9); length of maxillary palp 1.4 times height of head; length of eye in dorsal view 2.6 times temple (fig. 3); OOL:diameter of ocellus:POL = 6:3:5; length of malar space 0.9 times basal width of mandible; face, clypeus, frons and vertex



Figs 11, 12, 14, 15, *Xynobius* (*Paraxynobius* subgen. nov.) *albobasalis* spec. nov., ♀, holotype; fig. 13, *X.* (*P.*) *granulatus* spec. nov., ♀, paratype; fig. 16, *Xynobius* (*Stigmatopoea*) *macrocerus* (Thomson), ♀, lectotype. 11, 16, fore wing; 12, hind tarsus, outer aspect; 13, id., but inner aspect; 14, apex of antenna; 15, base of antenna. 11: 1.0 × scale-line; 12-15: 1.5 ×; 16: 0.5 ×.

finely granulate; hypoclypeal depression about half as wide as face (fig. 6); ventral part of occipital carina visible in anterior view of head; mandible slightly twisted apically and with ventral lamella.

Mesosoma.— Length of mesosoma 1.7 times its height; pronope absent; pronotum anteriorly nearly vertical (fig. 10); side of pronotum medially crenulate and remainder granulate; mesopleuron granulate; precoxal sulcus absent except for a shallow depression; metapleuron granulate but ventrally rugose; notauli absent except for a pair of short impressions anteriorly (fig. 2); mesoscutum granulate, medially sparsely setose and laterally largely glabrous, medio-posterior depression obsolescent (fig. 2); scutellar sulcus rather deep and narrowed medially and with one distinct carina (fig. 2); scutellum flat and granulate; surface of propodeum coarsely granulate and with short median carina anteriorly, posteriorly and laterally densely rugose and medially partly punctate (fig. 2).

Wings.— Fore wing: r wide, very short and much shorter than width of pterostigma (fig. 1); r:3-SR:SR1 = 3:36:73; 1-CU1:2-CU1 = 1:12; 2-SR:3-SR:r-m = 35:36:20; m-cu just postfurcal and converging to 1-M posteriorly; cu-a short and first subdiscal cell rather robust (fig. 1); CU1b slightly longer than vein 3-CU1. Hind wing: m-cu present (fig. 1); M+CU:1-M = 16:19.

Legs.— Hind coxa and femur granulate; tarsal claws simple, setose with apical tooth distinctly bent (fig. 7); fourth segment of hind tarsus distinctly longer than wide (fig. 13); length of femur, tibia and basitarsus 4.1, 11.0 and 5.3 times their width, respectively; both hind tibial spurs 0.3 times as long as hind basitarsus.

Metasoma.— Length of first tergite twice its apical width, its sternite free, its surface granulate and with oblique rugulae (fig. 4), its dorsal carinae up to basal quarter of tergite, united; dorsope medium-sized, rather deep (fig. 4); laterope absent; second tergite 1.4 times longer than third tergite medially; ovipositor sheath 0.13 times as long as fore wing, with long setae (fig. 10); hypopygium normal and not protruding beyond apex of metasoma (fig. 10).

Colour.— Black; face, clypeus, frons (except stemmaticum and its surroundings), temple anteriorly and ventrally, pronotum (except posteriorly), mesoscutum (except laterally), scutellum laterally and posteriorly, metanotum largely, mesopleuron anterodorsally, second tergite medially and third tergite medio-basally, metasoma medio-ventrally, tegulae, scapus and pedicellus yellowish-brown; palpi, legs (but apex of hind femur dark brown and telotarsi infuscate), third tergite medio-apically and following tergites medially pale yellowish; pterostigma and veins rather dark brown; wing membrane subhyaline.

Distribution.— New Zealand (South Island).

Variation.— Length of fore wing 2.8-3.4 mm, and of body 2.5-3.4 mm; antenna of ♀ with 27 (1), 28 (3), 29 (16) or 30 (8) segments; length of ovipositor sheath 0.13-0.15 times fore wing; medio-posterior depression of mesoscutum and pit-like depression of frons may be distinct or obsolescent; second and third tergites (except apically) may be largely dark brown.

Note.— Runs in the key by Fischer (1987) to the genus *Euopius* Fischer, 1967, because of the complete occipital carina. There are three species known from the Indo-Australian region with complete occipital carina: *E. jacobsoni* (Fischer, 1966) from Indonesia (Sumatra) differs by having the precoxal sulcus crenulate and distinctly impressed,

no medio-posterior depression of the mesoscutum, vein r of the fore wing slender and emitted basally of middle of pterostigma, the head black and the mesopleuron largely smooth; *E. nabirensis* Fischer, 1976, from New Guinea has the precoxal sulcus crenulate, the head black, the four apical segments of the antenna whitish, the wing membrane infuscate and vein m-cu of the fore wing antefurcal; *E. christiphori* Fischer, 1978, from Tasmania has the mesopleuron largely smooth, vein m-cu of the fore wing antefurcal, the pterostigma narrower, vein r of the fore wing emitted basally of middle of pterostigma and slender, second metasomal tergite sculptured basally and with a long medio-posterior depression of the mesoscutum.

If the character of the complete occipital carina is dismissed it runs to the genus *Diachasma* Foerster, 1862, in Fischer (1987) and to the only species in the area, *D. australis* Fischer, 1966. It differs by having about 39 antennal segments, the third antennal segment about 3 times as long as wide, the mesoscutum smooth, the medio-posterior depression of mesoscutum present, the propodeum with a median carina, vein r emitted from basal 0.7 of the pterostigma, vein 3-SR of fore wing distinctly shorter than vein 3-CU1, vein CU1b shorter than vein 3-CU1 and the face black.

Xynobius (Paraxynobius) albobasalis spec. nov.
(figs 11, 12, 14, 15)

Material.— Holotype, ♀ (NZAC), "**New Zealand**, [N. Island], AK, [Auckland], St. Heliers Dingle Dell [forest reserve], 30.iv.2004, J.A. Berry sweeping [for] Bioblitz". Paratypes: 1 ♀ + 1 ♂ (NZAC, RMNH), same data.

Holotype, ♀, length of body 2.3 mm and of fore wing 2.6 mm. Very similar to holotype of *X. granulatus* but differs as follows:

Head.— Antenna with 27 segments, length of third, fourth and penultimate segments 6.3, 4.3 and 2.7 times their width, respectively (figs 14, 15); length of eye in dorsal view 2.4 times temple; length of malar space 0.8 times basal width of mandible; face matt and distinctly granulate, clypeus, frons and vertex shiny and superficially granulate; hypoclypeal depression 0.4 times as wide as face.

Mesosoma.— Length of mesosoma 1.6 times its height; pronope minute; mesoscutum shiny and indistinctly sculptured laterally; scutellum weakly convex and superficially granulate; surface of propodeum granulate anteriorly and remainder densely and rather coarsely rugose.

Wings.— Fore wing: r wide, very short and much shorter than width of pterostigma (fig. 11); r:3-SR:SR1 = 2:20:48; 1-CU1:2-CU1 = 2:15; 2-SR:3-SR:r-m = 19:20:19.

Legs.— Fourth segment of hind tarsus hardly longer than wide (fig. 12); length of femur, tibia and basitarsus 4.5, 11.8 and 5.0 times their width, respectively.

Metasoma.— Length of first tergite 2.2 times its apical width; second tergite 1.1 times longer than third tergite medially; second and following tergites smooth, depressed; ovipositor sheath 0.19 times as long as fore wing; hypopygium large, triangular and slightly protruding beyond apex of metasoma.

Colour.— Black; clypeus pale yellowish, paler than yellowish-brown face; frons and temple only laterally yellowish-brown; middle lobe of mesoscutum partly dark brown; scutellum and metanotum only posteriorly yellowish-brown; second and

following tergites largely pale yellowish but narrowly dark brown laterally; tegulae, scapus and pedicellus pale yellowish, but pedicellus with dark patch; palpi, coxae, trochanters, trochantelli, basally femora and metasoma ventrally white or ivory; hind tarsus (except basally) infuscate; hind tibia partly slightly darkened; wing membrane slightly infuscate.

Distribution.— New Zealand (North Island).

Variation.— Antenna of ♀ with 27 (2) segments and of ♂ with 31 (1) segments; length of fore wing 2.5-2.6 mm and of body 2.2-2.3 mm; middle lobe of mesoscutum partly to completely dark brown; length of ovipositor sheath 0.16-0.19 times fore wing; area between posterior ocellus and eye largely black or only near ocellus; hind tarsus of ♂ slender; vein r and base of vein 3-SR of fore wing of ♂ widened.

Subgenus *Sulcynobius* nov.

(figs 17-29)

Type species: *Xynobius latisulcus* spec. nov.

Etymology.— From "sulcus" (Latin for "groove") and the generic name *Xynobius* because it is near *Xynobius* s.s. and has a wide groove at the mesosternum. Gender: masculine.

Diagnosis.— Occipital carina rather narrowly interrupted medio-dorsally (fig. 20) and remaining rather far from hypostomal carina ventrally; antenna 1.4 times as long as fore wing; frons without depression; clypeus medium-sized (fig. 18); anterior tentorial pits enlarged and deep (fig. 18); hypoclypeal depression medium-sized (fig. 18); mandible gradually widened subbasally; malar suture deep and curved (fig. 24); medio-posterior depression of mesoscutum narrow droplet-shaped (fig. 25); mesopleuron largely smooth; mesosternal sulcus wide ovoid and smooth (fig. 26); postpectal carina absent; vein 3-SR of fore wing about 1.7 times vein 2-SR; pterostigma elliptical (fig. 17); vein r emitted before middle of pterostigma (fig. 17), but remaining far removed from base of pterostigma; vein r angled with vein 3-SR of fore wing; vein M+CU1 of fore wing largely unsclerotized; first tergite comparatively slender and its dorsope distinct (fig. 23); second tergite without a pair of basal depressions.

Biology.— Unknown.

Distribution.— Wallacea (Sulawesi), only the type species is known.

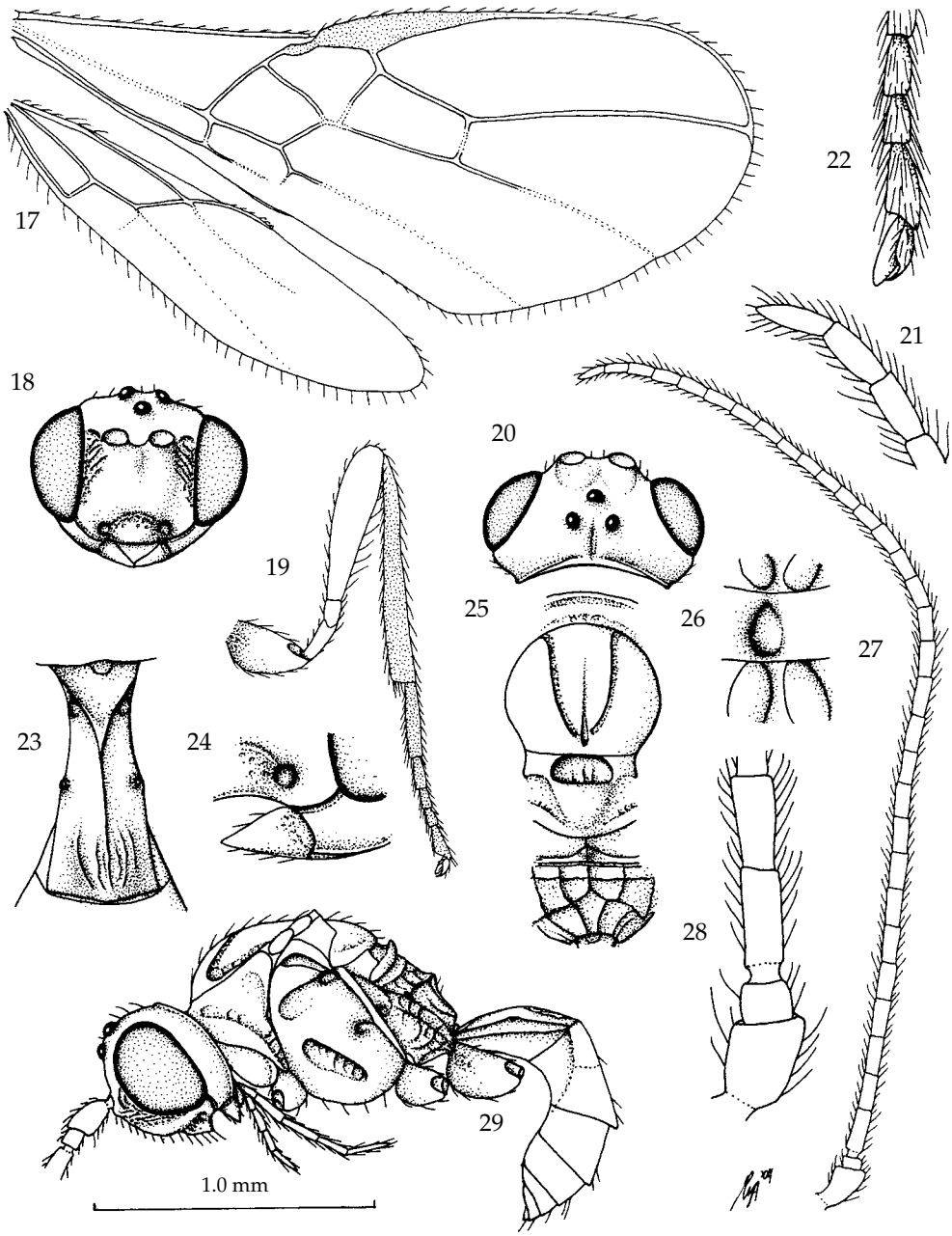
Xynobius (Sulcynobius) latisulcus spec. nov.

(figs 17-29)

Material.— Holotype, ♂ (RMNH), "**Indonesia**: [Central] **Sulawesi**, nr Mamasa, Penannang, 1600-1800 m, 9-13.iv.1991, C. v. Achterberg, RMNH'91".

Holotype, ♂, length of body 2.4 mm and of fore wing 2.7 mm.

Head.— Antenna with 33 segments, third antennal segment 1.3 times fourth segment, length of third, fourth and penultimate segments 2.8, 2.2 and 2.3 times their width, respectively (figs 21, 27, 28); length of maxillary palp 1.2 times height of head; length of eye in dorsal view 2.4 times temple (fig. 20); OOL:diameter of ocellus:POL = 6:3:5; length of malar space 1.4 times basal width of mandible; face obliquely rugose



Figs 17-29, *Xynobius* (*Sulcynobius* subgen. nov.) *latisulcus* spec. nov., ♂, holotype. 17, wings; 18, head, anterior aspect; 19, hind leg; 20, head, dorsal aspect; 21, apex of antenna; 22, outer hind claw; 23, first metasomal tergite, dorsal aspect; 24, mandible and malar space, latero-anterior aspect; 25, mesosoma, dorsal aspect; 26, mesosternum, ventral aspect; 27, antenna; 28, base of antenna; 29, habitus, lateral aspect. 17, 19, 26, 27, 29: 1.0 × scale-line; 18, 20, 25: 1.1 ×; 21, 22, 28: 2.5 ×; 23, 24: 1.7 ×.

dorso-laterally and remainder smooth; clypeus medium sized and convex, sparsely punctate and remainder smooth; frons and vertex smooth; vertex with median groove (fig. 20); hypoclypeal depression about 0.4 times as wide as face (fig. 18); mandible slightly twisted apically and with ventral lamella.

Mesosoma.— Length of mesosoma 1.4 times its height; pronope absent; pronotum anteriorly subhorizontal (fig. 29); side of pronotum largely smooth, with a few crenulae; mesopleuron largely smooth, with precoxal sulcus present medially, wide and crenulate; metapleuron rugose but dorsally largely smooth; notauli nearly complete, finely crenulate anteriorly and remainder smooth, narrow (fig. 25); mesoscutum smooth, largely glabrous, and medio-posterior depression deep, elongate (fig. 25); scutellar sulcus deep and wide, with 3 short carinae (fig. 25); scutellum flat and smooth; surface of propodeum areolate, with a medium-sized median carina anteriorly, posteriorly with medial areola narrowed (fig. 25).

Wings.— Fore wing: r issued from basal 0.3 of pterostigma, medium-sized and rather wide, and much shorter than width of pterostigma (fig. 17); r:3-SR:SR1 = 4:21:58; 1-CU1:2-CU1 = 3:29; 2-SR:3-SR:r-m = 12:21:9; m-cu shortly antefurcal and converging to 1-M posteriorly; cu-a short and first subdiscal cell rather robust (fig. 17); CU1b reduced, distinctly shorter than vein 3-CU1 (fig. 17). Hind wing: m-cu vaguely indicated (fig. 17); M+CU:1-M = 2:1.

Legs.— Hind coxa and femur largely smooth; tarsal claws simple, setose with apical tooth hardly bent (fig. 22); fourth segment of hind tarsus longer than wide (fig. 19); length of femur, tibia and basitarsus 4.7, 9.6 and 5.8 times their width, respectively; hind tibial spurs 0.10 and 0.15 times as long as hind basitarsus.

Metasoma.— Length of first tergite twice its apical width, its surface largely smooth except for some coarse rugae medio-posteriorly (fig. 23), its dorsal carinae united, nearly up to apex of tergite, dorsope medium-sized (fig. 23); laterope absent; second tergite about as long as third tergite medially.

Colour.— Black; scapus, pedicellus, legs (but hind tibia largely and hind tarsus dark brown) and tegulae yellowish-brown; palpi pale yellowish; second and third metasomal tergites, pterostigma and veins dark brown; wing membrane subhyaline.

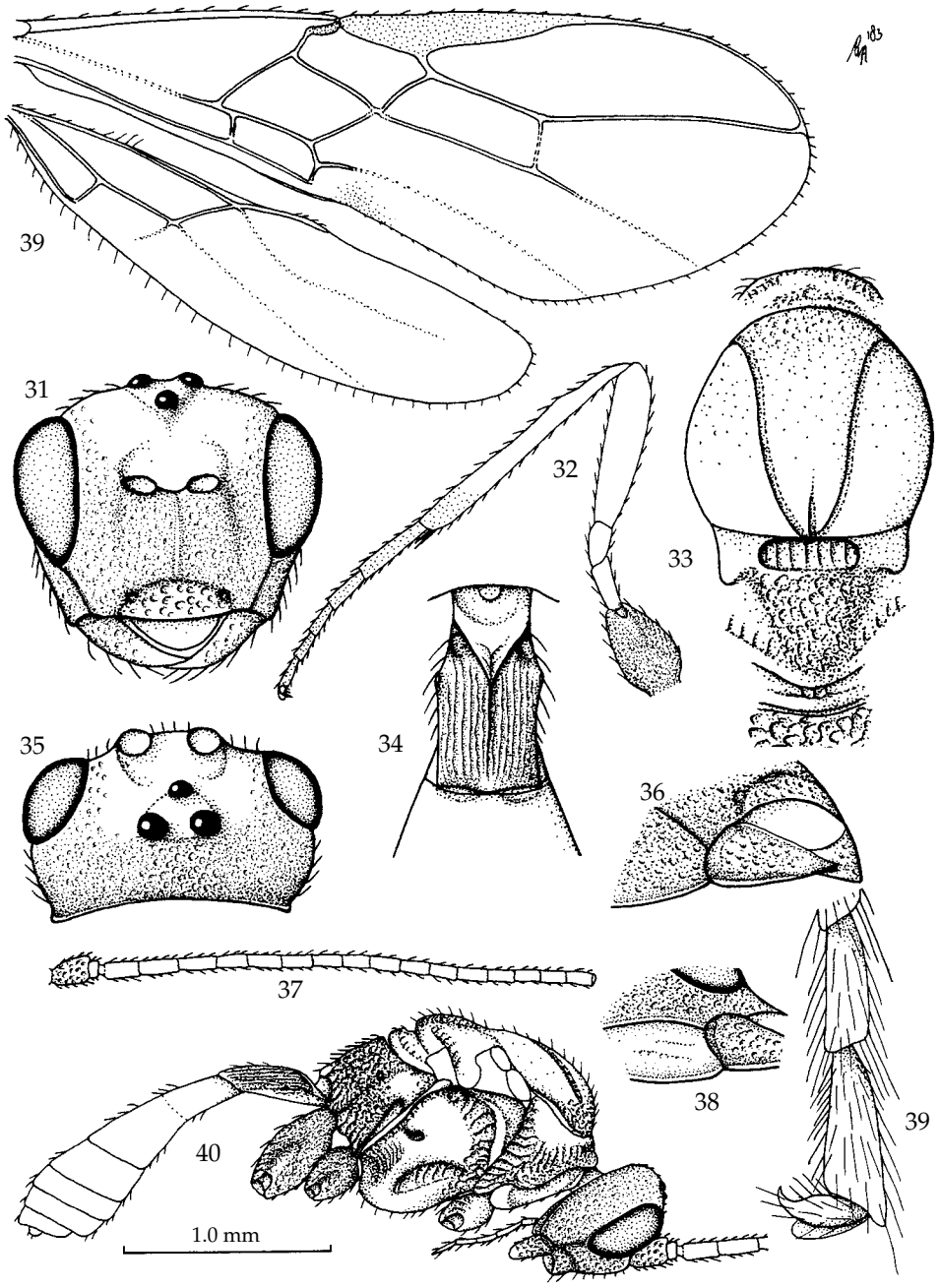
Note.— Runs in the key by Fischer (1987) to the subgenus *Aulonotus* Ashmead, 1900, of the genus *Opius* Wesmael, 1835, and to the Afrotropical *O. stranus* Fischer, 1968. However, this species has a much less transverse head in dorsal view, the medio-posterior depression of the mesoscutum is round and small, the anterior tentorial pits are half as wide as the distance from pit to eye, vein r issued from middle of the pterostigma, vein CU1b of the fore wing present and about as long as vein 3-CU1, and the second metasomal tergite rugulose.

Genus *Ademoneuron* Fischer, 1988

(figs 41-52)

Ademoneuron Fischer, 1988: 268-271, figs 34-36 (as subgenus of the genus *Opius* Wesmael, 1835); 1999: 282 (generic status). Type species (by original designation): *Opius graculis* Fischer, 1988 [examined].

Diagnosis.— Occipital carina strongly developed, narrowly (*A. yasirae*) or widely (*A. graculis*) interrupted medio-dorsally (fig. 44) and remaining distinctly removed from



Figs 30-40, *Xynobius* (*Xynobius*) *pallipes* Foerster, ♂, holotype. 30, wings; 31, head, anterior aspect; 32, hind leg; 33, mesosoma, dorsal aspect; 34, first metasomal tergite, dorsal aspect; 35, head, dorsal aspect; 36, mandible and malar space, latero-ventral aspect; 37, antenna; 38, ventral part of occipital and hypostomal carinae, latero-posterior aspect; 39, inner hind claw; 40, habitus, lateral aspect. 30, 32, 37, 40: 1.0 × scale-line; 31, 33-36, 38: 2.0 ×; 39: 5.0 ×.

hypostomal carina ventrally; hypostomal flange protruding (figs 52); antenna 1.2-1.4 times as long as fore wing; frons without depression; clypeus medium-sized and bell-shaped (fig. 43); hypoclypeal depression medium-sized (fig. 43); mandible gradually widened subbasally; propleuron with a curved carina and area behind it flattened (fig. 52); notauli largely impressed (fig. 48); medio-posterior depression of mesoscutum small (fig. 48) to large and deep; scutellar sulcus wide and deep; precoxal sulcus present and at least partly sculptured; mesopleuron largely smooth; mesosternal sulcus deep and crenulate; postpectal carina largely present (fig. 51); vein SR1 absent apically, resulting in an open marginal cell (fig. 41); vein 3-SR of fore wing 1.7-2.2 times vein 2-SR; pterostigma elliptical (fig. 41); vein r emitted from middle of pterostigma (fig. 41); vein r angled with vein 3-SR of fore wing; hind wing narrow and vein m-cu absent (fig. 41); first tergite moderately slender and its dorsope distinct (fig. 47) or obsolescent (type species).

Biology.— Unknown.

Distribution.— Australia (Queensland, New South Wales, South Australia) and Wallacea (Halmahera); two species.

Notes.— The genus *Ademoneuron* Fischer is similar to the genus *Atormus* van Achterberg, 1997 (van Achterberg, 1997b), because of the transverse carina of the propleuron, the protruding hypostomal flange and the more or less developed dorsope. Therefore, it has been included in the partial key above.

Key to species of the genus *Ademoneuron* Fischer

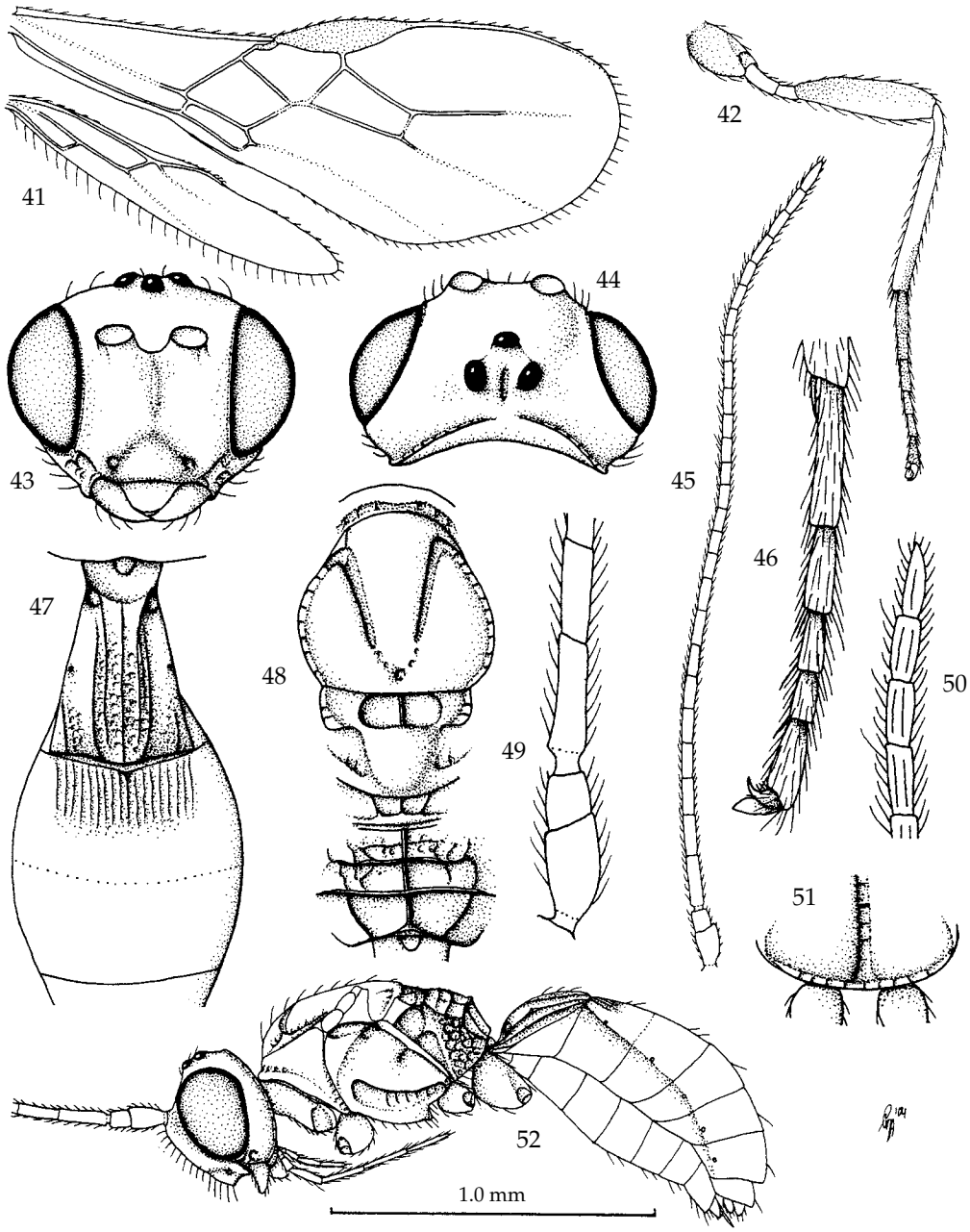
1. Occipital carina narrowly interrupted medio-dorsally (fig. 44); second metasomal tergite longitudinally striate basally and without a pair of basal depressions (fig. 47); malar suture wide and rather shallow (fig. 43); dorsope distinct (fig. 47); notauli smooth (fig. 48); antenna with about 33 segments and about 1.4 times as long as fore wing; medio-posterior depression of mesoscutum small (fig. 48); vein 2-SR of fore wing nearly 4 times as long as vein r (fig. 41); Indonesia (Halmahera) ..... ***A. yasirae*** spec. nov.
- Occipital carina widely interrupted medio-dorsally, completely absent dorsally; second tergite smooth basally or nearly so and with a pair of basal depressions; malar suture absent; dorsope obsolescent; notauli finely crenulate; antenna with 22-27 segments and about 1.2 times as long as fore wing; medio-posterior depression of mesoscutum large; vein 2-SR of fore wing about twice as long as vein r; Australia ..... ***A. graculis*** (Fischer, 1988)

Ademoneuron yasirae spec. nov.
(figs 41-52)

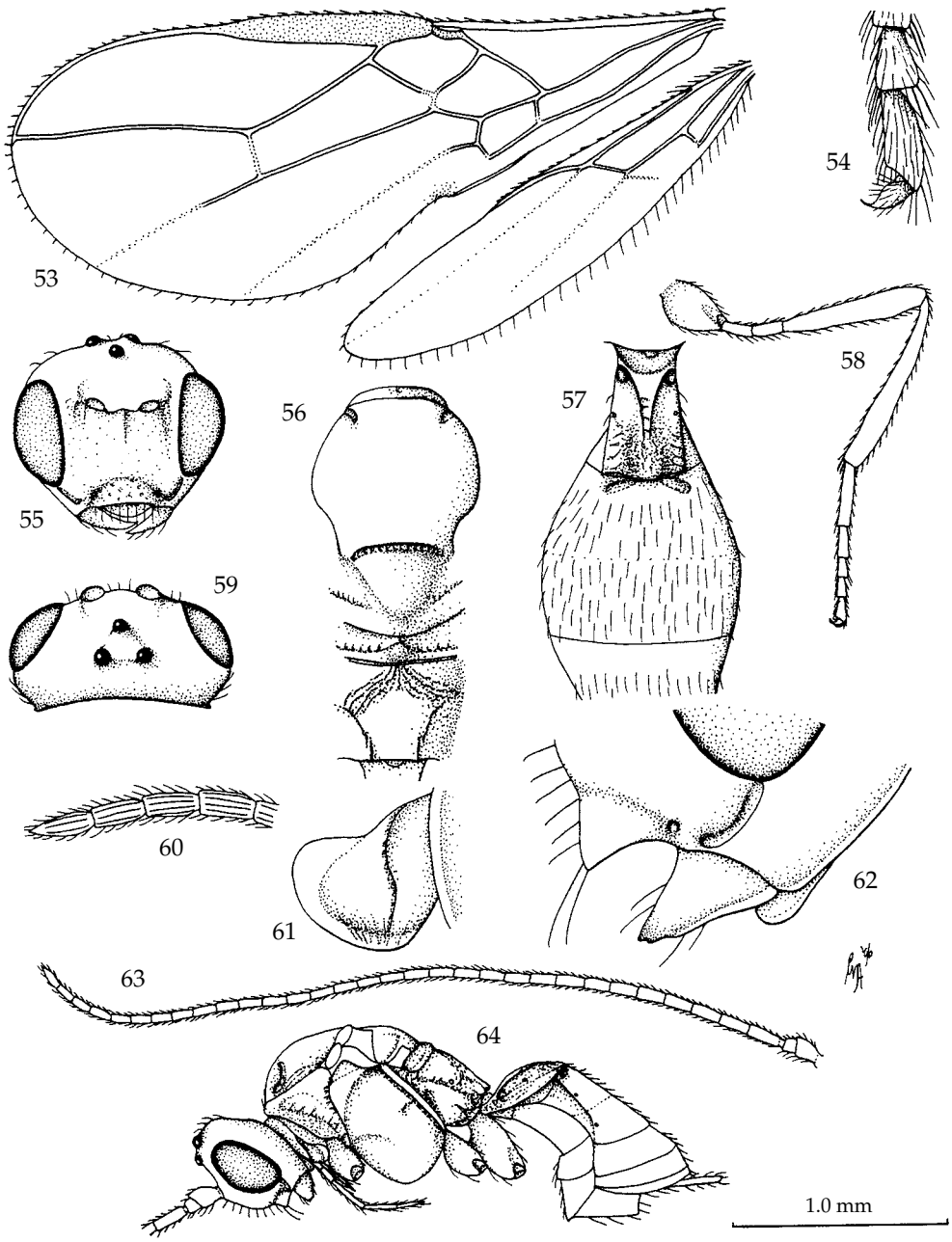
Material.— Holotype, ♂ (RMNH), "Indonesia: S Halmahera, between Payahe & Gita Woda, Mal. trap 4, c 20 m, 17.ii-17.iii.1995, C. v. Achterberg, R. de Vries & Y. Yasir, RMNH'95".

Holotype, ♂, length of body 2.0 mm and of fore wing 1.9 mm.

Head.— Antenna with 33 segments, third antennal segment 1.2 times fourth segment, length of third, fourth and penultimate segments 4.3, 3.5 and 2.3 times their



Figs 41-52, *Ademoneuron yasirae* spec. nov., ♂, holotype. 41, wings; 42, hind leg; 43, head, anterior aspect; 44, head, dorsal aspect; 45, antenna; 46, hind tarsus, inner aspect; 47, first-third metasomal tergites, dorsal aspect; 48, mesosoma, dorsal aspect; 49, base of antenna; 50, apex of antenna; 51, posterior half of mesosternum, ventral aspect; 52, habitus, lateral aspect. 41, 42, 45, 52: 1.0 × scale-line; 43, 44, 47, 48, 51: 1.5 ×; 46, 49, 50: 2.5 ×.



Figs 53-64, A*tormus victus* (Haliday), ♀, Ireland, Glenn of the Downes. 53, wings; 54, outer hind claw, outer aspect; 55, head, anterior aspect; 56, mesosoma, dorsal aspect; 57, first-third metasomal tergites, dorsal aspect; 58, hind leg; 59, head, dorsal aspect; 60, apex of antenna; 61, propleuron, ventral aspect; 62, mandible and malar space, lateral aspect; 63, antenna; 64, habitus, lateral aspect. 53, 58, 63, 64: 1.0 × scale-line; 54, 61, 62: 4.4 ×; 55-57, 59: 1.4 ×; 60: 2.5 ×

width, respectively (figs 45, 49, 50); length of maxillary palp 1.4 times height of head; length of eye in dorsal view 2.4 times temple (fig. 44); OOL:diameter of ocellus:POL = 6:3:5; length of malar space 3.4 times basal width of mandible; face largely smooth with some micro-sculpture submedially and laterally; clypeus medium sized and weakly convex, largely smooth; frons and vertex largely smooth; stemmaticum with a median groove (fig. 44); hypoclypeal depression about 0.4 times as wide as face (fig. 43); mandible slightly twisted apically and with a ventral lamella.

Mesosoma.— Length of mesosoma 1.4 times its height; pronope absent; pronotum anteriorly subvertical (fig. 52); side of pronotum largely smooth, with a few short crenulae anteriorly and postero-ventrally; mesopleuron largely smooth, with precoxal sulcus nearly complete, wide and smooth anteriorly, narrowed and crenulate posteriorly (fig. 52); metapleuron smooth and depressed anteriorly, medially and posteriorly reticulate; notauli nearly complete, mainly smooth, wide anteriorly and narrow posteriorly (fig. 48); mesoscutum smooth, largely glabrous, and medio-posterior depression shallow and round (fig. 48); scutellar sulcus deep and wide, with one carina (fig. 48); scutellum flat and smooth; surface of propodeum coarsely areolate, with a long median carina, posteriorly without a medial areola (fig. 48).

Wings.— Fore wing: r issued from middle of pterostigma, short and narrow, and much shorter than width of pterostigma (fig. 41); r:3-SR:SR1 = 5:33:82; 1-CU1:2-CU1 = 1:12; 2-SR:3-SR:r-m = 19:33:10; m-cu shortly antefurcal and slightly converging to 1-M posteriorly; cu-a short and first subdiscal cell slender (fig. 41); CU1b complete, about as long as vein 3-CU1 (fig. 41). Hind wing: m-cu absent (fig. 41); M+CU:1-M = 15:11.

Legs.— Hind coxa and femur smooth; tarsal claws simple, setose with apical tooth gradually bent (fig. 46); fourth segment of hind tarsus longer than wide (fig. 46); length of femur, tibia and basitarsus 3.3, 10.6 and 5.3 times their width, respectively; hind tibial spurs 0.1 and 0.2 times as long as hind basitarsus.

Metasoma.— Length of first tergite 1.3 times its apical width, its surface coarsely longitudinally striate medially, with some fine sculpture between striae, laterally smooth but with some micro-sculpture (fig. 47), its dorsal carinae remain separate and extending up to 0.7 of tergite, dorsope medium-sized (fig. 47); second tergite longitudinally striate medio-basally and 1.1 times as long as third tergite medially.

Colour.— Black; palpi and trochanters whitish; antenna, tegulae, coxae, femora basally, small subbasal patch and apico-dorsal patch of hind tibia, telotarsi, hind tarsus largely, metasoma ventrally and apical half of metasoma dorsally dark brown; femora largely, pterostigma and veins brown; remainder of legs brownish-yellow; wing membrane slightly infuscate.

Notes.— It is a real pleasure to name this species after one of its collectors, the entomologist and counterpart Mrs Ida Yasir SSi (Makassar).

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