

# Six new species of the *Aleiodes dispar* group (Hymenoptera: Braconidae: Rogadinae)

C. van Achterberg & A.M. Penteado-Dias

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C. van Achterberg, Afdeling Entomologie (Hymenoptera), Nationaal Natuurhistorisch Museum, Postbus 9517, 2300 RA Leiden, The Netherlands.

A.M. Penteado-Dias, Federal University of São Carlos, Dept. of Ecology and Evolutionary Biology, Caixa Postal. 676, 13560 São Carlos, S.P., Brazil.

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Six new species from South America (Brazil, Peru, Ecuador, Costa Rica) and Southeast Asia (Indonesia), of which the males have metasomal depressions and belonging to the *Aleiodes dispar* group, are described and illustrated. A key to the *Aleiodes* species with males possessing metasomal depressions is added.

## Introduction

Since 1941 (when the Palaearctic species *Aleiodes excavatus* (Telenga) was described) it is known that males of the genus *Aleiodes* Wesmael, 1838 (Braconidae: Rogadinae Foerster, 1862) may have peculiar depressions on the second and third metasomal tergites, which are absent in females (van Achterberg, 1985). Owing to the kindness of Drs Scott Shaw (Laramie, Wyoming, U.S.A.) and Lars Huggert (Dalby, Sweden) the senior author could examine several new species from South America. One species was collected by the senior author in Indonesia. The junior author found an additional species in Brazil. Six new species can now be added to the single species known having such aberrant males. Not all species of the *Aleiodes dispar* group have such males, and both sexes of species belonging to the group can be recognized as follows: vein r of fore wing comparatively long (at least 0.7 times vein 3-SR of fore wing), precoxal sulcus present (at least medially, and distinctly sculptured) and its surroundings largely smooth and shiny, propodeum coarsely reticulate-rugose and flattened, parallel-sided, hind trochantellus elongate (figs 13, 15, 31, 33), hypoclypeal depression small and ventral rim of clypeus not differentiated, ventrally clypeus gradually merging into hypoclypeal depression (figs 5, 30, 35), marginal cell of hind wing parallel-sided, and mesoscutum coarsely and densely (vermiculate-)rugose.

The biology of the new species is unknown; the sparse data available on the biology of the *Aleiodes dispar* group indicate that they are parasites of lepidopterous larvae living in low vegetation. Probably the host lives in rather open type of forest since specimens are collected in such kind of a habitat. For instance, *Aleiodes yasirae* spec. nov. was found to be common in such lowland rainforest in Mangole (Sula Islands, Indonesia). For the identification of the subfamily Rogadinae, see van Achterberg (1990, 1993), of the genus *Aleiodes*, see van Achterberg (1991), and for the terminology used in this paper, see van Achterberg (1988, 1993).

**Key to species of the *Aleiodes dispar* group with males possessing metasomal depressions**

1. Posterior quarter of fourth metasomal tergite of ♂ ♀ smooth and usually largely retracted below third tergite (except of *A. elliptidepressus*, which has tergite partly sculptured, completely smooth in other species); depression of third metasomal tergite of ♂ without median carina (figs 4, 7, 23, 46-48), depression of second tergite narrow apically and not touching broadly either posterior margin of tergite or depression of third tergite (figs 4, 7, 14, 20, 23); hind basitarsus very slender, 9.5-12 times its width (figs 3, 9, 15, 18); Neotropical ..... 2
  - Fourth tergite of ♂ completely and coarsely sculptured, not retracted (figs 29, 37), of ♀ smooth, but only partly retracted below third tergite; depression of third tergite of ♂ with median carina (figs 29, 37), depression of second tergite wide apically and touching broadly posterior margin of tergite and depression of third tergite (figs 29, 37); hind basitarsus moderately slender, 6-8 times its width (figs 31, 33); Old World ..... 6
2. Depression of second metasomal tergite of ♂ without median carina and slender ovoid (figs 7, 14, 20); second submarginal cell of fore wing slender (figs 10, 12, 17), but may be robust (fig. 22); eyes gradually emarginate (cf. fig. 30); first tergite coarsely rugose laterally, usually more than medially; pterostigma evenly rather dark brown; face transversely rugose; fourth tergite of ♂ partly retracted and smooth; hind coxa densely transversely striate dorsally (fig. 8); hind tarsus infuscate or largely dark brown; antescutal depression variable (figs 11, 21, 26) ..... 3
  - Depression of second tergites of ♂ with (weak) median carina and elongate elliptical (figs 4, 46-48); second submarginal cell of fore wing robust (fig. 1); eyes distinctly notched (fig. 5); first tergite nearly similarly rugose laterally as dorsally; base of pterostigma yellowish; face coriaceous; fourth tergite of ♂ not retracted and partly (superficially) sculptured; hind coxa without distinct striae, only rugose dorsally (fig. 8); hind tarsus yellowish-brown; antescutal depression absent or nearly so (figs 11, 21, 26) ..... *A. elliptidepressus* spec. nov.
3. Median carina of second tergite of ♂ short, 0.2-0.4 times length of depression (figs 14, 20, 23); head (except stemmaticum) largely yellowish-brown dorsally; mesoscutum anteriorly distinctly higher than pronotum (figs 16, 21, 26); side of pronotum largely dark brown or infuscate, paler parts not strongly contrasting with darker parts ..... 4
  - Median carina of second tergite of ♂ medium-sized, about 0.6 times length of depression (fig. 7); head black dorsally; mesoscutum low anteriorly, nearly at same level as pronotum anteriorly (fig. 11); side of pronotum blackish anteriorly and contrasting with posterior yellowish-brown part ..... *A. longipendulatus* spec. nov.
4. Length of malar space of ♂ 1.1-1.2 times basal width of mandible, and 0.30-0.35 times height of eye; first-third tergites dark brown or partly infuscate; rugosity of first tergite variable (figs 20, 23) ..... 5
  - Length of malar space of ♂ about 1.7 times basal width of mandible, and 0.45 times height of eye; first-third metasomal tergites yellowish-brown; first tergite laterally more coarsely rugose (costate) than medially (fig. 14) ..... *A. rugosicostalis* spec. nov.

5. Dorsal face of pronotum in lateral view nearly horizontal (fig. 21); first metasomal tergite evenly coarsely rugose and subparallel-sided (fig. 20); first-third tergites dark brown; 1-CU1:2-CU1 = 1: 22; vein 3-SR of fore wing nearly twice as long as vein 2-SR (fig. 17) ..... *A. brevipendulatus* spec. nov.
- Dorsal face of pronotum in lateral view distinctly protruding (fig. 26); first tergite more coarsely rugose laterally than medially and somewhat widened posteriorly (fig. 23); first-third tergites partly infusate; 1-CU1:2-CU1 = 1: 8-12; vein 3-SR of fore wing 1.0-1.3 times as long as vein 2-SR (fig. 22) ..... *A. pedanochora* spec. nov.
6. Hind trochantellus slender, its maximum length 3.5-4.2 times its width (figs 41, 42, 44); vein 3-SR of fore wing longer vein r-m (figs 36, 43); vein r of fore wing 0.6-1.1 times vein 3-SR (figs 36, 43); antenna of ♀ without whitish band; length of antenna 1.7-1.8 times fore wing ..... 7
- Hind trochantellus comparatively robust, its maximum length 2.4-2.8 times its width (fig. 31); vein 3-SR of fore wing about as long as vein r-m or shorter (fig. 29); vein r of fore wing 1.0-1.3 times vein 3-SR (fig. 29); antenna of ♀ with whitish band (fig. 28); length of antenna 1.5-1.6 times fore wing; Palaearctic ..... *A. excavatus* (Telenga)
- Note. If third metasomal tergite is smooth posteriorly and comparatively convex (♀; fig. 34), cf. *A. fasciatipennis* (Ashmead, 1906) from Japan, of which the male is unknown.
7. Hind femur largely (except its base) infusate; vein r of fore wing about as long as vein 3-SR (fig. 43); propodeum dark brown; mesosternum superficially rugose; hind basitarsus of ♀ slender, about 8 times its width (fig. 44; ♂ unknown); length of maxillary palp about 1.4 times height of head; Japan ..... *A. takasuae* van Achterberg
- Hind femur yellowish; vein r of fore wing 0.6-0.7 times vein 3-SR (fig. 36); propodeum yellowish-brown; mesosternum largely smooth, only superficially punctate; hind basitarsus of ♀ less slender, 6-7 times its width (fig. 39), and of ♂ 7-8 times (fig. 38); length of maxillary palp 1.6-1.8 times height of head; Indonesia (Mangole) ..... *A. yasirae* spec. nov.

### Descriptions

*Aleiodes brevipendulatus* van Achterberg, spec. nov.  
(figs 17-21)

Material.— Holotype, ♂ (RMNH), "Ecuador: Pichincha, Puerto Quito, 2.iii.1983, L. Huggert, RMNH'84".

Holotype, ♂, length of body 4.2 mm, of fore wing 3.1 mm.

Head.— Antenna incomplete, remaining segments 37, length of antenna more than 1.5 times fore wing; length of maxillary palp 1.4 times height of head; occipital carina complete and rather strong; frons and vertex transversely rugose; length of eye in dorsal view 2.2 times temple; OOL:diameter of ocellus:POL = 4:5:5; face transversely rugose; clypeus punctate dorsally and smooth ventrally, situated near lower level of eyes; width of hypoclypeal depression 0.3 times minimum width of face; length of malar space 1.1 times basal width of mandible, and 0.35 times height of eye.

Mesosoma.— Length of mesosoma twice its height; antescutal depression shal-

low, nearly absent, dorsal face of pronotum in lateral view largely horizontal (fig. 21); pronotum elongate (fig. 21); mesoscutum distinctly higher than pronotum anteriorly (fig. 21); precoxal sulcus complete, distinctly crenulate; mesopleuron near precoxal sulcus smooth; mesosternum moderately punctate; mesoscutum coarsely and densely rugose; scutellum superficially punctate-rugose; surface of propodeum coarsely reticulate, with median carina distinct.

Wings.— Fore wing: r:3-SR = 7:10; 1-CU1 horizontal, 1-CU1:2-CU1 = 1:22; r-m distinctly shorter than 3-SR (fig. 17); cu-a inclivous. Hind wing: 2-SC+R shortly transverse.

Legs.— Hind coxa striate dorsally, rugose laterally; maximum length of hind trochantellus 4.2 times its width (fig. 18); length of femur, tibia and basitarsus of hind leg 5.3, 14.0, and 10.3 times their width, respectively; length of hind tibial spurs 0.18 and 0.22 times hind basitarsus.

Metasoma.— Length of first tergite 1.6 times its apical width, its surface very coarsely reticulate, with complete strong median carina; second tergite with small triangular medio-basal area, connected to short median carina (fig. 20), and with slender elliptical depression without median carina (fig. 20); depression of third tergite nearly triangular and only in basal half of tergite (fig. 20); second and third tergites coarsely and densely rugose; second suture deep anteriorly, because second tergite is elevated above third tergite; fourth tergite smooth and partly retracted.

Colour.— Yellowish-brown; palpi pale yellowish; stemmaticum, first and second tergites largely, hind tibia (except basally) and hind tarsus, dark brown; hind femur apico-dorsally, pronotum, mesoscutum, propodeum, face medially, and frons medially, more or less infuscate; pterostigma and veins brown, partly somewhat infuscate; wing membrane slightly infuscate.

Note.— Three females from Panama (RMNH) resemble *A. brevipendulatus*, but have length of malar space 1.6 times basal width of mandible and 0.5 times height of eyes; and the wing membrane distinctly infuscate, but the latter may be subject of clinal variation. The comparatively small eyes are also present in *A. rugosicostalis*, but the Panamese specimens have the first metasomal tergite evenly rugose and more convex, and are much darker.

*Aleiodes depanochora* van Achterberg, spec. nov.  
(figs 22-26)

Material.— Holotype, ♂ (RMNH), "Peru: Huanuco, Tingo Maria, Cueva de las Pavas, 30.i.1984, L. Huggert, RMNH'84". Paratype, ♂ (RMNH), topotypic, same date.

Holotype, ♂, length of body 4.2 mm, of fore wing 3.5 mm.

Head.— Antenna incomplete, remaining segments 43, length of antenna more than 1.6 times fore wing; length of maxillary palp 1.5 times height of head; occipital carina complete and rather strong; frons and vertex transversely rugose; length of eye in dorsal view 2.7 times temple; OOL:diameter of ocellus:POL = 4:5:4; face superficially transversely rugose; clypeus punctate and microsculptured dorsally and smooth ventrally, situated near lower level of eyes; width of hypoclypeal depression 0.3 times minimum width of face; length of malar space 1.2 times basal width of mandible, and 0.35 times height of eye.

Mesosoma.— Length of mesosoma 1.9 times its height; antescutal depression distinct, dorsal face of pronotum in lateral view strongly protruding, keeled (fig. 26); pronotum elongate (fig. 26); mesoscutum distinctly higher than pronotum anteriorly (fig. 26); precoxal sulcus long, absent in posterior quarter of mesopleuron, distinctly crenulate; mesopleuron near precoxal sulcus largely smooth; mesosternum sparsely punctulate; mesoscutum coarsely and densely vermiculate-rugose; scutellum superficially punctate-rugose, triangularly protruding medio-anteriorly; surface of propodeum very coarsely reticulate, with median carina obsolescent.

Wings.— Fore wing: r:3-SR = 9:10; 1-CU1 horizontal, 1-CU1:2-CU1 = 1:8; r-m about as long as 3-SR (fig. 22); cu-a inclivous. Hind wing: 2-SC+R subquadrate.

Legs.— Hind coxa striate dorsally, superficially rugose laterally; maximum length of hind trochantellus 3.8 times its width (fig. 25); length of femur, tibia and basitarsus of hind leg 5.6, 15.0, and 10.2 times their width, respectively; length of hind tibial spurs 0.22 and 0.25 times hind basitarsus.

Metasoma.— Length of first tergite 1.7 times its apical width, its surface coarsely reticulate and laterally stronger sculptured and costate-rugose, with complete strong median carina and basally with pair of wide lamelliform flanges; second tergite with small triangular medio-basal area, connected to short median carina 0.4 times length of depression (fig. 23), and with deep elliptical (droplet-like) depression without median carina (fig. 23); depression of third tergite nearly triangular and only in basal half of tergite (fig. 23); second and third tergites coarsely and densely rugose (except apex of third tergite); second suture deep; fourth tergite smooth and partly retracted.

Colour.— Yellowish-brown; palpi and tegulae pale yellowish; humeral plate, scapus, and pedicellus, largely brown; stemmaticum, second-third tergites largely, telotarsi, hind tibia (except basally), hind tarsus, hind femur apico-dorsally, more or less infuscate; pterostigma and veins brown, partly somewhat infuscate; wing membrane rather infuscate.

Variation.— Paratype is very similar to holotype: antenna with 55 segments, 1.9 times fore wing; length of fore wing 3.6 mm; 1-CU1:2-CU1 = 1:12; length of first tergite 1.4 times its apical width; median carina of second tergite 0.2 times length of depression; vein r 0.7 times vein 3-SR of fore wing, and 1.3 times vein 2-SR; vein r-m of fore wing about 0.7 times vein 3-SR.

*Aleiodes elliptidepressus* Pentead-Dias & van Achterberg, spec. nov.  
(figs 1-6, 46-48)

Material.— Holotype, ♂ (DCBU), "Brazil, S.P., Rio Mogi Guaçu, Luís Antônio, 27.iii.1987, L.A. Joaquim". Paratype (4 ♂♂): 2 ♂♂ (RMNH, DCBU), topotypic, same date, light trap; 2 ♂♂ (RMNH, DCBU), topotypic, but 18.ii.1988 and 2.v.1991, light trap.

Holotype, ♂, length of body 6.0 mm, of fore wing 4.4 mm.

Head.— Antenna segments 52, length of antenna 1.8 times fore wing, its penultimate segment 3.0 times its width; length of maxillary palp 1.5 times height of head; occipital carina complete and rather strong; frons and vertex irregularly rugose; length of eye in dorsal view 3.4 times temple; eyes much deeper emarginate than other species of this group (fig. 5); OOL:diameter of ocellus:POL = 5:10:8; face coriaceous; clypeus rather superficially punctate dorsally, situated near lower level of

eyes; width of hypoclypeal depression 0.5 times minimum width of face; length of malar space 1.0 times basal width of mandible, and 0.25 times height of eye.

**Mesosoma.**— Length of mesosoma twice its height; antescutal depression absent, posterior half of dorsal face of pronotum in lateral view nearly horizontal (fig. 6); pronotum moderately long, convex dorsally, not keeled (fig. 6); mesoscutum distinctly higher than pronotum anteriorly (fig. 6); precoxal sulcus only medially present, superficially rugose; mesopleuron near precoxal sulcus largely smooth, except for anterior rugosity; mesosternum sparsely punctate; mesoscutum finely and densely rugose-vermiculate; scutellum punctate; surface of propodeum rather coarsely rugose (rugae rather sparse), with median carina rather distinct.

**Wings.**— Fore wing: r:3-SR = 9:10; 1-CU1 horizontal, 1-CU1:2-CU1 = 1:5; r-m distinctly shorter than 3-SR (fig. 1); cu-a slightly inclivous. Hind wing: 2-SC+R subquadrate.

**Legs.**— Hind coxa superficially rugose, without distinct dorsal striae; maximum length of hind trochantellus 4.4 times its width (fig. 3); length of femur, tibia and basitarsus of hind leg 4.8, 15.2, and 11.3 times their width, respectively; length of hind tibial spurs 0.18 and 0.22 times hind basitarsus.

**Metasoma.**— Length of first tergite 1.5 times its apical width, tergite distinctly widened posteriorly, its surface coarsely longitudinally rugose, with complete strong median carina; second tergite with medio-basal area, without median carina outside depression (fig. 4), and with shallow (compared to other species of the group), elliptical depression with weak median carina, and depression reaching posterior margin of tergite (fig. 4); depression of third tergite similar to depression of second tergite but without median carina (fig. 4); second and third tergites longitudinally rugose; second suture rather shallow; fourth tergite largely smooth and not retracted.

**Colour.**— Yellowish-brown; stemmaticum blackish; palpi ivory; telotarsi, apex of hind trochantellus, base of hind and middle femora narrowly dark brown; antennal segments (except of dark brown basal quarter of antenna and pedicellus largely pale yellowish) bicoloured, pale brown medially and remainder dark brown; basal half of pterostigma yellowish and remainder of pterostigma dark brown; veins mostly rather dark brown; wing membrane subhyaline.

**Variation.**— Length of fore wing 3.6-4.4 mm, of body 4.7-6.0 mm; antennal segments 48(1), 49(1), 51(1), 52(1); depression of second tergite of most paratypes remains removed from posterior margin of tergite (figs 46-48); usually only basal third to fifth of pterostigma yellowish; median carina of depression of second tergite may be reduced, in front of depression a short median carina may be present; fourth tergite may be largely, and rather coarsely, sculptured (except posteriorly), but usually superficially sculptured or largely smooth.

*Aleiodes excavatus* (Telenga, 1941)  
(figs 29-31)

*Heterogamus excavatus* Telenga, 1941: 132, 133, 402, fig. 53; van Achterberg, 1975: 15; Shenefelt, 1975: 1201.  
*Aleiodes excavatus*; van Achterberg, 1985: 184-185, figs 7-15.  
*Heterogamus (Jirunia) farmakena* Malác, 1941: 137-139, figs 1-7.

Known from England to Kazakhstan; easily recognizable because of the aberrant colour of antenna of female (fig. 28).

*Aleiodes longipendulatus* van Achterberg, spec. nov.  
(figs 7-11)

Material.— Holotype, ♂ (RMSEL), "Costa Rica, Guanac, Arenales, W side Volcán Cacao, 900 m, 1988-1989".

Holotype, ♂, length of body 7.8 mm, of fore wing 4.7 mm.

Head.— Antenna segments 66, antenna nearly twice as long as fore wing, its penultimate segment 2.1 times its width; length of maxillary palp 1.4 times height of head; occipital carina complete and rather strong; frons and vertex very coarsely (mainly transversely) rugose; length of eye in dorsal view 2.1 times temple; OOL: diameter of ocellus:POL = 5:5:3; face transversely punctate-rugose; clypeus densely punctate dorsally, smooth ventrally, situated near lower level of eyes; width of hypoclypeal depression 0.3 times minimum width of face; length of malar space 1.6 times basal width of mandible, and nearly 0.5 times height of eye.

Mesosoma.— Length of mesosoma 1.9 times its height; antescutal depression present, dorsal face of pronotum in lateral view weakly convex (fig. 11); pronotum long, keeled medio-dorsally (fig. 11); mesoscutum nearly as low as pronotum anteriorly (fig. 11); precoxal sulcus shallowly impressed, crenulate, but apical third smooth; mesopleuron near precoxal sulcus largely smooth, sparsely punctulate; mesosternum largely smooth; mesoscutum coarsely and densely vermiculate-rugose; scutellum granulate and superficially punctate; surface of propodeum very coarsely reticulate-rugose.

Wings.— Fore wing: r:3-SR = 8:10; 1-CU1 horizontal, 1-CU1:2-CU1 = 1:21; r-m distinctly shorter than 3-SR (fig. 10); cu-a vertical. Hind wing: 2-SC+R subquadrate.

Legs.— Hind coxa coarsely and obliquely striate dorsally, punctate-rugose laterally; maximum length of hind trochantellus 4.3 times its width (fig. 9); length of femur, tibia and basitarsus of hind leg 6.2, 16.4, and 11.0 times their width, respectively; length of hind tibial spurs 0.1 and 0.2 times hind basitarsus.

Metasoma.— Length of first tergite 1.7 times its apical width, tergite parallel-sided, posterior third with median carina, its surface coarsely reticulate-rugose; second tergite with distinct medio-basal area, connected to rather long (0.6 times length of depression) median carina (fig. 7), and with deep, rather small and elliptical depression without median carina, and not reaching posterior margin of tergite (fig. 7); depression of third tergite similar, small (fig. 7); second and third tergites very densely and finely rugose; second suture rather deep anteriorly; fourth tergite smooth and largely retracted.

Colour.— Pale yellowish-brown; head (except face largely, clypeus and malar space), antenna, anterior half of pronotum, first-third tergites blackish-brown; propodeum largely dark brown; remainder of mesosoma dorsally yellowish-brown; legs yellowish, but femora (apical dorsal 0.3-0.5), tibiae (except basally) and tarsi dark brown; pterostigma and veins dark brown; wing membrane subhyaline.

*Aleiodes rugosicostalis* van Achterberg, spec. nov.  
(figs 12-16)

Material.— Holotype, ♂ (RMSEL), "Peru: Junin: San Rémon de Pangoa, 40 km SE Satipo, 750 meters, 2.iii.1972, R.T. & J.C. Schuh", "sweeping understory of high secondary forest".

Holotype, ♂, length of body 5.3 mm, of fore wing 4.3 mm.

Head.— Antenna incomplete, remaining segments 47, length of antenna more than 1.6 times fore wing; length of maxillary palp 1.6 times height of head; occipital carina complete and very strong; frons and vertex transversely rugose; length of eye in dorsal view 2.5 times temple; OOL:diameter of ocellus:POL = 4:5:5; face transversely rugose; clypeus largely smooth, situated near lower level of eyes; width of hypoclypeal depression 0.3 times minimum width of face; length of malar space 1.7 times basal width of mandible, and 0.45 times height of eye.

Mesosoma.— Length of mesosoma twice its height; antescutal depression present, dorsal face of pronotum in lateral view distinctly convex (fig. 16); pronotum long, keeled medio-dorsally (fig. 16); mesoscutum distinctly higher than pronotum anteriorly (fig. 16); precoxal sulcus nearly complete, crenulate; mesopleuron near precoxal sulcus and mesosternum smooth; mesoscutum coarsely and densely vermiculate-rugose; scutellum rugose-punctate; surface of propodeum very coarsely reticulate-rugose.

Wings.— Fore wing: r:3-SR = 8:10; 1-CU1 horizontal, 1-CU1:2-CU1 = 1:11; r-m distinctly shorter than 3-SR (fig. 12); cu-a about vertical. Hind wing: 2-SC+R subquadrate.

Legs.— Hind coxa striate dorsally, rugose laterally; maximum length of hind trochantellus 4.0 times its width (fig. 15); length of femur, tibia and basitarsus of hind leg 5.7, 16.5, and 10.7 times their width, respectively; length of hind tibial spurs 0.18 and 0.24 times hind basitarsus.

Metasoma.— Length of first tergite 1.5 times its apical width, tergite widened posteriorly, rather flat, with median carina, its surface very coarsely costate-rugose laterally, and coarsely rugose medially (fig. 14); second tergite with distinct medio-basal area, connected to short median carina (fig. 14), and with deep, medium-sized slender ovoid depression without median carina, and not reaching posterior margin of tergite (fig. 14); depression of third tergite similar, but smaller (fig. 14); second and third tergites densely and finely rugose; second suture rather deep anteriorly; fourth tergite smooth and largely retracted.

Colour.— Yellowish-brown; stemmaticum, and flagellum blackish; scapus and pedicellus partly infusate; hind tibia (except basally) and tarsus infusate; pterostigma and veins dark brown; wing membrane subhyaline.

*Aleiodes takasuae* van Achterberg, 1985  
(figs 43-45)

*Aleiodes takasuae* van Achterberg, 1985: 183-184.

Only known from holotype from Japan (Anegasaki, Miyako C., Iwate). The male is unknown, so it is uncertain if the male has metasomal depressions, but most likely it has because of the similarity of this species with *A. yasirae* spec. nov.

*Aleiodes yasirae* van Achterberg, spec. nov.  
(figs 36-42)

Material.— Holotype, ♂ (RMNH), "Indonesia: Sula Isl., Mangole, near Buya, Mal. trap 12, c 495 m, 12.x.-2.xi.1993, C. v. Achterberg, RMNH'93". Paratypes (1 ♂ + 8 ♀♀; RMNH, MZB): 1 ♂ + 7 ♀♀, topotypic, but Mal. trap 13, c 465 m, 13.x.-2.xi.1993; 1 ♀, id., but Mal. trap 14, c. 450 m.

Holotype, ♂, length of body 4.3 mm, of fore wing 3.1 mm.

Head.— Antenna segments 45, length of antenna 1.8 times fore wing, its penultimate segment 2.3 times its width; length of maxillary palp 1.8 times height of head; occipital carina complete and strong; frons and vertex coarsely transversely rugose; length of eye in dorsal view 3.7 times temple; OOL:diameter of ocellus:POL = 3:5:4; face and clypeus densely and finely transversely rugulose; clypeus situated near lower level of eyes; width of hypoclypeal depression 0.35 times minimum width of face; length of malar space equal to basal width of mandible, and 0.3 times height of eye.

Mesosoma.— Length of mesosoma 2.1 times its height; antescutal depression absent (fig. 40); pronotum moderately long, slightly convex medio-dorsally (fig. 40); mesoscutum distinctly higher than pronotum anteriorly (fig. 40); precoxal sulcus nearly complete, distinctly crenulate; mesopleuron near precoxal sulcus largely smooth; mesosternum superficially punctate; mesoscutum coarsely and densely rugose, posteriorly with some coarse longitudinal striae; scutellum coarsely punctate; surface of propodeum coarsely rugose, with median carina distinct.

Wings.— Fore wing: r:3-SR = 7:10; 1-CU1 subhorizontal, 1-CU1:2-CU1 = 3:16; r-m distinctly shorter than 3-SR (fig. 36); cu-a inclivous. Hind wing: 2-SC+R subquadrate.

Legs.— Hind coxa transversely striate dorsally, obliquely rugose laterally; maximum length of hind trochantellus 4.2 times its width (fig. 41); length of femur, tibia and basitarsus of hind leg 5.2, 16.0, and 7.6 times their width, respectively; length of hind tibial spurs 0.26 and 0.33 times hind basitarsus.

Metasoma.— Length of first tergite 1.4 times its apical width, tergite rather convex, with median carina, its surface densely and moderately coarsely rugose; second tergite with indistinct medio-basal area, and with deep, large ovoid depression with median carina, and broadly reaching posterior margin of tergite (fig. 37); depression of third tergite similar, large (fig. 37); second-fourth tergites densely and rather coarsely rugose; second suture deep; fourth tergite entirely exposed.

Colour.— Yellowish-brown; palpi white; stemmaticum black; flagellum, pedicellus basally, pronotum posteriorly (partly), mesopleuron antero-dorsally, metapleuron posteriorly, propodeum posteriorly, first-fourth tergites (except apex of fourth tergite) and telotarsi dark brown; fore and middle coxae, and tegulae pale yellowish; basal third of pterostigma yellowish; remainder of pterostigma and most veins rather dark brown; wing membrane slightly infuscate.

Variation.— Length of fore wing 2.8-3.1 mm; antennal segments of ♂ 45(1), of ♀ 45(1) or 46(5); length of maxillary palp 1.6-1.8 times height of head; length of vein r of fore wing 0.6-0.7 times vein 3-SR; maximum length of hind trochantellus 3.5-4.2 times its width; depression of third tergite of ♂ may be as large as of second tergite; fourth tergite of ♀ smooth and largely retracted; length of ovipositor sheath 0.09-0.12 times fore wing; basal 0.3-0.5 of pterostigma yellowish; metasoma of ♀ completely brown dorsally, without distinct infuscation.

Notes.— It is a real pleasure to name this species after the biologist Ms Ida Yasir (formerly UNHAS, Ujung Pandang), who accompanied the senior author during his trip to Mangole; her help and that of her father greatly facilitated the fieldwork on Mangole.

I have examined a ♂ from Sumatra (RMNH; "N Sumatra, Bivouac Two, Mt Bandahara, 3°44'N-97°43'E, 5-10.vii.1972, J. Krikken, no 24, ca 1430 m", "submontane

multistratal evergreen forest, at light") is very similar but has the second submarginal cell of fore wing comparatively robust, and length of the hind basitarsus is 9.0 times its width.

### Acknowledgements and abbreviations

We wish to thank Drs Lars Huggert (Dalby) and Scott Shaw (Laramie, Wyoming) for the gift or loan of specimens, and Mr T. Huddleston (London) for his comments on the first draft. DCBU stands for Department of Ecology and Evolutionary Biology, Federal University of São Carlos, São Carlos, São Paulo, RMSEL for Rocky Mountain Systematic Entomology Laboratory, University of Wyoming, Laramie, Wyoming, and RMNH for Nationaal Natuurhistorisch Museum, Leiden.

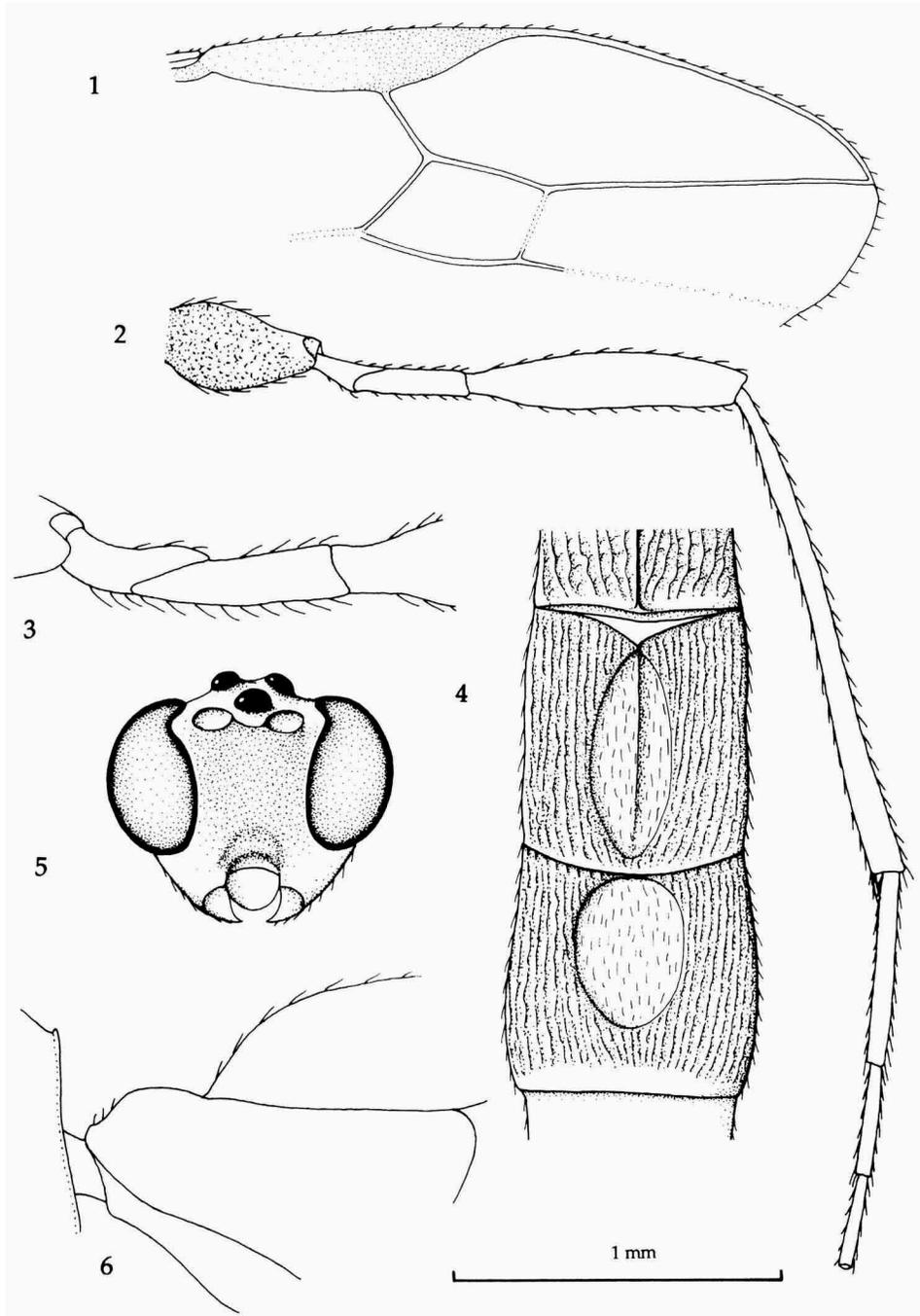
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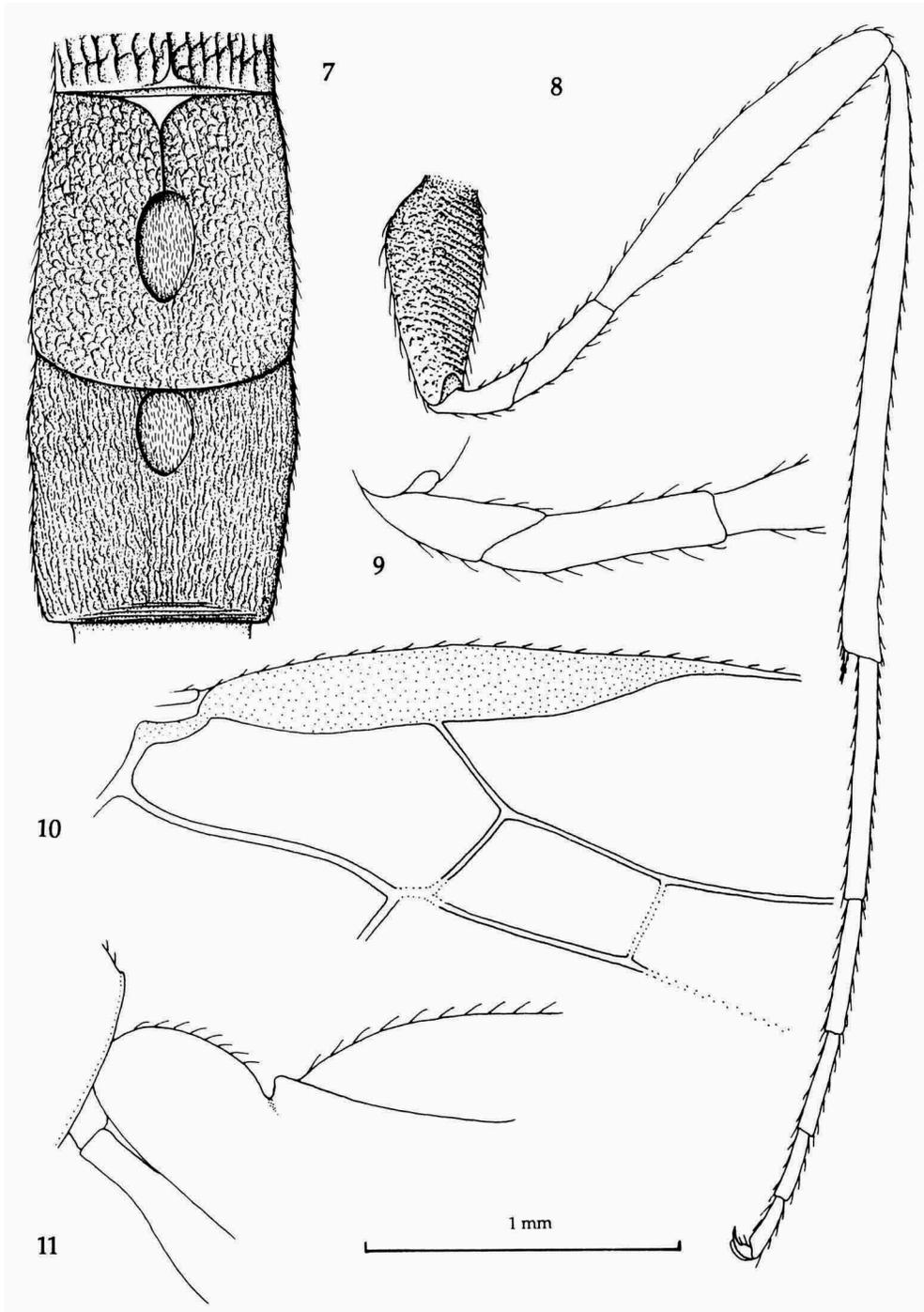
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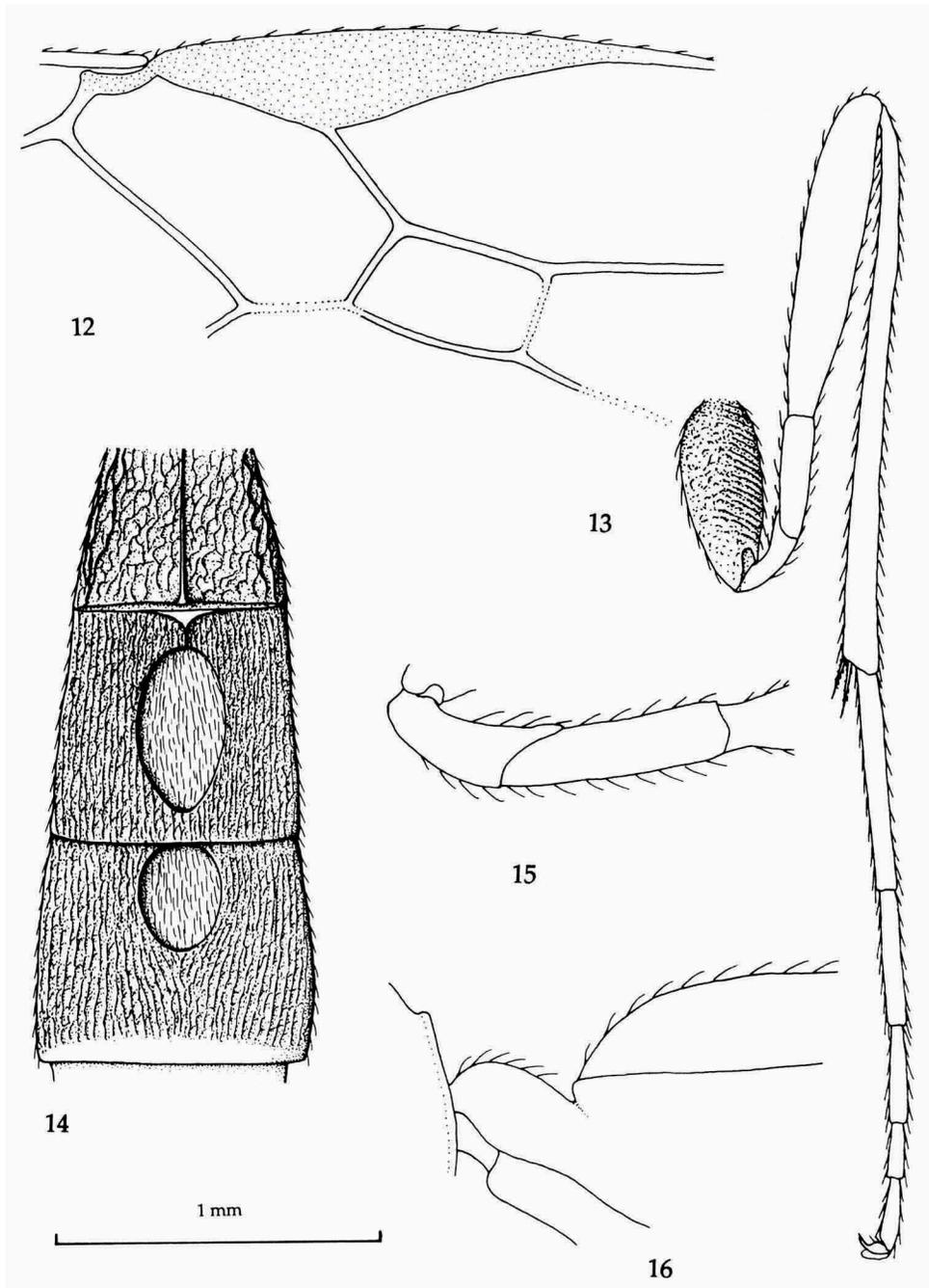
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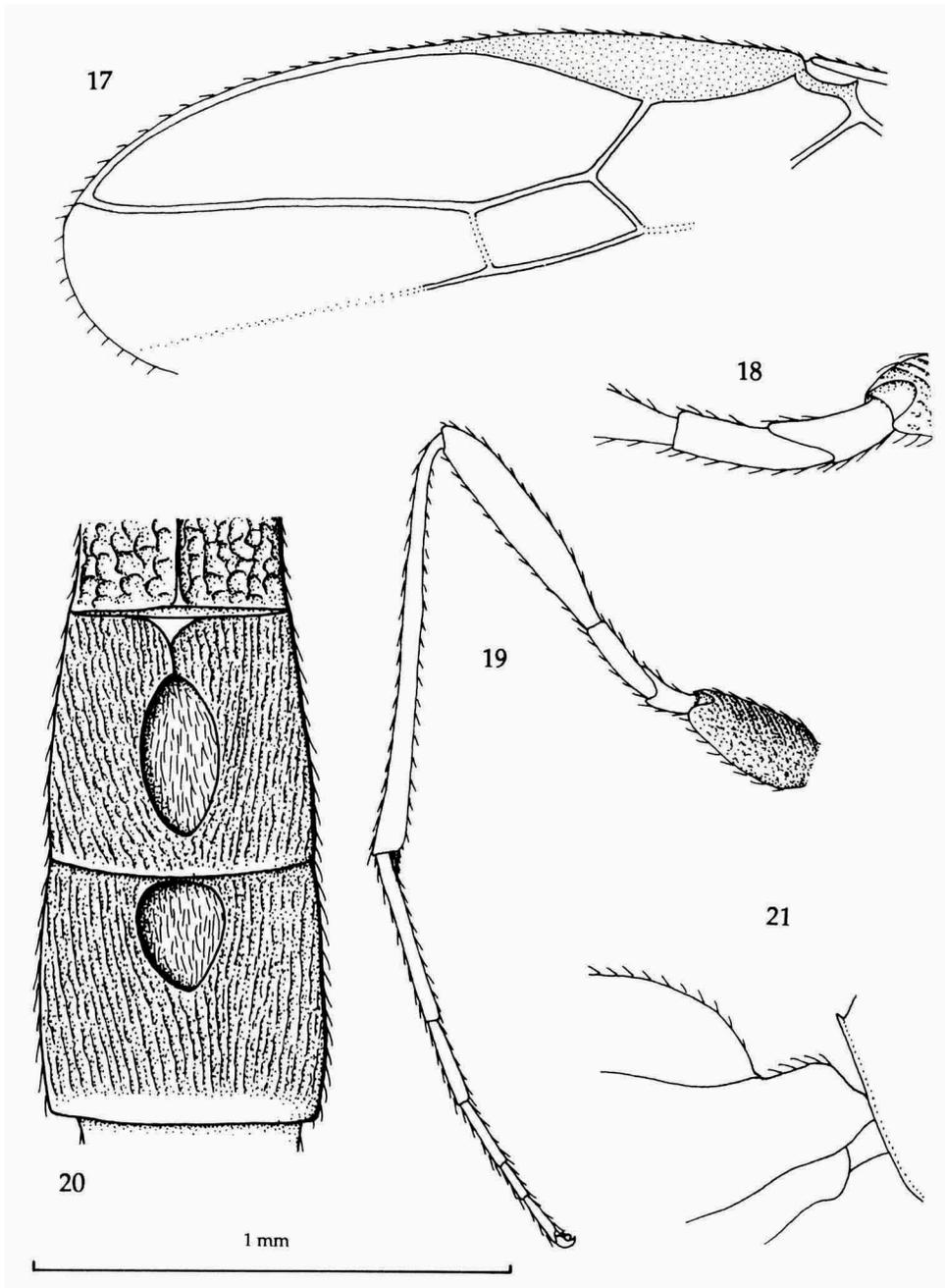
Figs 1-6, *Aleiodes elliptidepressus* spec. nov., ♂, holotype. 1, detail of antero-distal part of fore wing; 2, hind leg; 3, detail of hind trochantellus, lateral aspect; 4, second and third metasomal tergites, dorsal aspect; 5, head, frontal aspect; 6, pronotum, lateral aspect. 1, 4, 5: 1.0 × scale-line; 2: 0.7 ×; 3, 6: 1.4 ×.



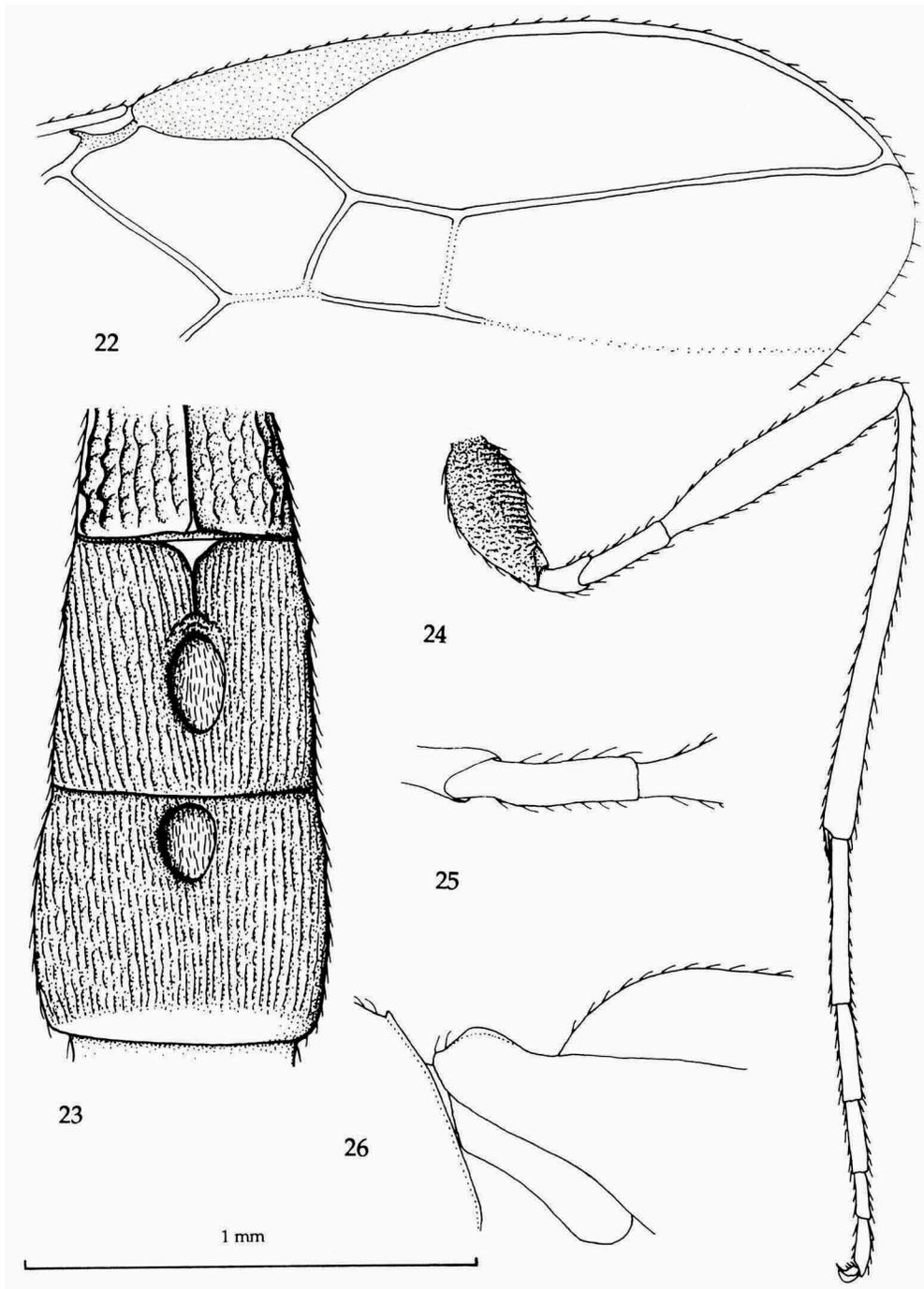
Figs 7-11, *Aleiodes longipendulatus* spec. nov., ♂, holotype. 7, second and third metasomal tergites, dorsal aspect; 8, hind leg; 9, detail of hind trochantellus, lateral aspect; 10, detail of antero-distal part of fore wing; 11, pronotum, lateral aspect. 7: 1.0 × scale-line; 8: 0.7 ×; 9-11: 1.4 ×.



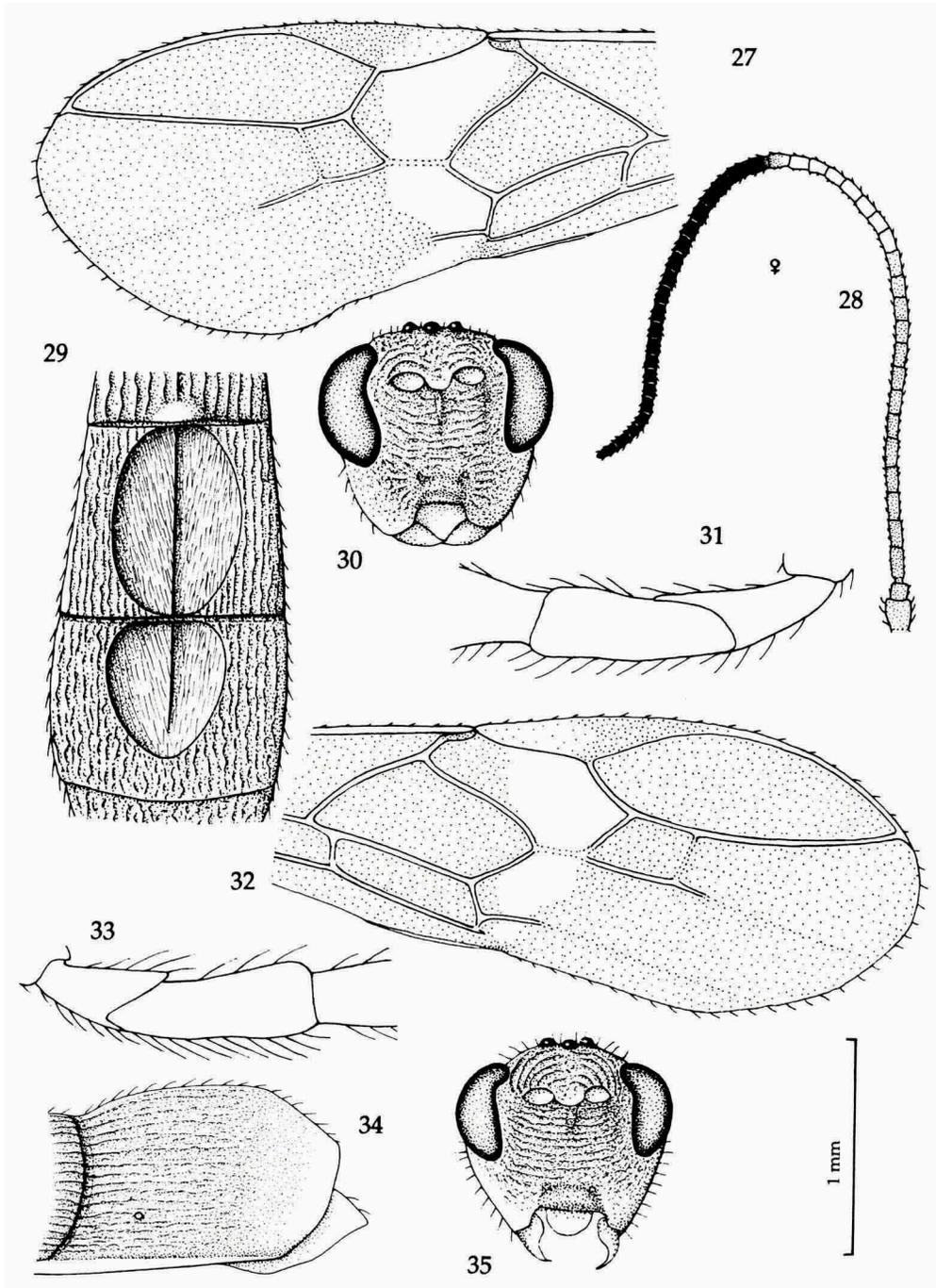
Figs 12-16, *Aleiodes rugosicostalis* spec. nov., ♂, holotype. 12, detail of antero-subdistal part of fore wing; 13, hind leg; 14, posterior half of first, second and third metasomal tergites, dorsal aspect; 15, detail of hind trochantellus, lateral aspect; 16, pronotum, lateral aspect. 12, 15, 16: 1.0 × scale-line; 13: 0.5 ×; 14: 0.7 ×.



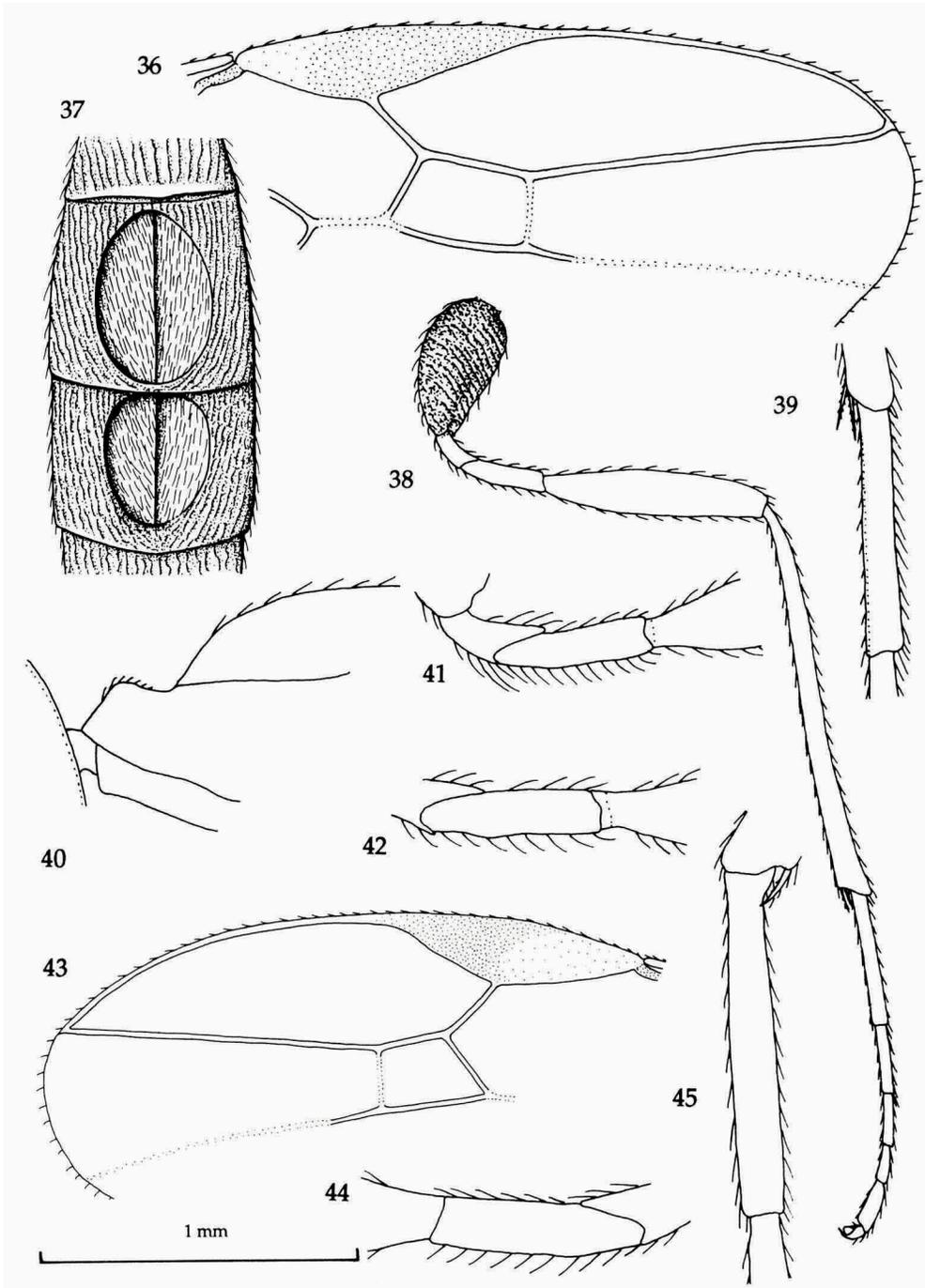
Figs 17-21, *Aleiodes brevipendulatus* spec. nov., ♂, holotype. 17, detail of antero-distal part of fore wing; 18, detail of hind trochantellus, lateral aspect; 19, hind leg; 20, second and third metasomal tergites, dorsal aspect; 21, pronotum, lateral aspect. 17, 18, 20, 21: 1.0 × scale-line; 19: 0.5 ×.



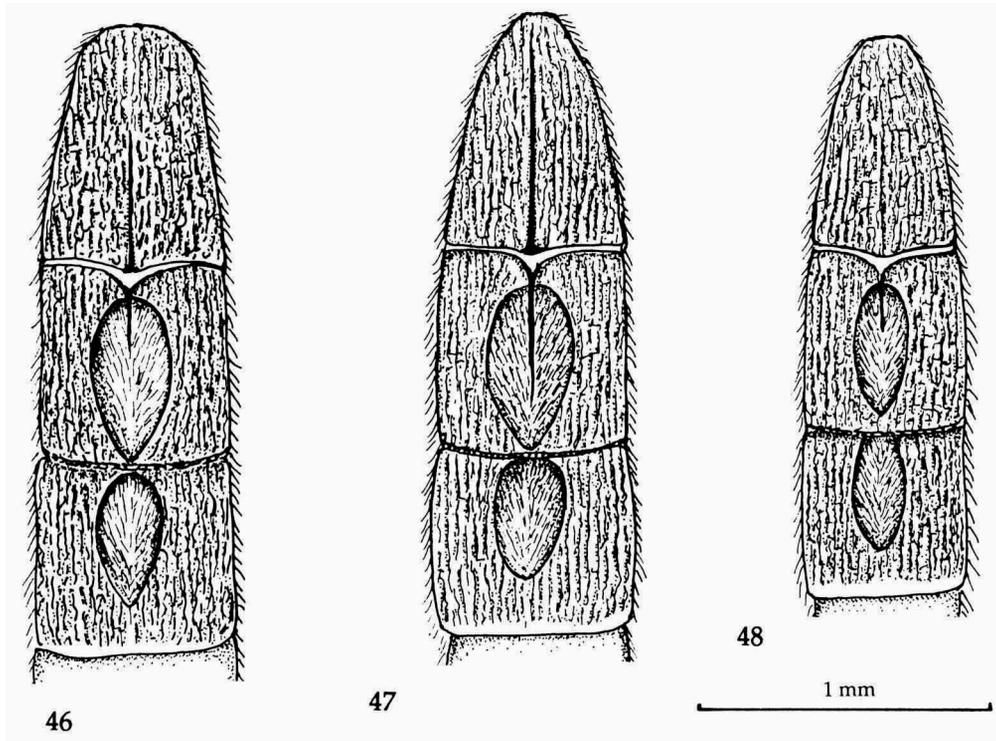
Figs 22-26, *Aleiodes depanochora* spec. nov., ♂, holotype. 22, detail of antero-distal part of fore wing; 23, second and third metasomal tergites, dorsal aspect; 24, hind leg; 25, detail of hind trochantellus, lateral aspect; 26, pronotum, lateral aspect. 22, 23, 25, 26: 1.0 × scale-line; 24: 0.5 ×.



Figs 27-31, *Aleiodes excavatus* (Telenga), ♀, (but 29 of ♂), Nunspeet, Netherlands; figs 32-35, *A. fasci-atipennis* (Ashmead), ♀, holotype. 27, 32, distal half of fore wing; 28, antenna; 29, second and third metasomal tergites, dorsal aspect; 30, 35, head, frontal aspect; 31, 33, detail of hind trochantellus, lateral aspect; 34, third tergite, lateral aspect. 27, 29, 30, 32, 35: 1.0 × scale-line; 28: 0.7 ×; 31, 33: 2.0 ×; 34: 1.4 ×.



Figs 36-42, *Aleiodes yasirae* spec. nov., ♂, holotype (but 39 and 42 of ♀, paratype); figs. 43-45, *A. takasuae* van Achterberg, ♀, holotype. 36, 43, detail of antero-distal part of fore wing; 37, second and third metasomal tergites, dorsal aspect; 38, hind leg; 39, 45, hind basitarsus, lateral aspect; 40, pronotum, lateral aspect; 41, 42, 44, detail of hind trochantellus, lateral aspect. 36, 39-42, 44, 45: 1.4 × scale-line; 37, 43: 1.0 ×; 38: 0.7 ×.



Figs 46-48, *Aleiodes elliptidepressus* spec. nov., ♂, paratypes, first-third metasomal tergites, dorsal aspect. 46-48: 1.0 × scale-line.