Revision of the genus *Centistes* Haliday (Hymenoptera: Braconidae: Euphorinae) of the USSR Far East and neighbouring territories

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The East Palaearctic species of the genus *Centistes* Haliday are revised. The subgeneric division of the genus *Centistes* is discussed; *Syrrhizus* Foerster is considered to be a distinct genus. Eleven new species from the Far East of the USSR are figured and described: C. (*C.*) *alekseevi*, C. (*A.*) *semirufícus*, C. (*A.*) *convexitemporalis*, C. (*A.*) *microvalvis*, C. (*A.*) *pteropygidium*, C. (*A.*) *sylvicola*, C. (*A.*) *manchzhuricus*, C. (*A.*) *chaetopygidium*, C. (*A.*) *planivalvis*, C. (*A.*) *spasskensis*, and C. (*A.*) *scutellaris*. Three species (C. (*A.*) *paupella* (Shenefelt), C. (*A.*) *medythiae* Maetô & Nagai, and C. (*A.*) *antennalis* (Watanabe)) are recorded for the fauna of the USSR for the first time, and six species (C. (C.) *cuspidatus* (Haliday), C. (C.) *fuscipes* (Nees), C. (*A.*) *collaris* (Thomson), C. (*A.*) *ater* (Nees), C. (*A.*) *edentatus* (Haliday), and C. (*A.*) *saxo* (Reinhard)) are new for the Far East of the USSR. The lectotype of *Leiophron saxo* Reinhard, 1862, is designated. A key to East Palaearctic subgenera and species of *Centistes* is given.

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Introduction

The tribe Centistini Čapek, 1970 (sensu van Achterberg, 1988), of the subfamily Euphorinae Foerster, 1862, which includes the genus *Centistes* Haliday, has such characters as the wide and usually short first abdominal tergite, the often unsclerotized mediocubital vein of the fore wing, the wide and usually curved ovipositor, sometimes accompanied by various modifications of the ovipositor sheath and hypopygium. Centistini are known to be solitary endoparasites of final instar larvae (rarely) and of adults of Curculionidae, Chrysomelidae, Staphylinidae, Carabidae and Coccinellidae. This is a very peculiar biological feature, which is also present in other Euphorinae.

The genus *Centistes* comprises 23 species in total, including 15 species in the Palaearctic fauna (Shenefelt, 1969; Maetô & Nagai, 1985; Tobias, 1986). According to van Achterberg (1985), *Centistes* can be divided into four subgenera: *Centistes* Haliday, 1835, *Syrrhizus* Foerster, 1862, *Ancylocentrus* Foerster, 1862, and *Anartionyx* van Achterberg, 1985. However, I consider the lack of the first abscissa of the medial vein important enough to treat the subgenus *Syrrhizus* as a distinct genus. I agree with the position of the remaining three subgenera of *Centistes*. The main diagnostic feature of the subgenus *Ancylocentrus* (the presence of the notauli) is highly variable. For this reason Shaw (1985) disagreed with the use of these subgeneric divisions. However, I find it possible and useful to apply these subgenera in this paper.

The morphological terms are used as defined by Tobias (1986). The "sternauli" concern actually the precoxal sulci; the real sternauli (as commonly found in the

Ichneumonidae) are present only in a few Braconidae. The "first abdominal tergite" is actually the second abdominal tergite and the first metasomal tergite of others (e.g. van Achterberg, 1985). The following abbreviations are used: POL - postocellar line: OOL - ocular-ocellar line; Od - maximal diameter of lateral ocelli; NMID - National Museum of Ireland, Dublin (Ireland); EIS - Entomological Institute Hokkaido University, Sapporo (Japan); ZML - Zoological Museum University of Lund (Sweden); ZMB - Museum für Naturkunde an der Humboldt-Universität zu Berlin (Germany); IRSB - Institute Royal des Sciences Naturelles de Belgique, Bruxelles (Belgium); RMNH - Rijksmuseum van Natuurlijke Historie, Leiden (The Netherlands); ZIL - Zoological Institute, Russian Academy of Sciences, Leningrad (Russia); IZANU - Institute of Zoology, Ukrainian Academy of Sciences, Kiev (Ukraina). The primary types listed after the reference, are examined, but not included again in the "Material" section. An asterisk (*) indicates the territories where the species was discovered for the first time.

Systematic part

Genus **Centistes** Haliday, 1835

Type species: *Ancylus cuspidatus* Haliday, 1833.

Head transverse. Ocellar triangle with base 1.3-1.5 times longer than sides, rarely ocellar triangle equilateral. Eye with short and sparse hairs. Occipital carina completely developed and connected to the hypostomal carina near base of mandible. Subocular suture present. Maxillar palpi usually 5-segmented, labial palpi 3-segmented. Antennae filiform. Notauli deep and crenulate, but often narrow and smooth. Sometimes notauli absent or only a short longitudinal depression in the posterior third or half of mesoscutum is present. Prepectal carina complete. Sternauli usually deep, rarely absent. Propodeum often with transversal arched medial carina. Radial cell of fore wing usually slightly shortened. First abscissa of medial vein present. Mediocubital vein unsclerotized. Nervulus postfurcal. First transversal anal vein present, but unsclerotized. All coxae and femora thickened usually. Tarsal claws without tooth. First abdominal tergite without dorsope, laterope distinct. Hypopygium of usual shape and often densely setose, rarely glabrous or with various protuberances or processes. Ovipositor long (but its greater part kept inside abdomen), flat and falcate. Ovipositor sheath usually short and flat, but sometimes long or thick.

Key to the East Palaearctic species of *Centistes*

1. Notauli absent; short longitudinal medial depression in posterior part of mesoscutum absent. (Subgenus *Centistes* Haliday) 2
- Notauli present, at least as faint trace (figs. 44-48), or mesoscutum with short longitudinal medial depression posteriorly (fig. 43). (Subgenus *Ancylocentrus* Foerster) 4
2. Radial cell of fore wing strongly shortened, metacarpus 1.2-1.6 times shorter than length of pterostigma. Discoidal cell sessile anteriorly (fig. 61). First abdominal

tergite smooth, short and wide (fig. 84). Ovipositor sheath very short, wide, densely setose distally (figs. 101, 102). Head width 2-2.2 times its medial length (fig. 6). Antennae 31-segmented. Length of body 2.6-3.3 mm ..... ***C.* (*C.*) *alekseevi*** spec. nov.

- Radial cell of fore wing slightly shortened, metacarpus not shorter than length of pterostigma. Discoidal cell petiolate anteriorly (fig. 62). First abdominal tergite rugulose, long and narrow (figs. 85, 86). Ovipositor sheath long, narrow, rarely setose distally (figs. 76, 103). Head width 1.6-1.8 times its medial length (figs. 2, 4). Antennae 19-25-segmented 3

3. Antennae 24-25-segmented, longer than body. Fourth segment of maxillar palpi 3-3.3 times as long as its maximum width. Mesoscutum glabrous and shiny in distal half. Sternauli wide, densely and weakly granulo-rugulose. Ovipositor sheath distinctly narrowed to distal margin (fig. 76). Legs completely yellow-brown. Length of body 1.8-2.3 mm ..... ***C.* (*C.*) *cuspidatus*** (Haliday)
- Antennae 19-20 (rarely 21)-segmented, shorter than body. Fourth segment of maxillar palpi 1.8-2 times as long as its maximum width. Mesoscutum setose in distal half (sometimes slightly), usually mat. Sternauli indistinct and smooth. Ovipositor sheath very weakly narrowed distad (fig. 103). Legs reddish-brown, coxae dark, sometimes almost black. Length of body 1.8-2.4 mm ..... ***C.* (*C.*) *fuscipes*** (Nees)

4. Mesoscutum with deep, short, longitudinal medial depression in distal third or half (fig. 43). Notauli only anteriorly present on mesoscutum, as a very short impression 5
- Mesoscutum without medial longitudinal depression. Notauli present and complete, but sometimes shallow (figs. 44-48) 6

5. Length of malar space 0.9-1.0 times basal width of mandible. Mesothorax blackish. Length of fore wing 2.6-3.3 mm. Temple distinctly and roundly narrowed behind eye (fig. 8). Penultimate segment of antenna twice as long as wide. Ovipositor sheath weakly curved at external margin; length of sheath 1.2-1.3 times shorter than length of first abdominal tergite or almost equal to it (fig. 77) ..... ***C.* (*A.*) *collaris*** (Thomson)
- Length of malar space 0.3-0.4 times basal width of mandible. Mesothorax (partly) yellowish-brown. Length of fore wing 2.0-2.7 mm. Temple anteriorly almost parallel-sided or weakly widened, then roundly narrowed (fig. 10). Penultimate segment of antenna 1.3-1.6 times as long as wide. Ovipositor sheath strongly curved at external margin; length of sheath usually 1.5-1.7 times shorter than length of first abdominal tergite (fig. 104) ..... ***C.* (*A.*) *medythiae*** Maetô & Nagai

6. Ovipositor sheath almost parallel-sided (figs. 105, 106); length of sheath 1.2-1.3 times length of first abdominal tergite, distinctly longer than combined length of first and second tarsal segments of hind legs or equal to it. Abdomen of female distinctly compressed 7
- Ovipositor sheath not parallel-sided (figs. 81, 83, 109, 117); length of sheath distinctly shorter than length of first abdominal tergite, and shorter than length of first tarsal segment of hind legs. Abdomen of female usually depressed or oblong-oval 8

7. Ocelli smaller, POL 1.8 times maximal diameter of lateral ocellus. Length of temple 1.3 times shorter than transverse diameter of eye (fig. 14). Body almost completely black. Length of body 5 mm ..... ***C.* (*A.*) *aino*** (Watanabe)

- Ocelli larger, POL equal to maximal diameter of lateral ocellus. Length of temple 1.6 times shorter than transverse diameter of eye (fig. 12). Thorax and basal half of abdomen light reddish-brown, head and distal half of abdomen black. Length of body 5 mm ..... *C. (A.) semiruficus* spec. nov.

8. Maxillar palpi 6-segmented. Abdomen of ♀ with pair of teeth medio-ventrally (fig. 81), but sometimes latent. Ovipositor sheath slightly widened distad (fig. 81). First abdominal tergite usually with distinct transverse medial depression or depression only laterally present. Length of body 2.5-3 mm ..... *C. (A.) ater* (Nees)
- Maxillar palpi 5-segmented. Abdomen of ♀ without teeth ventrally. Ovipositor sheath not widened distad. First abdominal tergite without transverse depression 9

9. Temple anteriorly distinctly widened behind eye, and posteriorly roundly narrowed. Length of temple 1.1-1.4 times transverse diameter of eye (figs. 18, 20) . 10
- Temple usually roundly narrowed behind eye, very rarely anteriorly almost parallel-sided. Length of temple usually shorter than transverse diameter of eye (figs. 22, 24) 11

10. Antennae not thickened. Notauli almost smooth or very weakly crenulate. Mesoscutum with distinct short longitudinal carina before prescutellar depression, glabrous in posterior half. Sternauli deep. First abdominal tergite shorter, its length 1.1-1.2 times its apical width (fig. 82). Hypopygium with pair of distinct, small and setose protuberances postero-laterally (fig. 107). Length of body 2.7-3.2 mm ..... *C. (A.) edentatus* (Halliday)
- Antennae thickened. Notauli distinctly crenulate. Mesoscutum without carina before prescutellar depression, setose almost completely. Sternauli very shallow. First abdominal tergite longer, its length 1.5-1.7 times its apical width (fig. 87). Hypopygium without protuberances postero-laterally (fig. 108). Length of body 2-3.3 mm ..... *C. (A.) convexitemporalis* spec. nov.

11. Notauli deep and coarsely crenulate. Mesoscutum completely or almost completely setose, sometimes glabrous posteriorly (fig. 47). Sternauli widely and usually irregularly rugulose. First abdominal tergite usually longitudinally rugulose, but sometimes smooth near its posterior margin (figs. 91-95) 12
- Notauli shallow and usually smooth, rarely deeper and very weakly sculptured. Mesoscutum glabrous in its posterior third or half (fig. 48). Sternauli usually narrowly crenulate (except *C. paupella*), but sometimes smooth. First abdominal tergite usually partly or completely smooth 17

12. Radial cell of fore wing distinctly shortened, metacarpus 1.2 times shorter than length of pterostigma (fig. 71). Ovipositor sheath very short and hardly extending beyond apex of abdomen (fig. 109). Face with a very dense covering of white hairs. Length of body 2.6 mm ..... *C. (A.) microvalvis* spec. nov.
- Radial cell of fore wing weakly shortened, metacarpus equal to or longer than length of pterostigma. Ovipositor sheath longer, distinctly extending beyond apex of abdomen. Face usually with sparse, light hairs 13

13. Hypopygium with pair wing-like processes postero-laterally (figs. 53, 110, 111). First abdominal tergite with distinct spiracular protuberances (fig. 91). Length of body 4-5.5 mm ..... *C. (A.) pteropygidium* spec. nov.
- Hypopygium without wing-like processes. First abdominal tergite without, or with weak, spiracular protuberances 14

14. Ovipositor sheath almost linearly and strongly narrowed distally, acute apically and with long hairs (its length almost equal to maximum width of sheath). Hypopygium with two bundles of long and dense hairs laterally (fig. 83). Hind femora in distal third and distal half of hind tibiae strongly darkened. Antennae 35-39-segmented. Length of body 4.7-6.5 mm ..... ***C. (A.) antennalis*** (Watanabe)
- Ovipositor sheath curvedly and weakly narrowed distally, apically obtuse, and with short hairs usually (its length considerably shorter than maximum width of sheath). Hypopygium without bundles of hairs laterally. Hind femora and tibiae without darkened parts. Antenae 24-30-segmented 15
15. First abdominal tergite weakly widened from base to apex, its length 1.5 times its apical width (fig. 94). Sternauli narrowly crenulate. POL twice OOL (fig. 30). Front smooth. Eye larger, 1.5 times as high as broad. Cheek height 5 times shorter than height of eye (fig. 29). Hypopygium glabrous (fig. 112). Length of body 3.7 mm ..... ***C. (A.) sylvicola*** spec. nov.
- First abdominal tergite considerable widened from base to apex, its length nearly equal to or shorter than its apical width (figs. 93, 95). Sternauli widely and irregularly sculptured. POL nearly equal to OOL or slightly longer (figs. 28, 32). Frons sculptured. Eye smaller, 1.7-1.8 times as high as broad. Cheek height 2.5-3 times shorter than eye height (figs. 27, 31). Hypopygium setose, at least in posterior margin (figs. 113, 114) 16
16. Length of temple 1.1 times transverse diameter of eye (fig. 32). Face almost flat, with small protuberance medially, and densely setose. Metacarpus slightly shorter than length of pterostigma (fig. 72). Posterior quarter of abdomen of ♀ not compressed. Ovipositor sheath as fig. 114. Coxae black or dark brown. Length of body 3.6 mm ..... ***C. (A.) manchzhuricus*** spec. nov.
- Length of temple distinctly shorter than transverse diameter of eye (fig. 28). Face distinctly convex medially, without protuberance, and rarely setose. Metacarpus longer than length of pterostigma. Posterior quarter of abdomen of ♀ compressed. Ovipositor sheath as fig. 113. Coxae usually light reddish-brown. Length of body 4.5-6 mm ..... ***C. (A.) saxo*** (Reinhard)
17. Ovipositor sheath short, very thick, and massive (figs. 115, 116). Hypopygium (as fourth and fifth sternites) densely and shortly setose (brush-like; figs. 54, 115). Sternauli largely smooth. Length of body 3.3-6.2 mm ..... ***C. (A.) chaetopygidium*** spec. nov.
- Ovipositor sheath long, thin, and slender. Hypopygium glabrous or sparsely setose, similar to fourth asnd fifth sternites. Sternauli at least partly sculptured .. 18
18. Sternauli widely and irregularly sculptured. Propodeum completely irregularly sculptured, without transversal carina. Length of first abdominal tergite nearly equal to its apical width (fig. 97). Fourth-seventh tergites weakly extending beyond third tergite (fig. 117). Length of body 2.8-3.6 mm ..... ***C. (A.) paupella*** (Shenefelt)
- Sternauli narrowly crenulate. Basal half of propodeum smooth or weakly sculptured, with distinct transversal carina. Length of first abdominal tergite 1.3-1.7 times longer than its apical width (figs. 98-100). Fourth-seventh tergites distinctly extending beyond third tergite 19
19. Ovipositor sheath shorter, almost parallel-sided, and rounded apically (fig. 118). First abdominal tergite almost completely longitudinally rugulose (fig. 98).

Radial cell of fore wing distinctly shortened, metacarpus 1.1-1.2 times shorter than length of pterostigma. Discoidal cell sessile anteriorly (fig. 74). Length of body 3.3-3.4 mm ..... *C. (A.) planivalvis* spec. nov.

- Ovipositor sheath longer, distinctly narrowed and acute distally (figs. 119-121). First abdominal tergite almost completely smooth or at least medially (figs. 99, 100). Radial cell of fore wing weakly shortened, metacarpus longer than length of pterostigma. Discoidal cell petiolate anteriorly (fig. 75) 20

20. Temple anteriorly almost parallel-sided, then roundly narrowed behind eye (fig. 40). Width of face 1.5 times its height (fig. 39). Notauli smooth. Scutellum weakly convex. First abdominal tergite slightly widened from base to apex, and with distinct rugae laterally (fig. 99). Ovipositor sheath narrower, its length 4 times maximum width (fig. 119). Length of body 3.4. mm ..... *C. (A.) spasskensis* spec. nov.

- Temple strongly and almost straightly narrowed immediately behind eye (fig. 42). Width of face slightly longer than its height (fig. 41). Notauli weakly crenulate. Scutellum strongly convex. First abdominal tergite almost parallel-sided and smooth (fig. 100). Ovipositor sheath wider, its length 2.5 times its maximum width (fig. 121). Length of body 4.1 mm ..... *C. (A.) scutellaris* spec. nov.

Centistes (Centistes) alekseevi spec. nov.
(figs. 5, 6, 61, 84, 101, 102)

Material.— Holotype, ♀, Primoryan Territory, Nakhodka, oak-forest, shrubs, 20.viii.1985 (S. Belokobylskij) (ZIL). Paratype: 1 ♀, Primoryan Territory, 15 km S Partizansk, Novitskoe, forest, 20.vi.1990 (S. Belokobylskij) (ZIL).

Female.— Body length 2.6-3.3 mm; fore wing length 2.4-2.8 mm. Head width 2-2.2 times medial length. Temple strongly and roundly narrowed behind eye, its length 1.1-1.3 times shorter than transverse diameter of eye. Ocellar triangle with base 1.5 times longer than sides. POL 1.7-1.8 times Od, slightly longer than OOL. Eye 1.5 times as high as broad. Cheek height 3.5 times shorter than eye height and nearly equal to basal width of mandible. Face height 1.6-1.7 times shorter than eye height and 1.2-1.4 times shorter than width of face. Clypeal width 1.6-1.7 times its medial height. Distance between tentorial pits 1.5 times the distance of pit to eye. Antennae 30-31-segmented. First flagellar segment 3.8-4 times as long as its maximum width, 1.3-1.4 times as long as second segment. Penultimate segment 1.3 times as long as wide.

Thorax.— Length 1.3 times its height. Mesoscutum densely setose in anterior half, glabrous in posterior half. Prescutellar depression short, smooth, and with weak medial carina. Sternauli very shallow, but deeper posteriorly, smooth. Scutellum convex.

Wing.— Radial cell of fore wing strongly shortened, metacarpus (within radial cell) 1.2-1.6 times shorter than length of pterostigma. Radial vein arising distad of middle of pterostigma. First radial abscissa 5.5 times shorter than second, which is anteriorly distinctly curved, but almost straight in distal half. First radiomedial vein 1.9-2.4 times first radial abscissa. Nervulus distad of basal vein by its length or more. Hind wing with first abscissa of mediocubital vein 3-4 times second abscissa.

Legs.— Femora thickened. Hind femur 3.2-3.5 times as long as wide. Length of second tarsal segment twice shorter than first segment, almost equal to fifth (without pretarsus).

Abdomen.— Abdomen elongate oval. First tergite wide, distinctly widened from base to middle (with its small spiracular protuberances), posterior of middle sides almost parallel or weakly narrowed. Apical width of first tergite 0.8-1 times its width near spiracular protuberances, equal to or slightly longer than its length. Combined length of second and third tergites equal to or 1.2 times longer than basal width of second tergite. Hypopygium densely setose. Ovipositor sheath wide, short, obtuse, with dense and long setae distally; length of sheath 1.6-1.7 times shorter than its maximum width; ovipositor wide.

Sculpture.— Head and mesothorax smooth. Propodeum weakly and irregularly rugulose, almost smooth and with distinct longitudinal medial carina in basal half. Abdomen completely smooth.

Colour.— Body dark reddish-brown or black, basal half of abdomen of holotype light reddish-brown. Antennae dark brown, basally brown. Palpi and legs light brown, hind tibia dark medially. Wings very weakly brownish. Pterostigma dark brown.

Male.— Unknown.

Remark.— This species differs from all species of subgenus *Centistes* Haliday by having the strongly shortened radial cell, the discoidal cell sessile, the first abdominal tergite short, wide and smooth, the ovipositor sheath short and wide, and the posteriorly very densely setose, and short head.

I have named this species after my friend and colleague, Dr V.N. Alekseev - the well-known Russian hymenopterologist.

Centistes (Centistes) cuspidatus (Haliday, 1833)
(figs. 1, 2, 55, 62, 63, 76, 85)

Ancylus cuspidatus Haliday, 1833: 261 (lectotype: ♀, Ireland (?), "*cuspidatus*", "Box 8 AWS", "*Centistes cuspidatus* Hal., fide A.H. Haliday! ♀ Type! AWS. 23.3.1948"; NMID; examined).
Centistes cuspidatus; Shenefelt, 1969: 27; Tobias, 1986: 223.
Bracon lucidator Nees, 1834: 50 (syntypes: ♂, Germany, "prope Sickershausen"; lost).

Material. —12 ♀♀, 56 ♂♂, from European part of the USSR, Caucasus, Kazakhstan, Kirgiziya. 1 ♂, Primoryan Territory, Vladivostok, Morskoe cemetery, oak-forest, 24.viii.1988 (S. Belokobylskij); 3 ♂♂, Khasan, Golubiny Utyos (Rock of pigeon), oak-forest, shrubs, 27.viii.1988 (S. Belokobylskij); 3 ♂♂, Khasan, forest, 29.viii.1988 (S. Belokobylskij); 1 ♂, Kunashir Island, Tyatino, border of a forest, glades, 6.viii.1988 (A. Kotenko); 1 ♀, Kunashir Island, Golovnino, 19.vii.1989 (E. Budrys).

Distribution.— USSR: European part, Caucasus, Kazakhstan, Middle Asia, *Primoryan Territory, Sakhalin Island, *Kunashir Island West;Europe.

Host.— Adult of *Tachyporus* spec. (Staphylinidae).

Remark.— This species is closely related to *C (C.) scymni* Ferriére, 1954 (Ferriére, in Delucchi, 1954), from Central Europe. I have studied the holotype of *C. scymni* (British Museum (Natural History), London): ♀, "Type", "Switzerland, Feldmeilen, Em. 10.vi.1950, L.P. Mesnil", "Ex adult of *Scymnus impexus* Muls. from Seegräben", "*Centistes scymni* ♀ Ch. Ferriere, Type", "B.M. Type Hym. 3.c.1644". The species are distinctly differentiated considering the following features:

1. Temple distinctly roundly narrowed behind eye. Recurrent vein of fore wing distinctly postfurcal. Sternauli smooth. Fifth tarsal segment of hind legs usual

shape. Ovipositor sheath shorter, its length 1.7 times shorter than length of first abdominal tergite. Length of body 2.1 mm ..... *C. (C.) scymni* Ferriére

- Temple almost linearly narrowed behind eye. Recurrent vein of fore wing antefurcal. Sternauli granulo-rugulose. Fifth tarsal segment of hind legs distinctly thickened. Ovipositor sheath longer, its length nearly equal to length of first abdominal tergite. Length of body 1.8-2.3 mm ..... *C. (C.) cuspidatus* (Haliday)

Centistes (Centistes) fuscipes (Nees, 1834)
(figs. 3, 4, 51, 56, 86, 103)

Bracon fuscipes Nees, 1834: 50 (syntypes: ♀, ♂, Germany, "Sickershausen"; lost).
Centistes fuscipes; Shenefelt, 1969: 28; Tobias, 1986: 223.

Material.— 11 ♀♀, 15 ♂♂, from European part of the USSR, Caucasus. 4 ♂♂, Sakhalin Island, Novoalexandrovsk, 28 & 29.vi, 3 & 5.vii.1973 (D. Kasparyan); 1 ♂, Kunashir Island, Mendeleevo, hot springs, 3.vi.1973 (I. Kerzhner); 1 ♂, Primoryan Territory, Nakhlodka, oak-forest, shrubs, 20.viii.1985 (S. Belokobylskij); 1 ♂, Novokachalinsk, oak-forest, 29.viii.1987 (S. Belokobylskij); 2 ♀♀, 15 km S Slavyanka, Ryazanovka, oak-forest, 2.ix.1987 (S. Belokobylskij); 1 ♂, 25 km S Slavyanka, Andreevka, meadow, oak-forest, 5.ix.1987 (S. Belokobylskij); 1 ♂, 20 km SW Spassk, oak-forest, 25.ix.1988 (S. Belokobylskij); 1 ♀, 20 km SE Spassk, Evseevka, valley forest, 9.vi.1989 (S. Belokobylskij).

Distribution.— USSR: European part, Caucasus, *Primoryan Territory, *Sakhalin Island, *Kunashir Is; West Europe.

Centistes (Ancylocentrus) collaris (Thomson, 1895)
(figs. 7, 8, 77, 78)

Leiophron (Leiophron) collaris Thomson, 1895: 2222 (lectotype: ♀, Sweden, "Börringe, 30/F 43". "*collaris* m.", "Lectotypus *L. collaris* Thoms., Mason, 1960"; examined; ZML).
Ancylocentruscollaris; Shenefelt, 1969: 9; Tobias, 1986: 225.

Material. — 1 ♀, from European part of the USSR (near Leningrad). 1 ♀, Yakutsk, Sergelyah, forest, 9.vii.1990 (D. Kasparyan); 1 ♀, Primoryan Territory, 20 km E Ussuriysk, at light, 27.viii.1984 (S. Sinev); 1 ♀, Ussurian Reserve, Suvorov source, meadow, 24.viii.1987 (Kostyukov); 1 ♀, Ussurian Reserve, Staraya Basa, forest, 28.viii.1982 (V. Tobias); 1 ♂, Anisimovka, forest, 4.ix.1982 (V. Tobias); 1 ♀, Sakhalin Island, Novoalexandrovsk, mixed forest on slope of hill, 26.vii.1988 (A. Kotenko); 2 ♀♀, 20 km SE Ussuriysk, at light, 30.vii.1991 (S. Belokobylskij).

Distribution.— USSR: European part, *Yakutiya, *Primoryan Territory, *Sakhalin Is; West Europe.

Centistes (Ancylocentrus) medythiae Maetô & Nagai, 1985
(figs. 9, 10, 43, 49, 52, 57, 66, 79, 104)

Centistes medythiae Maetô & Nagai, 1985: 730 (holotype: ♀, Japan, Akasaka, Akaiwagun, Okayama Pref., 10.vi.1984 (K. Nagai); EIS).

Material. — 1 ♀ (paratype), "Akasaka, Akaiwa-gun, Okayama Pref., 20.V.1984, K. Nagai", "ex adult *Medythia nigrobilineata* on soy bean". USSR: 1 ♀, "4 v. nizhe Dar'inoy, m. Kirens. i Vitim, 2.ix. 1925, L. Bianki", "*Leiophron subsulcatus* Thoms., det. Tobias, 1965"; 5 ♂♂, Primoryan Territory, Vozdvizhenka,

soy-bean, 7.ix.1964 (Kulikova); 1 ♀, 2 ♂♂, Chernigovka District, Dmitrievka, 27.viii.1982, 1 & 4.x.1984 (Arefin & Ivliev); 2 ♀♀, Reserve "Kedrovaya Pad", 23 & 24.viii.1976 (N. Storozheva); 3 ♀♀, 4 ♂♂, Spassk, forest, 1 & 30.vi, 11.ix.1985, 19.viii & 18.ix.1987, 13.ix.1988, 13.vi.1990 (S. Belokobylskij); 1 ♀, Spassk, 21-23.vii.1987 (G. Belokobylskaya); 3 ♀♀, 1 ♂, Nakhodka, oak-forest, shrubs, 20.viii.1985 (S. Belokobylskij); 1 ♂, 10 km SE Partizansk, oak-forest, 18.viii.1985 (S. Belokobylskij); 1 ♀, 15 km S Partizansk, forest, 19. vi.1990 (S. Belokobylskij); 2 ♀♀, 15 km S Slavyanka, oak-forest, 2 & 3.ix.1987 (S. Belokobylskij); 1 ♀, Vladivostok, Morskoe cemetery, oak-forest, 24.viii.1988 (S. Belokobylskij); 1 ♀, Anisimovka, forest, glades, 4.ix.1988 (S. Belokobylskij); 1 ♀, 20 km W Spassk, Khanka, meadow with *Salix*, 12 vi.1989 (S. Belokobylskij); 1 ♀, 10 km E Pos'et, oak-forest, 1.vi.1989 (S. Belokobylskij); 1 ♀, Khabarovsk, Khekhtsir, forest, 12.vi.1985 (S. Belokobylskij).

Distribution.— *USSR: Eastern Siberia, Khabarovsk and Prymoryan Territories; Japan (Kyushi Island).

Host.— Adults of *Medythia nigrobilineata* (Motsch.) (Chrysomelidae).

Remark.— *C. medythiae* is closely related to *C. (A.) rufithorax* (Telenga, 1950) from the USSR and Finland and can be distinguished as follows:

1. Mesoscutum completely smooth. Penultimate segment of antennae 1.3-1.6 times as long as wide. Ovipositor sheath wide, its length 1.4-1.7 times shorter than length of first abdominal tergite. Length of body 2.2-2.4 mm. .... *C. (A.) medythiae* Maetô & Nagai
- Mesoscutum usually rugulose medially. Penultimate segment of antennae 1.8-2.2 times as long as wide. Ovipositor sheath narrow, its length nearly equal to the length of first abdominal tergite or slightly shorter. Length of body 2.2-2.5 mm. ... . *C. (A.) rufithorax* (Telenga)

Centistes (Ancylocentrus) aino (Watanabe, 1937) comb. nov.
(figs. 13, 14, 67, 68, 88, 105)

Leiophron aino Watanabe, 1937: 139 [holotype: ♀, Sapporo, 25.vii.1933 (Watanabe); examined; EIS]. *Ancylocentrus aino*; Shenefelt, 1969: 9.

Material. — Only holotype examined.

Distribution.— Japan (Hokkaido Island).

Centistes (Ancylocentrus) semirufícus spec. nov.
(figs. 11, 12, 44, 89, 106)

Material. — Holotype, ♀, Primoryan Territory, 20 km S Slavyanka, oak-forest, 5.vii.1979 (S. Belokobylskij) (ZIL).

Female.— Body length 5 mm; fore wing length 4.5 mm. Head width twice its medial length. Temple strongly and roundly narrowed behind eye, its length 1.6 times shorter than transverse diameter of eye. Ocellar triangle with base 1.3 times longer than sides. POL almost equal to Od, 1.4 times OOL. Eye 1.6 times as high as broad. Cheek height nearly 10 times shorter than eye height and twice shorter than basal width of mandible. Face height nearly twice shorter than eye height and 1.2 times

shorter than width of face. Clypeal width 1.8 times medial height. Distance between tentorial pits 4.5 times the distance of one of them from eye. Antennae 31-segmented. First flagellar segment 3 times as long as its maximum width, slightly longer than second segment. Penultimate segment 1.6 times as long as wide.

Thorax.— Length 1.3 times its height. Mesoscutum densely and shortly setose, glabrous laterally only. Prescutellar depression long, smooth, with high medial carina. Sternauli deep, narrow, twice curved, roughly crenulate. Scutellum convex.

Wings.— Radial cell of fore wing weakly shortened, metacarpus (within radial cell) 1.2 times length of pterostigma. Radial vein arising from middle of pterostigma. First radial abscissa 8.5 times shorter than second, which is anteriorly weakly curved and then straight. First radiomedial vein twice first radial abscissa. Nervulus distad of basal vein by 0.4 times its length. Hind wing with first abscissa of mediocubital vein 4 times second abscissa.

Legs.— Femora narrow. Hind femur 4.7 times as long as wide. Length of second tarsal segment almost twice shorter than first segment, nearly equal to 5th (without pretarsus).

Abdomen.— Abdomen compressed. First tergite distinctly and almost straightly widened from base to apex, with distinct spiracular protuberances before middle of tergite. Apical width of first tergite 2.2 times its basal width, 1.3 times shorter than its length. Combined length of second and third tergites 1.6 times basal width of second tergite. Hypopygium strongly compressed, and completely covered with long and pale hairs. Ovipositor sheath, long, flat, parallel-sided, with sharp thorn distally, densely setose in distal half (length of hairs nearly equal to width of sheath). Length of sheath 6 times its maximum width, 1.3 times length of first abdominal tergite).

Sculpture.— Head and mesothorax smooth, but sparsely weakly punctulate. Clypeus weakly rugulose. Propodeum with some strong irregular carinae, and smooth basally. First abdominal tergite roughly rugulose, and smooth distally.

Colour.— Body light reddish-brown. Head (except light its lower part) and posterior part of abdomen almost black. Palpi and legs light brown, behind tibiae black in distal half. Antennae dark brown, lighter basally. Wings light. Pterostigma black.

Male.— Unknown.

Remark.— This species is very closely related to C. (*A.*) *aino* (Watanabe, 1937) and differs by having the large ocelli (POL equal to Od), the short temple and most of the body light reddish-brown.

Centistes (Ancylocentrus) ater (Nees, 1834)
(figs. 15, 16, 45, 50, 58, 64, 65, 80, 81)

Leiophron ater Nees, 1834: 45 (syntypes: ♀♂, Germany, "prope Sickershausen"; lost).
Ancylocentrus ater; Shenefelt, 1969: 9.
Centistes (Ancylocentrus) ater; van Achterberg, 1985: 358.
Leiophron (Ancylus) excrucians Haliday, 1835: 461 (lectotype: ♀, Ireland (?), "*excrucians*", "Box 8. AWS", "*Ancylus excrucians* Hal., fide Haliday! ♀ Type! AWS., 26.2.1948"; examined; NMID).
Ancylocentrus excrucians; Shenefelt, 1969: 10; Tobias, 1986: 225.
Centistes (Ancylocentrus) excrucians; van Achterberg, 1985: 358.
Allurus lativalvis Jakimavicius, 1972: 51 (holotype: ♀, Lithuanian SSR, Kryatung district, garden, 15. vii.1967 (A. Jakimavicius); examined; ZIL).
Ancylocentrus lativalvis; Tobias, 1986: 225.

Material. — 1 ♀, from European part of the USSR (Novgorod Region). 3 ♀♀, Primoryan Territory, Barabash-Levada, at light, 19, 21 & 27.vi.1978 (S. Belokobylskij); 2 ♀♀, 1 ♂, Sakhalin Island, Novoalexandrovsk, 29 & 30.vii, 9.viii.1986 (Nesterov); 2 ♀♀, Kunashir Island, Alyokhino, mixed forest, 30 & 31.vii.1981 (S. Belokobylskij); 2 ♀♀, Kunashir Island, volcano Golovnina, river Ozernaya, forest, 20.viii.1988 (A. Kotenko); 4 ♀♀, Prymoryan Territory, near Sergeyevka, oak-forest, 21.vii.1979 (S. Belokobylskij).

Distribution.— USSR: European part, *Primoryan Territory, *Sakhalin Island, *Kunashir Is; West Europe; North America.

Host.— *Sitona scissifrons* Say (Curculionidae).

Remarks.— There is confusion about the status of a specimen of C. (*A.*) ***subsulcatus*** (Thomson, 1895) from the Thomson collection (Lund) labelled (but not published) as lectotype by Dr W.R.M. Mason. However, Dr C. van Achterberg disagrees with this choice. The specimen is from Helsinborg, a locality not mentioned in the original description and therefore it cannot be a lectotype (at most a neotype). The holotype of C. *(A.) subsulcatus* originates from Lund, but is probably lost (van Achterberg, in litt.). The short description of C. (*A.*) ***subsulcatus*** (without indication of important characters) is insufficient for a more definite opinion. The studied specimen belongs to C. (*A.*) *ater* (Nees) without any doubt.

Centistes (Ancylocentrus) edentatus (Haliday, 1835)
(figs. 17, 18, 46, 69, 70, 82, 107)

Leiophron (*Ancylus*) *edentatus* Haliday, 1835: 461 (lectotype: ♀, Ireland (?), "Box 8. AWS", "*Ancylus edentatus* Hal., ♀. Type! AWS. 22.3.1948"; examined; NMID)
Ancylocentrus edentatus; Shenefelt, 1969: 10.
Ancylocentrus edentulus (sic!); Tobias, 1986: 225.

Material. — 7 ♀ from European part of the USSR and Kazakhstan; 1 ♀ from Morocco; 1 ♀, Krasnoyarsk, Akademgorodok, 4.vii.1988 (D. Kasparyan); 1 ♂, Turukhansk on the Enisey, taiga, 18.vii. 1988 (D. Kasparyan); 1 ♀, Khabarovsk, Khekhtsir, forest, 13.vi.1986 (S. Belokobylskij); 1 ♀, Primoryan Territory, 20 km SE Spassk, forest, 20.vi.1980 (S. Belokobylskij); 3 ♂, Lyalichi on the river Ilistaya (Lephu), forest, 2.vi.1990 (S. Belokobylskij); 1 ♀, 1 ♂, Sakhalin Island, Novoalexandrovsk, mixed forest, 10.vii.1986 (Nesterov).

Distribution.— USSR: European part, Kazakhstan, *West Siberia, *Khabarovsk and *Primoryan Territories, *Sakhalin Is; West Europe; *Morocco.

Centistes (Ancylocentrus) convexitemporalis spec. nov.
(figs. 19, 20, 87, 108)

Material. — Holotype, ♀, Vladivostok, Morskoe cemetery, oak-forest, 23.vi. 1985 (D. Kasparyan) (ZIL). Paratypes: 1 ♀, Primoryan Territory, 30 km S Slavyanka, oak-forest with *Corylus*, 3.viii.1985 (S. Belokobylskij) (ZIL); 3 ♀♀, Vladivostok, Sedanka, border of forest, glades, 21 & 24.viii.1986 (A. Kotenko) (IZANU, ZIL); 5 ♀♀, Spassk, glades, forest, shrubs, 7, 8 & 10.vi.1989 and 7.vi.1990 (S. Belokobylskij) (ZIL, RMNH); 1 ♀, 20 km E Ussuriysk, forest, 31.v.1990 (S. Belokobylskij) (ZIL); 17 ♀♀, Vladivostok, Morskoe cemetery, forest, 17.vi.1990 (S. Belokobylskij) (ZIL, IZANU, RMNH); 1 ♀, 14 km S Partizansk, Novitskoe, forest, 24.vi.1990 (S. Belokobylskij) (ZIL); 2 ♀♀, 30 km E Spassk, forest, glades, 26.vi.1985 & 26.vii.1991 (S. Belokobylskij); 8 ♀♀, 20 km SE Ussuriysk, forest, 31.vii., 2 & 3.viii.1991 (S. Belokobylskij); 2 ♀♀, Vladivostok, Morskoe cemetery, oak-forest, 8.viii.1991 (S. Belokobylskij) (all in ZIL).

Female.— Body length 2-3.3 mm; fore wing length 1.9-2.6 mm. Head width 1.6-1.7 times medial length. Temple anteriorly distinctly widened, posteriorly roundly narrowed behind eye, its length 1.2-1.4 times transverse diameter of eye. Ocellar triangle with base 1.5 times longer than sides. POL twice Od, nearly equal to OOL. Eye 1.8-1.9 times as high as broad. Cheek height 2.5-3 times shorter than height of eye and nearly equal to basal width of mandible. Face height 1.6-1.8 times shorter than eye height and 1.7-1.8 times shorter than width of face. Clypeal width twice its medial height. Distance between tentorial pits 1.7-2 times the distance of pit to eye. Antennae thickened, 25-27-segmented. First flagellar segment 2.6-3 times as long as maximum width, 1.2-1.3 times as long as second segment. Length of penultimate segment nearly equal to its width.

Thorax.— Length 1.6 times its height. Mesoscutum completely densely setose. Notauli shallow and crenulate. Prescutellar depression long, irregularly rugulose, with distinct medial carina. Sternauli very shallow, wide and irregularly rugulose. Scutellum convex.

Wings.— Radial cell of fore wing shortened, metacarpus (within radial cell) nearly equal to length of pterostigma or slightly longer. Radial vein arising from middle of pterostigma. First radial abscissa 11.5-12.5 times shorter than second, which weakly and uniformly curved. First radiomedial vein 3.6-4.5 times first radial abscissa. Nervulus distad of basal vein by two-thirds its length. Hind wing with first abscissa of mediocubital vein 3.3-4.3 times second abscissa.

Legs.— Femora weakly thickened. Hind femur 4-4.5 times as long as wide. Length of second tarsal segment twice shorter than first segment, slightly shorter than 5th (without pretarsus).

Abdomen.— Abdomen weakly compressed. First tergite weakly, uniformly and almost straightly widened from base to apex, with distinct spiracular protuberances in basal third of tergite. Apical width of first tergite 1.7-1.8 times its basal width, 1.5-1.7 times shorter than its length. Combined length of second and third tergites 1.5-1.7 times basal width of second tergite. Hypopygium with dense, long and light hairs. Ovipositor sheath short, flat, weakly narrowed distally, rounded apically, with long and dense hairs, intermingled with short hairs. Length of sheath 2-2.5 times its maximum width, 2-3 times shorter than length of first abdominal tergite.

Sculpture.— Head and mesothorax smooth, mesoscutum weakly punctate. Propodeum roughly and irregularly rugulose completely, without transverse carina. First abdominal tergite completely longitudinal rugose.

Colour.— Body black. Antennae light brown basally, dark brown distally. Palpi yellow. Legs light reddish-brown, hind femora and tibiae darker. Wings weakly brownish. Pterostigma dark brown, lighter basally.

Male.— Unknown.

Remark.— This species is closely related to C. *(A.) edentatus* (Haliday) and differs by having the thick antennae, the distinctly crenulate notauli, the mesoscutum completely setose, the very shallow sternauli, the long first abdominal tergite, and the hypopygium without protuberances laterally.

Centistes (Ancylocentrus) microvalvis spec. nov.
(figs. 21, 22, 71, 90, 109)

Material. — Holotype, ♀, Primoryan Territory, Spassk, forest, 30.vi.1985 (Belokobylskij) (ZIL).

Female.— Body length 2.6 mm; fore wing length 2.3 mm. Head width 1.7 times medial length. Temple strongly and roundly narrowed behind eye, its length nearly equal to transverse diameter of eye. Ocellar triangle with base 1.5 times longer than sides. POL 2.2 times Od, nearly equal to OOL. Eye 1.5 times as high as broad. Cheek height 3.6 times shorter than eye height and nearly equal to basal width of mandible. Face height 1.7 times shorter than eye height and 1.7 times shorter than width of face. Clypeal width twice its medial height. Distance between tentorial pits twice the distance of pit to eye. Face with dense and white hairs. Antennae 21-segmented. First flagellar segment 2.7 times as long as apical width, 1.2 times as long as second segment. Penultimate segment twice as long as wide.

Thorax.— Length 1.3 times its height. Mesoscutum rarely setose, glabrous in lateral lobes. Notauli deep and crenulate. Prescutellar depression long, sparsely rugulose, and with distinct medial carina. Sternauli distinct, shallow, narrow, irregularly rugulose. Scutellum convex.

Wings.— Radial cell of fore wing distinctly shorten, metacarpus (within radial cell) 1.2 times shorter than length of pterostigma. Radial vein arising slightly distad of middle of pterostigma. First radial abscissa almost 9 times shorter than second, the latter uniformly curved. First radiomedial vein 3 times first radial abscissa. Nervulus distad of basal vein by its length. Hind wing with first abscissa of mediocubital vein 4.3 times second abscissa.

Legs.— Femora thickened. Hind femur 3.2 times as long as wide. Length of second tarsal segment 1.8 times shorter than first segment, 1.3 times shorter than 5th (without pretarsus).

Abdomen.— Abdomen elongate oval. First tergite uniformly and straightly widened from base to apex, with very weak spiracular protuberances before middle. Apical width of first tergite twice its basal width, 1.2 times shorter than its length. Combined length of second and third tergites 1.4 times basal width of second tergite. Hypopygium sparsely setose. Ovipositor sheath very short, hardly extending beyond apex of abdomen, rounded, with dense and short hairs.

Sculpture.— Head densely and distinctly punctulate. Mesoscutum weakly punctulate, the remainder of mesothorax almost smooth. Propodeum completely irregularly rugulose. First abdominal tergite longitudinally rugose, almost smooth in distal fifth.

Colour.— Body black. Antennae dark brown, dark reddish-brown basally. Palpi and legs reddish-brown. Wings weakly brownish. Pterostigma dark brown.

Male.— Unknown.

Remarks.— This species differs from all species of subgenus *Ancylocentrus* Foerster by having the very shortened ovipositor sheath (hardly extending beyond apex of the abdomen), the very densely setose face and the shortened radial cell of the fore wing.

C. (A.) microvalvis has such unusual characters for *Centistes* as the distinctly shortened radial cell, the very short ovipositor sheath and the densely setose face. These characters are usually met in the genus *Leiophron (Peristenus)*, but *C. (A.) microvalvis* has some characters, which are absent in *Leiophron*: the wide first abdominal tergite and the long ovipositor. Because of these characters, this new species is referred to the genus *Centistes*.

Centistes (Ancylocentrus) pteropygidium spec. nov. (figs. 23, 24, 53, 91, 110, 111)

Material. — Holotype, ♀, Primoryan Territory, 20 km E Ussuriysk, Gornotayozhnoe, 24.vi.1981 (D. Kasparyan). (ZIL). Paratypes: 1 ♀, Primoryan Territory, Reserve "Kedrovaya Pad", 10.viii.1976 (Berezantsev) (ZIL); 1 ♀, Vladivostok, Morskoe cemetery, oak-forest, 23.vi.1985 (D. Kasparyan) (ZIL); 1 ♀, Vladivostok, Akademgorodok, glades in forest, 13.viii.1986 (A. Kotenko) (IZANU); 1 ♀, Lazovskiy Reserve, cordon Petrova, coast of sea, 15.viii.1986 (A. Kotenko) (IZANU); 1 ♀, Lazovskiy Reserve, Benevskoe, floodlands of river Kievka, forest, 18.viii.1986 (A. Kotenko) (IZANU); 4 ♀♀, Vladivostok, Sedanka, border of forest, glades, 21 & 24.viii.1986 (A. Kotenko) (ZIL, IZANU); 1 ♀, Reserve "Kedrovaya Pad", forest, 30.viii.1986 (A. Kotenko) (IZANU); 20 ♀♀, Reserve "Kedrovaya Pad", at light, 7, 8, 10 & 11.viii.1988 (E. Budrys) (ZIL, UZANU, RMNH); 6 ♀♀, Reserve "Kedrovaya Pad", cordon "Sukhaya rechka", 29.vii, 5, 6.viii.1988 (E. Budrys) (ZIL, RMNH); 3 ♀♀, 20 km E Ussuriysk, forest, 30 & 31.V.1990 (S. Belokobylskij) (ZIL); 1 ♀, 15 km S Partizansk, forest, 19.vi.1990 (S. Belokobylskij) (ZIL); 1 ♀, Anisimovka, forest, glades, 10.viii.1991 (S. Belokobylskij) (ZIL).

Female.— Body length 3.5-5.5 mm; fore wing length 3.3-4.9 mm. Head width 1.8 times medial length. Temple strongly and roundly narrowed behind eye, its length nearly equal to or 1.2 times shorter than transverse diameter of eye. Ocellar triangle with base 1.5 times longer than sides. POL 1.6-2 times Od, 1.3-1.6 times OOL. Eye 1.7 times as high as broad. Cheek height 3.6-4.5 times shorter than eye height and nearly equal to or slightly shorter than basal width of mandible. Face height 2-2.2 times shorter than eye height, 1.8-2 times shorter than width of face. Clypeal width twice its medial height. Distance between tentorial pits 1.8-2 times the distance of pit to eye. Antennae 33-37-segmented. First flagellar segment 2.5-2.8 times as long as apical width, 1.2-1.3 times as long as second segment. Penultimate segment 1.1-1.4 times as long as wide.

Thorax.— Length 1.5-1.6 times its height. Mesoscutum densely and shortly setose completely. Notauli deep, complete, roughly crenulate. Prescutellar depression long, smooth or weakly rugulose, with distinct medial carina. Sternauli wide, shallow, curved, roughly and irregularly rugulose. Scutellum convex.

Wings.— Radial cell of fore wing shortened, metacarpus (within radial cell) slightly longer than length of pterostigma. Radial vein arising slightly distad of middle of pterostigma. First radial abscissa 9-11 times shorter than second, which is first weakly curved then almost straight in distal half. First radiomedial vein 3-3.7 times radial abscissa. Nervulus distad of basal vein half to two-thirds of its length. Hind wing with first abscissa of medioscubital vein 3.6-4.2 times second abscissa.

Legs.— Femora distinctly thickened. Hind femur 3.3-3.5 times as long as wide. Length of second tarsal segment 2.1-2.5 times shorter than first segment, 1.5 times 5th segment (without pretarsus).

Abdomen.— Abdomen elongate oval. First tergite weakly and irregularly widened from base to apex, with distinct spiracular protuberances in basal third or before middle. Apical width of first tergite slightly longer than its width near spiracular protuberances, 1.8-2 times its basal width, 1.2-1.3 times shorter than its length. Combined length of second and third tergites 1.3-1.5 times basal width of second tergite. Hypopygium with pair wing-like processes postero-laterally, densely and shortly setose almost completely. Ovipositor sheath short, flat, and strongly narrowed distally and with acute projection apically, with long, light and outstanding hairs (its length 1.6-2.5 times shorter than maximum width of sheath). Length of sheath (with

projection) 1.5-2 times its maximum width, 1.7-2.7 times shorter than length of first abdominal tergite.

Sculpture.— Head weakly punctulate, frons with distinct rugae near antennal pits. Mesothorax punctulate, mesopleura smooth in most part, but roughly punctulate ventrally. Propodeum irregularly rugulose, and basally granulate. First abdominal tergite ruguloso-punctulate, but its distal fifth smooth. Notum of second tergite sometimes weakly rugose basally.

Colour.— Body black. Antennae black, but basally dark brown. Palpi light brown. Legs light reddish-brown, distal third of hind tibiae dark. Wings slightly brownish. Pterostigma black.

Male.— Unknown.

Remark.— This species is closely related to C. (*A.*) *antennalis* (Watanabe, 1937) and C. (*A.*) *saxo* (Reinhard, 1862) and differs by having the hypopygium with a pair of wing-like processes postero-laterally, densely and almost completely shortly setose, the first abdominal tergite narrower, longer and with distinct spiracular protuberances, and short part of the sternauli rugulose.

Centistes (Ancylocentrus) antennalis (Watanabe, 1937) comb. nov.
(figs. 25, 26, 83, 92)

Leiophron antennalis Watanabe, 1937: 138 (holotype: ♀, Emgyoji, Kochicity, 19.iv.1931 (Y. Sugihara); examined; EIS).
Ancylocentrus antennalis; Shenefelt, 1969: 9.

Material. — 3 ♀♀, Primoryan Territory, 20 km E Ussuriysk, forest, 31.v.1990 (S. Belokobylskij); 1 ♀, Vladvostok, Morskoe cemetery, forest, 17.vi.1990 (S. Belokobylskij); 1 ♀, 15 km S Partizansk, Novitskoe, forest, 19.vi.1990 (S. Belokobylskij).

Distribution.— *USSR: Primoryan Territory; Japan (Sikoku Island).

Centistes (Ancylocentrus) sylvicola spec. nov.
(figs. 29, 30, 94, 112)

Material. — Holotype, ♀, Primoryan Territory, Spassk, forest, 23.viii.1987 (S. Belokobylskij) (ZIL).

Female.— Body length 3.3 mm; fore wing length 2.8 mm. Head width 1.8 times medial length. Temple weakly roundly narrowed behind eye, its length 1.3 times shorter than transverse diameter of eye. Ocellar triangle with base 1.4 times longer than sides. POL twice Od and OOL. Eye 1.5 times as high as broad. Cheek height 5 times shorter than eye height and 1.5 times shorter than basal width of mandible. Face height 1.8 times shorter than eye height, 1.5 times shorter than width of face. Clypeal width twice its medial height. Distance between tentorial pits 3.3 times the distance of pit to eye. Antennae 24-segmented. First flagellar segment 2.8 times as long as apical width, 1.3 times as long as second segment. Penultimate segment 1.8 times as long as wide.

Thorax.— Length 1.4 times its height. Mesoscutum setose almost completely. No-

tauli deep, roughly and irregulalrly rugulose. Prescutellar depression long, smooth, with 3 carinae. Scutellum weakly convex. Sternauli shallow, narrow, crenulate.

Wings.— Radial cell of fore wing weakly shortened, metacarpus (within radial cell) slightly longer than length of pterostigma. Radial vein arising from middle of pterostigma. First radial abscissa 9 times shorter than second, which is weakly and uniformly curved. First radiomedial vein 2.5 times first radial abscissa. Nervulus distad of basal vein by its length. Hind wing with first abscissa of mediocubital vein 3.5 times second abscissa.

Legs.— Femora distinctly thickened. Hind femur 3.2 times as long as wide. Length of second tarsal segment half as long as first segment, 1.3 times shorter than 5th (without pretarsus), which is distinctly thickened.

Abdomen.— Abdomen elongate-oval. First tergite very weakly and roundly widened from base to apex, with very weak spiracular protuberances before middle. Apical width of first tergite 1.3 times its basal width, nearly equal to its width near spiracular protuberances, 1.4 times shorter than its length. Combined length of second and third tergites 1.5 times basal width of second tergite. Hypopygium glabrous. Ovipositor sheath short, slightly widened distally, obtuse, completely sparsely and shortly setose. Length of sheath 1.6 times its maximum width, 1.7 times shorter than length of first abdominal tergite.

Sculpture.— Head smooth, face shallowly and densely punctulate. Mesothorax smooth, mesoscutum weakly punctulate. Propodeum irregularly rugulose, smooth basally, with distinct transverse curved medial carina. First abdominal tergite densely longitudinally rugulose, but rugae weak distally.

Colour.— Body black. Antennae black, but basally reddish brown. Palpi yellow. Legs light brown. Wings hyaline. Pterostigma brown, but basally paler.

Male.— Unknown.

Remark.— This species is related to C. (*A.*) *saxo* (Reinhard) and differs by having the first abdominal tergite long and differently shaped, the sternauli narrow, the frons smooth, the base of the ocellar triangle long, the eye larger, and the hypopygium glabrous.

Centistes (Ancylocentrus) manchzhuricus spec. nov.
(figs. 31, 32, 72, 95, 114)

Material.— Holotype, ♀, Primoryan Territory, 10 km E Pos'et, Gvozdevo, oak-forest, 1.vi.1989 (S. Belokobylskij) (ZIL).

Female.— Body length 3.6 mm; fore wing length 3.1 mm. Head width 1.8 times medial length. Temple weakly roundly narrowed behind eye, its length slightly longer than transverse diameter of eye. Ocellar triangle with base 1.4 times longer than sides. POL 2.3 times Od, 1.2 times shorter than OOL. Eye 1.75 times as high as broad. Cheek height 3 times shorter than eye height and almost equal to basal width of mandible. Face height 1.8 times shorter than eye height and width of face. Clypeal width 2.2 times its medial height. Distance between tentorial pits 1.7 times the distance of pit to eye. Face with dense and light hairs. Antennae 26-segmented. First flagellar segment 2.5 times as long as apical width, 1.35 times as long as second segment.

Penultimate segment 1.8 times as long as wide.

Thorax.— Length 1.4 times its height. Mesoscutum almost completely setose , but its lateral lobes glabrous partly. Notauli deep, crenulate. Prescutellar depression long, rarely crenulate, with distinct medial carina. Scutellum convex. Sternauli shallow, wide, rugulose-reticulate.

Wings.— Radial cell of fore wing distinctly shortened, metacarpus (within radial cell) slightly shorter than length of pterostigma. Radial vein arising from middle of pterostigma. First radial abscissa nearly 9 times shorter than second, which is distinctly and uniformly curved. First radiomedial vein 2.8 times first radial abscissa. Nervulus distad of basal vein by 0.6 times its length. Hind wing with first abscissa of mediocubital vein 3.7 times second abscissa.

Legs.— Femora thickened. Hind femur 3.75 times as long as wide. Length of second tarsal segment twice shorter than first segment, almost equal to thick 5th (without pretarsus).

Abdomen.— Abdomen elongate oval. First tergite uniformly and straightly widened from base to apex, without spiracular protuberances. Apical width of first tergite nearly twice its basal width, slightly shorter than its length. Combined length of second and third tergites 1.5 times basal width of second tergite. Hypopygium with wide stripe of dense, short outstanding hairs distally. Ovipositor sheath sufficiently short, wide, weakly narrowed distally, rounded, its distal margin with dense and long setae. Length of sheath 1.4 times its maximum width, 1.8 times shorter than length of first abdominal tergite.

Sculpture.— Head densely and weakly punctulate, face weakly granulate also. Mesothorax smooth, but mesoscutum weakly punctulate. Propodeum completely weakly and irregulary rugulose, its basal third with weak transverse carina. First abdominal tergite densely longitudinally rugulose. Second and third tergites aciculate laterally.

Colour.— Body black. Antennae black, but basally dark reddish-brown. Palpi light brown. Legs light reddish-brown, but coxae black. Wings slightly brownish. Pterostigma brown.

Male.— Unknown.

Remark.— This species is closely related to C. *(A.) saxo* (Reinhard) and differs by having the temples long, the face almost flat and with dense, light hairs, the metacarpus shorter than the pterostigma, the ovipositor sheath shaped differently, and the coxae black. It has the characters of the venation and the head of C. *(A.) microvalvis*, but differs in having the comparatively long and wide ovipositor sheath, which is densely setose, the temple longer, the frons weakly punctulate, and the coxae black.

Centistes (Ancylocentrus) saxo (Reinhard, 1862)
(figs. 27, 28, 47, 60, 93, 113)

Leiophron saxo Reinhard, 1862: 335 (lectotype: ♀, Germany, "186/60", "Type", "Coll. H.Rhd", "*saxo*"; designate here; ZMB).

Ancylocentrus saxo; Shenefelt, 1969: 10; Tobias, 1986: 225.

Material.— Paralectotype, ♂, Germany, "Type", "Coll. H.Rhd.", "30223", "*saxo*". 6 ♀♀, 16 ♂♂, from European part of the USSR, Caucasus, Ural, Kazakhstan, Siberia and China. 1 ♀, Yakutsk, lake Beloe,

mixed forest, slopes, 7.vii.1990 (D. Kasparyan); 2 ♂♂, Primoryan Territory, Privalova Island near mouth of river Razdol'naya, meadow, 12.ix.1982 (I. Kerzhner); 1 ♂, Kunashir Island, Alyokhino, 27.vii.1973 (D. Kasparyan).

Distribution.— USSR: southern European part, Caucasus, Middle Asia, Kazakhstan, Siberia, *Yakutia, *Primoryan Territory, *Kunashir Island; West Europe; China.

Host.— *Amara apricaria* Pk. (Carabidae).

Centistes (Ancylocentrus) chaetopygidium spec. nov. (figs. 33, 34, 48, 54, 59, 96, 115, 116)

Material.— Holotype, ♀, Primoryan Territory, 30 km E Spassk, forest, 4.vi.1984 (S. Belokobylskij) (ZIL). Paratypes: 1 ♀, Primoryan Territory, Barabash-Levada, flood-lands forest, 26.vi.1980 (G. Krivolutskaya) (ZIL); 1 ♀, 20 km SE Spassk, forest, 20.vi.1980. (S. Belokobylskij) (ZIL); 1 ♀, 20 km E Spassk, forest, 27.vi.1981 (S. Belokobylskij) (ZIL); 1 ♀, 30 km NE Spassk, forest, 24.viii.1981 (S. Belokobylskij) (ZIL); 1 ♀, 20 km E Ussuriysk, at light, 6.ix.1983 (E. Budrys) (ZIL); 1 ♂, 20 km E Ussuriysk, 27.viii.1984 (S. Sinev) (ZIL); 3 ♂♂, Spassk, forest, 30.vi.1985 & 23.viii.1987 (S. Belokobylskij) (ZIL, RMNH); 1 ♀, 1 ♂, 15 km NW Partizansk, forest, 16.viii.1985 (S. Belokobylskij) (ZIL, RMNH); 1 ♀, 25 km SE Spassk, Evseevka, flood-lands forest, 28.vi.1985. (D. Kasparyan) (ZIL); 1 ♀, 15 km S Partizansk, Novitskoe, forest, 24.vi.1990 (S. Belokobylskij) (ZIL); 5 ♀♀, 20 km SE Ussuriysk, at light, 31.vii., 1-4.viii.1991 (S. Belokobylskij) (ZIL).

Female.— Body length 4.8-6.2 mm; fore wing length 3.5-4.7 mm. Head width 1.8 times medial length. Temple strongly and almost linearly narrowed behind eye, its length 1.6-2 times shorter than transverse diameter of eye. Ocellar triangle almost equilateral. POL slightly longer than Od, 1.5 times OOL. Eye 1.6 times as high as broad. Cheek height 7-8.5 times shorter than eye height and 1.5-2 times shorter than basal width of mandible. Face height 1.7-2 times shorter than eye height, 1.3 times shorter than width of face. Clypeal width twice its medial height. Distance between tentorial pits 2.5-3 times the distance of pit to eye. Antennae 30-32-segmented. First flagellar segment 3-3.3 times as long as apical width, 1.2-1-3 times as long as second segment. Penultimate segment 1.5-1.6 times as long as wide.

Thorax.— Length 1.5 times its height. Mesoscutum setose anteriorly, its posterior half or two-thirds glabrous. Notauli complete, shallow, and smooth. Prescutellar depression long, very weakly rugulose, and with 1-3 distinct carinae. Scutellum convex. Sternauli very shallow, wide, curved, smooth.

Wings.— Radial cell of fore wing weakly shortened, metacarpus (within radial cell) nearly equal to, or slightly longer than length of, pterostigma. Radial vein arising near middle of pterostigma. First radial abscissa 8.5-12.5 times shorter than second, which is anteriorly weakly curved, then straight. First radiomedial vein 3.5-5 times first radial abscissa. Nervulus distad of basal vein 0.5-0.66 its length. Hind wing with first abscissa of mediocubital vein 2.6-3 times second abscissa.

Legs.— Femora weakly thickened. Hind femur 4.6-4.9 times as long as wide. Length of second tarsal segment 2-2.2 times shorter than first segment, 1.3 times 5th (without pretarsus).

Abdomen.— Abdomen elongate oval. First tergite weakly and roundly widened from base to apex, with weak spiracular protuberances before middle, with distinct and short oval depression medially. Apical width of first tergite 1.6-1.9 times its basal width, 1.3-1.6 times shorter than its length. Combined length of second and third tergites 1.5-1.7 times basal width of second tergite. Hypopygium with brush-like, very

dense, and shortly setose. Ovipositor sheath short, very thick, strongly narrowed distally, shortly and densely setose. Length of sheath nearly equal to its maximum width, 3.7-4 times shorter than length of first abdominal tergite.

Sculpture.— Head and mesothorax smooth. Propodeum almost smooth in basal half, weakly and irregulary rugulose in distal half, with weak transverse medial carina. First abdominal tergite smooth, but weakly rugo-granulate laterally.

Colour.— Body black, pro-and mesothorax (in front or almost completely) light reddish-brown. Antennae black, but basally dark brown. Palpi and legs light brown, hind tibiae and tarsae darker. Wings very weakly brownish. Pterostigma black.

Male.— Body length 3.3-3.8 mm. Temple roundly narrowed behind eye, its length 1.2-1.4 times shorter than transverse diameter of eye. Eye height 4.7-6.5 times cheek height. Hind femur 4-4.2 times as long as wide. Apical width of first abdominal tergite 1.2-1.4 times shorter than its length; tergite more strongly rugulose then ♀. Propodeum more roughly and irregularly rugulose in distal half. Body sometimes darker. Otherwise similar to female.

Remark.— This species differs from all species of *Centistes* by having the very enlarged eye, the indistinct sternauli, the short and very thick ovipositor sheath, the hypopygium brush-like, densely and shortly setose, and the first abdominal tergite with distinct and short oval medial depression.

Centistes (Ancylocentrus) paupella (Shenefelt, 1969)
(figs. 35, 36, 73, 97, 117)

Ancylocentrus paupella Shenefelt, 1969: 10 nom. nov. pro *Leiophron pallipes* Wesmael, 1835, not *L. pallipes* Curtis 1833.

Leiophron pallipes Wesmael, 1835: 108 (holotype: ♂ (not ♀), Belgium ("pres de Bruxelles"), "Coll. Wesmael", "1823", "*Leiophron pallipes* mihi, det. C. Wesmael; examined; IRSB).

Material. —1 ♀, Ukraine, Poltava Region, Mirgorod, Ostrov, border of forest, 30.vii.1984 (A. Kotenko); 1 ♀, Ufa, left coast of river Ufimka, border of forest, 5.vii.1985 (A. Kotenko); 1 ♀, Kamchatka, "g. Kharchinsk", 4.ix.1931 (Pereleshina); 1 ♀, Khabarovsk Territory, 20 km NW Amurzet, meadow, 17.vi.1985 (S. Belokobylskij); 2 ♀♀, Primoryan Territory, Barabash-Levada, forest, 27 & 28.vi.1978 (S.Belokobylskij); 1 ♀, 1 ♂, Sergeyevka, oak-forest, 21 & 22.vii.1978 (S. Belokobylskij); 2 ♀♀, Spassk, forest, shrubs, 15 & 16.ix.1987 (S. Belokobylskij); 1 ♀, 20 km SE Spassk, Evseevka, forest, 9.vi.1989 (S. Belokobylskij); 1 ♀, 15 km S Partizansk, forest, 24.vi.1990 (S. Belokobylskij); 1 ♀, Prymoryan Territory, 20 km SE Ussuriysk, at light, 31.vii.1991 (S. Belokobylskij).

Distribution.— *USSR: Ukraine, Bashkiriya, Kamchatka, Khabarovsk and Primoryan Territories; West Europe.

Centistes (Ancylocentrus) planivalvis spec. nov.
(figs. 37, 38, 74, 98, 118)

Material. — Holotype, ♀, Primoryan Territory, 15 km S Slavyanka, Ryasanovka, at light, 3.ix.1987 (S. Belokobylskij) (ZIL). Paratypes: 1 ♀, 15 km S Slavyanka, Ryasanovka, oak-forest, 2.ix.1987 (S. Belokobylskij) (ZIL); 1 ♀, 20 km SE Ussuriysk, at light, 4.viii.1991 (S. Belokobylskij) (ZIL); 1 ♀, 20 km SE Ussuriysk, forest, 31.vii.1991 (S. Belokobylskij) (ZIL).

Female.— Body length 2.9-3.4 mm; fore wing length 2.5-2.7 mm. Head width 1.9 times medial length. Temple strongly and roundly narrowed behind eye, its length 1.1-1.3 times shorter than transverse diameter of eye. Ocellar triangle with base 1.3 times longer than sides. POL 1.3-1.7 times Od, almost equal to or 1.3 times OOL. Eye 1.5 times as high as broad. Cheek height 4.3-4.8 times shorter than eye height and 1.1-1.3 times shorter than basal width of mandible. Face height 1.6-1.9 times shorter than eye height and 1.1-1.4 times shorter than width of face. Clypeal width almost twice its medial height. Distance between tentorial pits 2-2.6 times the distance of pit to eye. Atennae 25-26-segmented. First flagellar segment 3.-3.5 times as long as apical width, 1.1-1.3 times as long as second segment. Penultimate segment 1.5 times as long as wide.

Thorax.— Length 1.6 times its height. Mesoscutum smooth and glabrous, sparsely setose anteriorly only. Notauli complete, very shallow, and smooth. Prescutellar depression long, weakly rugulose, and with medial carina. Scutellum convex. Sternauli narrow, short, oblique, and crenulate.

Wings.— Radial cell of fore wing distinctly shortened, metacarpus (within radial cell) 1.1-1.2 times shorter than length of pterostigma. Radial vein arising from middle of pterostigma. First radial abscissa 7.5-10 times shorter than second, 3-3.2 times shorter than first radiomedial vein, and slightly curved. First radiomedial vein 3 times first radial abscissa. Nervulus distad of basal vein by 1-1.4 times its length. Hind wing with first abscissa of mediocubital vein 3.6-4 times second abscissa.

Legs.— Femora thickened. Hind femur 3.1-3.5 times as long as wide. Length of second tarsal segment 2-2.2 times shorter than first segment, 1.2 times shorter than 5th (without pretarsus).

Abdomen.— Abdomen weakly depressed. First tergite almost uniformly and straightly widened from base to apex, with weak spiracular protuberances. Apical width of first tergite 1.8-2 times its basal width, 1.3-1.5 times shorter than its length. Combined length of second and third tergites 1.4-1.5 times basal width of second tergite. Hypopygium glabrous, but with some hairs laterally. Ovipositor sheath short, flat, weakly narrowed distally, rounded apically, with short hairs and sparsely setose. Length of sheath 2.4-2.6 times its maximum width, 2-2.3 times shorter than length of first abdominal tergite.

Sculpture.— Head smooth, face weakly and densely punctulate. Mesothorax smooth. Basal half of propodeum almost smooth, its distal half weakly and irregulary rugulose, and with distinct transversal medial carina. First abdominal tergite longitudinally rugulose, almost smooth in distal quarter or third.

Colour.— Body black. Antennae dark brown or black, basally light brown. Palpi yellow. Legs light reddish-brown. Wings light. Pterostigma dark brown.

Male.— Unknown.

Remark.— This species is closely related to *C.* (*A.*) *paupella* (Shenefelt) and differs by having the longer, weakly widened and partly smooth first abdominal tergite, the propodeum with distinct transverse carina and weak sculpture, the sternauli deep, oblique, and narrow, the face narrow, and the mesoscutum largely glabrous.

Centistes (Ancylocentrus) spasskensis spec. nov.
(figs. 39, 40, 75, 99, 119, 120)

Material.— Holotype, ♀, Primoryan Territory, Spassk, forest, 13.ix.1988 (S.Belokobylskij) (ZIL); paratypes, 2 ♀♀, Prymoryan Territory, Spassk, forest, glades, 19 & 27.vii.1991 (S.Belokobylskij) (ZIL, RMNH); 1 ♀, 15 km SW Spassk, Knorring, forest, glades, 22.vii.1991 (S.Belokobylskij) (ZIL); 2 ♀♀, 20 km SE Ussuriysk, at light, 30.vii. & 4.viii.1991 (S.Belokobylskij) (ZIL).

Female.— Body length 3-3.4 mm; fore wing length 2.5-2.6 mm. Head width 1.8-1.9 times medial length. Temple anteriorly almost parallel-sided behind eye, then almost straightly narrowed, its length nearly equal to transverse diameter of eye. Ocellar triangle with base 1.5 times longer than sides. POL 1.6-1.8 times Od, slightly shorter than OOL or equal to it. Eye 1.6 times as high as broad. Cheek height 3.5-4.3 times shorter than eye height and slightly longer than basal width of mandible or 1.1-1.3 times shorter than it. Face height 1.7-1.8 times shorter than eye height and 1.4-1.6 times shorter than width of face. Clypeal width 1.7-2 times its medial height. Distance between tentorial pits 2.2-2.6 times the distance of pit to eye. Antennae 22-23-segmented. First flagellar segment 2.8-3 times as long as apical width, 1.1-1.2 times as long as second segment. Penultimate segment 1.8-2 times as long as wide.

Thorax.— Length 1.5 times its height. Mesoscutum setose in anterior half and glabrous in posterior half. Notauli complete, deep, but shallow in distal third, almost smooth. Prescutellar depression long, smooth or weakly rugulose, with medial carina. Scutellum convex. Sternauli shallow, wide, only partly rugulose.

Wings.— Radial cell of fore wing weakly shortened, metacarpus (within radial cell) slightly longer than length of pterostigma. Radial vein arising from middle of pterostigma. First radial abscissa 3.5-4 times shorter than first radiomedial vein and 9.7-12 times shorter than second, which is anteriorly weakly curved, then straight. First radiomedial vein 4 times first radial abscissa. Nervulus distad of basal vein by two-thirds or by its length. Hind wing with first abscissa of mediocubital vein 3.3-4.6 times second abscissa.

Legs.— Femora thickened. Hind femur 3.5-3.8 times as long as wide. Length of second tarsal segment 1.7-2 times shorter than first segment, 1.2-1.4 times shorter than distinctly thickened 5th segment (without pretarsus).

Abdomen.— Abdomen weakly depressed, but its distal third compressed. First tergite weakly, linearly and uniformly widened from base to apex, with very weak spiracular protuberances. Apical width of first tergite 1.7-1.9 times its basal width, 1.4-1.5 times shorter than its length. Combined length of second and third tergites 1.5-1.7 times basal width of second tergite. Hypopygium sparsely setose. Ovipositor sheath long, flat, strongly narrowed distally, acute apically, densely and longly setose. Length of sheath 3.6-4 times its maximum width, 1.2-1.3 times shorter than length of first abdominal tergite.

Sculpture.— Head and mesothorax smooth, only face weakly and densely punctulate. Propodeum smooth in basal half, weakly, sparsely and irregularly rugulose in distal half, with distinct transverse carina. First abdominal tergite weakly rugulose laterally and usually basally, smooth medially and distally.

Colour.— Body black. Antennae dark brown, almost black distally, and light brown basally. Abdomen light reddish-brown in distal third-quarter. Palpi yellow. Legs light reddish-brown, hind tibiae in distal half, middle and hind tarsi and usually all coxae (partly or almost completely) darker. Wing light. Pterostigma dark brown.

Male.— Unknown.

Remark.— This species is related to C. (*A.*) *paupella* (Shenefelt) and differs by hav-

ing the sternauli weakly sculptured, the basal half of the propdeum smooth, the first abdominal tergite and the ovipositor sheath longer and differently shaped. Also *C. (A.) spasskensis* is related to *C. (A.) planivalvis* spec. nov. and differs by having the ovipositor sheath longer and differently shaped, the long temple, the hind tibiae and tarsi dark.

Centistes (Ancylocentrus) scutellaris spec. nov.
(figs. 41, 42, 100, 121)

Material.— Holotype, ♀, Primoryan Territory, 15 km S Slavyanka, Ryazanovka, oak-forest, 2.ix.1987 (S. Belokobylskij) (ZIL).

Female.— Body length 4.1 mm; fore wing length 3.4 mm. Head width 1.9 times medial length. Temple strongly and almost linearly narrowed behind eye, its length 1.3 times shorter than transverse eye diameter. Ocellar triangle with base 1.4 times longer than sides. POL 1.3 times Od, 1.5 times OOL. Eye 1.5 times as high as broad. Cheek height 5.5 times shorter than eye height and 1.2 times shorter than basal width of mandible. Face height 1.7 times shorter than eye height and slightly shorter than width of face. Clypeal width 2.2 times its medial height. Distance between tentorial pits 2.5 times the distance of pit to eye. Antennae 24-segmented. First flagellar segment 3 times as long as apical width, slightly longer than second segment. Penultimate segment 2.2 times as long as wide.

Thorax.— Length 1.5 times its height. Mesoscutum setose in anterior half and glabrous posteriorly. Notauli complete, deep, and weakly crenulate. Prescutellar depression long, smooth, with medial carina. Scutellum strongly convex. Sternauli deep, narrow, crenulate.

Wings.— Radial cell of fore wing slightly shortened, metacarpus (within radial cell) slightly longer than length of pterostigma. Radial vein arising slightly distad of middle of pterostigma. First radial abscissa 12 times shorter than second, the latter basally weakly curved, and distally straight. First radiomedial vein 4.5 times first radial abscissa. Nervulus distad of basal vein by its length. Hind wing with first abscissa of mediocubital vein 3.2 times second abscissa.

Legs.— Femora thickened. Hind femur 3.5 times as long as wide. Length of second tarsal segment almost half as long as first segment, 1.3 times shorter than distinctly thickened 5th (without pretarsus).

Abdomen.— Abdomen elongate-oval. First tergite largely almost parallel-sided, slightly widened distally only, and with very weak spiracular protuberances near its basal third. Apical width of first tergite 1.2 times its width near spiracular protuberances, 1.6 times its basal width, 1.7 times shorter than its length. Combined length of second and third tergites 1.7 times basal width of second tergite. Hypopygium glabrous. Ovipositor sheath long, flat, almost uniformly narrowed distad and acute apically, with sparse and short setae. Length of sheath 2.5 times its maximum width, slightly shorter than length of first abdominal tergite.

Sculpture.— Head and mesothorax smooth. Propodeum very weakly and irregularly rugulose, almost smooth in basal half, with distinct transverse medial carina. First abdominal tergite almost smooth.

Colour.— Body black. Antennae dark reddish-brown, almost black distally. Palpi yellow. Legs light reddish-brown. Wings hyaline. Pterostigma dark brown.

Male.— Unknown.

Remark.— This new species is closely related to C. (*A.*) *spasskensis* spec. nov. and differs by having the temple almost linearly narrowed behind eye, the face narrow, the notauli deep and crenulate, the scutellum strongly convex, the first abdominal tergite almost parallel-sided and smooth, and the ovipositor sheath wide.

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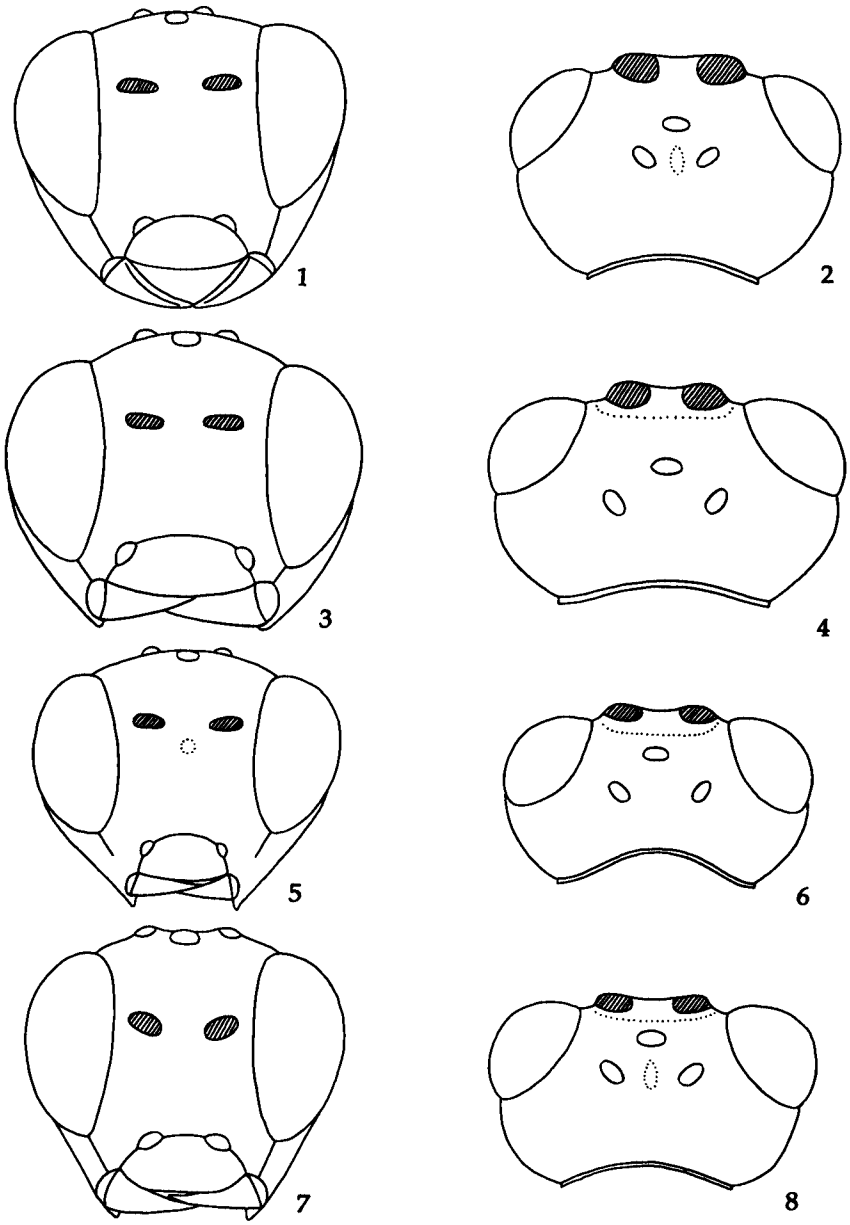
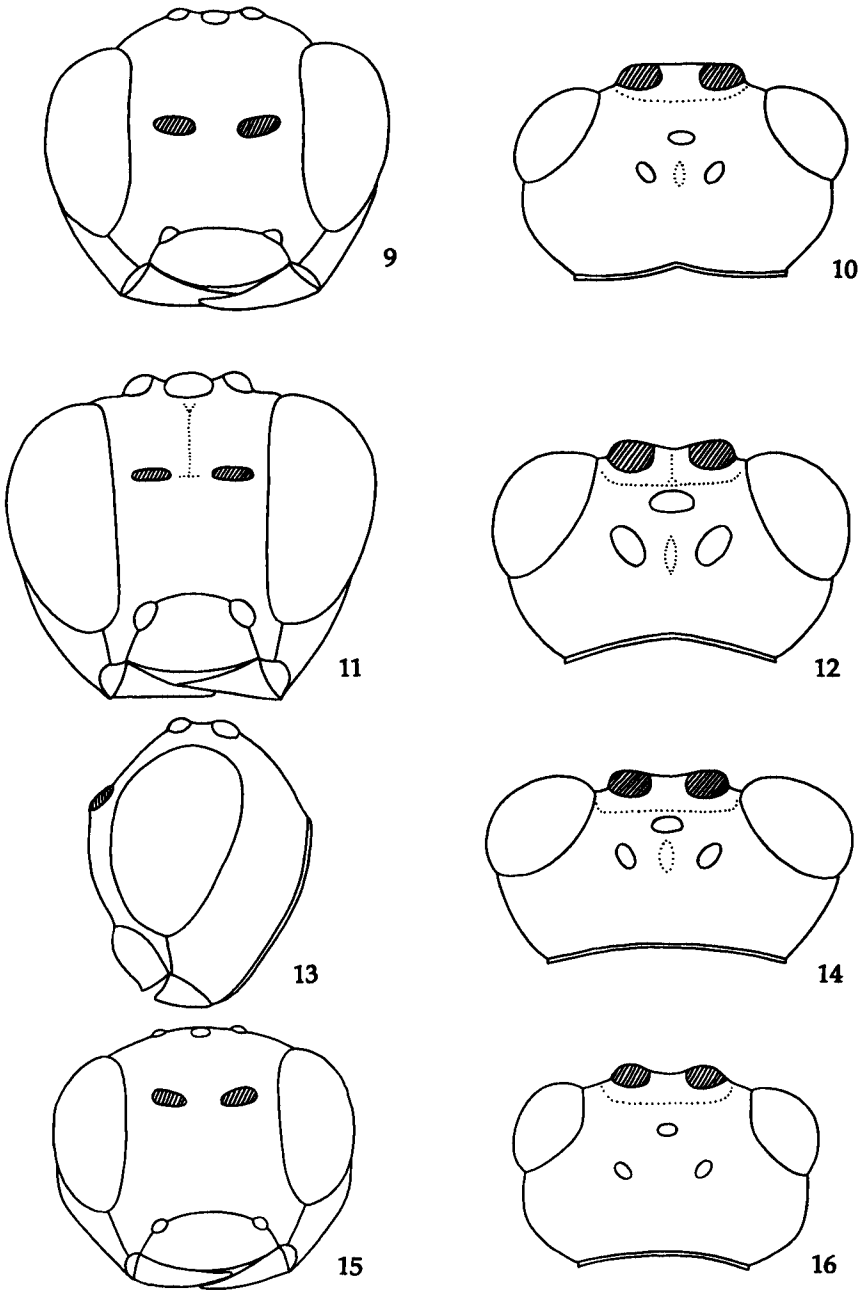
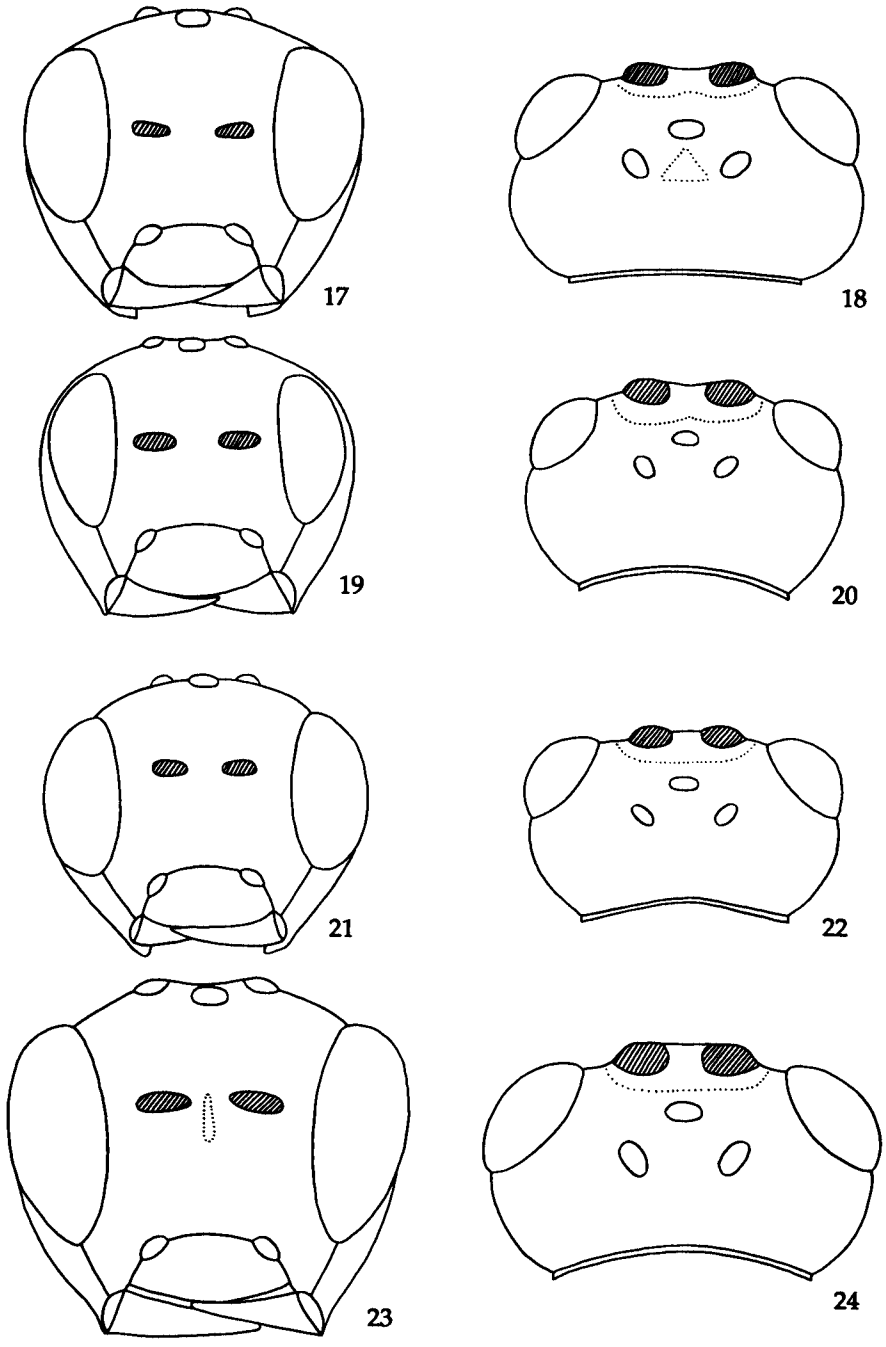


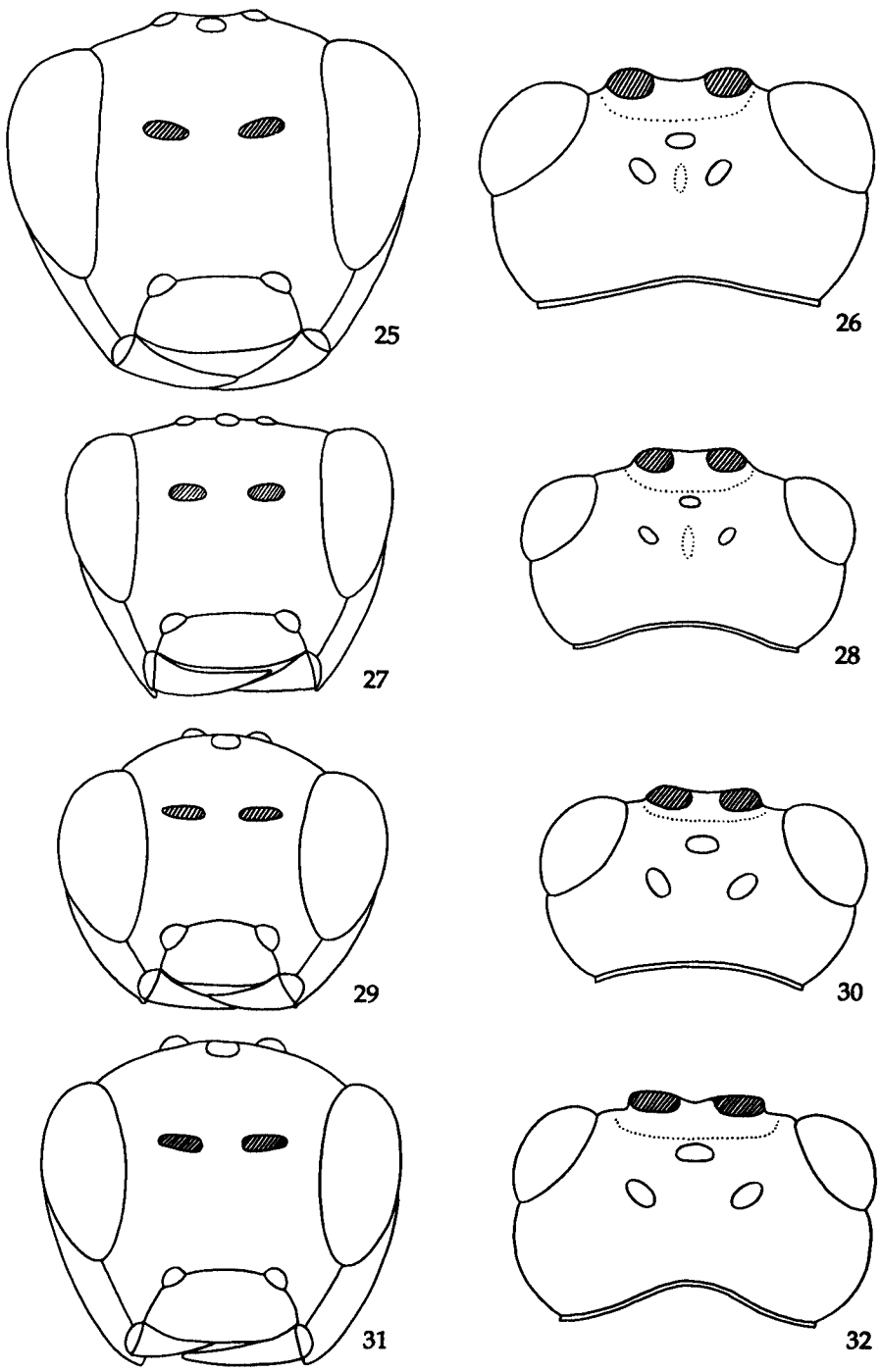
Figs. 1-8. Head (1, 3, 5, 7, frontal aspect; 2, 4, 6, 8, dorsal aspect). 1, 2, *Centistes* (*Centistes*) *cuspidatus* (Haliday); 3, 4, *C.* (*C.*) *fuscipes* (Nees); 5, 6, *C.* (*C.*) *alekseevi* spec. nov.; 7, 8, *C.* (*Ancylocentrus*) *collaris* (Thomson).



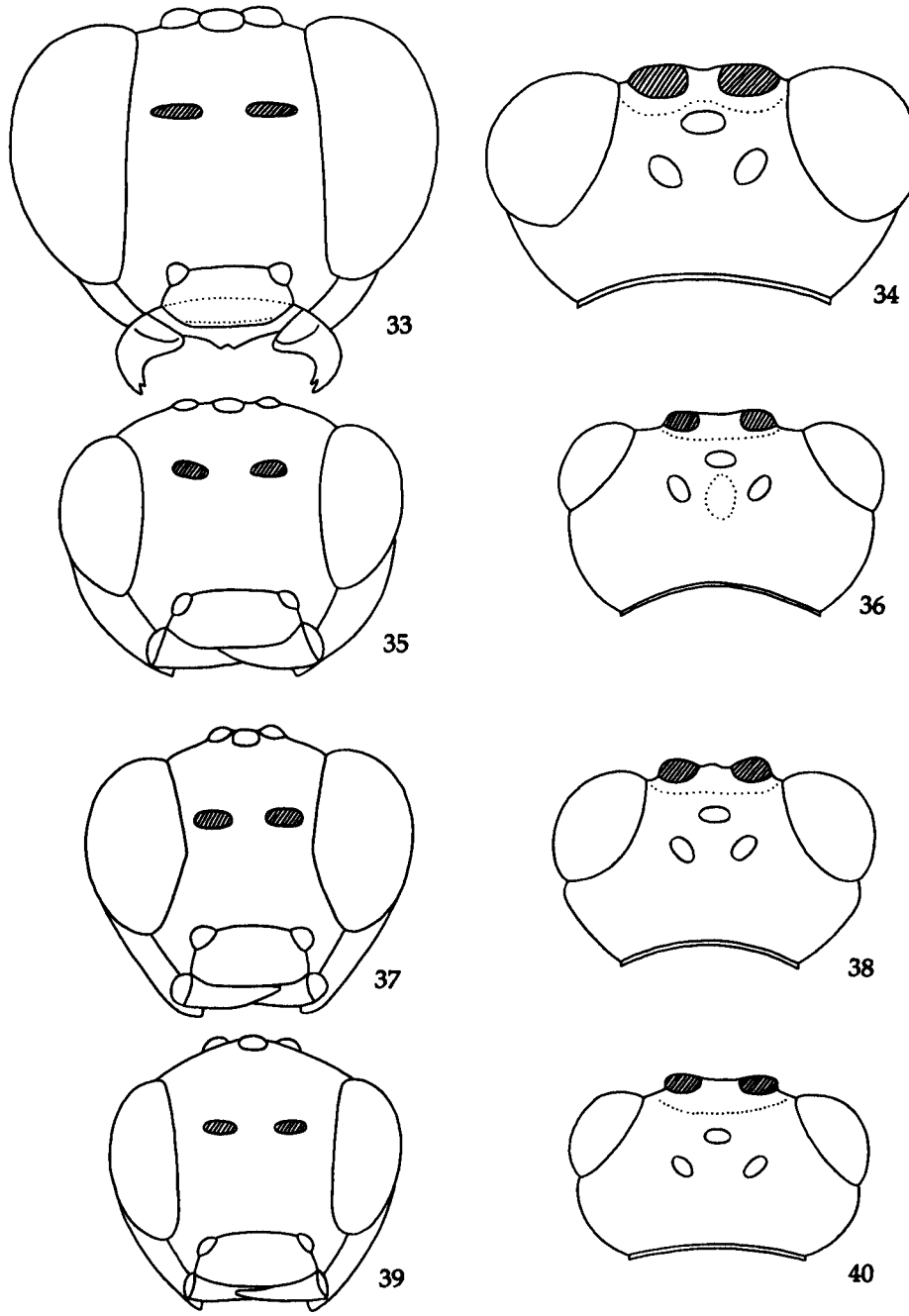
Figs. 9-16. Head (9, 11, 15, frontal aspect; 13, lateral aspect; 10, 12, 14, 16, dorsal aspect). 9, 10, *Centistes* (*Ancylocentrus*) *medythiae* Maetô & Nagai; 11, 12, *C.* (*A.*) *semiruficus* spec. nov.; 13, 14, *C.* (*A.*) *aino* (Watanabe); 15, 16, *C.* (*A.*) *ater* (Nees).



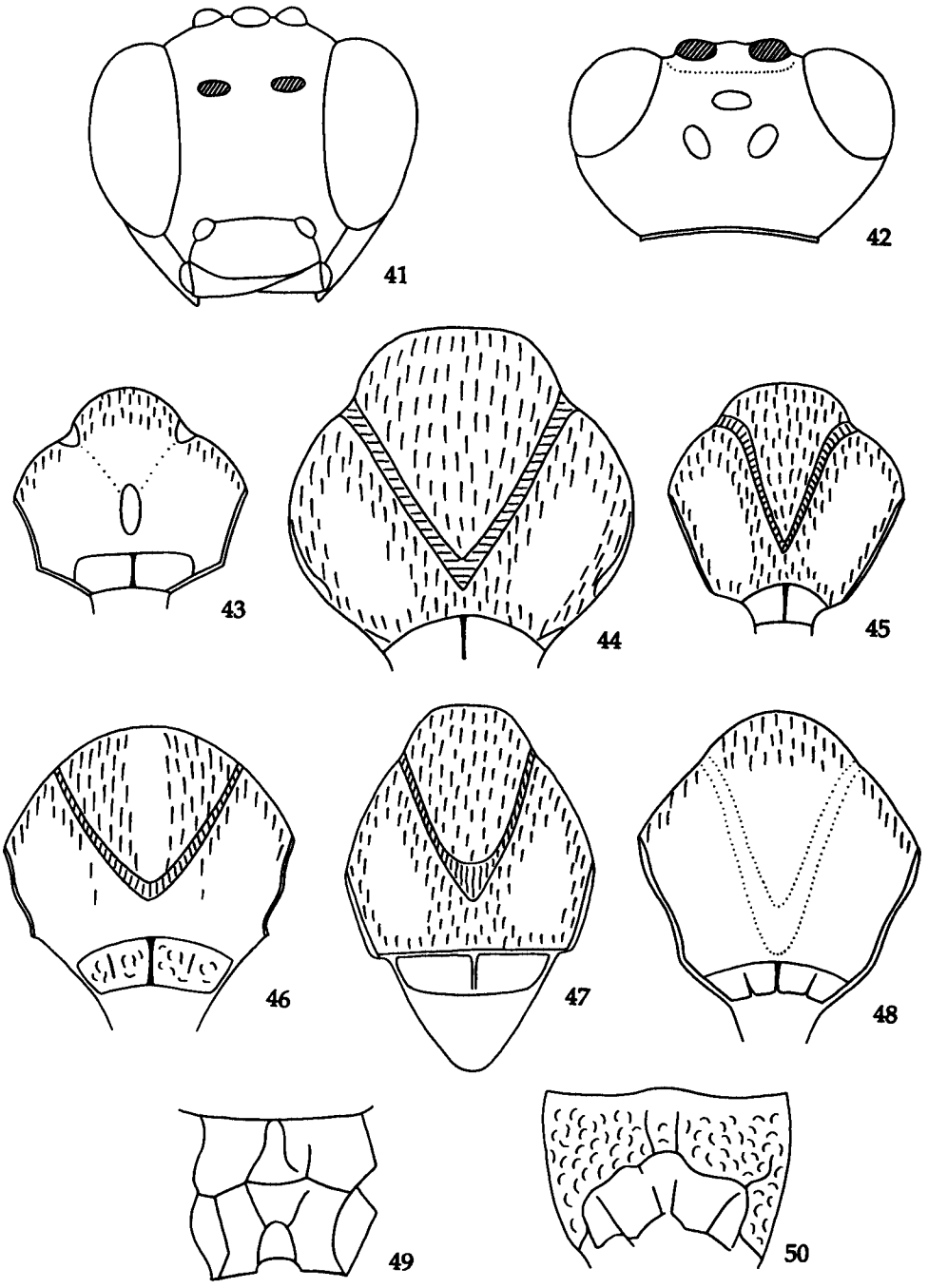
Figs. 17-24. Head (17, 19, 21, 23, frontal aspect; 18, 20, 22, 24, dorsal aspect). 17, 18, *Centistes (Ancylocentrus) edentatus* (Haliday); 19, 20, *C. (A.) convexitemporalis* spec. nov.; 21, 22, *C. (A.) microvalvis* spec. nov.; 23, 24, *C. (A.) pteropygidium* spec. nov.



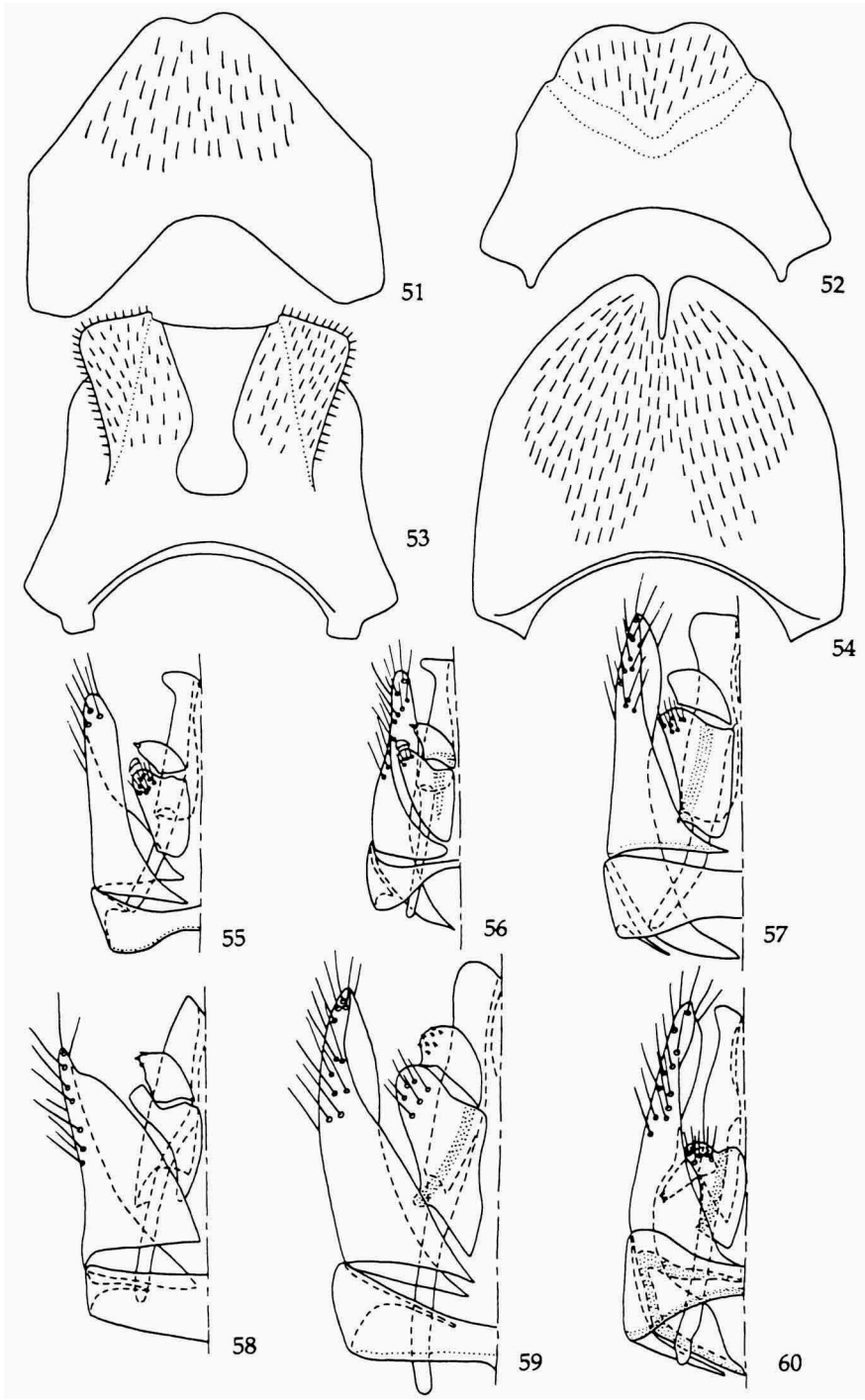
(Figs. 25-32. Head (25, 27, 29, 31, frontal aspect; 26, 28, 30, 32, dorsal aspect). 25, 26, *Centistes* (*Ancylocentrus*) *antennalis* (Watanabe); 27, 28, *C.* (*A.*) *saxo* (Reinhard); 29, 30, *C.* (*A.*) *sylvicola* spec. nov.; 31, 32, *C.* (*A.*) *manchzhuricus* spec. nov.



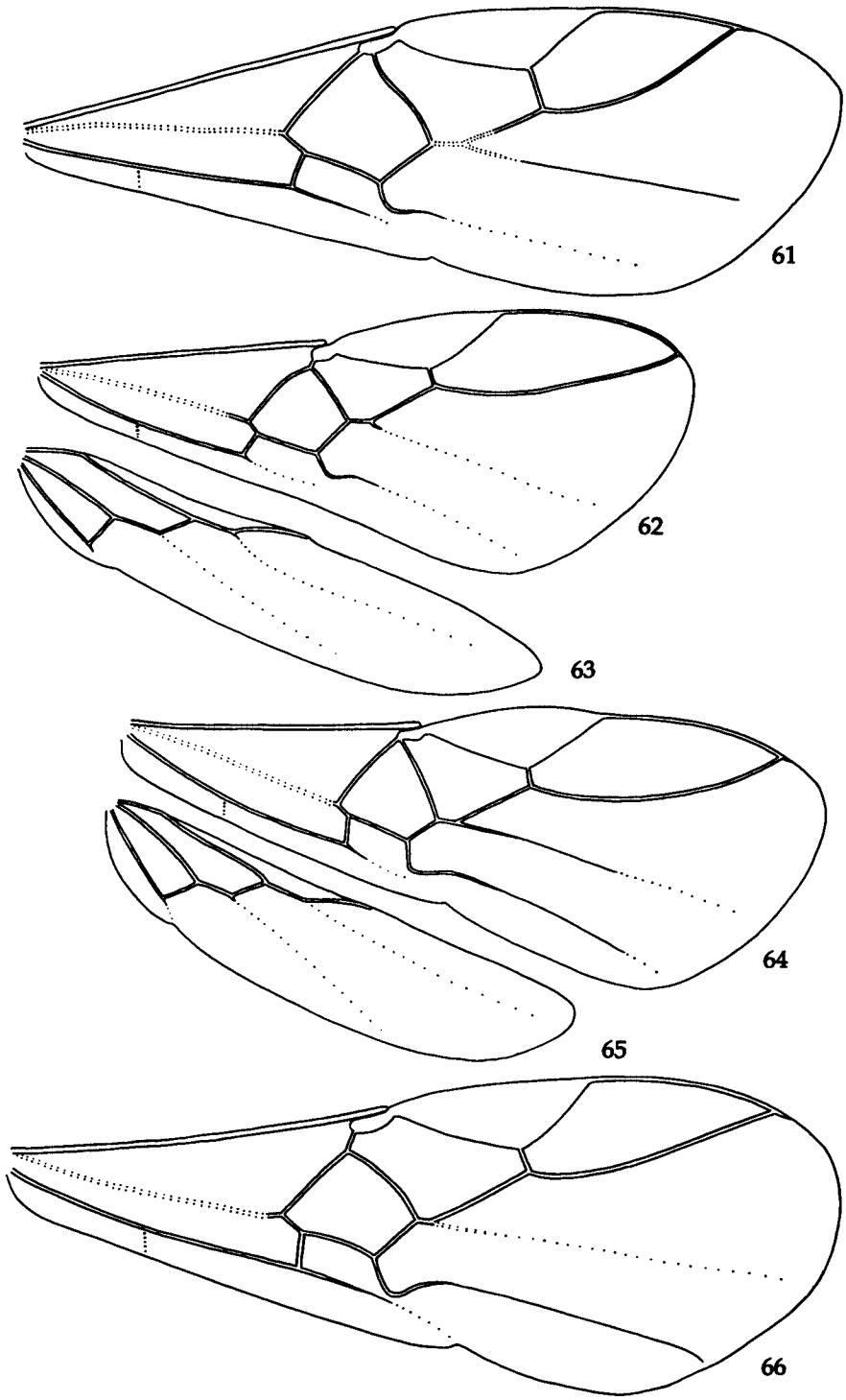
Figs. 33-40. Head (33, 35, 37, 39, frontal aspect; 34, 36, 38, 40, dorsal aspect). 33, 34, *Centistes* (*Ancylocentrus*) *chaetopygidium* spec. nov.; 35, 36, *C. (A.) paupella* (Shenefelt); 37, 38, *C. (A.) planivalvis* spec. nov.; 39, 40, *C. (A.) spasskensis* spec. nov.



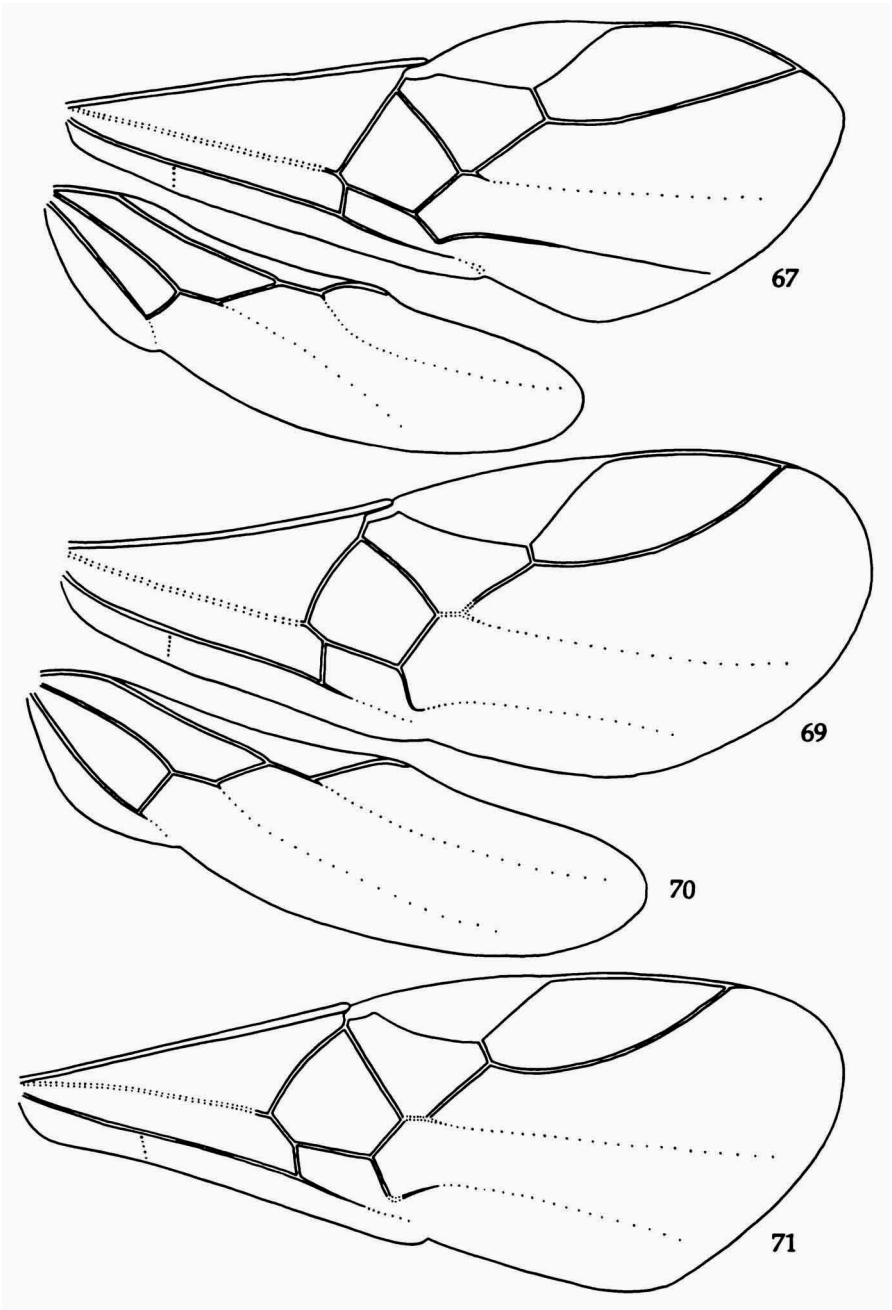
Figs. 41, 42. Head (41, frontal aspect; 42, dorsal aspect). Figs. 43-50. Mesoscutum (43-48) and propodeum (49, 50). 41, 42, *Centistes* (*Ancylocentrus*) *scutellaris* spec. nov.; 43, 49, *C.* (*A.*) *medythiae* Maetô & Nagai; 44, *C.* (*A.*) *semirufícus* spec. nov.; 45, 50, *C.* (*A.*) *ater* Nees; 46, *C.* (*A.*) *edentatus* (Haliday); 47, *C.* (*A.*) *saxo* (Reinhard); 48, *C.* (*A.*) *chaetopygidium* spec. nov.



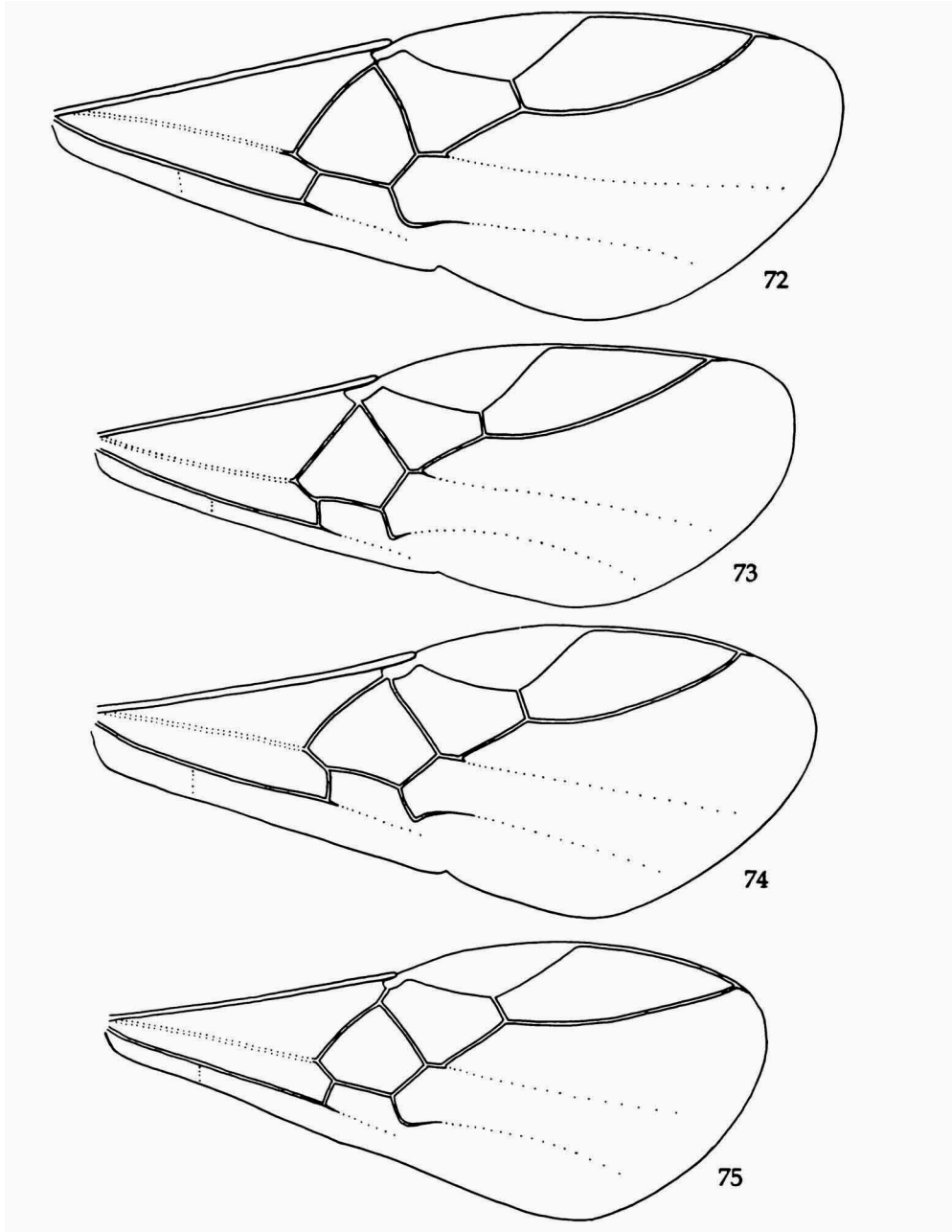
Figs. 51-60. Hypopygium (51-54) and male genitalia (55-60). 51, 56, *Centistes* (*Centistes*) *fuscipes* (Nees); 52, 57, *C.* (*Ancylocentrus*) *medythiae* Maetô & Nagai; 53, *C.* (*A.*) *pteropygidium* spec. nov.; 54, 59, *C.* (*A.*) *chaetopygidium*) spec. nov.; 55, *C.* (*C.*) *cuspidatus* (Haliday); 58, *C.* (*A.*) *ater* (Nees); 60, *C.* (*A.*) *saxo* (Reinhard).



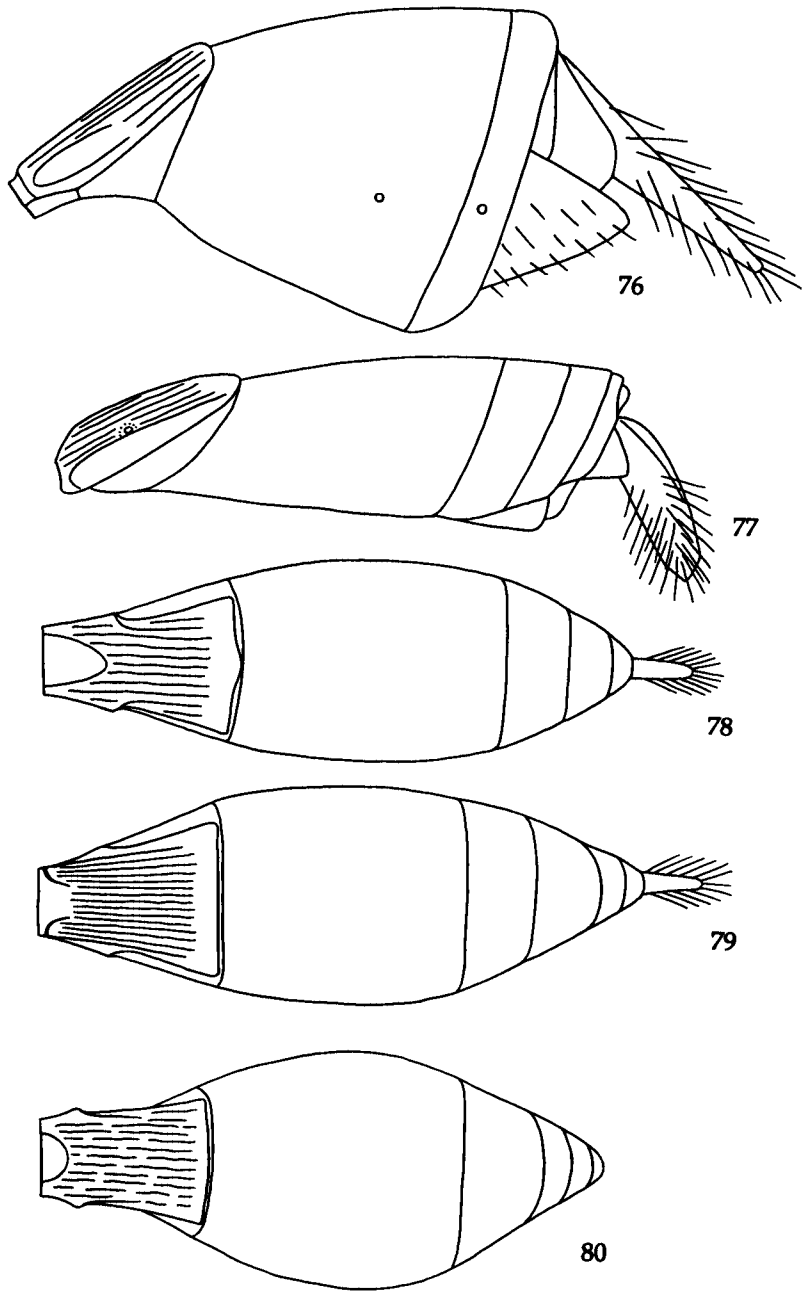
Figs. 61-66. Fore (61, 62, 64, 66) and hind (63, 65) wings. 61, *Centistes* (*Centistes*) *alekseevi* spec. nov.; 62, 63, *C.* (*C.*) *cuspidatus* (Haliday); 64, 65, *C.* (*Ancylocentrus*) *ater* (Nees); 66, *C.* (*A.*) *medithae* Maetô & Nagai.



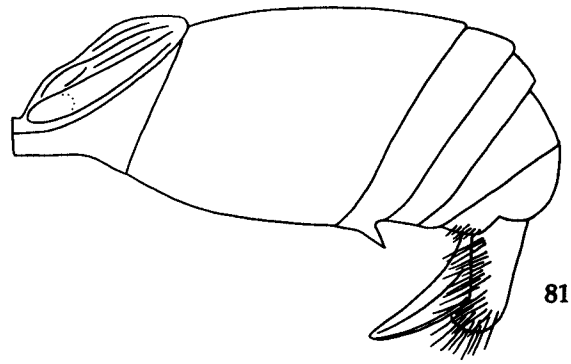
Figs. 67-71. Fore (67, 69, 71) and hind (68, 70) wings. 67, 68, *Centistes* (*Ancylocentrus*) *aino* (Watanabe); 69, 70, *C.* (*A.*) *edentatus* (Haliday); 71, *C.* (*A.*) *microvalvis* spec. nov.

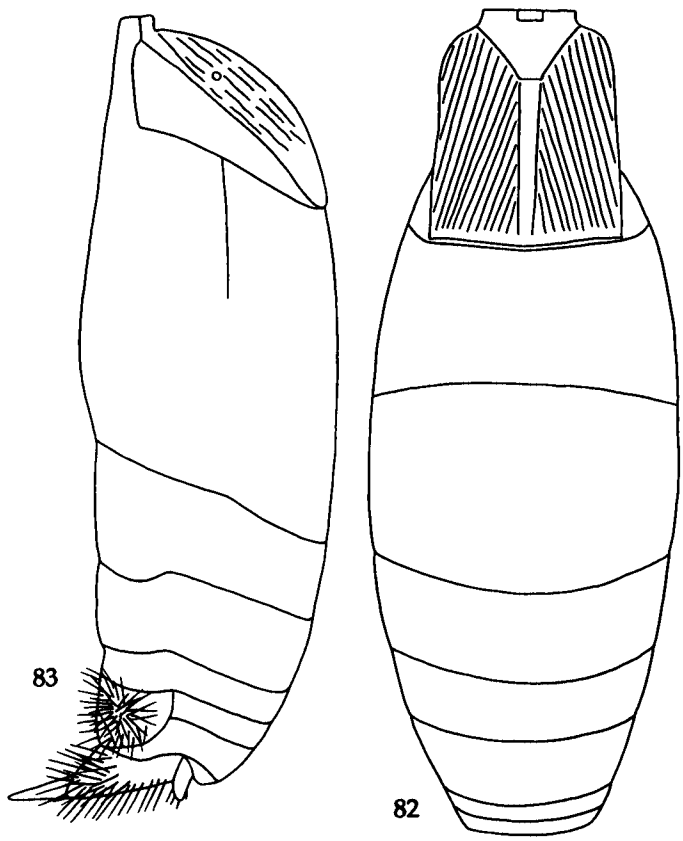


Figs. 72-75. Fore wings. 72, *Centistes* (*Ancylocentrus*) *manchzhuricus* spec. nov; 73, *C.* (*A.*) *paupella* (Shenefelt); 74, *C.* (*A.*) *planivalvis* spec. nov.; 75, *C.* (*A.*) *spasskensis* spec. nov.

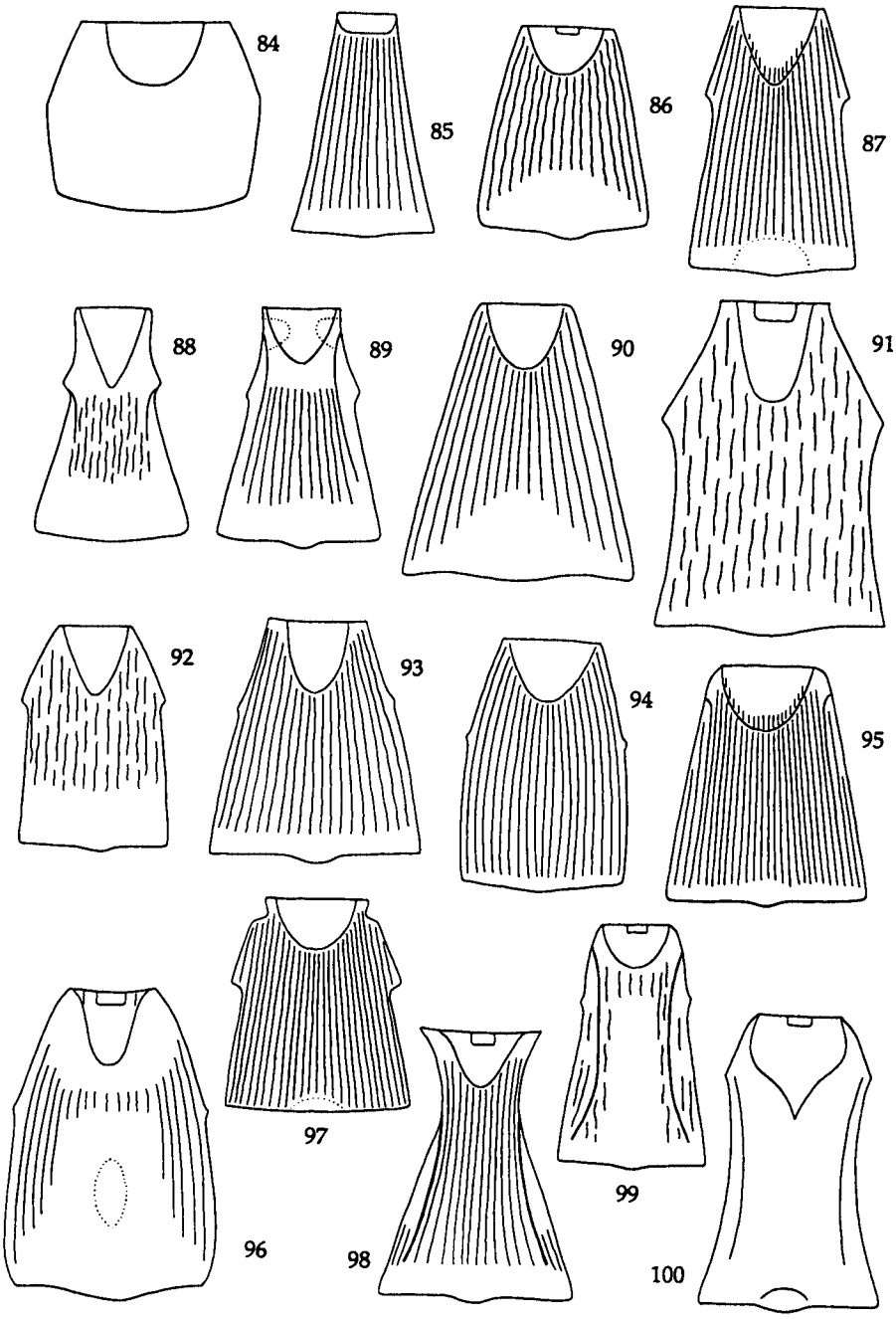


Figs. 76-80. Abdomen (76, 77, lateral aspect; 78, 79, 80, dorsal aspect). 76, *Centistes* (*Centistes*) *cuspidatus* (Haliday); 77, 78, *Centistes* (*Ancylocentrus*) *collaris* (Thomson); 79, *C.* (*A.*) *medythiae* Maetô & Nagai; 80, *C.* (*A.*) *ater* (Nees).

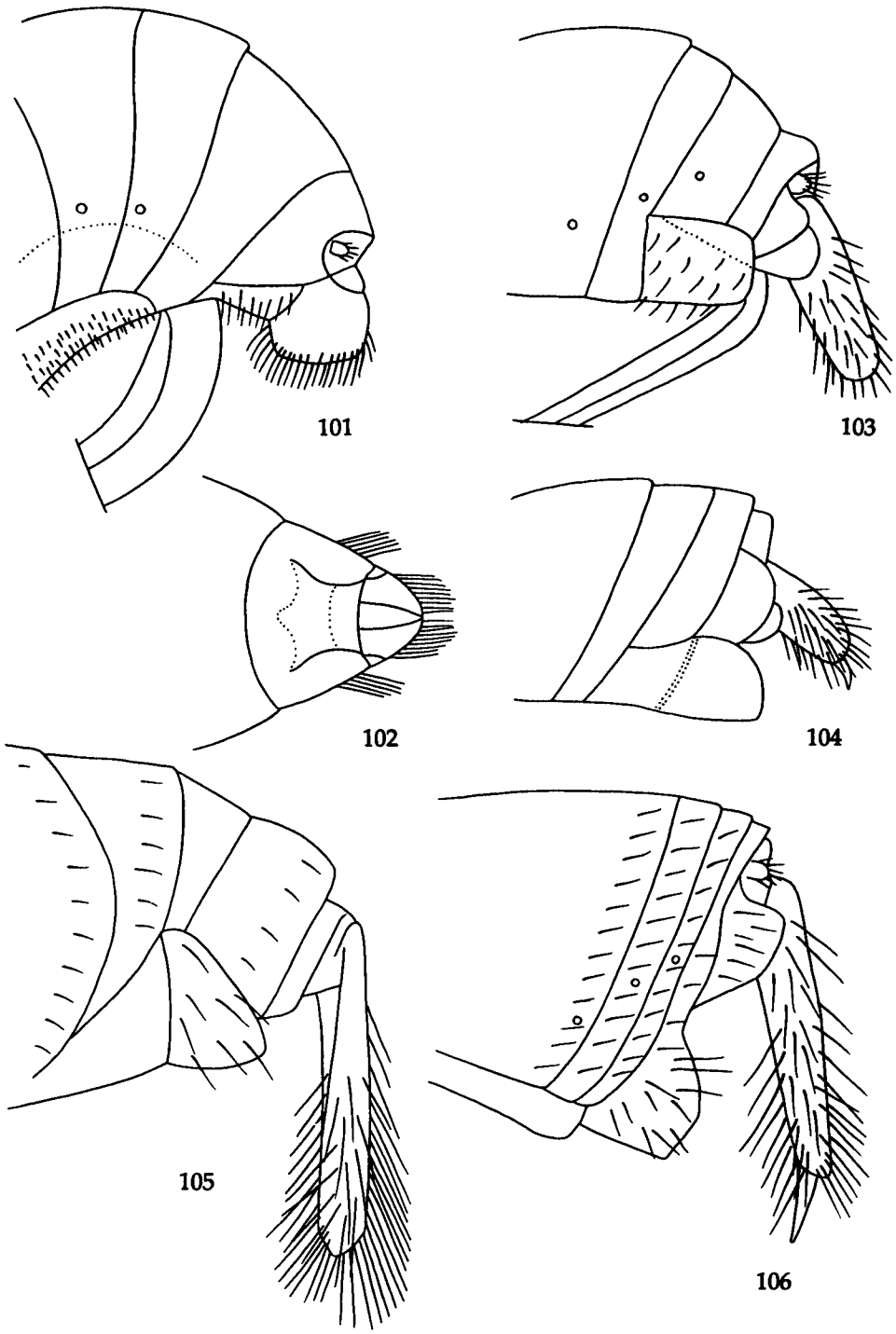




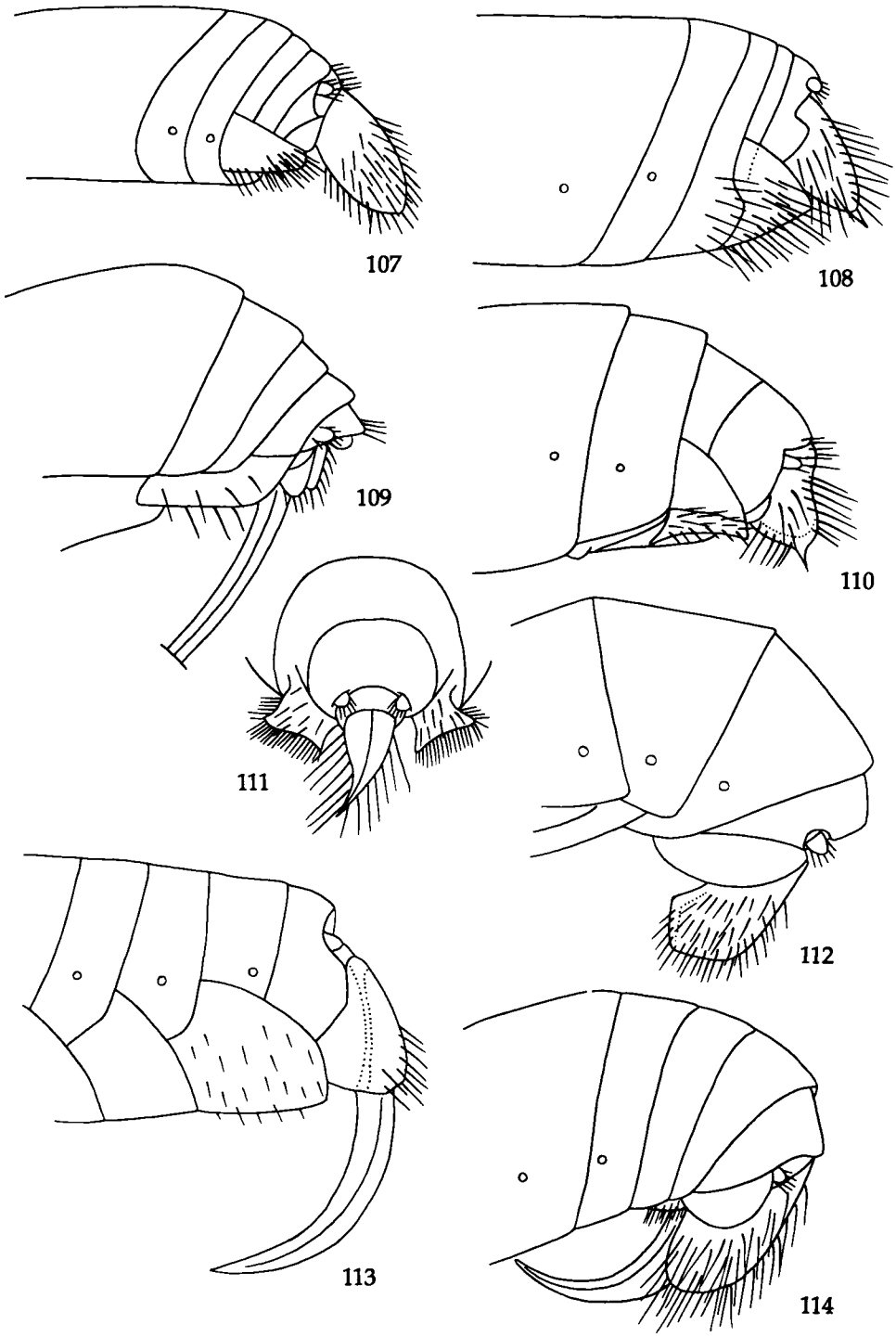
Figs. 81-83. Abdomen (82, dorsal aspect, 81, 83, lateral aspect). 81, *Centistes* (*Ancylocentrus*) *ater* (Nees); 82, *C.* (*A.*) *edentatus* (Haliday); 83, *C.* (*A.*) *antennalis* (Watanabe).



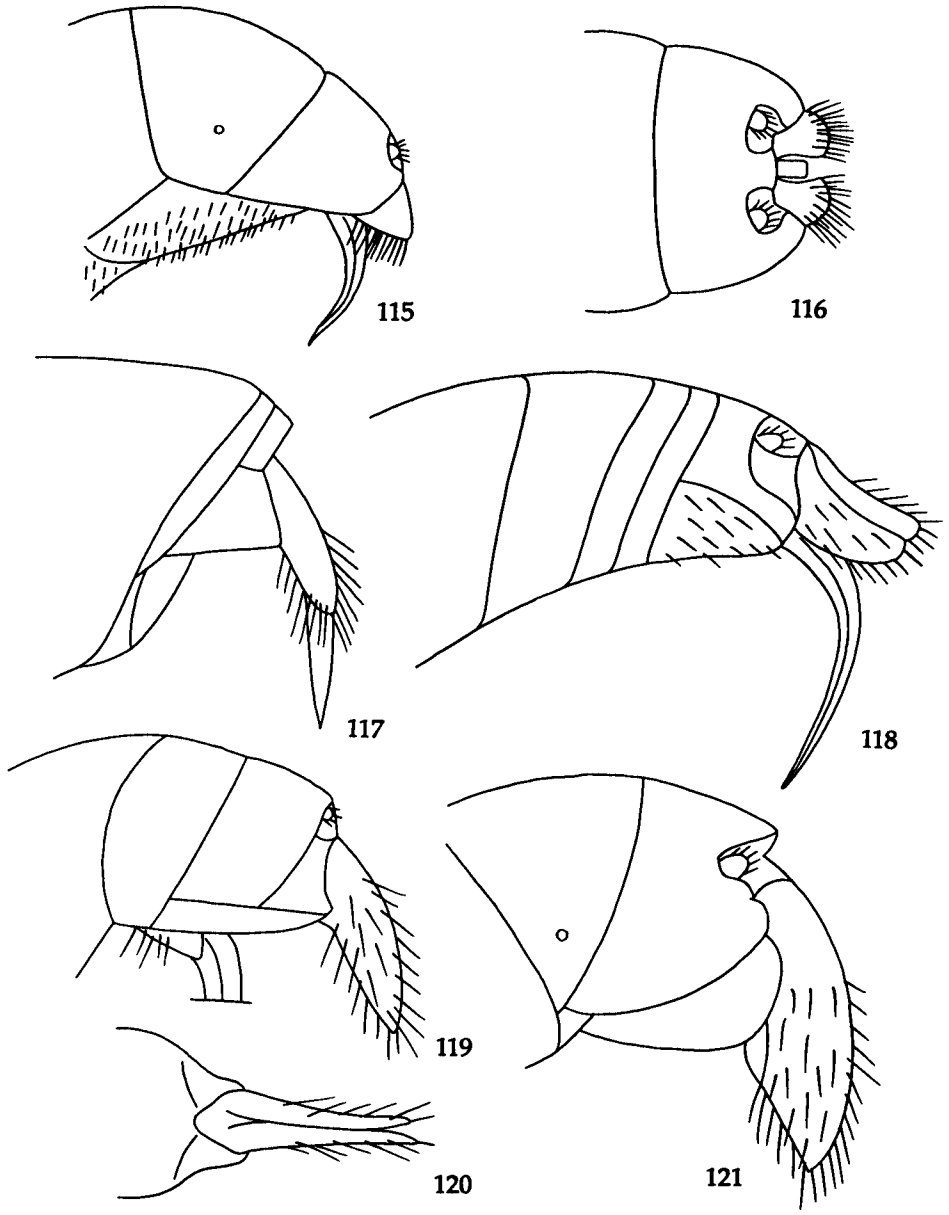
Figs. 84-100. First abdominal tergites. 84, *Centistes* (*Centistes*) *alekseevi* spec. nov.; 85, *C.* (*C.*) *cuspidatus* (Haliday); 86, *C.* (*C.*) *fuscipes*, (Nees); 87, *C.* (*Ancylocentrus*) *convexitemporalis* spec. nov.; 88, *C.* (*A.*) *aino* (Watanabe); 89, *C.* (*A.*) *semiruficus* spec. nov.; 90, *C.* (*A.*) *microvalvis* spec. nov.; 91, *C.* (*A.*) *pteropygidium* spec. nov.; 92, *C.* (*A.*) *antennalis* (Watanabe); 93, *C.* (*A.*) *saxo* (Reinhard); 94, *C.* (*A.*) *sylvicola* spec. nov.; 95, *C.* (*A.*) *manchzhuricus* spec. nov.; 96, *C.* (*A.*) *chaetopygidium* spec. nov.; 97, *C.* (*A.*) *paupella* (Shenefelt); 98, *C.* (*A.*) *planivalvis* spec. nov.; 99, *C.* (*A.*) *spasskensis* spec. nov.; 100, *C.* (*A.*) *scutellaris* spec. nov.



Figs. 101-106. Apex of abdomen, including ovipositor sheath (101, 103-106, lateral aspect; 102, dorsal aspect). 101, 102, *Centistes (C.) alekseevi* spec. nov.; 103, *C. (C.) fuscipes* (Nees); 104, *C. (Ancylocentrus) medythiae* Maetô & Nagai; 105, *C. (A.) aino* (Watanabe); 106, *C. (A.) semirufícus* spec. nov.



Figs. 107-114. Apex of abdomen, including ovipositor sheath (107-110, Figs. 107-114. Apex of abdomen, including ovipositor sheath (107-110, 112-114, lateral aspect; 111, dorsal aspect). 107, *Centistes (Ancylocentrus) edentatus* (Haliday); 108, *C. (A.) convexitemporalis* spec. nov.; 109, *C. (A.) microvalvis* spec. nov.; 110, 111, *C. (A.) pteropygidium* spec. nov.; 112, *C. (A.) sylvicola* spec. nov.; 113, *C. (A.) saxo* (Reinhard); 114, *C. (A.) manchzhuricus* spec. nov.



Figs. 115-121. Apex of abdomen, including ovipositor sheath (115, 117-119, 121, lateral aspect; 116, 120, dorsal aspect). 115, 116, *Centistes (Ancylocentrus) chaetopygidium* spec. nov.; 117, *C. (A.) paupella* (Shenefelt); 118, *C. (A.) planivalvis* spec. nov.; 119, 120, *C. (A.) spasskensis* spec. nov.; 121, *C. (A.) scutellaris* spec. nov.