

Revision of the subfamily Euphorinae (excluding the tribe Meteorini Cresson) (Hymenoptera: Braconidae) from China

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The subfamily Euphorinae (excluding the tribe Meteorini Cresson) (Hymenoptera: Braconidae) from China is revised. In total 150 species, belonging to 24 genera, are treated and keyed. One genus (*Heia* gen. nov.; type species: *Heia robustipes* spec. nov.) and 69 species are described as new to science. Seven genera and 16 species are new to the fauna of China. Three genera (*Euphorus* Nees, 1834, *Leiophron* Nees, 1818, and *Peristenus* Foerster, 1862) are redefined. The subgeneric division of the genus *Streblocera* Westwood is reassessed and one new subgenus (*Villocera* subgen. nov.; type species: *Streblocera villosa* Papp, 1985) is proposed. The following synonyms are established: *Euphoriella* Ashmead, 1900, with *Leiophron* Nees, 1818; *Aridelus hunanensis* You, Xiong & Zhou, 1988, with *A. rutilipes* Papp, 1965; *Aridelus destitutes* Chou, 1987, with *A. nigricans* Chao, 1974; *Streblocera guizhouensis* You & Lou, 1993, with *S. villosa* Papp, 1985; *Bracteodes ceranae* You & Zhou, 1991, with *Syntretomorpha szaboi* Papp, 1962 and *Wesmaelia pendula* Foerster, 1862, with *Euphorus petiolatus* Wollaston, 1850. The following new names are proposed: *Streblocera chaoi* nom. nov. for *S. serrata* Chao, 1993 and Myiocephalini nom. nov. for Loxocephalini Shaw, 1985. *Wesmaelia petiolata* (Wollaston, 1850) is a new combination. An aberrant species of the tribe Meteorini (*Meteorus erratus* spec. nov.) is included, because of its similarity to some members of the tribe Perilitini Foerster, 1862.

Contents

Introduction	4
Systematic part	5
Key to genera and subgenera of the subfamily Euphorinae Foerster from China	5
Genus <i>Aridelus</i> Marshall, 1887	11
Key to Chinese species of the genus <i>Aridelus</i> Marshall	12
Genus <i>Asiacentistes</i> Belokobylskij, 1995	20
Genus <i>Centistes</i> Haliday, 1835	21
Subgenus <i>Syrrhizus</i> Foerster, 1862	21
Key to Chinese species of the subgenus <i>Syrrhizus</i> Foerster	22
Subgenus <i>Centistes</i> s. s.	23
Key to Chinese species of the subgenus <i>Centistes</i> s. s.	23
Subgenus <i>Ancyllocentrus</i> Foerster, 1862	30
Key to Chinese species of the subgenus <i>Ancyllocentrus</i> Foerster	30
Genus <i>Chrysopophthorus</i> Goidanich, 1948	38
Genus <i>Cosmophorus</i> Ratzeburg, 1848	39
Genus <i>Dimocampus</i> Foerster, 1862	41
Genus <i>Euphorus</i> Nees, 1834	42
Key to Chinese species of the genus <i>Euphorus</i> Nees	42
Genus <i>Heia</i> gen. nov.	49
Genus <i>Leiophron</i> Nees, 1818	51

Key to Chinese species of the genus <i>Leiophron</i> Nees	51
Genus <i>Marshiella</i> Shaw, 1985	56
Key to species of the genus <i>Marshiella</i> Shaw	56
Genus <i>Meteorus</i> Haliday, 1835	59
Genus <i>Microctonus</i> Wesmael, 1835	61
Key to Chinese species of the genus <i>Microctonus</i> Wesmael	62
Genus <i>Myiocephalus</i> Marshall, 1898	74
Genus <i>Perilitus</i> Nees, 1818	75
Key to Chinese species of the genus <i>Perilitus</i> Nees	75
Genus <i>Peristenus</i> Foerster, 1862	87
Key to Chinese species of the genus <i>Peristenus</i> Foerster	87
Genus <i>Proclithrophorus</i> Tobias & Belokobylskij, 1981	99
Genus <i>Pygostolus</i> Haliday, 1833	100
Key to Chinese species of the genus <i>Pygostolus</i> Haliday	101
Genus <i>Ropalophorus</i> Curtis, 1837	102
Genus <i>Spathicopsis</i> van Achterberg, 1977	103
Genus <i>Streblocera</i> Westwood, 1833	103
Subgenus <i>Asiastreblocera</i> Belokobylskij	104
Key to species of the subgenus <i>Asiastreblocera</i> Belokobylskij	104
Subgenus <i>Cosmophoridia</i> Hedqvist, 1955	105
Subgenus <i>Eutanycerus</i> Foerster, 1862	106
Key to Chinese species of the subgenus <i>Eutanycerus</i> Foerster	106
Subgenus <i>Streblocera</i> Westwood, 1833	119
Key to Chinese species of the subgenus <i>Streblocera</i> Westwood	120
Subgenus <i>Villocera</i> subgen. nov.	123
Key to species of the subgenus <i>Villocera</i> nov.	124
Genus <i>Syntretomorpha</i> Papp, 1962	125
Genus <i>Syntretus</i> Foerster, 1862	125
Key to Chinese species of the genus <i>Syntretus</i> Foerster	126
Genus <i>Townesilitus</i> Haeselbarth & Loan, 1983	131
Key to Chinese species of the genus <i>Townesilitus</i> Haeselbarth & Loan	132
Genus <i>Ussuraridelus</i> Tobias & Belokobylskij, 1981	135
Genus <i>Wesmaelia</i> Foerster, 1862	136
Key to Chinese species of the genus <i>Wesmaelia</i> Foerster	137
Acknowledgements and abbreviations	138
References	138
Figures	145
Index to names of Braconidae and hosts	209

Introduction

The braconid subfamily Euphorinae Foerster, 1862, has a cosmopolitan distribution, containing 54 valid (sub)genera and about 500 species. Euphorinae are koinobiont endoparasites of larval Lepidoptera (tribe Meteorini Cresson, 1887), of larval and adult Coleoptera, and mainly of adult Hemiptera, Hymenoptera, Neuroptera, Orthoptera and Psocoptera (remainder of Euphorinae; Shenefelt, 1969; van Achterberg 1985, 1992 & 1993; Shaw 1985, 1987, 1988 & 1996; Belokobylskij, 1995 & 1996; Chen & van Achterberg, 1997).

The knowledge of this subfamily from China is rather limited. The revision of the genus *Meteorus* Haliday, 1835 (of the tribe Meteorini) from China is absolutely necessary and will be published elsewhere. The Chinese species of the other genus of Meteorini, *Zele* Curtis, 1832, were already revised by Chen, He & Ma (1987) and

Chou & Chou (1993). An aberrant species, *Meteoros erratus* spec. nov., of the genus *Meteoros* Haliday is included in this paper because it reflects the phylogenetic relationship of this genus with the genus *Perilitus* Nees. Among the remainder of this subfamily, there are ten genera with 69 species (65 valid species) previously recorded to occur in China, i.e., *Aridelus* Mashall (19 species, of which 17 are valid), *Chrysopophthorus* Goidanich (one species), *Dinocampus* Foerster (one species), *Myiocephalus* Marshall (one species), *Perilitus* Nees (one unidentified species), *Peristenus* Nees (one species), *Ropalophorus* Haliday (one species), *Streblocera* Westwood (40 species, of which 38 are valid), *Syntretomorpha* Marshall (one species), and *Wesmaelia* Foerster (three species). The purpose of this paper is to study the Chinese Euphorinae more extensively and systematically. Among the above ten genera, three genera, i.e., *Chrysopophthorus*, *Ropalophorus* and *Wesmaelia* are included in this paper following the literature because no specimens are available for this study. Chou (1987) reported ten genera of this subfamily as new for Taiwan province (among them nine genera not yet known from continental China), but no species were included. Most of these genera were found during this study and species are now included, but still two genera, i. e., *Centistina* Enderlein, 1912, and *Holdawayella* Loan, 1967, were not discovered. The genus *Bracteodes* De Saeger, 1946, was recorded erroneously from China owing to the misidentification of *Syntretomorpha szaboi* Papp, 1962, by You & Zhou (1991) as a new species, *B. ceranae* You & Zhou, 1991, of this genus.

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

Systematic part

Key to genera and subgenera of the subfamily Euphorinae Foerster from China

1. Antenna situated on a protuberance in front of eyes (fig. 177); occipital carina ending behind base of (more or less modified) mandible; maxillary palp with 4 segments and labial palp with 1 segment; scapus protruding apically, more or less toothed (fig. 180); prepectal carina absent laterally (fig. 177); ovipositor ribbon-shaped compressed; vein cu-a of hind wing absent (fig. 175); (tribe *Cosmophorini* Muesebeck & Walkley) *Cosmophorus* Ratzeburg
- Antenna situated more or less between eyes, not on a protuberance (figs 3, 40, 57); occipital carina ending above base of usually unmodified mandible; maxillary palp with 5-6 segments and labial palp with 2-3 segments; scapus not protruding apically, without tooth (figs 7, 42, 159); prepectal carina usually present laterally (figs 40, 186, 199); ovipositor cylindrical, if compressed then vein cu-a of hind wing at least partly present (figs 37, 55) 2
2. Mesosternum of female very densely felty setose and flattened (fig. 468); first metasomal tergite broadly sessile and with large dorsope (fig. 463); tarsi densely and long setose ventrally and comparatively slender (fig. 465); ovipositor strongly (blade-like) compressed (figs 469, 470); apex of antenna with spine (fig. 466) *Pygostolus* Haliday
- Mesosternum of female normally setose and convex (figs 40, 49, 186); first metasomal tergite petiolate, if broadly sessile then dorsope absent (figs 38, 152); tarsi normally setose ventrally and usually less slender (figs 11, 46, 54); ovipositor vari-

- able, usually cylindrical; apex of antenna usually without distinct spine (figs 45, 57, 206) 3
3. First metasomal tergite broadly sessile and laterope deep (figs 38, 57, 60, 89); length of ovipositor sheath less than 3 times its maximum width, if more than 3 times then first tergite with large dorsope; marginal cell of fore wing long (figs 55, 62); vein M+CU1 of fore wing largely reduced, unsclerotized and only vaguely pigmented (except *Asiacentistes*); (tribe Centistini Čapek s.s.) 4
- First tergite distinctly petiolate; if subpetiolate or rather sessile (figs 188, 260, 494), then laterope absent (fig. 186) and/or marginal cell of fore wing short (fig. 256), or length of ovipositor sheath more than 3 times its maximum width (figs 186, 256, 448); vein M+CU1 of fore wing variable 7
4. Vein 1-SR of fore wing absent, resulting in broadly sessile first discal cell (fig. 37); laterope of first metasomal tergite very shallow and small; hind tibia with distinct small sparse pegs at outer side (fig. 39); vein M+CU1 of fore wing completely sclerotized (fig. 37); malar suture present, but sometimes incomplete or absent (fig. 41) *Asiacentistes* Belokobylskij
- Vein 1-SR of fore wing shortly developed, resulting in a short petiolate first discal cell (figs 70, 82); laterope of first metasomal tergite deep and medium-sized to large; hind tibia without distinct small pegs at outer side (fig. 56); vein M+CU1 of fore wing largely reduced, unsclerotized (figs 55, 62, 70); malar suture present (figs 59, 65); (genus *Centistes* Haliday s.l.) 5
5. Vein 1-SR+M of fore wing, notauli, and precoxal sulcus usually absent (figs 55, 57, 60); metasoma without ventral teeth (fig. 57) subgenus *Syrhizus* Foerster
- Vein 1-SR+M of fore wing present (figs 62, 70), but may be partly reduced (fig. 76); notauli and precoxal sulcus often partly developed (figs 67, 101, 156); metasoma variable, sometimes with ventral teeth (fig. 117) 6
6. Notauli present anteriorly at mesoscutum, at least as a faint trace (figs 148, 156), or mesoscutum with a distinct medio-posterior pit (fig. 126) subgenus *Ancylocentrus* Foerster
- Notauli and medio-posterior pit of mesoscutum absent (fig. 64) subgenus *Centistes* Haliday
7. Tarsal claws bifurcate and abruptly bent submedially (figs 548, 559); vein 1-M of hind wing shorter than vein 1r-m (figs 549, 560), or absent (figs 539, 564); vein cu-a of hind wing usually reduced (figs 549, 564); vein 1-SR+M of fore wing absent; vein SR1+3-SR of fore wing slightly or not curved, resulting in (usually) long marginal cell (figs 549, 560); first tergite closed ventrally, tube-shaped on basal half or completely (figs 541, 556); vein 2-1A of hind wing absent; vein M+CU1 of fore wing unsclerotized (figs 539, 549); (tribe Syntretini Shaw) 8
- Tarsal claws simple and submedially evenly curved (figs 213, 486), not twisted; vein 1-M of hind wing usually as long as vein 1r-m, or longer (figs 205, 479); vein cu-a of hind wing, veins 1-SR+M and SR1+3-SR of fore wing variable (figs 204, 479); basal half of first tergite variable, if closed ventrally then usually vein 1-SR+M of fore wing present (figs 235, 245); vein 2-1A of hind wing usually present; vein M+CU1 of fore wing variable, if unsclerotized then marginal cell of fore wing short (figs 245, 256) 9
8. Occipital carina completely absent (figs 541, 544); mesosoma coarsely sculptured (figs 541, 542); notauli present (fig. 542); malar space long (fig. 545); propodeum

- reticulate and medio-posteriorly depressed (fig. 542); epistomal suture absent (fig. 545) *Syntretomorpha* Papp
- Occipital carina at least laterally present (figs 551, 553); mesosoma less sculptured (figs 551, 557); notauli absent (fig. 557); malar space shorter (fig. 554); propodeum and epistomal suture variable *Syntretus* Foerster
9. Scapus enlarged, longer than third antennal segment, protruding above top level of vertex or just reaching it (figs 49, 199, 498); if intermediate, then dorsope present (fig. 481) 10
- Scapus normal, slightly or not enlarged and subequal to or shorter than third antennal segment, not reaching top level of vertex (figs 206, 237, 247); if about reaching top level of vertex, then dorsope absent (fig. 186) 17
10. Antenna with 9-10 segments; scapus not or slightly protruding above top level of vertex, shorter than 1.9 times length of third antennal segment (fig. 481); antenna widened apically and length of apical segment more than twice length of penultimate segment (fig. 481); vein 1-SR+M of fore wing present (fig. 479); labial palp with 2 segments; ovipositor with acute subapical notch (fig. 481); first tergite in lateral view almost perpendicularly bent (fig. 481) *Ropalophorus* Curtis
- Antenna with more than 14 segments; scapus protruding above top level of vertex, nearly always longer than 1.9 times length of third antennal segment (figs 49, 196, 498); antenna not widened apically and length of apical segment less than twice length of penultimate segment (figs 196, 498); vein 1-SR+M of fore wing usually absent (figs 47, 193, 497); labial palp with 2-3 segments; ovipositor without acute subapical notch (figs 49, 199); first tergite in lateral view less and more gradually bent (figs 49, 199, 498) 11
- Note. If vein 1-SR+M of fore wing is present, cf. *Centistina* Enderlein, 1912.
11. Eyes strongly enlarged (figs 194, 199) and face distinctly transverse (fig. 194); scapus of ♀ comparatively short (fig. 199); legs robust, length of hind femur about 4 times its width (fig. 202) *Heia* gen. nov.
- Eyes normal to rather small (figs 501, 509, 516, 520), if enlarged then face about as long as high (fig. 51); scapus of ♀ long (figs 49, 498, 512, 518); legs slender, length of hind femur about 6-7 times its width (figs 53, 499); (*Streblocera* Westwood) ... 12
13. Mandible with wide ventral lamella (fig. 534); inner concave side of scapus of ♀ densely setose (fig. 532) subgenus *Cosmophoridia* Hedqvist
- Mandible without wide ventral lamella (figs 501, 520, 524); inner concave side of scapus of ♀ usually less densely setose (figs 498, 522, 538) 14
14. Face with an acute horn (fig. 49); fifth metasomal sternite of female with pair of acute teeth (fig. 49); occipital carina ventrally separated from hypostomal carina .
..... subgenus *Asiastreblocera* Belokobylskij
- Face without an acute horn (fig. 498); fifth metasomal sternite of female without pair of acute teeth (fig. 498); occipital carina ventrally usually joining hypostomal carina 15
15. Face of ♀ about as long as wide, strongly flattened and more or less tomentose (fig. 622); antennal sockets reaching top level of eyes in lateral view (fig. 619); seventh antennal segment of ♀ modified (figs 537, 618)
..... subgenus *Villocera* nov.
- Face of ♀ distinctly transverse, more or less convex and at most densely setose; antennal sockets near level of middle of eyes in lateral view (fig. 498); seventh antennal segment of ♀ usually not modified (figs 498, 507, 518, 522) 16

16. Third antennal segment of ♀ modified and with acutely protruding corner apically (figs 49, 535), in typical species fourth antennal segment submedially inserted on third antennal segment and third segment with long acute apex (fig. 49); seventh to ninth antennal segments of ♀ normal (fig. 49) subgenus *Streblocera* Westwood
- Third antennal segment of ♀ normal, without protruding corner apically (figs 498, 512, 518, 522), fourth antennal segment submedially inserted on third antennal segment (figs 498, 512, 518, 522); ninth (sometimes seventh and eighth) antennal segments of ♀ protruding apico-ventrally (figs 498, 512, 518, 522), but sometimes hardly protruding (fig. 507) subgenus *Eutanycerus* Foerster
17. Laterope deep and submedially situated in very slender first tergite (figs 339, 341); metasoma of female strongly compressed (fig. 341); hypopygium of female long setose apically (fig. 339); dorsal aspect of head usually slightly concave anteriorly (fig. 342); clypeus rather narrow (fig. 340); (tribe Myiocephalini nov.) *Myiocephalus* Marshall
- Note.— The tribal name, Loxocephalini Shaw, 1985, is invalid (Art. 39 of International Code of Zoological Nomenclature) because it is based on a junior homonym.
- Laterope absent (figs 206, 237, 276, 286), or shallow; if distinct then subbasally situated (figs 352, 374); metasoma of female more or less depressed (fig. 352); hypopygium of female shortly setose apically; dorsal aspect of head flat or convex anteriorly (figs 347, 573); clypeus usually rather wide (figs 250, 348) 18
18. Mandible enormously enlarged, about 1.5 times as long as height of head (figs 451, 454); mandible with 2 large lobes and 1 acute lobe (fig. 454); clypeus (sub) horizontally protruding forwards and semicircular (figs 451, 453); scapus apico-ventrally with an acute flange (fig. 451) *Proclithrophorus* Tobias & Belokobylskij
- Mandible normal and shorter than height of head (fig. 209); mandible with 2 more or less acute teeth (figs 286, 327); clypeus (sub)vertical, at most protruding downwards (figs 206, 247); scapus (sub)cylindrical (figs 206, 247) 19
19. Occipital carina completely absent (figs 589, 591); mesoscutum short, transverse, and medially reticulate (fig. 592); notauli absent (fig. 592); vein SR1 of fore wing reduced near wing margin, resulting in an open marginal cell of fore wing (fig. 587); vein M+CU1 of fore wing unsclerotized (fig. 587) *Ussuraridelus* Tobias & Belokobylskij
- Note. If vein m-cu of fore wing is absent, cf. *Holdawayella* Loan, 1967.
- Occipital carina present (figs 239, 247, 572); mesoscutum longer, less transverse, and medially largely smooth (figs 240, 259); notauli usually present (figs 240, 259); vein SR1 of fore wing complete, reaching wing margin, and resulting in a closed marginal cell (figs 204, 569), or completely absent and no marginal cell (fig. 261); vein M+CU1 of fore wing variable 20
20. First metasomal tergite wider submedially than apically (fig. 601), and vein r-m of fore wing absent (fig. 595); length of first tergite 7.2-9.4 times its apical width (figs 597, 601) *Wesmaelia* Foerster
- First tergite submedially as wide as apically or narrower (figs 290, 395), if parallel-sided or slightly wider, than vein r-m of fore wing present or length of first tergite usually less than 5 times its apical width (figs 253, 268, 272) 21
21. Vein M+CU1 of fore wing largely unsclerotized and vein r-m of fore wing absent (figs 204, 245); ovipositor usually strongly curved downwards and shorter than

- hind basitarsus (figs 206, 247); length of ovipositor sheath 3 times its maximum width or less (figs 206, 247); marginal cell of fore wing small or absent (figs 204, 245, 261); (tribe Euphorini p.p.) 22
- Vein M+CU1 of fore wing completely sclerotized, or if rarely unsclerotized then vein r-m of fore wing present (figs 273, 285, 346, 569); ovipositor straight or only apically curved and longer than hind basitarsus (figs 273, 286, 350, 572); ovipositor sheath longer than 5 times its maximum width (figs 273, 286, 350, 572); marginal cell of fore wing medium-sized to large (figs 273, 285, 346, 569) 26
22. Occipital carina straight ventrally or nearly so, remaining separated from hypostomal carina (fig. 207); vein 1-SR+M of fore wing present (figs 204, 214, 218) and vein 2-CU1 usually unsclerotized (fig. 214); vein cu-a of hind wing (partly) absent (figs 204, 214, 218); occipital carina usually widely interrupted dorsally (figs 210, 216, 220); first tergite (largely) open ventrally (fig. 212) *Euphorus* Nees
- Occipital carina curved towards and joining hypostomal carina (figs 247, 391) or at least connected to it by a branch (fig. 407); vein 1-SR+M of fore wing variable, if present then usually vein 2-CU1 of fore wing sclerotized (figs 245, 256, 388); occipital carina and first tergite variable 23
23. First discal cell of fore wing much more setose than basal cell, which is frequently (nearly) completely glabrous and often darker than basal cell (fig. 245); vein cu-a of hind wing variable, if present then first metasomal tergite ventrally open (fig. 259); first metasomal tergite usually hardly widened apically (figs 253, 264, 268); occipital carina usually widely interrupted dorsally (figs 248, 257); mesosternum usually smooth medio-posteriorly and postpectal carina distinct; (*Leiophron* Nees, 1818 s.l.) 24
- First discal and basal cells of fore wing similarly setose, both subhyaline (figs 388, 399); vein cu-a of hind wing present and vein 2-CU1 of fore wing sclerotized (figs 388, 399, 404); first metasomal tergite usually widened apically (figs 395, 403, 409); occipital carina usually complete dorsally or narrowly interrupted (figs. 393); mesosternum usually distinctly sculptured medio-posteriorly and postpectal carina indistinct or absent *Peristenus* Foerster
24. Antenna of both sexes with 14 segments; vein SR1 of fore wing nearly absent and vein 1-SR+M largely present; occipital carina complete dorsally, strong; parasites of Psocoptera subgenus *Euphoriella* Ashmead
- Antenna of both sexes with 15-20 segments; vein SR1 of fore wing partly or completely present (figs 245, 256, 269), if absent then vein 1-SR+M absent (fig. 261); occipital carina usually widely interrupted dorsally, if present then weakly developed; parasite of Hemiptera (Miridae and Lygaeidae) 25
25. Sides of basal 0.7 of first metasomal tergite largely free ventrally, distinctly separated by a split (fig. 259) and in dorsal view comparatively robust (fig. 260); vein cu-a of hind wing present (fig. 256) subgenus *Euphoriiana* Gahan
- Sides of basal 0.7 of first metasomal tergite touching and more or less united ventrally (fig. 252) and in dorsal view slender (figs 253, 264); vein cu-a of hind wing absent (figs 245, 261) subgenus *Leiophron* Nees
26. Ventral petiolar condylus nearly at level of bases of middle coxae (fig. 166); first metasomal tergite long, cylindrical and closed ventrally, smooth (figs 2, 165); vein r-m of fore wing present (figs 1, 13, 167) 27
- Ventral petiolar condylus normal, near level of bases of hind coxae; first tergite

- shorter, its posterior half depressed, not cylindrical and usually (largely) open ventrally (figs 286, 350, 572); vein r-m of fore wing variable 28
27. Vein 1-SR of fore wing absent (figs 16, 19) or wide and short (figs 1, 13); metasomal insertion surrounded by strong lamella (fig. 2); distance between antennal sockets about twice diameter of antennal socket (figs 6, 20); mesoscutum reticulate or reticulate-areolate; ovipositor sheath glabrous (except for a few setae) and widened (fig. 3), scarcely protruding, less than 0.6 times length of first tergite (fig. 3); vein 1r-m of hind wing short (figs 1, 13, 19) *Aridelus* Marshall
- Vein 1-SR of fore wing present, slender (figs 160, 167); metasomal insertion not surrounded by lamella (figs 174, 170); distance between antennal sockets about equal to diameter of antennal socket or less (figs 161, 169); mesoscutum punctate to finely granulate; ovipositor sheath setose and slender (fig. 158), distinctly protruding, at least 0.6 times length of first tergite (fig. 158); vein 1r-m of hind wing medium-sized (figs 160, 167) *Chrysopophthorus* Goidanich
28. Vein r-m of fore wing usually present (fig. 605), if absent then mandible with fine medio-longitudinal carina; vein 1-R1 of fore wing usually longer than pterostigma (figs 235, 605); dorsope frequently present (fig. 611); propodeum often with curved transverse carina anteriorly (fig. 611) or submedially and median carina more or less developed 29
- Vein r-m of fore wing absent (figs 184, 285, 346, 596) and mandible without fine medio-longitudinal carina, but usually with distinct ventral carina; vein 1-R1 of fore wing usually shorter than pterostigma (figs 184, 285, 346, 596); dorsope absent (figs 188, 352, 576), if present then small (figs 290, 311, 319); propodeum often rugose or reticulate, usually without carinae; (tribe Perilitini Foerster) 31
29. Vein 1-SR+M of fore wing absent (fig. 487); lower valve of ovipositor rather depressed (figs 496); first tergite subsessile (fig. 494); vein SR1 of fore wing evenly curved (fig. 487); vein r-m of fore wing absent (fig. 487); vein 1-M of hind wing about as long as vein 1r-m (fig. 487) *Spathicopis* van Achterberg, 1977
- Vein 1-SR+M of fore wing present (figs 235, 605); lower valve of ovipositor normal, rather compressed (figs 237, 605); first tergite (shortly) petiolate (figs 242, 611); vein SR1 of fore wing straight (fig. 605) or curved basally (fig. 235); vein r-m of fore wing present (fig. 605), but sometimes absent (fig. 235); vein 1-M of hind wing distinctly shorter than vein 1r-m (figs 235, 605); (tribe Meteorini Cresson) 30
30. Marginal cell of hind wing widened apically (fig. 605), sometimes with a faint vein r (fig. 605); fourth and fifth metasomal tergites largely densely setose (fig. 604); dorsope present (fig. 611); cocoons without long apical thread; propodeum with transverse carina anteriorly (fig. 611) *Zele* Curtis, 1832
- Marginal cell of hind wing narrowed apically (fig. 235), rarely subparallel-sided, without vein r (fig. 235); fourth and fifth tergites largely glabrous (fig. 237), rarely in ♂ rather setose; dorsope variable; cocoons of some species with long apical thread, pending; propodeum often without transverse carina anteriorly (fig. 240) *Meteorus* Haliday, 1835
31. First metasomal tergite at least baso-ventrally closed, tube-shaped (figs 241, 276, 577); clypeus narrower and almost flat, 2.0-2.5 times as wide as high; vein 1-M of hind wing shorter than vein 1r-m 32
- First metasomal tergite completely open ventrally (figs 186, 286, 353); clypeus

- broader and relatively convex, 1.4-2.2 times as wide as high; vein 1-M of hind wing usually about as long as vein 1r-m or longer, but sometimes shorter 33
32. Fourth-sixth antennal segments cylindrical, normally setose and setae not flattened apically (fig. 570) *Townesilitus* Haeselbarth & Loan
- Fourth-sixth antennal segments of female (of male unknown) wide, flattened, densely setose and with long setae, flattened apically (figs 278, 279, 284)
..... *Marshiella* Shaw
33. Scapus elongate, about as long as frons, reaching top level of vertex (fig. 186); scutellum largely rugose posteriorly (fig. 187) *Dinocampus* Foerster
- Scapus robust, its length about 0.5 times length of frons, not reaching top level of vertex (figs 286, 350); scutellum largely smooth posteriorly (figs 289, 351) 34
- Note. If the ovipositor is distinctly curved apically, and about as long as the apical height of the metasoma, the ovipositor sheath is distinctly widened and the sculpture of the first tergite is reduced, cf. *Rilipertus* Haeselbarth, 1996, which may occur in China.
34. Vein 1-SR+M of fore wing absent (figs 285, 295, 300), exceptionally partly developed, but not completely sclerotized; female stands on substrate near host, and oviposits in specific ventral part of host's body *Microctonus* Wesmael
- Vein 1-SR+M of fore wing present, completely sclerotized (figs 346, 355, 359, 363); female stands on back of host, and oviposits in anterior part of body
..... *Perilitus* Nees

Genus *Aridelus* Marshall, 1887

(figs 1-36)

- Aridelus* Marshall, 1887: 66; Papp, 1965: 181; Shenefelt, 1969: 11; Shaw, 1985: 309; Chou, 1987: 21. Type species (by monotypy): *Aridelus bucephalus* Marshall, 1887 [= *Ophion nigrator* Fabricius, 1804].
- Helorimorpha* Schmiedeknecht, 1907: 523; Shenefelt, 1969: 11. Type species (by monotypy): *Helorimorpha egregia* Schmiedeknecht, 1907. Syn. by Muesebeck, 1936.
- Strictometeorus* Cameron, 1909: 9; Shenefelt, 1969: 11. Type species (by monotypy): *Strictometeorus rufus* Cameron, 1909. Syn. by Muesebeck, 1936.
- Erythrometeorus* Cameron, 1911: 317; Shenefelt, 1969: 11. Type species (by monotypy): *Erythrometeorus reticulatus* Cameron, 1911. Syn. by Muesebeck, 1936.
- Scipolabia* Enderlein, 1920: 220; Shenefelt, 1969: 11. Type species (by original designation): *Scipolabia reticulata* Enderlein, 1920. Syn. by Muesebeck, 1936.
- Arideloides* Papp, 1974: 443. Type species (by original designation): *Arideloides niger* Papp, 1974. Syn. by Shaw, 1985.

Diagnosis.— Head transverse; antenna filiform, with 18 segments, its apical segment with a spine; interantennal distance twice width of socket; maxillary palp with 6 segments; labial palp with 4 segments; occipital carina complete, or absent medio-dorsally for a long distance, rarely completely absent, ventrally joining hypostomal carina; frons punctate with a median carina extending to frontal ocellus; width of face of female longer than clypeus width; lower clypeal margin indented medially; malar space about 0.25-0.5 times height of eye; malar suture absent; mandibles overlapping each other nearly completely; mesonotum, mesopleuron, and propodeum mostly areolate; petiolar notch extending nearly to mesocoxal insertions; parastigma large; vein 1-SR of fore wing absent to shortly present; vein 3-SR of fore wing absent to distinctly present; vein 1-R1 of fore wing short; end of vein SR1 of fore wing much closer to pterostigma than to apex of wing; vein r-m of fore wing present; veins SR and 2-M of hind wing present, darkly pigmented; first metasomal tergite about 3/4

times metasoma beyond first metasomal tergite and completely fused ventrally; third tergite nearly reaching end of metasoma, following segments hidden; second and third tergites ventrally overlapping, without lateral fold; ovipositor and its sheath shortly exposed.

Biology.— Parasites of nymphs and adults of Pentatomidae.

Distribution.— Essentially cosmopolitan, but most diverse in equatorial region; medium-sized genus, about 40 species known; 20 species are recorded from China in this paper.

Note.— Careful examination of the specimens of the Chinese *Aridelus* revealed that there exist interspecific difference between two sexes and variation within same species among individuals, especially of those species, such as *A. nigricans* Chao and *A. confusus* spec. nov., with the occipital carina absent dorsally and the median frontal carina weakly developed. They tend to have the penultimate flagellar segment of male much longer than that of female, hind tibial spur distinctly curved, much longer than that of female, more than 0.5 times length of hind basitarsus, and vein 3-SR of fore wing varies from distinctly present to completely absent. This variation is not mentioned by previous authors, partly due to that descriptions only are based on a single specimen or a single sex. Dr Liang-yih Chou (on the request of the first author) kindly reexamined the Taiwanese species and confirmed the existence of this variation at least in *A. destitulus* Chou (= *A. nigricans* Chao) and *A. tungnuensis* Chou (Chou, 1991, in litt.). Most species described from Taiwan are included in this paper according to Chou (1987).

Key to Chinese species of the genus *Aridelus* Marshall

1. Occipital carina complete and distinct (figs 17, 21, 24, 27); median frontal carina distinctly lamelliform or frons with two submedial longitudinal carinae (figs 18, 20, 23, 26) 2
- Occipital carina absent dorsally or completely absent (figs 7, 15); median frontal carina usually weaker, lower and wider (figs 6, 14) 13
2. Head and metasoma black, mesosoma yellowish red or black 3
- Head yellow to yellowish red, mesosoma and metasoma yellowish red or black .5
3. Vein m-cu of fore wing distinctly antefurcal (fig. 22); vein 2-1A of fore wing nearly entirely present (fig. 22); fore wing with fuscous bands (fig. 22) 4
- Vein m-cu of fore wing interstitial or postfurcal (fig. 14 in Chou, 1987); vein 2-1A of fore wing only basally present (fig. 14 in Chou, 1987); fore wing without fuscous band (fig. 14 in Chou, 1987); mesosoma black; length of body 4.0 mm. Taiwan *A. reticulatus* Chou
4. Mesosoma black; length of body 4.8-6.5 mm. Zhejiang, Hunan, Taiwan, Guangxi and Guizhou *A. rutipes* Papp
- Mesosoma red; length of body 6.5 mm. Zhejiang *A. ussuriensis* Belokobylskij
5. Body yellowish brown; flagellum brown; length of penultimate flagellar segment 1.2-1.6 times its width; vein 3-SR distinctly present (fig. 16); intertentorial line 1.4-1.7 times tentorio-ocular line (fig. 18); vein m-cu of fore wing interstitial to postfurcal (fig. 16); length of body 4.2-5.1 mm. Fujian, Guizhou and Taiwan *A. flavicans* Chao
- Mesosoma dark brown, metasoma yellowish red or black; other characters variable 6

6. Metasoma yellowish red; legs yellowish brown 7
 - Metasoma black, at most first metasomal tergite yellowish or paler; colour of legs variable 8
7. Vertex distinctly transversely (punctate-)rugose (fig. 27); vein m-cu of fore wing interstitial to slightly postfurcal (fig. 25); vein 1r-m of hind wing longer, about 0.7 times vein 2-SC+R (fig. 25); mesosoma completely black; length of body 5.1-5.5 mm. Guizhou *A. rufiventris* Luo & Chen
 - Vertex punctate (fig. 21); vein m-cu of fore wing distinctly to slightly antefurcal (fig. 19); vein 1r-m of hind wing shorter, 0.4 times vein 2-SC+R (fig. 19); mesosoma brown and at least prothorax reddish; length of body 4.5-5.4 mm. Beijing *A. rufotestaceus* Tobias
8. Intertentorial line 2.8 times tentorio-ocular line (fig. 22 in Chou, 1987); first metasomal tergite yellow, legs yellowish brown. Taiwan *A. longicus* Chou
 - Intertentorial line twice tentorio-ocular line or less (figs 28, 33, 35) 9
9. Intertentorial line slightly shorter than tentorio-ocular line; basal half of first metasomal tergite pale yellow, remainder pale brown; legs yellow. Length of body 4.4 mm. Shanxi *A. fuscus* Wang
 - Intertentorial line longer than tentorio-ocular line; colour of first metasomal tergite and legs variable 10
10. Length of first metasomal tergite more than 7 times its width at spiracles; intertentorial line slightly longer (1.1 times) tentorio-ocular line (fig. 33); POL:OOL = 1:3 (fig. 34); Jilin and Guangxi *A. alternecolatus* He
 - Length of first metasomal tergite 5.0-6.7 times its width at spiracles; intertentorial line obviously longer (1.2-1.6 times) tentorio-ocular line (figs 30, 35); POL:OOL = 1:2-2.5 (figs 31, 36) 11
11. Length of eye in dorsal view 1.3-1.4 times temple (fig. 52 in Chou, 1987); length of penultimate flagellar segment 1.8 times its width (fig. 7 in Chou, 1987); length of body 4.8-5.4 mm. Taiwan *A. taiwanus* Chou
 - Length of eye in dorsal view as long as temple (figs 31, 36); length of penultimate flagellar segment 1.5 times its width or less (fig. 28) 12
12. Intertentorial line 1.6 times tentorio-ocular line (fig. 30); vein r of fore wing 4.1 times vein 3-SR (fig. 29); head brownish yellow, flagellum black; length of body 4.3 mm. Yunnan *A. basalis* spec. nov.
 - Intertentorial line 1.2-1.3 times tentorio-ocular line (fig. 35); vein r of fore wing 3.0 times vein 3-SR; head yellowish red, flagellum brown; length of body 4.0 mm. Shaanxi and Guizhou *A. sinensis* Wang
13. Occipital carina completely absent 14
 - Occipital carina present laterally, but absent dorsally 16
14. Fore wing with a pale fuscous band; body black, first metasomal tergite and legs yellow; length of body 3.2 mm. Sichuan *A. ziyangensis* Wang
 - Fore wing without any fuscous band 15
15. Head 1.7 times as broad as long; intertentorial line twice tentorio-ocular line; first metasomal tergite dark brown; length of body 3.5 mm. Sichuan *A. emeiensis* Wang
 - Head 2.1 times as broad as long; intertentorial line 3.0 times tentorio-ocular line; first metasomal tergite bright yellow, baso-dorsally and apically yellowish brown; length of body 3.0 mm. Beijing *A. miccus* Wang

16. Vein 3-SR of fore wing absent, if shortly present, then its length less than 0.2 times vein r (fig. 1) 17
 - Vein 3-SR of fore wing distinctly present, its length at least more than 0.3 times vein r (fig. 13) 19
17. Intertentorial line 1.7 times tentorio-ocular line (fig. 27 in Chou, 1987); length of eye in dorsal view 1.6 times temple (fig. 54 in Chou, 1987); length of body 3.7 mm. Taiwan *A. tungpuensis* Chou
 - Intertentorial line 2.0-2.2 times tentorio-ocular line (fig. 6); length of eye in dorsal view 1.0-1.1 times temple (fig. 7) 18
18. Vertex rather punctate-reticulate (fig. 46 in Chou, 1987); head twice as broad as long; hind femur yellowish brown; first metasomal tergite yellowish brown; length of body 3.5 mm. Taiwan *A. antennatus* Chou
 - Vertex transversely punctate-rugose (fig. 7); head 1.8-1.9 times as broad as long (fig. 7); hind femur black; first metasomal tergite brown, basally yellow; length of body 3.3-3.6 mm. Yunnan *A. confusus* spec. nov.
19. Length of first flagellar segment 2.6 times its width (fig. 8 in Chou, 1987); length of body 3.6 mm. Taiwan *A. tsuifengensis* Chou
 - Length of first flagellar segment more than 3.0 times its width (fig. 12; fig. 2 in Chou, 1987); length of body 3.7-4.0 mm. Fujian, Taiwan, Guangxi *A. nigricans* Chao

Aridelus alternecolatus He, 1980
(figs 32-34)

Aridelus alternecolatus He, 1980: 85.

Material. — 1 ♀ + 1 ♂ (ZAU): 1 ♀ (not ♂ as stated in original description), holotype, Jilin, Mt Changbai, 10.viii.1977, He Junhua, no. 771325, "*Aridelus alternecoloratus* He"; 1 ♂ (ZAU), Guangxi, Jinxiu, 15.vi.1982, He Junhua, no. 823065.

Distribution.— China: Jilin and Guangxi.

Note.— Examination of the holotype revealed that the holotype is a female, not a male as stated in the original description, and the ventral margin of the clypeus lacks a small median tooth. The specimen from Guangxi agrees well with the holotype, but differs in the length of the penultimate antennal segment 2.2 times (1.3 times in holotype) its width, length of vein 1-R1 0.65 times (0.52 times) length of pterostigma, and flagellum completely dark brown (yellowish brown basally). However, we consider these differences as sexual dimorphic variation and we include it as a male of this species, despite of the large distance between both localities. *A. taiwanus* Chou, 1987, is similar to this species, the small differences given in the key are provisionally considered sufficient for separation. Moreover, the species, *A. elasmuchae* described by Maetô & Kudo (1992), is also similar to this species, but differs by having the first metasomal tergite less slender (3.4-4.3 times), the vein 1-SR of fore wing shortly developed, the prothorax yellowish, and the frons and the vertex without brownish spots.

Aridelus antennatus Chou, 1987

Aridelus antennatus Chou, 1987: 27.

Distribution.— China: Taiwan.

Note.— No specimen was available for study.

Aridelus basalis spec. nov.
(figs 28-31)

Material.— Holotype, ♀ (ZAU), Yunnan, Ruili, 29.v.1981, He Junhua, no. 812804.

Holotype, ♀, length of body 4.3 mm, of fore wing 3.3 mm.

Head.— Width of head in dorsal view 1.8 times its length; length of third antennal segment 1.3 times fourth segment, length of third and penultimate antennal segments 4.8 and 1.4 times their width, respectively; median frontal carina well developed; POL:OD:OOL = 6:3:13; vertex rounded behind eyes; length of eye in dorsal view equal to temple; occipital carina complete; intertentorial line 1.6 times tentorio-ocular line; length of malar space 0.56 times height of eye.

Mesosoma.— Areolate.

Wings.— Fore wing: length of vein 1-R1 0.64 times length of pterostigma; vein 1-SR shortly developed; r:3-SR = 4.1:1; m-cu postfurcal.

Legs.— Length of hind tibial longer spur 0.33 times hind basitarsus.

Metasoma.— Entirely smooth; length of first metasomal tergite 6.7 times its width at spiracles; first metasomal tergite curved downwards; third tergite reaching apex of metasoma, following tergites retracted.

Colour.— Black; head, scapus and pedicellus brownish yellow; first metasomal tergite yellow; flagellum dark brown; tip of mandible and telotarsus brown; wing membrane hyaline, pterostigma dark brown, fore wing with a fuscous band below pterostigma, reaching posterior margin of wing or nearly so, veins within the band brown, remainder of veins yellow.

Note.— This species is closely resembling *A. alternocolatus* He, 1980, and *A. taiwanus* Chou, 1987, but differs in having the head less transverse, the intertentorial line longer, the vein 1-SR of fore wing shortly present, the vein r of fore wing 3.0 times vein 3-SR, and the frons and vertex without brown spots. It differs from *A. elasmuchae* Maetô & Kudo, 1992, in having the prothorax black, the first metasomal tergite and basal antennal segments much more slender.

Aridelus confusus spec. nov.
(figs 1-11)

Material.— Holotype, ♀ (ZAU), Yunnan, Wenquan, 18-20.vii.1988, Chen Xuexin, no. 881632. Paratype: 1 ♀ + 1 ♂ (RMNH), same data as holotype, but nos 881635, 881642; 2 ♀ ♀ + 6 ♂ ♂ (ZAU), same data as holotype, but nos 881633-881634, 881636-881641; 2 ♀ ♀ (ZAU), same locality and collector as holotype, but 9-13.vii.1988, nos 884882, 884883; 1 ♂ (ZAU), Yunnan, Ruili, 6.v.1981, He Junhua, no. 814099.

Holotype, ♀, length of body 3.3 mm, of fore wing 2.5 mm.

Head.— Width of head in dorsal view 1.8 times its length; length of third antennal segment 1.5 times fourth segment, length of third and penultimate antennal segments 4.1 and 1.4 times their width, respectively; median frontal carina weakly developed; vertex transversely punctate; POL:OD:OOL = 3.5:2:10; occipital carina

absent dorsally at length; length of eye in dorsal view 1.1 times temple; face and clypeus finely punctate; intertentorial line twice tentorio-ocular line; malar space 0.45 times height of eye.

Mesosoma.— Areolate.

Wings.— Fore wing: length of vein 1-R1 0.52 times length of pterostigma; vein 1-SR shortly developed; r:3-SR = 5:1; vein m-cu postfurcal.

Legs.— Length of hind tibial spurs 0.38 times hind basitarsus.

Metasoma.— Entirely smooth and shining; length of first metasomal tergite 7.4 times its width at spiracles.

Colour.— Black; basal segments of antenna reddish brown, remainder dark brown; mandibles reddish brown; palpi brownish yellow; basal half of first metasomal tergite yellow, the remainder brown; legs yellowish brown, hind femur (except for base) dark brown, telotarsus and claws brown; wing membrane hyaline, area below pterostigma of fore wing brownish, paler towards apical margin, pterostigma dark brown, vein cu-a and 1-CU1 brown, remainder of veins yellowish.

Variation.— Length of body 3.2-3.6 mm, of fore wing 2.5-2.8 mm; head 1.8-1.9 times as broad as long; first metasomal tergite 7.0-7.4 times its width at spiracles; the penultimate flagellar segment 1.3-1.4 (♀) as long as wide; vein 3-SR of fore wing absent to shortly present, r: 3-SR = 0-2:10; clypeus black to reddish brown. Male generally similar to female, but differs in length of the penultimate flagellar segment 2.0-2.3 times its width; hind tibial spurs curved, length of hind tibial longer spur 0.55 times hind basitarsus; antenna brown apically; first metasomal tergite dark brown, rather paler basally; sometimes SR1 indistinct apically.

Note.— This species is closely related to *A. nigricans* Chao, but differs in having the vein 3-SR of fore wing absent to very shortly developed.

Aridelus emeiensis Wang, 1985

Aridelus emeiensis C. Wang, 1985: 74 [1 ♀].

Distribution.— China: Sichuan (Mt Emei).

Note.— This species is very similar to *A. nigricans* Chao. The only difference seems to be that the occipital carina of *A. emeiensis* Wang is completely absent while that of *A. nigricans* Chao has the carina present laterally. However, the presence of occipital carina laterally may be easily ignored, therefore, its specific status needs to be confirmed. No specimens was available for this study.

Aridelus flavicans Chao, 1974
(figs 16-18)

Aridelus flavicans Chao, 1974: 455; Chou, 1987: 23; Luo & Chen, 1994: 484.

Aridelus guizhouensis Luo, 1985: 203. Syn. by Luo & Chen, 1994.

Material.— 2 ♀♀ + 1 ♂ (ZAU), 1 ♂, allotype, Guizhou, Guiyang, Xintianzai, 24.viii.1982, Luo Qinghuai, "*Aridelus guizhouensis* Luo"; 1 ♀ (ZAU), paratype, Guizhou, Guiyang, Xintianzai, 22.viii.1982, Luo Qinghuai, "*Aridelus guizhouensis* Luo"; 1 ♀ (ZAU), Fujian, Fuzhou, Jinshan, 26.v.1983, Lin Naiquan.

Distribution.— China: Fujian, Taiwan and Guizhou.

Aridelus fuscus Wang, 1981

Aridelus fuscus J. Wang, 1981b: 421.

Distribution.— China: Shanxi.

Note.— This species is very close to *A. alternocolatus* He, 1980, the only difference is that the intertentorial line is slightly shorter than the tentorio-ocular line, therefore, its specific status needs confirmation. No specimen was available for this study.

Aridelus longius Chou, 1987

Aridelus longius Chou, 1987: 24.

Distribution.— China: Taiwan.

Note.— No specimen was available for this study.

Aridelus miccus Wang, 1985

Aridelus miccus J. Wang, 1985: 229 [1♀].

Distribution.— China: Beijing (Shangfangshan).

Note.— This species is very similar to *A. nigricans* Chao and may be the same as *A. emeiensis* Wang, therefore its specific status needs confirmation.

Aridelus nigricans Chao, 1974
(figs 12-15)

Aridelus nigricans Chao, 1974: 455.

Aridelus destitutus Chou, 1987: 26. Syn. nov.

Material.— 1 ♂ (BMNH), Taiwan, Tseuy Feng, 2000m, viii.(19)79, I. Gauld; 3 ♀♀ + 2 ♂♂ (ZAU): 1 ♀, Fujian, Chong'an, 14.vii.1985, Zheng Di, no. 880998; 1 ♀, Guangxi, Jinxiu, Dayaoshan, 16 km, 14.vi.1982, He Junhua, no. 822904; 1 ♀, Guangdong, Fengkai, 18.v.1992, Chen Xuexin, no. 921712; 1 ♂, Zhejiang, Zhoushan, 11.x.1974, Yang jikun, no. 871944; 1 ♂, Zhejiang, Mt Gutian, 20.vii.1986, Xu Huiliang, no. 863088.

Distribution.— China: Zhejiang, Fujian, Guangdong, Guangxi.

Note.— The female specimens examined agree well with the original description of Chao (1974), but differs by having the head in dorsal view 2.0-2.4 times as broad as long and the intertentorial line 2.4-2.8 times tentorio-ocular line. The male of this species is reported here for the first time, and it agrees well with the female except for the length of the penultimate antennal segment (2.0 times its width, 1.1 times in female), and of the intertentorial line (2.1 times tentorio-ocular line, and 2.4-2.8 times in female), the hind tibial spurs distinctly curved, the longer hind inner tibial spur (its length 0.6 times hind basitarsus and 0.3 times in female), and the colour of the hind femur (yellow, medially brown in female). *A. destitutus* Chou, 1987, is considered to be conspecific with *A. nigricans* Chao, because the only noticeable difference between these two species is that the head in dorsal view of *A. destitutus* is less trans-

verse (1.9 times wider than longer in dorsal view) than that of *A. nigricans* as Chou (1987) according to the original description.

Aridelus reticulatus Chou, 1987

Aridelus reticulatus Chou, 1987: 25.

Distribution.— China: Taiwan.

Note.— No specimen was available for this study.

Aridelus rutilipes Papp, 1965
(figs 22-24)

Aridelus rutilipes Papp, 1965: 187; Chao, 1974: 455; Chou, 1987: 22.

Aridelus hunanensis You, Xiong & Zhou, 1988b: 423. *Syn. nov.*

Material.— 1 ♀ (RMNH), Guangxi, Jinxiu, 14.vi.1982, He Junhua, no. 822936; 3 ♀♀ + 3 ♂♂ (ZAU): 1 ♀ + 1 ♂, Zhejiang, Mt W Tianmu, 2-3.ix.1987, Chen Xuexin, nos 877447, 878020; 1 ♀, Guangxi, Jinxiu, 19.ix.1980, Wang Zhongrong, no. 822232; 1 ♀ + 2 ♂♂, Guizhou, Guiyang, 25.v.1981, 30.viii.1987, He Junhua, nos 814293, 878243, 878244.

Distribution.— China: Zhejiang, Hunan, Taiwan, Guangxi, Guizhou.

Note.— The specimens examined differs from Papp's original description of *A. rutilipes* Papp, 1965, by having the vein SR1 of fore wing distinct and the legs brown in all the specimens, but agrees well with Chou (1987)'s redescription of this species. According to the text and figures given by You, Xiong & Zhou (1988), *A. hunanensis* is apparently a junior synonym of *A. rutilipes*.

Aridelus rufiventris Luo & Chen, 1994
(figs 25-27)

Aridelus rufiventris Luo & Chen, 1994: 483.

Material.— 1 ♂ (ZAU), paratype, Guizhou, Huishui, 2.vi.1982, Chu Jiming, no. 861707, "*Aridelus rufiventris* Luo & Chen".

Distribution.— China: Guizhou.

Note.— This species is similar to *A. rufotestaceus* Tobias, 1986, but differs by having the vertex distinctly transversely (punctate-)rugose (of the latter punctate), the vein m-cu of fore wing interstitial to slightly postfurcal (distinctly to slightly antefurcal), the vein 1r-m of hind wing longer (about 0.7 times vein 2-SC+R (0.4 times vein 2-SC+R)) and the mesosoma completely black (brown, and at least the prothorax reddish).

Aridelus rufotestaceus Tobias, 1986
(figs 19-21)

Aridelus rufotestaceus Tobias, 1986: 229 (English translation: 399).

Material.— 1 ♀ (BMNH), China, Great Wall, 60 km NW Beijing, 12.vi.1983, Boucek.

Distribution.— China: Beijing; Russia.

Note.— This species is new for China.

Aridelus sinensis Wang, 1981
(figs 35-36)

Aridelus sinensis C. Wang, 1981: 219; Luo & Chen, 1994: 484.

Material.— 1 ♀ (ZAU), Guizhou, Guiyang, Huaxi, 1000 m, 27.v.1987, Li Fasheng, no. 871945.

Distribution.— China: Shaanxi and Guizhou.

Aridelus taiwanus Chou, 1987

Aridelus taiwanus Chou, 1987: 24.

Distribution.— China: Taiwan.

Note.— No specimen was available for this study:

Aridelus tsuifengensis Chou, 1987

Aridelus tsuifengensis Chou, 1987: 27.

Material.— 1 ♀ (ZAU), Zhejiang, Mt W Tianmu, 2-4.vi.1990, He Junhua, no. 904647.

Distribution.— China: Zhejiang and Taiwan.

Aridelus tungpuensis Chou, 1987

Aridelus tungpuensis Chou, 1987: 28.

Distribution.— China: Taiwan.

Note.— No specimen was available for this study.

Aridelus ussuriensis Belokobylskij, 1981

Aridelus ussuriensis Belokobylskij, 1981: 43.

Material.— 1 ♀ + 1 ♂ (ZAU): 1 ♀, Zhejiang, Mt W Tianmu, 27.vi.1954, (collector unknown), no. 871078; 1 ♂, same locality as holotype, 2-4.vi.1990, He Junhua, no. 905261.

Distribution.— China: Zhejiang; Russia: Far East.

Note.— This species is new to China. It is very similar to *A. rutilipes* Papp, 1965 (fig. 22), but can be readily separated from the latter as it has the mesosoma reddish brown.

Aridelus ziyangensis Wang, 1983

Aridelus ziyangensis C. Wang, 1983a: 348 [1 ♂].

Distribution.— China: Sichuan (Ziyang).

Note.— This species is very similar to *A. nigricans* Chao and may be the same as *A. emeiensis* Wang, therefore, its specific status needs to be confirmed.

Genus *Asiacentistes* Belokobylskij, 1995

(figs 37-46)

Asiacentistes Belokobylskij, 1995: 293. Type species (By monotypy & original designation): *Centistes alekseevi* Belokobylskij, 1992.

Diagnosis.— Antenna filiform and thickened, 30-31 segmented, apical segment without spine; maxillary palp 5-segmented; labial palp 3-segmented; occipital carina absent dorsally, but present laterally and joining hypostomal carina near mandible; eye bare; malar suture shallowly impressed in female, but absent in male; anterior tentorial pit deep and large; clypeus short and strongly convex, its lower margin straight and with narrow flange; mandible short and distinctly twisted apically; notauli entirely absent; scutellar suture deep and smooth; basal half of scutellum with lateral carina; prepectal carina complete; mesosternum densely setose; precoxal sulcus wide, shallow and smooth; anterior subalar depression deep, narrow and rugulose; metapleural flange large and wide, coarsely striate; basal half of propodeum with longitudinal carina, and arched transverse median carina; marginal cell of fore wing short; length of vein 1-R1 0.6-0.8 times length of pterostigma; vein M+CU1 of fore wing sclerotized; vein 1-SR and r-m of fore wing absent; vein 1-SR+M of fore wing present; vein 2-SR+M long; tarsal claws long, robust and simple; all femora wide and robust; inner spur of hind tibia 0.4-0.6 times hind basitarsus; hind tibia with some distinct small spines at outer side; first metasomal tergite smooth and short, spiracles slightly protruding at middle, dorsope and dorsal carinae absent, laterope shallow and small; hypopygium and three preceding sternites with dense yellowish setosity medially; ovipositor strongly compressed and curved, its dorsal valve apically with wide, finely aciculate lobe; ovipositor sheath short, thick, truncate and densely setose apically.

Biology.— Unknown.

Distribution.— East Palaearctic region (China and Far East Russia); one species.

Note.— This is the first record of this genus from China.

Asiacentistes alekseevi (Belokobylskij, 1992)

(figs 37-46)

Centistes alekseevi Belokobylskij, 1992: 204.

Asiacentistes alekseevi; Belokobylskij, 1995: 294.

Material.— 2 ♂♂ (ZAU), Jiangsu, Yangzhou, 16.viii.1981, Yang Lianmin, no. 820111 & 320119.

Distribution.— China: Jiangsu; Russia: Far East Maritime Territory.

Note.— Belokobylskij (1992) described this species based on two female specimens. It is the first time that the male of this species is reported. The male agrees well with the original description of female, but differs in having the malar suture completely absent, and the setosity of the mesoscutum only anteriorly.

Genus *Centistes* Haliday, 1835

(figs 55-156)

- Leiophron* subgenus *Ancylus* Haliday, 1833: 261; Shenefelt, 1969: 26. Type species (designated by Viereck, 1914): *Leiophron (Ancylus) cuspidatus* Haliday, 1833.
- Leiophron* subgenus *Centistes* Haliday, 1835: 462. Type species (by monotypy): *Leiophron (Ancylus) cuspidatus* Haliday, 1833.
- Ancyllus* Haldeman, 1842: 191. New name for *Ancylus* Haliday.
- Syrrhizus* Foerster, 1862: 254; Shenefelt, 1969: 133. Type species (by original designation): *Syrrhizus delusorius* Foerster, 1862. Syn. by van Achterberg, 1977, and treated as a subgenus of *Centistes*.
- Ancylacentrus* Foerster, 1862: 254; Shenefelt, 1969: 8. Type species (by original designation): *Ancylus excrucians* Haliday, 1835. Syn. by van Achterberg, 1977, and treated as a subgenus of *Centistes*.
- Euphoridea* Ashmead, 1900: 116; Shenefelt, 1969: 27. Type species (by monotypy & original designation): *Euphoridea claripennis* Ashmead, 1900. Syn. by Muesebeck, 1936.
- Liosigalphus* Ashmead, 1900: 125; Shenefelt, 1969: 27. Type species (by monotypy & original designation): *Liosigalphus politus* Ashmead, 1900. Syn. by Muesebeck, 1936.
- Centistes*; van Achterberg, 1977: 27; van Achterberg, 1985: 357; Belokobylskij, 1992: 200.

Diagnosis.— Antenna filiform; maxillary palp with 5-6 segments; labial palp with 3 segments; eye with short and sparse setae; occipital carina complete, joining hypostomal carina near base of mandible; malar suture present; notauli deep and crenulate, but often narrow and smooth, sometimes absent or only a short longitudinal depression on the posterior third or half of mesoscutum present; prepectal carina complete; precoxal sulcus usually present, but sometimes absent; propodeum often with arched transverse median carina; marginal cell of fore wing comparatively short; vein M+CU1 of fore wing unsclerotized; vein 1-SR of fore wing present; vein 1-SR+M of fore wing present or absent; vein cu-a of fore wing postfurcal; vein 2A of fore wing present as a trace; tarsal claws simple; first metasomal tergite short and sessile, without dorsope, but with distinct laterope; hypopygium medium-sized, usually densely setose, sometimes glabrous or with various protuberances or processes; ovipositor long (but its main part remained inside metasoma), flat and falcate; ovipositor sheath usually short and thin, sometimes long or thick.

Biology.— Parasites of adult Coleoptera, particularly the families Curculionidae, Chrysomelidae, Coccinellidae, and Carabidae.

Distribution.— Cosmopolitan (except Australian region); medium-sized genus with about 40 known species, belonging to four subgenera: *Syrrhizus* Foerster, *Centistes* s.s., *Ancylacentrus* Foerster, and *Anartionyx* van Achterberg. *Anartionyx* is restricted to Nearctic region, while other three subgenera are wide-spread.

Note.— This genus was reported as new record to Taiwan province by Chou (1987), but no species were included. This is the first time that species of this genus are described from China.

Subgenus *Syrrhizus* Foerster, 1862

(figs 55-61)

There are six species known in this subgenus, i.e., *C. agilis* (Cresson, 1892) and *C. diabroticae* Gahan, 1922, from the Nearctic region, *C. adarka* (Belokobylskij, 1996), *C. delusorius* Foerster, 1862, *C. distinguendus* Sarra, 1929, and *C. ludius* (Belokobylskij, 1992) from the Palaearctic region (Shenefelt, 1969; Belokobylskij, 1992 & 1996). Two species are reported from China, one of which is new to science.

Key to Chinese species of the subgenus *Syrrhizus* Foerster, 1862

1. Ovipositor sheath comparatively short and slender; first metasomal tergite smooth; vein 1-M of hind wing shorter than 1r-m; precoxal sulcus faintly impressed medially with some indistinct rugae *C. minutus* spec. nov.
- Ovipositor sheath longer and more robust; first metasomal tergite longitudinally rugose; vein 1-M of hind wing as long as 1r-m; precoxal sulcus completely absent *C. ludius* Belokobylskij

Centistes (Syrrhizus) ludius (Belokobylskij, 1992)

Syrrhizus ludius Belokobylskij, 1992: 14.

Material.— 1 ♂ (ZAU), Jilin, Dongliao, 22-31.vii.1988, Lou Xiaoming, no. 888192.

Distribution.— China: Jilin; Far East Russia.

Note.— The male of this species is reported here for the first time. It agrees well with the original description of the female, but differs in having the fore and middle coxae reddish yellow, like other parts of the legs, not "almost black", the spiracles of first metasomal tergite not protruding and the body smaller (1.7 mm).

Centistes (Syrrhizus) minutus spec. nov.
(figs 55-61)

Material.— Holotype, ♀ (ZAU), Hubei, Shengnongjia, 2800m, 27.vii.1982, He Hunhua, no. 825711.

Holotype, ♀, length of body 1.4 mm, of fore wing 1.7 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 21, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 3.2, 2.8 and 1.3 times their width, respectively; length of maxillary palp 0.8 times height of head; OOL:OD:POL = 7:3:6; length of eye in dorsal view 1.1 times temple; temple behind eye parallel-sided at first, then narrowed; vertex and frons smooth, glabrous; face nearly smooth, rather indistinctly rugose, medially longitudinally convex, its width 1.6 times its height; intertentorial line 2.4 times tentorio-ocular line; clypeus convex, superficially rugulose; length of malar space 1.3 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side largely smooth, weakly crenulate anteriorly and dorsally; anterior subalar depression smooth; mesopleuron smooth; precoxal sulcus medially faintly impressed with indistinct rugae; metapleuron largely rugose, medially nearly smooth; mesoscutum smooth; notauli completely absent; scutellar suture deep, wide and with a median carina; scutellum smooth without lateral carina; propodeum divided into dorsal face and posterior face by a transverse median carina, dorsal face with a medio-longitudinal carina, largely smooth, laterally rugose.

Wings.— Fore wing: length of vein 1-R1 1.2 times length of pterostigma; r emitting behind middle; r:2-SR:SR1+3-SR = 5:17:50; vein m-cu interstitial; 1-CU1:2-CU1 = 4:13. Hind wing: 1-M:1r-m = 9:10.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.0,

8.4 and 6.0 times their width, respectively; length of both hind tibial spurs 0.5 times hind basitarsus.

Metasoma.— Length of first tergite 1.1 times its apical width, its surface smooth, dorsal carinae distinct, reaching basal 2/3 of tergite, with a distinct longitudinal median carina, without dorsope; ovipositor sheath slender and setose, its length 0.06 times fore wing; ovipositor with a distinct subapical dorsal notch.

Colour.— Dark reddish brown; basal four antennal segments, palpi, and legs brownish yellow; apical half of hind tibia and all telotarsi darker; wing membrane hyaline, pterostigma brown, veins pale brown to brownish yellow.

Note.— This species is similar to *C. ludius* (Belokobylskij, 1992), their differences are listed in the above key.

Subgenus *Centistes* Haliday, 1835
(figs 62-96)

There are eight Palaearctic species known in this subgenus, i.e. *C. cuspidatus* (Haliday, 1835), *C. dilatus* Papp, 1992, *C. dmitrii* Belokobylskij, 1996, *C. fuscipes* (Nees, 1834), *C. scymni* Ferriere, 1954, *C. sinapis* Papp, 1994, *C. spinulosus* Papp, 1994 and *C. tsherskii* Belokobylskij, 1995. The species described below from Yunnan and Guizhou provinces of China represent the first record of this subgenus from the Oriental region.

Key to Chinese species of the subgenus *Centistes* s. s.

1. Precoxal sulcus distinct (fig. 67) 2
- Precoxal sulcus completely absent (fig. 86) 3
2. First metasomal tergite nearly smooth with dorsal and medio-longitudinal carinae (fig. 69); propodeum nearly smooth; length of ovipositor sheath distinctly shorter than first metasomal tergite; vein m-cu of fore wing distinctly antefurcal (fig. 62); vein 1-CU1 of fore wing as long as or longer than vein cu-a (fig. 62); penultimate antennal segment much shorter, 1.3 times its width (fig. 68)
..... *C. yunnanus* spec. nov.
- First metasomal tergite distinctly longitudinally striate, without dorsal and medio-longitudinal carinae (fig. 74); propodeum rugose posteriorly; length of ovipositor sheath longer than first metasomal tergite; vein m-cu of fore wing interstitial (fig. 70); vein 1-CU1 of fore wing much shorter than vein cu-a (fig. 70); penultimate antennal segment longer, 2.6 times its width (fig. 75)
..... *C. guizhouensis* spec. nov.
3. Vein 1-SR+M of fore wing unpigmented, weak (fig. 76); vein m-cu of fore wing antefurcal (fig. 76); length of eye in dorsal view 0.8 times temple (fig. 79); ovipositor sheath with short setae (fig. 77); fore and middle tarsi distinctly shortened (fig. 80) *C. intermedius* spec. nov.
- Vein 1-SR+M of fore wing distinct (figs 82, 88, 93); vein m-cu of fore wing interstitial (figs 88, 93); length of eye in dorsal view 0.9-1.5 times temple (figs 84, 90, 95); ovipositor sheath with long setae (figs 83, 92); fore tarsus variable 4
4. Pterostigma brown; length of first metasomal tergite 1.5 times its apical width, its medio-longitudinal carina present medially (fig. 87); antennal segments 23-24
..... *C. carinatus* spec. nov.

- Pterostigma yellow; length of first metasomal tergite 1.2 times its apical width, its surface without a medio-longitudinal carina (figs 89, 94); antennal segments 25-26 5
- 5. Temple behind eyes at first swollen then contracted (fig. 95); second metasomal tergite medially finely rugulose (fig. 94); fourth and following tergites brown *C. flavus* spec. nov.
- Temple behind eyes contracted (fig. 90); second metasomal tergite smooth (fig. 89); metasoma entirely brownish yellow *C. striatus* spec. nov.

Centistes (Centistes) carinatus spec. nov.
(figs 82-87)

Material. — Holotype, ♀ (ZAU), Zhejiang, Mt Gutian, 19.vii.1992, Chen Xuexin, no. 923651. Paratypes (2 ♀♀ + 1 ♂; ZAU): 1 ♀, Zhejiang, Mt W Tianmu, 19.vi.1983, Ma Yun, no. 831466; 1 ♂, Zhejiang, Mt Mugan, 9-12.vii.1984, Qian Ying, no. 845275; 1 ♀, Shaanxi, Zhouzhi, 1979, Yang Jian, no. 791216.

Holotype, ♀, length of body 2.2 mm, of fore wing 2.3 mm.

Head.— Width of head in dorsal view 1.8 times its median length; antennal segments 24, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.4, 2.8 and 1.7 times their width, respectively; length of maxillary palp 0.9 times height of head; OOL:OD:POL = 7:4:8; length of eye in dorsal view 1.3 times temple; temple behind eye roundly narrowed; temple, vertex and frons smooth; face nearly smooth, densely setose, its width 1.3 times its height; inter-tentorial line 1.5 times tentorio-ocular line; clypeus convex, nearly smooth; length of malar space 1.3 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly crenulate, remainder largely smooth; mesopleuron smooth; precoxal sulcus completely absent; metapleuron largely rugose; mesoscutum smooth, and largely glabrous, only anteriorly remotely setose; notauli absent; scutellar suture deep, with a median carina; scutellum slightly convex and smooth; propodeum with a strong transverse and a less developed medio-longitudinal carina, its dorsal face largely smooth with some rugae near carina, and its posterior face nearly smooth.

Wings.— Fore wing: length of vein 1-R1 1.2 times length of pterostigma; r arising from middle; r:2-SR:SR1+3-SR = 6:25:77; vein m-cu interstitial; 1-CU1:2-CU1 = 4:19, 1-CU1 oblique. Hind wing: 1-M as long as 1r-m.

Legs.— Fore and middle tarsi slightly shortened; hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.2, 9.7 and 6.0 times their width, respectively; length of both hind tibial spurs 0.47 times hind basitarsus.

Metasoma.— Length of first tergite 1.5 times its apical width, its surface smooth, gradually widened towards its apex, spiracles not protruding, dorsal carinae distinct (except apically), medio-longitudinal carina present medially; second and following tergites smooth; hypopygium simple, sparsely setose; ovipositor sheath long, narrow, slightly widened subapically and narrowed towards apex, with long setose, length of sheath 3.4 times its maximum width, 0.63 times first tergite, and 0.08 times fore wing.

Colour.— Dark reddish brown; head ventrally (including face), mesopleuron ventrally, mesoscutum partly reddish brown; antenna brownish yellow basally, dark towards apex; pronotum and legs brownish yellow, hind tibia apically brownish;

palpi and trochanters pale yellow; wing membrane hyaline, pterostigma brown, veins pale brown to pale yellowish.

Variation.— Length of body 2.1-3.0 mm, of fore wing 20-2.3 mm; antennal segments 23-24; mesoscutum sometimes completely brownish yellow.

Note.— This species is very similar to *C. tsherskii* Belokobylskij, 1995, but differs in having the temple roundly narrowed behind eyes, the first tergite smooth with dorsal and median carinae present, the ovipositor sheath distinctly shorter than the first tergite and the fore tarsus shortened.

Centistes (Centistes) flavus spec. nov.
(figs 93-96)

Material.— Holotype, ♂ (ZAU), Shaanxi, Zhouzhi, 1979, Yang Jian, no. 791218.

Holotype, ♂, length of body 2.6 mm, of fore wing 2.5 mm.

Head.— Width of head in dorsal view 1.9 times its median length; antennal segments 25, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 4.5, 3.7 and 2.5 times their width, respectively; length of maxillary palp 0.7 times height of head; OOL:OD:POL = 10:5:9; length of eye in dorsal view 0.9 times temple; temple behind eye slightly swollen, posteriorly roundly narrowed; temple, vertex, frons and face smooth; face flat medially, its width 1.8 times its height; intertentorial line 1.1 times tentorio-ocular line; clypeus slightly convex, nearly smooth, its width 2.2 times its height; length of malar space 1.6 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side only anteriorly crenulate, remainder largely smooth; mesopleuron smooth; precoxal sulcus completely absent; metapleuron small, rugose; mesoscutum smooth, and largely glabrous, anteriorly sparsely setose; notauli absent; scutellar suture deep, with a median carina; scutellum nearly flat and smooth, medio-posterior depression distinct and crenulate; propodeum with a distinct transverse and a medio-longitudinal carina, sparsely rugose, but laterally more densely so.

Wings.— Fore wing: length of vein 1-R1 1.1 times length of pterostigma; r arising from middle; r:2-SR:SR1+3-SR = 7:22:74; vein m-cu interstitial; 1-CU1:2-CU1 = 4:17. Hind wing: 1-M:1r-m = 11:12; 2-SC+R short.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 3.8, 10.0 and 6.0 times their width, respectively; length of hind tibial spurs 0.44 and 0.56 times hind basitarsus.

Metasoma.— Length of first tergite 1.2 times its apical width, its surface longitudinally striate, gradually widened towards its apex, dorsal carinae present at basal 2/3 of tergite, spiracles slightly protruding; second tergite finely rugulose medially, its length 0.6 times median length of third tergite; third and following tergites smooth.

Colour.— Brownish yellow; propodeum and first metasomal tergite brown, fourth and following tergites brown; antenna pale brown; stemmaticum black; palpi yellow; legs yellow, hind tibia apically dark; wing membrane hyaline, pterostigma yellow, veins yellow to pale yellow.

Note.— This species is very similar to *C. sinapis* Papp, 1994, but differs in having

the temple more swollen, the vein 1-R1 longer than the pterostigma, the second tergite finely rugulose medially, the second tergite distinctly shorter than the third tergite, and the transverse carina of propodeum at a more posterior position.

Centistes (Centistes) guizhouensis spec. nov.
(figs 70-75)

Material.— Holotype, ♀ (ZAU), Guizhou, Mt Fanjing, Jinding, 13.vii.1993, Chen Xuexin, no. 938713. Paratypes (14 ♂♂): 2 ♂ (RMNH), same locality as holotype, 13.vii.1993, nos 939134, 939138; 12 ♂♂ (ZAU): same locality as holotype, 12.vii.1993 (1 ♂), 13.vii.1993 (5 ♂♂), 14.vii.1993 (2 ♂♂), Chen Xuexin, nos 938231, 938958, 939139, 938970, 939005, 938828; 12.vii.1993 (2 ♂♂), Yao Songlin, nos 936872, 936903; 2 ♂♂, Guizhou, Mt Fanjing, Huixiangping, 12,13.vii.1993, Xu Zaifu, nos 936105, 936872.

Holotype, ♀, length of body 3.2 mm, of fore wing 3.3 mm.

Head.— Width of head in dorsal view 1.8 times its length; antennal segments 24, length of third segment equal to fourth segment, length of third, fourth and penultimate segments 3.6, 3.6 and 2.6 times their width, respectively; length of maxillary palp 1.1 times height of head; OOL:OD:POL = 8:5:10; eye in dorsal view as long as temple; temple behind eye roundly narrowed; temple, vertex and frons smooth; face indistinctly transversely punctate-rugose, its width 1.6 times its height; tentorial pits large; anterior intertentorial line 3.2 times tentorio-ocular line; clypeus slightly convex, indistinctly rugose, ventral margin medially straight; length of malar space 1.1 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side anteriorly, medially and posteriorly (narrowly) crenulate, dorsally smooth; mesopleuron smooth; precoxal sulcus medially present, relatively wide, crenulate; metapleuron largely rugose, dorsally narrowly almost smooth; mesoscutum smooth, and largely glabrous, anteriorly sparsely setose; notauli absent; scutellar suture deep, with several weak carinae; scutellum smooth and convex; propodeum with a distinct transverse carina, its dorsal face nearly smooth with a weak medio-longitudinal carina, and its posterior face rugose.

Wings.— Fore wing: vein 1-R1 as long as pterostigma; r arising nearly from middle of pterostigma; r:2-SR:SR1+3-SR = 8:30:85; vein m-cu interstitial; 1-CU1:2-CU1 = 5:23, 1-CU1 horizontal, much shorter than cu-a. Hind wing: 1-M:1r-m = 11:15.

Legs.— Hind coxa nearly smooth, superficially punctate laterally; length of hind femur, tibia and basitarsus 4.2, 11.0 and 6.0 times their width, respectively; length of both hind tibial spurs 0.35 times hind basitarsus.

Metasoma.— Length of first tergite 1.6 times its apical width, its surface distinctly longitudinally striate, medio-basally distinctly concave, nearly parallel-sided, spiracles distinctly protruding; second and following tergites smooth; hypopygium glabrous; ovipositor sheath short, flat, knife-like, narrowed apically, with dense short setae, upper margin with a subtransparent edge; length of sheath 3.1 times its maximum width, 1.1 times first tergite, 0.2 times fore wing.

Colour.— Dark reddish brown; clypeus and prosternum reddish brown; antenna basally yellowish brown, dark towards apex; palpi pale yellow; legs brownish yellow, hind tarsus darker, hind and middle coxae dorsally brownish; wing membrane subhyaline, pterostigma brown, veins brown to pale brown.

Variation.— Length of body 2.6-3.2 mm, of fore wing 2.7-3.2 mm; antennal segments of both sexes 24; male similar to female, but position of vein m-cu of fore wing varies from interstitial to shortly antefurcal; precoxal sulcus more finely crenulate; propodeum more densely rugose, 1-M:1r-m = 11:12.

Note.— This species is similar to *C. yunnanus* spec. nov., but can be separated from the latter by the characters listed in the key. This species is also similar to *C. cuspidatus* (Haliday), but differs in having the precoxal sulcus crenulate, the shape of the ovipositor sheath different and the body longer.

Centistes (Centistes) intermedius spec. nov.
(figs 76-81)

Material.— Holotype, ♀ (ZAU), Guizhou, Mt Fanjing, Jinding, 13.vii.1993, Chen Xuexin, no. 939118. Paratypes (2 ♀♀, ZAU): 1 ♀, same locality as holotype, 10.vii.1993, Chen Xuexin, no. 937558; 1 ♀, Zhejiang, Mt W Tianmu, 18.vii.1983, Ma Yun, no. 831316.

Holotype, ♀, length of body 2.0 mm, of fore wing 2.3 mm.

Head.— Antennal segments 22, length of third segment 1.4 times fourth segment, length of third, fourth and penultimate segments 3.6, 2.5 and 1.3 times their width, respectively; length of maxillary palp 0.8 times height of head; OOL:OD:POL = 8:4:8; length of eye in dorsal view 0.8 times temple; temple behind eye roundly narrowed; temple, vertex and frons smooth; face indistinctly rugulose, its width 1.4 times its height; intertentorial line 2.2 times tentorio-ocular line; clypeus convex, punctate, ventral margin medially straight, its width 2.3 times its height; length of malar space 1.4 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side anteriorly crenulate, remainder largely smooth; mesopleuron smooth; precoxal sulcus completely absent; metapleuron ventrally rugose, dorsally largely smooth; mesoscutum smooth, setose on anterior half; notauli absent; scutellar suture deep, with a median carina; scutellum medially smooth, punctate laterally; propodeum with a distinct transverse carina, dorsal face largely smooth, with a weak medio-longitudinal carina and rugose near transverse carina, posterior face rugulose.

Wings.— Fore wing: length of vein 1-R1 1.1 times length of pterostigma; r arising behind middle; r:2-SR:SR1+3-SR = 7:25:67; 1-SR+M unpigmented, weak; vein m-cu antefurcal; 1-CU1:2-CU1 = 3:18, 1-CU1 oblique, shorter than cu-a. Hind wing: 1-M:1r-m = 9:13.

Legs.— All legs robust and stout; fore and middle tarsi distinctly shortened, hind tarsus less shortened; hind coxa nearly smooth; length of hind femur, tibia and basitarsus 3.8, 8.4 and 6.0 times their width, respectively; length of both hind tibial spurs 0.5 times hind basitarsus; length of hind tarsus 0.7 times hind tibia.

Metasoma.— Length of first tergite 1.3 times its apical width, its surface smooth apically, and remainder rugose, gradually widened towards its apex, dorsal carinae present at basal 2/3 of tergite, median carina present at basal half; second and following tergites smooth; hypopygium with short setae; ovipositor sheath flat, narrowed apically, sparsely setose; length of sheath 4.6 times its maximum width, 0.9 times first tergite, 0.13 times fore wing; ovipositor with a subapical dorsal notch.

Colour.— Dark reddish brown; first antennal segment brown, second yellow, third and basal half of fourth brownish yellow, remainder dark brown; palpi yellow;

legs yellowish brown, hind tibia apically and hind tarsus darkened, middle and hind coxae brownish basally; wing membrane hyaline, pterostigma brown, veins brown to brownish yellow.

Variation.— The paratype generally agrees with holotype, but differs in having the length of the body 1.7 mm, of fore wing 2.0 mm; the number of antennal segments 21, the length of penultimate segment 1.6 times its width (from Zhejiang); the vein 1-SR+M fore wing nearly absent apically.

Note.— This species seems unique in the subgenus *Centistes* because the vein 1-SR+M of fore wing is reduced (being intermediate to the subgenus *Syrrhius*), and fore and middle tarsi are distinctly shortened.

Centistes (Centistes) striatus spec. nov.
(figs 88-92)

Material.— Holotype, ♀ (ZAU), Jiangsu, Nantong, 1980(?), Zhao Meiyun, captured at light, no. 800326. Paratypes (3 ♀♀): 1 ♀ (RMNH), same as holotype; 2 ♀♀ (ZAU): 1 ♀, Zhejiang, Sengxian, 24.x.1963, He Junhua, no. 640933; 1 ♀, Hubei, Fangxian, 24.vii.1982, He Junhua, no. 825318.

Holotype, ♀, length of body 2.4 mm, of fore wing 2.6 mm.

Head.— Width of head in dorsal view twice its median length; remaining antennal segments 16 (apical segments missing), length of third segment 1.2 times fourth segment, length of third and fourth segments 3.3 and 2.8 times their width, respectively; length of maxillary palp 0.8 times height of head; OOL:OD:POL = 9:4:8; length of eye in dorsal view 1.5 times temple; temple behind eye parallel-sided and posteriorly distinctly narrowed; temple, vertex and frons smooth; face nearly smooth, densely setose, its width 1.2 times its height; intertentorial line 1.4 times tentorio-ocular line; clypeus slightly convex, punctate-rugose; length of malar space 1.3 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side anteriorly and medially crenulate, remainder largely smooth; mesopleuron smooth; precoxal sulcus completely absent; metapleuron largely rugose; mesoscutum smooth, anteriorly setose; notauli absent; scutellar suture deep, with a median carina; scutellum slightly convex and smooth; propodeum with a distinct transverse and a medio-longitudinal carina, largely irregularly rugose, and only baso-laterally smooth.

Wings.— Fore wing: vein 1-R1 as long as pterostigma; r arising slightly behind middle of pterostigma; r:2-SR:SR1+3-SR = 7:28:74; vein m-cu interstitial; 1-CU1:2-CU1 = 6:20, 1-CU1 oblique. Hind wing: 1-M:1r-m = 13:14.

Legs.— Fore and middle tarsi shortened; hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.2, 10.0 and 5.5 times their width, respectively; length of both hind tibial spurs 0.48 times hind basitarsus.

Metasoma.— Length of first tergite 1.2 times its apical width, its surface longitudinally striate, gradually widened towards its apex, spiracles slightly protruding; second and following tergites smooth; hypopygium simple; ovipositor sheath long, narrow, slightly widened subapically with long setae, length of sheath 4.2 times its maximum width, as long as first tergite, and 0.18 times fore wing.

Colour.— Pale brownish yellow; metapleuron, propodeum and first metasoma yellowish brown; antenna dark brownish yellow; stemmaticum black; palpi pale yellow; legs pale brownish yellow; wing membrane hyaline; pterostigma yellow, veins

brownish yellow to pale yellow.

Variation.— Length of body 2.2-2.4 mm, of fore wing 2.4-2.6 mm; antennal segments 25-26; length of penultimate antennal segment 1.6-2.0 times its width; width of head 1.8-2.0 times its median length; the paratype from Zhejiang is completely brownish yellow, but the one from Hubei is a little paler; vein m-cu of fore wing (only of the right wing) of paratype from Hubei antefurcal.

Note.— This species is very similar to *C. tsherskii* Belokobylskij, 1995, but differs in having the fore tarsus distinctly shortened, the penultimate antennal segment longer, the spiracles of first metasomal tergite not distinctly protruding, and the body colour largely brownish yellow.

Centistes (Centistes) yunnanus spec. nov.
(figs 62-69)

Material.— Holotype, ♀ (ZAU), Yunnan, Ruili, 2.vi.1981, He Junhua, no. 812408.

Holotype, ♀, length of body 2.6 mm, of fore wing 2.6 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 27, length of third segment 1.3 times fourth segment, length of third, fourth and penultimate segments 3.5, 2.8 and 1.3 times their width, respectively; length of maxillary palp 0.8 times height of head; OOL:OD:POL = 10:5:8; eye in dorsal view as long as temple; temple behind eyes distinctly roundly narrowed; temple, vertex and frons smooth; face setose, weakly and indistinctly transversely punctate-rugose, its width 1.4 times its height; intertentorial line 2.5 times tentorio-ocular line; clypeus sparsely punctate, nearly smooth, ventral margin medially slightly concave, its width 2.3 times its height; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly crenulate, remainder largely smooth; mesopleuron smooth; precoxal sulcus medially narrowly present, distinctly crenulate; ventral half of metapleuron rugose, dorsal half nearly smooth; mesoscutum completely smooth and glabrous; notauli absent; scutellar suture deep, with a median carina; scutellum smooth and convex; propodeum largely smooth with a distinct transverse carina, its dorsal face with a low medio-longitudinal carina which widens posteriorly.

Wings.— Fore wing: length of vein 1-R1 1.1 times length of pterostigma; r arising behind middle of pterostigma; r:2-SR:SR1+3-SR = 8:25:80; 1-SR short and thick; vein m-cu distinctly antefurcal; 1-CU1:2-CU1 = 6:18, 1-CU1 oblique. Hind wing: 1-M:1r-m = 11:16.

Legs.— Hind coxa weakly punctate, nearly smooth; length of hind femur, tibia and basitarsus 3.9, 9.4 and 6.2 times their width, respectively; length of both hind tibial spurs 0.4 times hind basitarsus.

Metasoma.— Length of first tergite 1.6 times its apical width, its surface smooth, gradually widened towards its apex, its dorsal carinae present at basal 2/3 of tergite, median carina present at medial 1/3 of tergite; second and following tergites smooth; hypopygium glabrous; ovipositor sheath short, flat, narrowed apically, with many short setae, upper margin more curved than lower margin and with a sub-transparent edge (fig. 63); length of sheath 2.3 times its maximum width, 0.7 times first tergite, 0.1 times fore wing.

Colour.— Dark reddish brown; clypeus, pronotum ventrally rather paler; antenna basally brownish yellow, remainder brown; palpi yellow; legs brownish yellow, tarsi darker, hind coxa dorsally brown; wing membrane subhyaline, pterostigma brown, veins brown to pale brown.

Note.— This species is similar to *C. cuspidatus* (Haliday), but differs in having the antenna with 27 segments, the mesoscutum completely glabrous, the precoxal sulcus narrowed and crenulate, and the shape of ovipositor sheath different.

Subgenus *Ancylocentrus* Foerster, 1862
(figs 97-156)

There are about 20 species described belonging to this subgenus. Ten species are reported from China, of which five are new to science.

Key to Chinese species of the subgenus *Ancylocentrus* Foerster

1. Distal third or half of mesoscutum with a deep, short medio-longitudinal depression and notauli only anteriorly present on mesoscutum, as a very short impression (fig. 126) 2
 - Mesoscutum without medio-longitudinal depression and notauli complete, but sometimes shallow (figs 101, 109, 134, 148, 156) 4
2. Vein 1-CU1 of fore wing much longer than vein cu-a (fig. 124); ovipositor sheath about as long as first metasomal tergite; length of body 3.0 mm. Guizhou *C. rufus* spec. nov.
 - Vein 1-CU1 of fore wing at most as long as vein cu-a (fig. 103, 119); ovipositor sheath much shorter than first metasomal tergite 3
3. Malar space as long as basal width of mandible (fig. 104); eye smaller (figs 104, 105); first metasomal tergite longitudinally rugose (fig. 107); length of body 2.0-2.6 mm. Heilongjiang, Shandong, Anhui, Jiangsu, Zhejiang, Yunnan and Guizhou; Japan; Russian Far East *C. medythiae* Maetô & Nagai
 - Length of malar space 0.6 times basal width of mandible (fig. 121); eye much larger (fig. 120); first metasomal tergite nearly smooth (fig. 123); length of body 2.8 mm. Zhejiang *C. ocularis* spec. nov.
4. Length of ovipositor sheath almost parallel-sided (fig. 97); length of sheath about 1.3 times first metasomal tergite (figs 100 & 102); metasoma of female distinctly compressed (fig. 102); length of body about 5. mm. Guangxi; Russian Far East *C. semiruficus* Belokobylskij
 - Length of ovipositor sheath not parallel-sided (figs 117, 138, 152); length of sheath distinctly shorter than first metasomal tergite (figs 117 & 118, 138 & 139, 152 & 153); metasoma of female nearly depressed or oblong-oval 5
5. Maxillary palp with 6 segments; metasoma of female with pair of teeth medio-ventrally (sometime indistinct) (fig. 117); ovipositor sheath apically slightly widened and with a hook because of ventral concavity (fig. 117); first metasomal tergite usually with distinct transverse medial depression or depression only laterally present (fig. 118); length of body 2.5-3.0 mm. Jilin; Holarctic region *C. ater* (Nees)

- Maxillary palp with 5 segments; metasoma of female without pair of teeth medio-ventrally (figs 112, 153); ovipositor sheath differently shaped (figs 112, 144, 153); first metasomal tergite usually without distinct transverse medial depression (figs 113, 139, 152) 6
- 6. Notauli distinct, at least partly crenulate (figs 109, 134); ovipositor sheath longer and less robust (figs 112, 135) 7
- Notauli shallow or indistinct, smooth (figs 148, 156); ovipositor sheath shorter and robust (figs 144, 153) 9
- 7. Temple anteriorly distinctly widened behind eye and posteriorly roundly narrowed (figs 133, 141); length of eye in dorsal view 0.7-0.8 times temple (figs 133, 141); notauli completely crenulate (fig. 134) 8
- Temple usually roundly narrowed behind eye (fig. 110); eye in dorsal view as long as or longer than temple (fig. 110); notauli anteriorly crenulate, posteriorly smooth (fig. 109); length of body 2.9 mm. Liaoning
..... *C. semiglabratus* spec. nov.
- 8. Antenna thickened (fig. 142); clypeus almost smooth (fig. 140); mesoscutum weakly punctate (cf. fig. 148); vein r of fore wing longer (fig. 137); length of body 2.0-3.3 mm. Jilin; Russian Far East *C. convexitemporalis* Belobobylskij
- Antenna not thickened (fig. 136); clypeus distinctly rugose (fig. 132); mesoscutum distinctly punctate (fig. 134); vein r of fore wing shorter (fig. 131); length of body 2.5 mm. Zhejiang *C. punctatus* spec. nov.
- 9. Tarsi distinctly shortened and robust (fig. 147), length of hind tarsus 0.5-0.6 times hind tibia; notauli present only as a trace (fig. 148); vein M+CU1 of fore wing moderately sclerotized; ovipositor sheath short but not massive (fig. 144); hypopygium simple (fig. 144); length of body 4.7 mm. Hubei
..... *C. brevitarsus* spec. nov.
- Tarsi normal (fig. 151), hind tarsus about as long as or slightly shorter than hind tibia; notauli at least shallowly impressed and distinct (fig. 156); vein M+CU1 of fore wing unsclerotized; ovipositor sheath very thick and massive (fig. 153); hypopygium (as fourth and fifth sternites) densely and shortly setose (brush-like) (fig. 153); length of body 3.3-6.2 mm. Zhejiang, Jiangxi; Russian Far East
..... *C. chaetopygidium* Belokobylskij

Centistes (Ancylocentrus) ater (Nees, 1834)
(figs 114-118)

Leiophron ater Nees, 1834: 45.

Ancylocentrus ater; Shenefelt, 1969: 9.

Centistes (Ancylocentrus) ater; van Achterberg, 1985: 358; Belokobylskij, 1992: 208.

Leiophron (Ancyclus) excrucians Haliday, 1835: 461.

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

Centistes (Ancylocentrus) excrucians; van Achterberg, 1985: 358.

Allurus lativalvis Jakimavicius, 1972: 51.

Ancylocentrus lativalvis; Tobias, 1986: 225.

Material.— 1 ♀ (ZAU), Jilin, Mt Changbai, 9.viii.1977, Zhang Yancheng, no. 790018.

Distribution.— China: Jilin; Russia: Far East and European part; West Europe; North America.

Biology.— Reported to be a parasite of *Sitona scissifrons* Say (Curculionidae).

Centistes (Ancylocentrus) brevitarsus spec. nov.
(figs 143-149)

Material.— Holotype, ♀ (ZAU), Hubei, Shengnongjia, 880m, 23.vii.1982, He Junhua, no. 825349.

Holotype, ♀, length of body 4.7 mm, of fore wing 3.9 mm.

Head.— Width of head in dorsal view 1.9 times its length; antenna missing, length of maxillary palp 0.8 times height of head; OOL:OD:POL = 5:10:11; eye large and bare; length of eye in dorsal view 2.2 times temple; temple, vertex and frons smooth; face densely rugose and setose, its width 0.9 times its height; anterior tentorial pits large, almost touching eye; intertentorial line 10 times tentorio-ocular line; clypeus flat, rugose; length of malar space 0.5 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely smooth, only anteriorly sparsely crenulate; mesopleuron smooth; precoxal sulcus completely absent; anterior subalar depression with rugae; metapleuron rugo-punctate ventrally, largely smooth dorsally; mesoscutum smooth, and densely setose, only lateral lobes glabrous; notauli present only as a trace; scutellar suture deep with a median carina; scutellum smooth; propodeum with a weak transverse carina, dorsal face largely smooth, medio-longitudinally rugose along weak median carina, posterior face small, irregularly sparsely rugose within areola.

Wings.— Fore wing: length of vein 1-R1 1.3 times length of pterostigma; r emitting a little behind middle of pterostigma; r:2-SR:SR1+3-SR = 12:35:96; vein 1-SR long; vein m-cu distinctly antefurcal; 1-CU1:2-CU1 = 10:33, 1-CU1 oblique, as long as cu-a. Hind wing: 1-M:1r-m = 14:18

Legs.— Hind coxa rugose laterally; length of hind femur, tibia and basitarsus 3.5, 8.4 and 4.0 times their width, respectively; femora distinctly thickened; tarsi distinctly shortened, length of hind tarsus 0.54 times hind tibia; length of both hind tibial spurs 0.5 times hind basitarsus.

Metasoma.— Length of first tergite 2.1 times its apical width; first tergite parallel-sided, but slightly protruding at spiracles, its surface medially smooth, apically and laterally distinctly longitudinally rugose; second and following tergites smooth; hypopygium glabrous; ovipositor sheath short, upper side strongly curved and with a spine apically, with long setae; length of sheath twice its width, 0.73 times first tergite and 0.12 times fore wing.

Colour.— Dark brown, mesoscutum paler; clypeus, mandible, mesopleuron largely, second and following tergites reddish brown; palpi, prothorax and legs brownish yellow; wing membrane subhyaline, pterostigma brown, veins brown to brownish yellow.

Note.— This species is similar to *C. chaetopygidium* Belokobylskij, 1992, but can be readily separated from the latter by having the hypopygium glabrous and by the different shape of ovipositor sheath.

Centistes (Ancylocentrus) chaetopygidium Belokobylskij, 1992
(figs 150-156)

Centistes (Ancylocentrus) chaetopygidium Belokobylskij, 1992: 216.

Material.— 1 ♀ (RMNH), Zhejiang, Mt W Tianmu, 12.vi.1993, Ma Jufa, no. 934555; 2 ♀♀ + 1 ♂ (ZAU): 1 ♂, Zhejiang, Mt W Tianmu, 21.vii.1987, Chen Xuexin, no. 873053; 1 ♀, Zhejiang, Longquan, Mt Fengyang, 28.vii.1983, Zhou Sansheng, no. 832043; 1 ♀, Jiangxi, Lushan, 10-12.viii.1982, He Junhua, no. 825223.

Distribution.— China: Zhejiang, Jiangxi; Russia: Far East.

Note.— Our specimens agree well with the original description of this species, but differ in having the body length sometimes less than 4 mm; the antennal segments 30-35; the temple of female may be slightly roundly narrowed behind eye; the precoxal sulcus sometimes indistinctly rugose; and the first tergite without distinct, short oval medial depression. The latter is also absent in the examined paratype (♂; RMNH).

Centistes (Ancylocentrus) convexitemporalis Belokobylskij, 1992
(figs 137-142)

Centistes (Ancylocentrus) convexitemporalis Belokobylskij, 1992: 209.

Material.— 1 ♀ (ZAU), Jilin, Dongliao, 22-31.vii.1988, Lou Xiaoming, no. 888105.

Distribution.— China: Jilin; Russia: Far East.

Note.— The examined specimen agrees well with the original description of this species, but has the body colour a little paler. The examination of the paratypes housed in RMNH has shown that the mesoscutum of this species has a distinct short longitudinal carina before prescutellar depression as our specimen does, but this was not mentioned in the original description.

Centistes (Ancylocentrus) medythiae Maetô & Nagai, 1985
(figs 103-107)

Centistes medythiae Maetô & Nagai, 1985: 730.

Centistes (Ancylocentrus) medythiae; Belokobylskij, 1992: 206.

Material.— 2 ♀♀ + 2 ♂♂ (RMNH): 2 ♀♀, Zhejiang, Dongyang, ix-x.1980, Zhou Hongxing, captured at light, no. 803574; 2 ♂♂, Yunnan, Lanchang, 20.iv.1981, He Junhua, nos. 814351, 814353; 23 ♀♀ + 12 ♂♂ (ZAU): 1 ♀, Heilongjiang, Heihe, 1981 (?), Wan Li, no. 810353; 1 ♀ + 1 ♂, Shandong, Huiming, 26.vi.1982, Qu Yaoshun, ex adults of *Medythia nigrobilineata* (Motsch.), no. 826545; 1 ♀, Anhui, yuexi, 17.ix.1981, Yang Fu'an, no. 820528; 1 ♂, Anhui, Puyang, 16.ix.1980, Li Sikui, no. 810190; 3 ♀♀, Jiangsu, Zhenjiang, 1981(?), Seng Qingxing, no. 810572; 1 ♀, Jiangsu, Yangzhou, 1981, Yang Lianming, no. 820100; 1 ♀, Jiangsu, Wangling, 8.ix.1981, Jiang Quangqing, no. 815816; 5 ♀♀, Zhejiang, Dongyang, ix-x.1980, Zhou Hongxing, captured at light, no. 803574 (4 ♀♀), no. 803577 (1 ♀); 1 ♀, Zhejiang, Lishui, 6.iv.1982, Xu Yao, no. 824248; 3 ♀♀, Zhejiang, Mt W Tianmu, 8-10.x.1982, Ma Yun, no. 826166, 22.vii.1987, Lou Xiaoming, no. 874667, 21.vi.1987, Chen Xuexin, no. 873106; 2 ♀♀, Zhejiang, Hangzhou, 1965 (?), staff of Plant Protection Dept. of ZAU, captured at light, no. 65047.22; 1 ♀, Zhejiang, Shangyu, 1984, Wei Heifu, no. 846188; 2 ♀♀, Guizhou, Dushan, 27.vi.1980, Zhou Shenzheng, nos 860190, 860246; 7 ♂♂, Yunnan, Lanchang, 20.iv.1981, He Junhua, nos 812206, 812207, 814348, 814342, 814346, 814331, 814367; 1 ♂, Yunnan, Ruili, 1.v.1981, He Junhua, no. 812403; 2 ♂♂, Yunnan, Ruili, 19.x.1980, Wang Luzhe, captured in the paddy field, nos 814036, 814037; 1 ♀, Yunnan, Kunming, 25.vii.1988, Chen Xuexin, no. 885389; 1 ♂, Yunnan, Kunming, 16.v.1981, He Junhua, no. 810925.

Distribution.— China: Heilongjiang, Shandong, Anhui, Jiangsu, Zhejiang,

Yunnan and Guizhou; Japan; Russia: Far East.

Biology.— Parasites of adult of Chrysomelidae: *Medythia nigrobilineata* (Motschulsky).

Note.— This species seems to be widely distributed in China. Some characters are added here: the first metasomal tergite with a medio-longitudinal carina at medial 0.3-0.7; body colour variable, from typically brownish yellow to brownish.

Centistes (Ancylocentrus) ocularis spec. nov.
(figs 119-123).

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt W Tianmu, 11.vi.1993, Zhu Mingjiang, no. 935175. Paratype: 1 ♀ (ZAU), Zhejiang, Songyang, 15-17.vii.1989, He Junhua, no. 895181.

Holotype, ♀, length of body 2.8 mm, of fore wing 2.7 mm.

Head.— Width of head in dorsal view twice its length; antennal segments 23, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.5, 3.0 and 1.9 times their width, respectively; length of maxillary palp 0.9 times height of head; OOL:OD:POL = 4:6:8; eye large; length of eye in dorsal view 1.6 times temple; temple roundly distinctly narrowed behind eye; vertex and frons smooth; face narrow, weakly punctate, medially slightly convex, its width 1.3 times its height; intertentorial line 3.1 times tentorio-ocular line; clypeus slightly convex, punctate, ventral margin straight medially; length of malar space 0.6 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly crenulate, remainder largely smooth; mesopleuron largely smooth; precoxal sulcus present medially, narrow and crenulate; metapleuron largely rugose; mesoscutum glabrous, only anteriorly sparsely setose, with a short, medio-posterior depression; notauli only present anteriorly and almost smooth; propodeum with a distinct transverse carina, its dorsal face largely smooth except for a narrow rugose medio-longitudinal area, its posterior face indistinctly rugose.

Wings.— Fore wing: length of vein 1-R1 as long as length of pterostigma; r arising from middle of pterostigma; r:2-SR:SR1+3-SR = 9:28:71; vein m-cu distinctly antefurcal; 1-CU1:2-CU1 = 6:21, 1-CU1 oblique, as long as cu-a. Hind wing: 1-M:1r-m = 12:15.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.2, 10.0 and 5.6 times their width, respectively; length of hind tibial spurs 0.50 and 0.56 times hind basitarsus; length of both fore and hind tarsi 0.8 times their tibiae.

Metasoma.— Length of first tergite 1.7 times its apical width; first tergite slender, slightly narrowed medially, widened apically, its surface smooth, with a distinct medio-longitudinal carina at median 1/3 of tergite, and its dorsal carinae present but absent apically; second and following tergites smooth; apical metasomal segments compressed; hypopygium glabrous; ovipositor sheath short, flat and shortly setose; length of sheath 2.5 times its width, 0.76 times first tergite and 0.11 times fore wing.

Colour.— Dark reddish brown; clypeus, prothorax, mesoscutum, mesosternum and mesopleuron reddish; mandible and palpi yellow; legs brownish yellow; wing membrane hyaline, pterostigma brown, veins brown to pale yellow.

Variation.— Length of body 2.5-2.8 mm, of fore wing 2.4-2.7 mm.

Note.— This species is very similar to *C. medythiae* Maetô & Nagai, 1985, but differs in having the eyes and ocelli large, the OD 1.5 times OOL, the length of eye 1.6 times temple, the length of malar space 0.6 times basal width of mandible and the first tergite almost smooth.

Centistes (Ancylocentrus) punctatus spec. nov.
(figs 131-136)

Material.— Holotype, ♀ (ZAU), Zhejiang, Qingyuan, Mt Baishanzhu, 18.vii.1994, Wu Hong, no. 946605.

Holotype, ♀, length of body 2.5 mm, of fore wing 2.8 mm.

Head.— Width of head in dorsal view 1.8 times its length; antennal segments 28, length of third segment 1.3 times fourth segment, length of third, fourth and penultimate segments 3.5, 2.8 and 1.1 times their width, respectively, subapical segments subquadrate; length of maxillary palp 0.9 times height of head; OOL:OD:POL = 9:5:9; length of eye in dorsal view 1.2 times temple; temple slightly widened then slightly narrowed behind eyes; temple, vertex and frons smooth; face punctate, slightly convex, its width twice its height; intertentorial line 1.7 times tentorio-ocular line; clypeus distinctly rugose, nearly flat, ventral margin convex; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly and posteriorly crenulate, remainder largely smooth; precoxal sulcus wide, fully present, and distinctly crenulate, remainder of mesopleuron smooth; metapleuron completely rugose; notauli narrow, deep and crenulate; mesoscutum completely punctate and setose; scutellar suture wide, deep with one median carina; scutellum small, nearly smooth, anteriorly convex; propodeum largely distinctly rugose with a weak medio-transverse carina.

Wings.— Fore wing: length of vein 1-R1 equal to length of pterostigma; r issued at middle of pterostigma, its length 0.54 times width of pterostigma; vein SR1+3-SR nearly straight apically; r short; r:2-SR:SR1+3-SR = 4.5:23:75; vein m-cu distinctly antefurcal; 1-CU1:2-CU1 = 6:20; 1-CU1 oblique, 1.2 times cu-a. Hind wing: 1-M:1r-m = 10:12.

Legs.— Hind coxa punctate laterally; length of hind femur, tibia and basitarsus 4.1, 8.5 and 6.3 times their width, respectively; length of both hind tibial spurs 0.46 times hind basitarsus; length of hind tibia about 0.94 times hind tarsus.

Metasoma.— Length of first tergite 1.4 times its apical width, its surface distinctly longitudinally rugose, slightly widened to spiracles then nearly parallel-sided to apex, basally concave; second and following tergites smooth; apical segments depressed; hypopygium with long pale setae; ovipositor sheath short, flat and with long setae, its length 2.4 times its width, 0.6 times first tergite, 0.09 times fore wing.

Colour.— Dark brown, nearly black, metasoma (except for its first segment) paler; clypeus, antenna basally, and legs yellowish brown, remainder of antenna brown; palpi yellow; wing membrane hyaline, pterostigma and veins brown.

Note.— This species is very close to *C. manchuricus* Belokobylskij, 1992, but differs in having the mesoscutum distinctly punctate, the second and third metasomal tergites smooth, the hypopygium with long pale setae, the coxae completely yellow-

ish brown, the clypeus distinctly rugose, and the penultimate antennal segment shorter. This species is also similar to *C. convexitemporalis* Belokobylskij, 1992, but can be separated by the characters listed in the above key.

Centistes (Ancylocentrus) rufus spec. nov.
(figs 124-130)

Material.— Holotype, ♀ (ZAU), Guizhou, Guiyang, 18.x.1983, He Junhua, no. 884739.

Holotype, ♀, length of body 3.0 mm, of fore wing 2.8 mm.

Head.— Width of head in dorsal view twice its median length; antennal segments 22, third segment as long as fourth segment, length of third, fourth and penultimate segments 2.7, 2.6 and 1.7 times their width, respectively; length of maxillary palp 0.9 times height of head; OOL:OD:POL = 10:5:10; length of eye in dorsal view 0.9 times temple; temple roundly narrowed behind eye; vertex and frons smooth; face punctate, medio-longitudinally distinctly convex on dorsal half, its width 1.5 times its height; tentorial pits very large; intertentorial line 2.7 times tentorio-ocular line; clypeus convex, weakly punctate, ventral margin straight medially; length of malar space 0.7 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly and posteriorly (narrowly) crenulate, remainder largely smooth; mesopleuron largely smooth, dorsally rugose; precoxal sulcus medially present, wide and crenulate; metapleuron small and largely rugose; mesoscutum glabrous, only anteriorly setose, with a short, distinct and smooth depression medio-posteriorly; notauli only present anteriorly, crenulate; scutellar suture deep, narrow with a median carina; scutellum anteriorly convex, nearly smooth; propodeum with a transverse carina, largely rugose, only baso-laterally smooth.

Wings.— Fore wing: vein 1-R1 as long as pterostigma; r arising distinctly behind middle of pterostigma; r:2-SR:SR1+3-SR = 9:30:71; vein m-cu shortly antefurcal; 1-CU1:2-CU1 = 11:20, 1-CU1 oblique, 1.8 times cu-a. Hind wing: 1-M:1r-m = 10:16

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.0, 10.1 and 6.7 times their width, respectively; length of hind tibial spurs 0.50 and 0.55 times hind basitarsus; all tarsi shortened, length of fore tarsus 0.64 times fore tibia, length of hind tarsus 0.8 times hind tibia.

Metasoma.— Length of first tergite 1.4 times its apical width, its surface distinctly longitudinally rugose, apically smooth, basally deeply concave, gradually widened from base towards apex, spiracles slightly protruding; second and following tergites smooth; hypopygium simple; ovipositor sheath short, rather slender and narrowed apically, shortly setose; length of sheath 3.8 times its width, 0.9 times first tergite and 0.14 times fore wing.

Colour.— Dark brown; clypeus and mesopleuron reddish brown; prothorax and mesoscutum yellowish brown; antenna brown, paler basally; palpi pale yellow; legs brownish yellow, middle and hind tibiae (except base) and tarsi brownish; wing membrane hyaline, pterostigma brown, veins brown to yellow.

Note.— This species is very similar to *C. rufithorax* (Telenga, 1950), but differs in having all tarsi shortened, the vein r arising distinctly from behind middle of pterostigma, the vein 1-CU1 of fore wing longer, the middle and hind tibiae apically

and tarsi brownish and the body longer. This species is also similar to *C. splendidus* Papp, 1992, but differs in having the penultimate antennal segments not cubic, the femur more robust and the antenna with less segments.

Centistes (Ancylocentrus) semiglabratus spec. nov.
(figs 108-113)

Material.— Holotype, ♀ (ZAU), Liaoning, Shengyang, Dongling, v-vi.1994, Lou Juxian, no. 947522.

Holotype, ♀, length of body 2.9 mm, of fore wing 3.0 mm.

Head.— Width of head in dorsal view 1.9 times its length; antennal segments 26, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.2, 2.2 and 1.6 times their width, respectively; apical two segments of maxillary palp missing; OOL:OD:POL = 10:5:10; eye in dorsal view as long as temple; temple strongly roundly narrowed behind eyes; vertex and frons smooth; face slightly convex medio-longitudinally, punctate and densely setose, its width 1.7 times its height; intertentorial line twice tentorio-ocular line; clypeus slightly convex, rugose, ventral margin medially straight; length of malar space 1.1 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly, medially and posteriorly coarsely crenulate, medio-dorsally and ventrally smooth; precoxal sulcus wide, complete and irregularly rugose; remainder of mesopleuron largely smooth; metapleuron distinctly coarsely rugose; notauli distinct, anteriorly deep and crenulate, posteriorly wide, shallow and smooth; mesoscutum largely smooth, but anterior third distinctly setose and punctate; scutellar suture deep, with two weak rugae; scutellum small, punctate, medially almost smooth; propodeum densely and irregularly rugose with a distinct transverse carina, its dorsal face with a median carina.

Wings.— Fore wing: vein 1-R1 as long as pterostigma; r emitting from middle of pterostigma; r:2-SR:SR1+3-SR = 8:27:78; vein m-cu distinctly antefurcal; 1-CU1:2-CU1 = 8:24; 1-CU1 slightly oblique, 0.9 times cu-a. Hind wing: 1-M:1r-m = 8:18.

Legs.— Hind coxa punctate; length of hind femur, tibia and basitarsus 3.5, 8.9 and 6.6 times their width, respectively; length of both hind tibial spurs 0.45 times hind basitarsus; length of hind tarsus 0.9 times hind tibia.

Metasoma.— First tergite as long as its apical width; first tergite distinctly widened from base to apex, its surface distinctly longitudinally rugose, apical margin smooth, spiracles slightly protruding; second and following tergites smooth; hypopygium glabrous; ovipositor sheath nearly parallel-sided, slender, and with dense long setae; length of sheath 3.0 times its width, 0.49 times first tergite, 0.08 times fore wing.

Colour.— Black; antenna dark brown, basally brown; palpi yellow; legs brownish yellow; all coxae dark reddish brown, hind tibiae apically and hind tarsus dark; wing membrane hyaline, pterostigma dark brown, veins dark brown to brown.

Note.— This species is similar to *C. paupella* (Shenefelt, 1969), but differs in having the temples strongly roundly narrowed behind eye, the notauli posteriorly wide, shallow and smooth, anteriorly narrow, deep and crenulate, and the propodeum with a distinct transverse carina.

Centistes (Ancylocentrus) semiruficus Belokobylskij, 1992
(figs 97-102)

Centistes (Ancylocentrus) semiruficus Belokobylskij, 1992: 207.

Material.— 1 ♀ (ZAU), Guangxi, Leye, x.1982, Wang Bing, no. 826451.

Distribution.— China: Guangxi; Russia: Far East.

Note.— This specimen agrees well with the original description, except for having 30 antennal segments. This represents the first record of this species from the Oriental region as well as from China.

Genus *Chrysopophthorus* Goidanich, 1948
(figs 157-174)

Chrysopophthorus Goidanich, 1948: 83; Shenefelt, 1969: 29; Shaw, 1985: 315; Chou, 1986: 159; van Achterberg, 1994: 301. Type species (by monotypy & original designation): *Chrysopophthorus chrysopimagineis* Goidanich, 1948 [= *Chrysopophthorus hungaricus* (Zilahi-Kiss, 1927)].

Diagnosis.— Antennal segments 22-27, apex of antenna with a spine; pedicellus slightly petiolate, comparatively large; maxillary and labial palpi with 6 and 3 segments, respectively; labial palp short compared to length of maxillary palp; occipital carina complete, connected to hypostomal carina far above base of mandible; eye glabrous and large; face largely flattened; clypeus wide and high; malar suture present and shallow; mandible long, strongly twisted, overlapping each other for at least three-quarters length of mandible, with long apical tooth; prepectal carina complete, angulate; postpectal carina absent; precoxal sulcus complete, shallowly impressed, sculptured; remainder of mesopleuron largely smooth; notauli complete; scutellum with minute transverse depression medio-posteriorly; propodeum distinctly concave medio-posteriorly, at least laterally coarsely reticulate, without median carina; vein SR1 of fore wing more or less curved; vein 2-R1 of fore wing long; vein 1-SR of fore wing present, short; veins M+CU1 and 2-1A of fore wing unsclerotized; vein r of fore wing short and subvertical; vein r-m of fore wing present, usually unsclerotized and may be short; parastigma small; pterostigma wide; vein m-cu of fore wing postfurcal; vein M+CU of hind wing much longer than vein 1-M; hind coxa simple; apex of inner side of hind tibia with setal comb; tarsal claws simple; first metasomal tergite tubular, very elongate, subparallel-sided, and curved in lateral view, its sternite immovably joined for most of its length, its dorsal and dorso-lateral carinae absent, its length 3.6-10.4 times its apical width, dorsope and laterope absent, basally flat; insertion of first tergite without lamella ventrally, condylus near bases of middle coxae; spiracles of first tergite submedially sinuated; metasoma smooth, at most with some oblique lateral striae of first tergite tergite; second and following tergites enclosing sternites; dorsal setae of metasoma mainly in one subapical row per tergite; ovipositor distinctly protruding, normal, nearly straight, without teeth; ovipositor sheath normally setose, slender, its apex membranous, acute; length of ovipositor sheath 0.2-0.3 times fore wing.

Biology.— Koinobiont endoparasites of adults of Chrysopidae, the genus *Chry-*

sopa in particular (Principi, 1948; van Achterberg, 1994).

Distribution.— Cosmopolitan, except Australian region; small genus with eight species known.

Chrysopophthorus petiolus Chou, 1986
(figs 167-174)

Chrysopophthorus petiolus Chou, 1986: 159; van Achterberg, 1994: 306.

Biology.— Unknown.

Distribution.— China: Taiwan; France.

Note.— This species was originally described from Taiwan province by Chou (1986) and later reported from France by van Achterberg (1994). No specimens from China are available for this study.

Genus *Cosmophorus* Ratzeburg, 1848
(figs 175-183)

Cosmophorus Ratzeburg, 1848: 42; Shenefelt, 1969: 135; Shaw, 1985: 317. Type species (by monotypy): *Cosmophorus klugii* Ratzeburg, 1848.

Cosmophorus subgenus *Cosmophorinus* Viereck, 1925: 73. Type species (designated by Muesebeck & Walkey, 1952): *Cosmophorus hopkinsii* Ashmead, 1896.

Diagnosis.— Antennal segments 13-23, apical segment without a spine; antennal sockets protruding as much as width of scapus, anterior margin raised in one or two sharp points; maxillary palpi with 4 segments; labial palpi with 1 segment; width of face greater than clypeus width; median frontal carina extending to median ocellus; vertex flattened, without groove medially or shallowly depressed; anterior ocellus usually at same level as posterior ocelli; occipital carina present, interrupted medio-dorsally, ventrally straight and joining hypostomal carina; mandibles robust, nearly as broad apically as basally, with two teeth, second tooth medium-sized or small but distinct, and situated ventrally to apical tooth of mandible, not in same plane; malar suture absent; prepectal carina present; mesopleuron smooth to partly rugose; anterior margin of scutellar suture without a suture or carina, the mesoscutum grading into scutellar suture; veins 1-SC+M, r-m, 1-R1 of fore wing absent; vein cu-a of hind wing present as a short spur; vein 3-CU1 of fore wing at the same level of vein 2-CU1; vein 1-1A of hind wing absent; vein 2-SC+R of hind wing medium-sized to short; dorsope absent; ovipositor straight or slightly sinuated apically, at most somewhat wavy.

Biology.— Parasites of adults of barkboring and woodboring Scolytidae and Curculionidae (Coleoptera).

Distribution.— Holarctic and Palearctic regions; small genus with about ten species known, but several undescribed species examined by the second author, which will be published by Drs D. Quicke and C. van Achterberg in a forthcoming publication. Chou (1987) once reported that this genus occurred in Taiwan province without mentioning species. This is the first time that a species of this genus is described from the Oriental region as well as from China.

Cosmophorus rugitergitus spec. nov.
(figs 175-183)

Material.— Holotype, ♂ (BMNH), China, Hainan, Dan Xian, 7.v.1983, Bouček.

Holotype, ♂, length of body 2.5 mm, of fore wing 1.9 mm.

Head.— Width of head in dorsal view 1.3 times its length; antennal segments 15, length of antenna 0.6 times length of body, scapus short, 1.8 times as long as wide, pedicellus elongate-elliptical, as long as scapus, 0.5 times third segment, third segment slender and long, length of third segment 1.6 times fourth segment, length of third, fourth and penultimate segments 8.0, 4.2 and 3.6 times their width, respectively; apical segment of maxillary palp longer than other segments; length of maxillary palp 0.8 times height of head; occiput distinctly notched in dorsal view; occipital carina widely interrupted medially, curved in dorsal view; OOL:OD:POL = 12:4:8; length of eye in dorsal view 0.9 times temple; middle ocellus distinctly anterior to the line of posterior margin of eyes; temple narrowed behind eyes; temple and vertex smooth and sparsely setose; frons flat, smooth with median carina; face vertical and narrow, nearly smooth, setose, with a weak median carina, its width 3.0 times its height; intertentorial line 1.8 times tentorio-ocular line; clypeus present, very narrow, nearly flat and smooth, ventral margin evenly curved, its width 3.5 times its height; outer side of mandible convex; length of malar space 0.4 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.8 times its height; pronotum with a large, round dorsope, side of pronotum anteriorly with two oblique carinae, medially and posteriorly crenulate-rugose, dorsal margin smooth; propleuron distinctly rugose; mesopleuron antero-dorsally and ventrally, ventro-posteriorly distinctly rugose, medially smooth; metapleuron completely reticulate-rugose as propodeum; notauli only anteriorly present and crenulate, anterior margin of notauli with a carina, vertical in lateral view; mesoscutum largely smooth, densely setose; scutellar suture deep with five fine carinae; scutellum smooth, flat, without medio-posterior depression; propodeum entirely reticulate, spiracles round, located before middle, protruding.

Wings.— Fore wing: pterostigma 2.1 times as long as wide; length of anterior margin of marginal cell 1.8 times length of pterostigma; r short, issued about middle of pterostigma; vein SR1+3-SR apically absent; r:2-SR:SR1+3-SR = 2:18:49; cu-a almost absent; 3-CU1 absent. Hind wing: 1-M:1r-m:2-SC+R = 2:12:9; SC+R1, 1-SC+R absent.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 3.8, 9.0 and 7.2 times their width, respectively; length of hind tibial spurs 0.33 and 0.27 times hind basitarsus; tarsal claws simple.

Metasoma.— Length of first tergite 2.9 times its apical width, first tergite nearly parallel-sided, ventrally open, dorsope and laterope absent, its surface entirely distinctly longitudinally reticulate; second tergite distinctly finely longitudinally striate; following tergites smooth; second and basal half of third tergites with lateral fold.

Colour.— Yellowish brown; propodeum, first tergite and apex of metasoma rather darkened; antenna yellowish, apically darkened; palpi and legs yellow; wing membrane hyaline, pterostigma brown, veins brown to yellow.

Note.— This species is similar to *C. cembrae* Ruschka, 1925, but differs in having

15 antennal segments, the length of eye in dorsal view 0.9 times temple, the middle ocellus distinctly anterior to the line through the posterior margin of eyes, the temple narrowed behind eyes, the propleuron distinctly rugose, the mesoscutum densely setose, the first tergite nearly parallel-sided, and the second tergite distinctly finely longitudinally striate.

Genus *Dinocampus* Foerster, 1862

(figs 184-192)

Dinocampus Foerster, 1862: 252; Shenefelt, 1969: 30; Shaw, 1985: 320. Type species (by monotypy & original designation): *Bracon terminalis* Nees, 1811(1812) [= *Ichneumon coccinellae* Schrank, 1802].

Diagnosis.— Antenna with 22-24 segments, apical segment without spine, length scapus about three times its width, about as long as third antennal segment; interantennal line about as long as socket diameter; maxillary palp with 5 segments; labial palp with 2 segments; occipital carina complete, low dorsally, ventrally separated from hypostomal carina above base of mandible; ocular setae present but minute; width of face longer than width of clypeus; width of clypeus about 1.4 times its height; anterior tentorial pits rather large; intertentorial line about 2 times tentorio-ocular line; malar suture present; malar space about 0.20-0.25 height of eye; mandible slender, with upper tooth much longer than lower tooth; notauli present, posteriorly wide, irregularly rugose; scutellum rugose, with a minute posterior depression; precoxal sulcus present and rugose; propodeum short, areolate, posteriorly sharply slanted and medially with a wide groove; pterostigma broad, about twice as long as wide; vein 1-R1 of fore wing short, about as long as pterostigma; end of SR1+3-SR of fore wing closer to pterostigma than to wing apex; veins 1-SR and 1-SR+M of fore wing present; vein r-m of fore wing absent; vein M+CU1 of fore wing sclerotized; veins SR and 2-M of hind wing present, pigmented; vein M+CU of hind wing much longer than vein 1-M; first metasomal tergite petiolate, distinctly widened apically, rugose-punctate, dorsope and laterope absent, ventrally open; second and third tergites smooth, close to apex of metasoma; ovipositor slender, about as long as first metasomal tergite, about 0.25 times fore wing.

Biology.— Parasites of adult Coccinellidae belonging to several genera.

Distribution.— Small cosmopolitan genus; one species.

Dinocampus coccinellae (Schrank, 1802)

(figs 184-192)

Ichneumon coccinellae Schrank, 1802: 310.

Bracon terminalis Nees, 1811(1812): 26.

Dinocampus coccinellae; Shenefelt, 1969: 31; Chao, 1981: 308; Chou, 1981: 80; Tobias, 1986: 229; He & Wang, 1987: 422; He et al., 1991: 40.

Perilitus occinellae; Chu et al., 1978: 62; Dang & Jin, 1982: 140.

Material.— 3 ♀♀ (RMNH): 1 ♀, Beijing, Haidian, 8.v.1981, Dong Zhenhua, no. 820835; 1 ♀, Henan, Anyang, 1-10.iv.1974, Shang Jinyuan, no. 740116, ex adults of *Coccinella septempunctata* Linnaeus; 1 ♀, Hubei, Yongnian, in cotton-field, vii.1995, S. Li; 15 ♀♀ (ZAU): 1 ♀, Beijing, Yanqing, 24.ix.1980, Wu Juwen, no. 820888; 1 ♀, Beijing, Hairou, 18.x.1981, Shi Baocai, no. 820878; 5 ♀, Henan, Anyang, 1-10.iv.1974, Shang Jinyuan, no. 740116, ex adults of *Coccinella septempunctata* Linnaeus; 1 ♀, Shanxi, Huata, 21.vi.1973, caught in corn field, staff of Biology Department of Shanxi University, no. 780728; 1

♀, Shanxi, Yuci, vi-vii.1978, Xu Shouzheng, no. 780601; 1 ♀, Shanxi, Linfen, 27.v.1986, Fan Jinjiang, no. 864133; 1 ♀, Xinjiang Urumqi, 5.ix.1987, Ma Qi, no. 880582; 1 ♀, Sichuan, Xichang, 1979, collector unknown, no. 803019; 1 ♀, Zhejiang, Dongyang, 9.iv.1963, He Junhua, no. 63062.26; 1 ♀, Yunnan, Kaixuan, 22.ix.1997, Tao Shaoling, ex a coccinellid, no. 846586; 1 ♀, Yunnan, Kunming, 16.v.1981, He Junhua, no. 810935.

Biology.— Parasites of adult Coccinellidae belonging to several genera.

Distribution.— China: Beijing, Henan, Shanxi, Xinjiang, Zhejiang, Sichuan and Yunnan; cosmopolitan (including Hawaii and New Zealand).

Genus *Euphorus* Nees, 1834

(figs 204-234)

Euphorus Nees, 1834: 360; Shenefelt, 1969: 35 (as synonym of *Leiophron* Nees, 1818); Shaw, 1985: 326 (as synonym of *Leiophron*): Type species (by monotypy): *Euphorus pallicornis* Nees, 1834.

Diagnosis.— Antennal segments 16, apical segment without spine; maxillary palp with 5 segments; labial palp with 3 segments; occipital carina usually widely interrupted dorsally, ventrally remaining widely separated from hypostomal carina; frons, vertex and temple smooth; malar suture present; malar space about 0.25-0.5 times height of eye; mesonotum and scutellum smooth; notauli absent, but sometimes present; marginal cell of fore wing small; vein SR1 ending far before wing apex; veins 1-SR+M and 2-M of fore wing present; vein M+CU1 of fore wing largely unsclerotized; vein 2-CU1 usually unsclerotized, but sometimes present; first discal and basal cells of fore wing similarly setose, both hyaline; tarsal claws simple; first metasomal tergite nearly parallel-sided or slightly widened apically, open ventrally, dorsope sometimes present; laterope absent; second and third tergites without lateral fold, nearly reaching end of metosoma, following segments hidden; ovipositor hardly visible, usually shorter than 0.25 times first tergite; ovipositor slender, distinctly curved downwards.

Biology.— Parasites of nymphs and adults of Psocidae (Psocoptera).

Distribution.— Cosmopolitan except for Australian region; medium-sized genus.

Note.— This genus is new to the fauna of China.

Key to Chinese species of the genus *Euphorus* Nees

1. Notauli (largely) distinctly developed, crenulate 2
 - Notauli absent (fig. 208), at most anteriorly impressed, if anteriorly distinctly present then smooth 4
2. Body reddish brown; notauli deep and crenulate; length of malar space 0.5 times basal width of mandible (fig. 232); length of vein 1-R1 0.8 times width of pterostigma (fig. 231); length of body 2.2 mm. Zhejiang ... *E. rufithorax* spec. nov.
 - Body yellow or brownish yellow; notauli shallow and sparsely crenulate; length of malar space 0.7-1.0 times basal width of mandible (figs 215, 219); length of vein 1-R1 0.4-0.5 times width of pterostigma (figs 214, 218) 3
3. Antenna brown, basal segments more slender; posterior side of stemmaticum as long as its lateral side; vein 1-SR absent (fig. 214); vein SR1 and 2-SR of fore wing separately issued from pterostigma (fig. 214); vein 2-CU1 of fore wing unsclero-

- tized (fig. 214); length of body 1.5 mm. Yunnan *E. suturus* spec. nov.
- Antenna yellowish, basal segments more robust; length of posterior side of stemmaticum 1.3 times its lateral side; vein 1-SR present (fig. 218); vein SR1 and 2-SR of fore wing issued together from pterostigma or nearly so (fig. 218); vein 2-CU1 of fore wing sclerotized (fig. 218); length of body 1.6 mm. Hainan *E. evidus* spec. nov.
4. Temple behind eyes strongly swollen (fig. 229); face medio-ventrally depressed and finely transversely rugose (fig. 228); veins 2-CU1 and 3-CU1 of fore wing unsclerotized (fig. 227); vein m-cu of fore wing absent (fig. 227); notauli present anteriorly, but smooth; length of body 2.4 mm. Fujian *E. expansus* spec. nov.
- Temple behind eyes not swollen (figs 210, 233); face smooth (figs 209, 232); veins 2-CU1 and 3-CU1 of fore wing sclerotized (figs 204, 231); vein m-cu of fore wing at least partly present (figs 204, 231); notauli absent 5
5. Antenna slender, length of third segment 5.6 times its width (fig. 226); posterior side of stemmaticum 1.2 times its lateral side (fig. 224); width of face 1.5 times height of face; intertentorial line twice tentorio-ocular line (fig. 223); length of malar space equal to basal width of mandible; precoxal sulcus only medially present; vein m-cu of fore wing partly absent (fig. 222); pterostigma yellow; length of body 1.6-1.8 mm. Zhejiang *E. normalis* spec. nov.
- Antenna robust, length of third segment 2.4 times its width (fig. 206); length of posterior side of stemmaticum as long as its lateral side (fig. 210); width of face 1.1 times height of face; intertentorial line 5.3 times tentorio-ocular line (fig. 209); length of malar space 0.6 times basal width of mandibles; precoxal sulcus almost fully present; vein m-cu of fore wing fully present (fig. 204); pterostigma brown; length of body 2.2 mm. Yunnan *E. natalus* spec. nov.

Euphorus evidus spec. nov.
(figs 218-221)

Material.— Holotype, ♂ (BMNH), China, Hainan, Dan Xian, 7.v.1983, Bouček.

Holotype, ♂, length of body 1.6 mm, of fore wing 1.4 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 16, distinctly thickened apically, much shorter than body, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 2.8, 2.3 and 1.4 times their width, respectively; length of maxillary palp 0.7 times height of head; OOL:OD:POL = 9:2:5; length of posterior side of stemmaticum 1.3 times its lateral side; length of eye in dorsal view equal to temple; temple slightly widened, round behind eyes; temple and vertex smooth; frons nearly flat, smooth; face moderately evenly convex, nearly smooth, setose, its width twice its height; intertentorial line 2.6 times tentorio-ocular line; clypeus narrow, flat, smooth, with long setae, ventral margin medially raised, its width 3.2 times its height; length of malar space 0.7 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side largely crenulate, medio-ventrally and dorsally smooth; precoxal sulcus only medially broadly developed and rugose; an oblique rugulose groove running from episternal scrobe to precoxal sulcus; remainder of mesopleuron largely smooth, dorsally rather rugulose; metapleuron completely rugose; notauli present but medially and posteri-

only very shallow, indistinctly crenulate; mesoscutum smooth, only middle lobe anteriorly rugulose and setose; scutellar suture wide and deep, with one median carina; scutellum smooth, medio-posterior depression minute, transverse; propodeum irregularly carinate with rugae between carinae, a short median carina and basal transverse carina more or less distinct, enclosing two small, smooth baso-lateral areas.

Wings.— Fore wing: length of vein 1-R1 0.2 times length of pterostigma, 0.5 times width of pterostigma; SR1 and 2-SR issued together from pterostigma or nearly so (fig. 218); 1-SR shortly present; m-cu antefurcal; m-cu, 2-CU1 and 3-CU1 present, but colourless; 2-SR:SR1+3-SR = 12:22; 1-CU1:2-CU1 = 1:13. Hind wing: 1-M:1r-m:2-SC+R = 7:5:4; cu-a present as a short spur.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 3.6, 8.8 and 7.0 times their width, respectively; length of both hind tibial spurs 0.3 times hind basitarsus.

Metasoma.— Length of first tergite twice its apical width, its surface irregularly rugose, apically slightly widened, dorsal carinae present on its basal half, spiracles not protruding, dorsope large; following tergites smooth; second suture absent; aedeagus shorter than parameres.

Colour.— Brownish yellow, metasoma after first tergite rather paler, but apically darker; antenna and legs yellow, antenna apically darkened; wing membrane hyaline, pterostigma brownish, its base pale, veins (but C+SC+R yellowish brown) yellow to colourless.

Note.— This species is similar to *E. suturus* spec. nov., but differs as indicated in the key.

Euphorus expansus spec. nov.
(figs 227-230)

Material.— Holotype, ♂ (ZAU), Fujian, Kanghang, 10.ix.1983, Wang Jiase, no. 854262.

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

Head.— Width of head in dorsal view twice its length; antennal segments 16, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 5.0, 4.7 and 2.0 times their width, respectively; length of maxillary palp 0.7 times height of head; OOL:OD:POL = 10:3:9; length of posterior side of stemmaticum 1.3 times its lateral side; length of eye in dorsal view 1.1 times temple; temple strongly swollen behind eye; vertex, temple and frons smooth; face laterally with coarse oblique rugae, medio-ventrally depressed and shortly transversely rugose, remainder convex and nearly smooth, its width 1.1 times its height; intertentorial line twice tentorio-ocular line; clypeus narrow, ventro-medially strongly protruding as a visor; length of malar space as long as basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side anteriorly, medially and posteriorly crenulate, remainder smooth; precoxal sulcus present, but posteriorly absent, crenulate, connected to episternal scrobe by a groove; remainder of mesopleuron smooth; metapleuron obliquely rugose; notauli only shallowly present anteriorly, smooth; mesoscutum entirely smooth; scutellar suture with one median carina; scutellum smooth, with a minute posterior depression; propodeum

irregularly rugose, basally with a short median carina, baso-laterally smooth.

Wings.— Fore wing: length of vein 1-R1 0.33 times length of pterostigma, 0.8 times width of pterostigma; vein r absent; veins SR1 and 2-SR issued from pterostigma nearly at same site; vein 1-SR short; vein m-cu absent; vein cu-a slightly postfurcal; 2-CU1 unsclerotized. Hind wing: vein cu-a present as a trace; 1-1A basally present.

Legs.— Hind coxa sparsely punctate, nearly smooth; length of hind femur, tibia and basitarsus 4.0, 10.0 and 7.0 times their width, respectively; length of hind tibial spurs 0.33 and 0.38 times hind basitarsus; claws simple.

Metasoma.— Length of first tergite 2.7 times its apical width, its surface irregularly rugose, spiracles slightly protruding, dorsope present, dorsal carinae weakly present basally; second and third tergites smooth, without second metasomal suture; parameres not visible.

Colour.— Head and mesosoma dark reddish brown, metasoma reddish brown; palpi yellow; antenna and legs brownish yellow; wing membrane hyaline, pterostigma brown, basally pale; veins largely pale brown.

Note.— This species is similar to *E. raddei* (Belokobylskij, 1993), but differs in having the veins 2-CU1 and 3-CU1 of fore wing absent, the antennal segments slender, and the face ventrally depressed and transversely rugose.

Euphorus natalus spec. nov.
(figs 204-213)

Material.— Holotype, ♀ (ZAU), Yunnan, Kunming, 19.vii.1980, He Junhua, no. 802642.

Holotype, ♂, length of body 2.2 mm, of fore wing 1.9 mm.

Head.— Width of head in dorsal view 1.5 times its length; antennal segments 16, shorter than body, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 2.4, 2.1 and 1.9 times their width, respectively; length of maxillary palp 0.7 times height of head; OOL:OD:POL = 10:3:5; posterior side of stemmaticum as long as its lateral side; length of eye in dorsal view 1.1 times temple; temple behind eyes parallel-sided, posteriorly narrowed; temple and vertex smooth; frons flat, smooth; face moderately evenly convex, smooth, densely setose, its width 1.1 times its height; intertentorial line 5.3 times tentorio-ocular line; clypeus flat, smooth, with long setae, ventral margin medially raised, its width 3.0 times its height; length of malar space 0.6 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly, medially and posteriorly narrowly crenulate, medio-ventrally and dorsally largely smooth; precoxal sulcus shallow, narrow, anteriorly widened, foveate; an oblique narrow foveate groove running from episternal scrobe to precoxal sulcus; remainder of mesopleuron largely smooth; metapleuron completely rugose; notauli absent, only anteriorly impressed; mesoscutum smooth; scutellar suture wide and shallow with one median carina; scutellum smooth, with a minute medio-posterior depression; propodeum largely irregularly rugose, only basally narrowly nearly smooth, with a short median carina and weak basal transverse carina.

Wings.— Fore wing: length of vein 1-R1 0.26 times length of pterostigma, 0.7 times width of pterostigma; SR1 and 2-SR issued from nearly the same site of

pterostigma; m-cu interstitial; 1-SR, m-cu, 2-CU1 and 3-CU1 present; 2-SR:SR1+3SR = 17:25; 1-CU1:2-CU1 = 2:17. Hind wing: 1-M:1r-m:2-SC+R = 1:1:1; cu-a present as a short spur.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 4.4, 7.7 and 7.6 times their width, respectively; length of hind tibial spurs 0.32 and 0.26 times hind basitarsus.

Metasoma.— Length of first tergite 2.3 times its apical width, its surface sparsely longitudinally irregularly rugose, apically slightly widened, dorsal carinae weakly present subbasally, spiracles not protruding, dorsope large; following tergites smooth; second metasomal suture absent; hypopygium medium-sized, setose; ovipositor short, slender, distinctly curved downwards.

Colour.— Black, metasoma after first tergite dark reddish brown; clypeus brownish yellow; antenna brown, basal two segments yellowish brown; palpi yellowish; legs yellowish brown, coxae brownish, hind tibia apically and hind tarsus darker; wing membrane hyaline, pterostigma brown, its base pale, veins brownish to yellow.

Note.— This species is similar to *E. pallidistigmus* (Curtis, 1833), but differs in having the vein m-cu of fore wing present, the first metasomal tergite apically slightly widened and the antenna thicker and brownish.

Euphorus normalis spec. nov.
(figs 222-226)

Material.— Holotype, ♂ (ZAU), Zhejiang, Mt W Tianmu, 25.vi.1984, Chen Xuexin, no. 842353. Paratypes (10 ♂♂): 2 ♂♂ (RMNH), same data as holotype, nos 842351, 842355; 3 ♂♂ (ZAU), same data as holotype, but nos 842279, 842350, 842352; 3 ♂♂ (ZAU), Zhejiang, Mt W Tianmu, 23.vi.1984, Zhu Xiliang, nos 842094, 841840, 841844; 1 ♂ (ZAU), Zhejiang, Mt W Tianmu, 2-4.vi.1992, Lou Yonggeng, no. 900958; 1 ♂ (ZAU), Zhejiang, Mt W Tianmu, 11.vi.1993, Ma Jufa, no. 934470.

Holotype, ♂, length of body 1.8 mm, of fore wing 2.0 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 16, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 5.6, 4.2 and 2.2 times their width, respectively; length of maxillary palp 0.7 times height of head; OOL:OD:POL = 8:2:6; length of posterior side of stemmaticum 1.2 times its lateral side; length of eye in dorsal view 1.1 times temple; temple slightly convex behind eye; temple, vertex and frons smooth; face nearly smooth, but densely setose, its width 1.5 times its height; intertentorial line twice tentorio-ocular line; clypeus narrow, smooth, ventro-medially raised as a visor; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side anteriorly and posteriorly finely crenulate, remainder largely smooth; precoxal sulcus present medially, narrow and irregularly rugose, connected to episternal scrobe by a groove; remainder of mesopleuron smooth; metapleuron coarsely obliquely rugose; mesoscutum smooth with some setae along area of notauli; notauli completely absent; scutellum smooth with minute posteriorly depression; scutellar suture deep with a median carina; propodeum coarsely irregularly rugose.

Wings.— Fore wing: length of vein 1-R1 0.29 times length of pterostigma, 0.8 times width of pterostigma; vein r absent; veins SR1 and 2-SR issued from pterostigma from the same site; anterior half of vein m-cu nearly absent; 1-CU1:2-CU1 =

2.5:20; 1-CU1 and 3-CU1 present. Hind wing: vein cu-a absent.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.8, 10.0 and 7.2 times their width, respectively; length of hind tibial spurs 0.30 and 0.35 times hind basitarsus; claws simple.

Metasoma.— Length of first tergite 2.6 times its apical width, its surface coarsely rugose, spiracles not protruding, dorsope present; second and third tergites smooth, second metasomal suture absent; parameres wide, enclosing aedeagus.

Colour.— Body dark brown; face paler; clypeus and mandibles reddish yellow; antenna and legs yellowish brown; wing membrane hyaline, pterostigma yellow, veins largely pale yellow to colourless.

Variation.— Length of body 1.6-1.8 mm, of fore wing 1.6-2.0 mm; spiracles of first tergite slightly raised; colour of second and third tergites paler.

Note.— This species is very similar to *E. pallidistigmus* (Curtis, 1833), but differs in having the basal segments of flagellum more slender, the inter-tentorial line shorter, the precoxal sulcus narrower, and the vein 2-CU1 of fore wing largely sclerotized.

Euphorus rufithorax spec. nov.
(figs 231-234)

Material.— Holotype, ♂ (ZAU), Zhejiang, Mt W Tianmu, 12.vi.1993, Ma Yun, no. 934444.

Holotype, ♂, length of body 2.2 mm, of fore wing 2.0 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 16, shorter than body, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 4.4, 2.9 and 1.8 times their width, respectively; length of maxillary palp 0.8 times height of head; OOL:OD:POL = 11:3:6; length of posterior side of stemmaticum 1.3 times its lateral side; length of eye in dorsal view 1.3 times temple; temple roundly slightly narrowed behind eyes; temple and vertex smooth; frons flat, smooth; face moderately evenly convex, nearly smooth, densely setose, its width 1.2 times its height; intertentorial line 2.9 times tentorio-ocular line; clypeus nearly flat, smooth, with long setae, ventral margin medially raised, its width 3.0 times its height; length of malar space 0.5 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely crenulate, medio-ventrally and dorsally smooth; precoxal sulcus superficially present, broad and rugose; an oblique narrow groove running from episternal scrobe to precoxal sulcus; remainder of mesopleuron only medially narrowly smooth, anterodorsally broadly rugose; metapleuron completely rugose; notauli distinct, narrow and crenulate, posteriorly narrow; middle lobe of mesoscutum largely punctate, lateral lobes largely smooth; scutellar suture wide and deep with three carinae; scutellum smooth, with a minute medio-posterior depression; propodeum entirely reticulate-rugose, with basal transverse carina rather distinct.

Wings.— Fore wing: length of vein 1-R1 0.36 times length of pterostigma, 0.8 times width of pterostigma; SR1 and 2-SR issued nearly together from pterostigma; m-cu just anterfurcal; 1-SR, m-cu, 2-CU1 and 3-CU1 present; 2-SR:SR1+3-SR = 21:30; 1-CU1:2-CU1 = 2:18. Hind wing: 1-M:1r-m:2-SC+R = 8:9:6; cu-a absent.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 4.2, 8.8 and 8.0 times their width, respectively; length of hind tibial spurs 0.33 and 0.29 times

hind basitarsus.

Metasoma.— Length of first tergite 1.8 times its apical width, its surface longitudinally irregularly rugose, apically widened, dorsal carinae weakly present basally, spiracles not protruding, dorsope small; following tergites smooth; second suture absent; aedeagus shorter than parameres.

Colour.— Reddish brown; dorsal aspect of head and mesosoma tinged with blackish, face and ventral part of head reddish yellow; metasoma dark reddish brown, first tergite black; antenna brown, basal three segments yellow; palpi pale yellow; legs yellow, trochanters, hind tibia apically and hind tarsus darkened; wing membrane hyaline with dense brownish setae, pterostigma brown, its base pale, veins brownish.

Note.— This species is similar to *E. kurilensis* Belokobylskij, 1993, but differs in having the vein 1-R1 0.36 times width of pterostigma, the length of eyes 1.3 times temple, the length of third antennal segment 4.4 times its apical width, and the length of first metasomal tergite 1.8 times its apical width.

Euphorus suturus spec. nov.
(figs 214-217)

Material.— Holotype, ♂ (ZAU), Yunnan, Simo, 7.iv.1981, He Junhua, no. 814867.

Holotype, ♂, length of body 1.5 mm, of fore wing 1.8 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 5 (incomplete), length of third segment 1.1 times fourth segment, length of third and fourth segments 4.3 and 3.5 times their width, respectively; apical segments of maxillary palp missing; OOL:OD:POL = 9:2:5; posterior side of stemmaticum as long as its lateral side; length of eye in dorsal view 1.5 times temple; temple rounded behind eye; temple, vertex, frons, face and clypeus smooth; width of face twice its height; intertentorial line 3.0 times tentorio-ocular line; ventro-medial margin of clypeus not raised; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side anteriorly, medially and posteriorly crenulate, remainder smooth; precoxal sulcus wide and shallow, absent anteriorly, irregularly rugose; remainder of mesopleuron largely smooth; metapleuron small and irregularly rugose; notauli narrow and shallow, posteriorly not reaching posterior margin of mesoscutum, sparsely crenulate; scutellar suture wide and deep, with three carinae; scutellum smooth, with a minute posterior depression; propodeum irregularly rugose, border of dorsal and posterior surface medially rather raised.

Wings.— Fore wing: length of vein 1-R1 0.29 times length of pterostigma, 0.4 times width of pterostigma; veins r and 1-SR absent; veins SR1 and 2-SR separately issued from pterostigma; vein 1-M thickened; veins m-cu and cu-a interstitial; 2-CU1 unsclerotized; m-cu and 3-CU1 sclerotized. Hind wing: vein cu-a present as a trace.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 4.6, 9.2 and 7.2 times their width, respectively; length of hind tibial spurs subequal, about 0.31 times hind basitarsus.

Metasoma.— length of first tergite 2.1 times its apical width, apically slightly widened, its surface longitudinally rugose, spiracles not protruding, dorsope pre-

sent; second and third tergites smooth, second suture absent; parameres longer than aedeagus.

Colour.— Body yellow, mesosoma and first tergite dark reddish, apex of metasoma brown; antenna (except basal three segments) brown; wing membrane hyaline, pterostigma yellowish brown, basally pale, vein C+SC+R yellowish brown, other veins yellowish to colourless.

Note.— This species is similar to *E. arenjevi* Belokobylskij, 1993, but differs in having the body smaller, the vein m-cu and 3-CU21 present, and the antenna much more slender. This species is also similar to *E. similis* (Curtis, 1833), but can be separated by having the body yellow to reddish yellow, OOL much longer than POL, and vein 1-SR absent.

Genus *Heia* gen. nov.

(figs 192-203)

Type species: *Heia robustipes* spec. nov.

Etymology: named after the well-known Chinese entomologist, Prof. Junhua He of ZAU (Hangzhou), in recognition of his great contribution to both taxonomy of parasitic Hymenoptera and pest biological control in China.

Diagnosis.— Antennal segments 25, apex with a short spine, scapus long, reaching top level of the head, curved, its length 4.9 times its width, 2.9 times length of pedicellus; inter-antennal distance as long as diameter of socket; maxillary palp with 5 segments (apical segment broken off); labial palp with 3 segments; eye large and glabrous; temple and vertex smooth, densely setose; vertex sharply slanted posteriorly, resulting a low position of occipital carina dorsally; occipital carina complete except for a indistinct medio-dorsal interruption, joining hypostomal carina far above base of mandible; frons, face and clypeus almost flat; tentorial pits large and deep; width of clypeus 1.2 times width of face, ventral margin roundly concave medially; malar suture distinct, but shallow; malar space smooth and narrow; mandible long, overlapping each other at least for 2/3 of their length when closed, with upper tooth much longer and larger than the lower one; mesosoma entirely (except pronotum) densely setose; precoxal sulcus complete, shallow; anterior subalar depression with a carina; prepectal carina complete, reaching anterior margin of mesopleuron; metapleural flange rather large; notauli complete, rather narrow, deep and crenulate; scutellar suture wide with a median carina; scutellum nearly flat, smooth with distinct medio-posterior depression; length of vein 1-R1 of fore wing shorter than pterostigma; veins 1-SR+M and r-m of fore wing absent; vein SR1+3-SR of fore wing distinctly curved; vein M+CU1 of fore wing sclerotized; apical half of 2-1A unsclerotized; vein M+CU of hind wing much longer than vein 1-M; vein 2-SC+R of hind wing long; legs normal; tarsal claws simple; first metasomal tergite distinctly widened from base towards apex, its apical width 2.9 times its basal width, spiracles situated behind middle of tergite, dorsope, laterope and dorsal carinae absent; first metasomal segment ventrally open; hypopygium short; ovipositor sheath slender, transversely striate, setose, slightly protruding (visible part); ovipositor slender, apically a little twisted.

Biology.— Unknown.

Distribution.— Oriental region; one species.

Note.— This genus is very similar to the genus *Streblocera* Westwood, 1833, but differs by having the eyes strongly enlarged and face distinctly transverse, scapus of female comparatively short, and legs much more robust, length of hind femur about 4 times its width. This genus is also similar to the genus *Ecclitura* Kokujev, 1902, but differs by having the antenna normal, apically not slightly clavate, the maxillary palp with at least 5 segments and labial palp with 3 segments, scutellum smooth, the notauli distinctly impressed, the first metasomal tergite without dorsal carina, and the ovipositor sheath less protruding.

Heia robustipes spec. nov.
(figs 193-203)

Material.— Holotype, ♀ (ZAU), Yunnan, Simao, 1982, Yi Shiqing, no. 826898.

Holotype, ♀, length of body 3.6 mm, of fore wing 3.7 mm.

Head.— Width of head twice its median length; antennal segments 25, third segment as long as fourth, length of third, fourth and penultimate segment 3.2, 3.2 and 1.4 times their width, respectively; apical segment of maxillary palp missing (?); length of eye in dorsal view 2.2 times temple; temple behind eyes roundly narrowed; OOL:OD:POL = 11:6:7; temple and vertex smooth, densely setose; frons nearly flat, medially with some weak rugae; face almost flat, distinctly transversely rugose and densely setose, its width 1.4 times its height; tentorial pits large and deep; inter-tentorial line 3.4 times tentorio-ocular line; clypeus almost flat, largely smooth, its width 2.8 times its height, 1.2 times width of face, ventral margin roundly concave medially; malar space smooth and narrow, its length 0.4 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; mesosoma entirely (except pronotum) densely setose; pronotal side anteriorly, medially and posteriorly sparsely crenulate, remainder largely smooth; precoxal sulcus crenulate-rugose; remainder of mesopleuron largely smooth; metapleuron coarsely obliquely rugose; mesoscutum almost smooth; propodeum irregularly coarsely rugose, basally broadly smooth with an irregular median carina.

Wings.— Fore wing: pterostigma narrow, 3.8 times its width; r issued behind middle of pterostigma; length 1-R1 0.8 times pterostigma; r:2-SR:SR1+3-SR = 10:30:80; m-cu interstitial; 1-CU1:2-CU1 = 7:25; 1-CU1 slightly oblique, 1.4 times cu-a; cu-a vertical; M+CU1 sclerotized; apical half of 2-1A unsclerotized. Hind wing: M+CU:1-M:1r-m:2-SC+R = 55:8:14:11; cu-a subvertical.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.3, 11.2 and 4.2 times their width, respectively; length of hind tarsus 0.6 times hind tibia; length of hind tibial spurs (subequal) 0.4 times hind basitarsus.

Metasoma.— First tergite distinctly widened from base towards apex, its apical width 2.9 times its basal width, its length 2.3 times its apical width, its surface longitudinally striate, but basally smooth; second and following tergites smooth; hypopygium simple.

Colour.— Pale brownish yellow; stemmaticum, metanotum, first metasomal tergite (except basally) and sheath dark brown; propodeum brownish; antenna largely brownish, basally yellow (dark towards apex); legs pale brownish yellow; wing

membrane hyaline with dense brownish setose; pterostigma brown, but apex and base yellowish, veins brown to yellow.

Genus *Leiophron* Nees, 1818
(figs 245-272)

Leiophron Nees, 1818: 303; Shenefelt, 1969: 35; Shaw, 1985: 326. Type species (designated by Viereck, 1914): *Leiophron apicalis* Haliday, 1833.

Euphoriana Gahan, 1913: 433; Shenefelt, 1969: 33; Shaw, 1985: 326. Type species (by original designation): *Euphoriana uniformis* Gahan, 1913. Syn. by Loan, 1974.

Euphoriella Ashmead, 1900: 116; Shenefelt, 1969: 34; Shaw, 1985: 323. Type species (by monotypy & original designation): *Labeo incertus* Ashmead, 1887. Syn. nov.

Diagnosis.— Antennal segments 14-20, apical segment without spine; maxillary palp with 5 segments; labial palp with 2-3 segments; occipital carina usually widely interrupted dorsally, ventrally joining hypostomal carina; frons, vertex and temple smooth; malar suture present; malar space about 0.25-0.5 times height of eye; mesonotum and scutellum usually smooth; notauli absent; postpectal carina distinct; propodeum without postero-median depression; marginal cell of fore wing small; vein SR1 ending far before wing apex; vein 1-SR+M of fore wing present, but sometimes absent; vein 2-M of fore wing present; vein M+CU1 of fore wing largely unsclerotized; vein 1-M usually thickened; vein 2-CU1 sclerotized or unsclerotized; veins 3-CU1 and CU1a absent; first discal cell of fore wing much more setose than basal cell, and often darker than basal cell, which is frequently (nearly) completely glabrous; vein cu-a of hind wing partly present (subgenus *Euphoriana* Gahan) or absent (subgenera *Leiophron* s. s. and *Euphoriella*); tarsal claws simple; first metasomal tergite nearly parallel-sided or slightly widened apically, ventrally variable: largely open, distinctly separated by a split, touching for a long distance and more or less united, or entirely fused, laterope and dorsope absent, spiracles in front of middle of tergite; second and third tergites without lateral fold and second metasomal suture absent; hypopygium small, straight ventrally and setose; ovipositor hardly visible, usually shorter than 0.25 times first tergite; ovipositor slender and curved downwards.

Biology.— Parasite of nymphs of Miridae, Lygaeidae and Psocoptera. The early instar nymph of host is parasitised and the mature larva emerges from the mature host nymph or adult (Marsh, 1979).

Distribution.— Cosmopolitan; there are three subgenera, *Leiophron* Nees, 1818, *Euphoriella* Ashmead, 1900, and *Euphoriana* Gahan, 1913.

Key to Chinese species of the genus *Leiophron* Nees

1. Sides of basal 0.7 of first metasomal tergite largely free ventrally, distinctly separated by split (fig. 259), and in dorsal view comparatively robust (fig. 260); vein cu-a of hind wing partly present (fig. 256); length of body 2.5 mm. Zhejiang; (subgenus *Euphoriana* Gahan). *L. (E.) chengi* spec. nov.
- Sides of basal 0.7 of first metasomal tergite ventrally touching and more or less united and in dorsal view slender (figs 252, 253, 264, 268, 272); vein cu-a of hind wing absent (figs 245, 261, 265) (subgenus *Leiophron* s. s.) 2

2. Vein 1-SR+M and SR1 of fore wing absent (fig. 261); wings comparatively narrow (fig. 261); length of body 2.8-3.0 mm. Guangxi . *L. (L.) buonluoica* (Belokobylskij)
- Vein 1-SR+M and SR1 of fore wing present (figs 245, 265, 269); wings broader (figs 256, 265) 3
3. Veins SR1 and 2-SR widely separated, issued from pterostigma (fig. 269); ventral margin of clypeus not raised (fig. 271); body yellowish; length of body 1.8 mm. Zhejiang *L. (L.) flavicarpus* spec. nov.
- Veins SR1 and 2-SR issued from pterostigma at same site or nearly so (figs 245, 265); ventral margin of clypeus raised (figs 250, 267); body brownish 4
4. Temple behind eyes parallel-sided, and posteriorly slightly narrowed (fig. 248); vertex and mesoscutum nearly smooth, but dull; face distinctly punctate; intertentorial line 2.8 times tentorio-ocular line (fig. 250); vein r of fore wing absent (fig. 245); vein m-cu of fore wing distinct (fig. 245); metasoma reddish brown; length of body 3.1 mm. Liaoning *L. (L.) subtilis* spec. nov.
- Temple behind eyes gradually narrowed (fig. 266); vertex and mesoscutum smooth and shiny; face smooth; intertentorial line 4.0 times tentorio-ocular line (fig. 267); vein r of fore wing shortly present (fig. 265); vein m-cu of fore wing indistinct (fig. 265); metasoma dark brown; length of body 2.5-2.6 mm. Yunnan ...
..... *L. (L.) ruficephalus* spec. nov.

Leiophron (Euphoriana) chengi spec. nov.
(figs 256-260)

Material.— Holotype, ♂ (ZAU), Zhejiang, Mt W Tianmu, 350 m, 16.v.1988, Lou Xiaoming, no. 883214.

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

Head.— Width of head in dorsal view 1.5 times its length; antennal segments 20, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 3.1, 2.9 and 1.4 times their width, respectively; length of maxillary palp 0.7 times height of head; OOL:OD:POL = 10:4:9; length of posterior side of stemmaticum twice its lateral side; length of eye in dorsal view 1.3 times temple; temple behind eyes parallel-sided; temple, vertex and frons smooth and shiny; face distinctly punctate, its width 1.9 times its height; intertentorial line 3.7 times tentorio-ocular line; clypeus smooth, ventro-medially raised as a visor; length of malar space 0.6 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side largely crenulate, ventrally longitudinally striate, dorsally nearly smooth; precoxal sulcus medially shortly present and rugose; mesopleuron anteriorly and ventrally smooth, remainder finely rugose; metapleuron obliquely rugose; mesoscutum smooth, remotely setose; notauli completely absent; scutellar suture with three carinae; scutellum smooth; propodeum irregularly rugose.

Wings.— Fore wing: length of vein 1-R1 0.18 times length of pterostigma; SR1 and 2-SR united basally; 1-SR+M and cu-m present; 1-CU1:2-CU1 = 3:16; basal cell glabrous; first discal cell sparsely setose. Hind wing: cu-a present.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 4.2, 8.8 and 7.5 times their width, respectively; length of hind tibial spurs 0.43 and 0.50 times hind basitarsus.

Metasoma.— First tergite smooth, apically slightly widened, its length 2.1 times

its apical width, ventrally open, its spiracles slightly protruding; second and third tergites smooth.

Colour.— Dark reddish brown; antenna brownish yellow, apically darker; palpi pale brown; legs dark yellowish brown; wing membrane hyaline, pterostigma brown, basally pale; veins brownish to colourless.

Note.— This species is similar to *L. kurentizovi* Belokobylskij, 1993, but differs in having the first metasomal tergite smooth and the antenna with 20 segments. It is also similar to *L. deficiens* (Ruthe, 1856), but differs from the latter by having the head and prothorax reddish yellow, the notauli anteriorly present, the antenna with 16-17 segments, and the body smaller.

Etymology.— This species is named after Prof. Cheng Jia'an, the well-known Chinese entomologist of the Zhejiang Agricultural University, Hangzhou.

Leiophron (Leiophron) buonluoica (Belokobylskij, 1993)
(figs 261-264)

Euphoriella buonluoica Belokobylskij, 1993a: 65-66.

Material.— 1 ♀ (ZAU), Guangxi, Bose, 2.vi.1982, He Junhua, no. 822115.

Distribution.— China: Guangxi; Vietnam.

Note.— The Chinese specimen agrees well with the original description of *E. buonluoica* Belokobylskij, 1993, but differs in having the metasoma behind first metasomal tergite dark brown, the frontal tubercle less obvious, and the vein cu-a of hind wing completely absent.

Leiophron (Leiophron) flavicorpus spec. nov.
(figs 269-272)

Material.— Holotype, ♀? (ZAU), Zhejiang, Longquan, Mt Fengyang, 27.vii.1983, Zhou Shanseng, no. 832038.

Holotype, ♀?, length of body 1.8 mm, of fore wing 1.4 mm.

Head.— Width of head in dorsal view 1.5 times its length; antennal segments 14 (incomplete), length of third segment 1.2 times fourth segment, length of third and fourth segments 3.7 and 3.0 times their width, respectively; length of maxillary palp 0.8 times height of head; OOL:OD:POL = 8:2:8; length of posterior side of stemmaticum 1.6 times its lateral side; length of eye in dorsal view 1.6 times temple; temple behind eyes roundly narrowed; temple, vertex and frons nearly smooth, vertex near posterior ocelli medially extremely finely transversely rugulose; face medially punctate, dorso-medially with a small tubercle, its width 1.3 times its height; intertentorial line 3.4 times tentorio-ocular line; clypeus nearly smooth, ventral margin not distinctly raised; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.8 times its height; pronotal side anteriorly, medially and posteriorly crenulate, ventrally with some longitudinal rugae, remainder nearly smooth; mesopleuron largely smooth, dorsally and area of precoxal sulcus widely finely rugose; precoxal sulcus absent; metapleuron rugose; mesoscutum smooth, notaulic aera very finely transversely rugose; scutellar suture wide and

deep, with one median carina; scutellum smooth and convex; propodeum irregularly rugose.

Wings.— Fore wing: length of vein 1-R1 0.14 times length of pterostigma; marginal cell very small; 1-M thickened; 1-SR+M present; veins m-cu, 2-CU1, 3-CU1, CU1b, 2-1A absent; cu-a postfurcal by its own length; basal cell glabrous; first discal cell setose. Hind wing missing.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.8, 9.3 and 8.8 times their width, respectively; length of both hind tibial spurs 0.36 times hind basitarsus.

Metasoma.— First tergite finely longitudinally rugose, parallel-sided, ventrally largely touching, its length 4.7 times its apical width, its spiracles at basal third of tergite, protruding; second and third tergites smooth.

Colour.— Yellowish brown, apex of metasoma dark brown; antenna brownish yellow, apically dark; legs yellowish brown, apical 2/3 of hind tibia darkened; wing membrane hyaline, but brown along first discal and first subdiscal cells, and apical half (except broad apical margin) of fore wing; pterostigma brown, basally pale, veins yellowish brown to colourless.

Leiophron (Leiophron) ruficephalus spec. nov.
(figs 265-268)

Material.— Holotype, ♀ (ZAU), Yunnan, Lancang, 20.iv.1981, He Junhua, no. 814333. Paratypes (2 ♂♂ in ZAU): 1 ♂, Yunnan, Simo, 7.iv.1981, He Junhua, no. 814857; 1 ♂, Yunnan, Pingchuan, 5.ix.1980, Wang Luzhe, no. 814237.

Holotype, ♀, length of body 2.6 mm, of fore wing 1.9 mm.

Head.— Width of head in dorsal view 1.5 times its length; antennal segments 15, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.9, 3.0 and 1.5 times their width, respectively; length of maxillary palp 0.6 times height of head; OOL:OD:POL = 9:3:9; length of posterior side of stemmaticum 1.5 times its lateral side; length of eye in dorsal view 1.5 times temple; temple gradually narrowed behind eyes; temple, vertex and frons smooth; face nearly smooth, shiny, its width 1.2 times its height; intertentorial line 4.0 times tentorio-ocular line; clypeus smooth, ventro-medially raised; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.9 times its height; pronotal side largely smooth, sparsely and narrowly crenulate anteriorly, medially and posteriorly; precoxal sulcus absent; mesopleuron smooth; metapleuron obliquely rugose; mesoscutum and scutellum smooth; notauli entirely absent; scutellar suture with one median carina; scutellum convex; propodeum irregularly rugose.

Wings.— Fore wing: length of vein 1-R1 0.18 times length of pterostigma; 1-M thickened; r shortly present; 2-SR largely absent; vein m-cu indistinct; cu-a almost interstitial; basal cell glabrous; first discal cell densely setose. Hind wing: cu-a absent.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.6, 7.9 and 9.4 times their width, respectively; length of hind tibial spurs 0.29 and 0.33 times hind basitarsus.

Metasoma.— First tergite longitudinally rugose, parallel-sided, ventrally epi-

pleura touching each other, its length 3.3 times its apical width; following tergites smooth, without suture between second and third tergites; hypopygium small, setose; ovipositor sheath just visible, 0.02 times fore wing, setose; ovipositor slender, curved downwards.

Colour.— Head reddish brown, mesosoma and metasoma dark brown; antenna brownish yellow, apically dark brown; mandibles (except apex) and palpi yellowish; legs brownish yellow, hind femur and apical 2/3 of hind tibia brownish; wing membrane brownish, basal and subbasal cells, and a transverse band beneath base of pterostigma hyaline; pterostigma brown, basally pale; vein 1-M brown, remainder of veins paler.

Variation.— Length of body 2.5-2.6 mm, of fore wing 1.9-2.0 mm; antenna with 15-16 segments.

Note.— This species is most similar to *L. (L.) subtilis* spec. nov., but can be separated as indicated in the key.

Leiophron (Leiophron) subtilis spec. nov.
(figs 245-255)

Material.— Holotype, ♀ (ZAU), Liaoning, Sengyang, Dongling, vi-vii.1994, Lou Juxian, no. 947775.

Holotype, ♀, length of body 3.1 mm, of fore wing 2.5 mm.

Head.— Width of head in dorsal view 1.4 times its length; antennal segments 15, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 4.0, 3.5 and 1.6 times their width, respectively; length of maxillary palp 0.8 times height of head; OOL:OD:POL = 11:4:10; length of posterior side of stemmaticum twice its lateral side; length of eye in dorsal view 1.3 times temple; temple behind eyes parallel-sided, posteriorly narrowed; temple, vertex and frons finely coriaceous, nearly smooth, but dull; face punctate, medially weakly transversely rugose, its width 1.4 times its height; intertentorial line 2.8 times tentorio-ocular line; clypeus smooth, ventro-medially slightly raised, dorsal margin below the ventral margin of eye; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side largely crenulate, ventrally with some longitudinal rugae; precoxal sulcus absent; mesopleuron smooth, dull; metapleuron obliquely rugose; mesoscutum nearly smooth, dull, rather coriaceous; notauli entirely absent; scutellar suture narrow with one median carina; scutellum smooth and convex; propodeum irregularly rugose.

Wings.— Fore wing: length of vein 1-R1 0.19 times length of pterostigma; 1-M thickened; SR1 and 2-SR united basally; m-cu and 2-CU1 present; 3-CU1 and CU1a absent; 1-CU1:2-CU1 = 1:21, cu-a slightly postfurcal; basal cell glabrous; first discal cell densely setose. Hind wing: cu-a absent.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.5, 8.5 and 11.0 times their width, respectively; length of hind tibial spurs 0.29 and 0.32 times hind basitarsus.

Metasoma.— First tergite longitudinally striate, nearly parallel-sided, ventrally touching, its length 3.2 times its apical width; following tergites smooth, dull, without suture between second and third tergites; hypopygium moderately setose; ovipositor sheath just visible, densely setose; ovipositor slender, curved downwards.

Colour.— Head and metasoma reddish brown, mesosoma and first metasomal tergite dark brown; antenna brownish yellow, apically dark; mandibles (except apex) and palpi yellowish; legs yellowish brown, hind femur and apical 2/3 of hind tibia brownish; wing membrane hyaline with two brownish bands (one through the first discal and first subdiscal cells, and another subapically (fig. 245)); pterostigma brown, basally pale; veins brownish to pale.

Note.— This species is similar to *L. (L.) fascipennis* (Ruthe, 1856), but differs in having the antenna apically thickened, the mesosoma entirely dark brown, the vein m-cu of fore wing distinct, the apical margin of fore wing broadly hyaline, the meso-scutum completely smooth, without rugae, and the vertex and frons smooth and shiny.

Genus *Marshiella* Shaw, 1985
(figs 273-284)

Marshiella Shaw, 1985: 329. Type species (by original designation): *Streblocera pulvilicornis* Walley & MacKay, 1963.

Diagnosis.— Female antenna raptorial, with 19-21 segments, basal flagellar segments (1-4) flattened, somewhat heart-shaped in dorsal view, densely setose, the setae flattened and broader apically; maxillary palp with 4 segments; labial segments with 2 segment; occipital carina complete, ventrally joining hypostomal carina; malar space less than 0.25 times height of eyes; width of face shorter than width of clypeus; malar suture present; precoxal sulcus present and sculptured; remainder of mesopleuron largely smooth; notauli completely present; scutellar suture with carinae; scutellum smooth; propodeum with carinae and rugulose sculpture between carinae; vein M+CU1 of fore wing sclerotized; veins 1-SR+M and r-m of fore wing absent; vein SR1+3-SR of fore wing ending closer to pterostigma than to wing apex; vein M+CU of hind wing much longer than 1-M; tarsal claws simple; first tergite apically about 4 times wider than basally, ventrally fused basally, dorsope and laterope absent; hypopygium small, sparsely setose; ovipositor sheath slender, longer than (about 1.3 times) first metasomal tergite, about 0.3 times fore wing, sparsely setose.

Biology.— *M. plumicornis* (Ruthe) was reared from a species of Anthicidae, *Notoxus monoceros* Linnaeus (Smith, 1953).

Distribution.— Holarctic and Neotropical regions; small genus with two species known. In this paper another two new species are described from China, which represents the first record of this genus from the Oriental region as well as from China.

Key to species of *Marshiella* Shaw

1. Body black, but head partly dark reddish brown; ovipositor about half as long as metasoma; length of body 2.5-3.0 mm. Palaearctic region (Germany) *M. plumicornis* (Ruthe, 1856)
- Body brownish yellow to reddish brown; ovipositor distinctly longer than half length of metasoma 2
2. Antenna with 21 segments; vein cu-a of fore wing nearly interstitial (fig. 281); seven antennal segment not distinctly smaller (fig. 284); length of fore wing 2.3 mm. Yunnan *M. sinensis* spec. nov.

- Antenna with 19 segments; vein cu-a of fore wing postfurcal (fig. 273); seven antennal segment smaller and wedge-shaped (fig. 278); length of fore wing 1.7-1.8 mm 3
- 3. Length of first metasomal tergite twice its apical width; propodeum more coarsely rugose; frons medio-longitudinally distinctly raised; face medio-ventrally with longitudinal carina; spiracles of first tergite less protruding; antenna bicoloured, its six basal segments yellow, sharply contrasting with brown remainder of segments; length of body 2.0 mm. Yunnan *M. binarius* spec. nov.
- Length of first metasomal tergite 2.5 times its apical width; propodeum less coarsely rugose, and basally smooth; frons normal; face ventrally without carina; spiracles of first tergite more protruding; antenna uniformly brown except for two basal yellowish segments; length of body 1.8 mm. Nearctic region (Canada) *M. pulvillicornis* (Walley & Mackay, 1963)

Marshiella binarius spec. nov.
(figs 273-280)

Material.— Holotype, ♀ (ZAU), Yunnan, Kaiyuan, 16.iv.1983, Liao Shichang, no. 841265.

Holotype, ♀, length of body 2.0 mm, of fore wing 1.8 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 19, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 2.8, 2.0 and 1.3 times their width, respectively; seventh segment shorter than sixth and eighth segments; length of maxillary palp 0.7 times height of head; OOL:OD:POL = 13:3:8; length of eye in dorsal view 1.6 times temple; temple roundly narrowed behind eyes; temple, vertex and frons nearly smooth; frons broadly raised medio-longitudinally; face granulate, nearly smooth, with a medio-longitudinal carina, its width 1.3 times its height; intertentorial line twice tentorio-ocular line; clypeus nearly smooth and slightly convex, its width 2.1 times its height; dorsal margin of clypeus above level of ventral margin of eye; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side anteriorly medially and posteriorly coarsely crenulate, antero-ventrally longitudinally rugose, dorsally smooth; precoxal sulcus widely present and irregularly rugose; remainder of mesopleuron smooth; metapleuron irregularly rugose; notauli fully present, narrow and crenulate, posteriorly medially with a short longitudinal carina; remainder of mesoscutum smooth; scutellar suture deep with three carinae; scutellum smooth; propodeum irregularly carinate with rugae in between, basally rugae weaker, posterior face vertical to dorsal face, medially slightly longitudinally concave.

Wings.— Fore wing: length of vein 1-R1 0.29 times length of pterostigma; r issued behind middle of pterostigma; r:2-SR:SR1+3-SR = 4:16:21; vein m-cu slightly postfurcal; 1-CU1:2-CU1 = 2:12, cu-a postfurcal. Hind wing: 1-M:1r-m = 30:5; cu-a present.

Legs.— Hind coxa smooth; length of hind femur and tibia 5.0 and 10.6 times their width, respectively.

Metasoma.— First tergite longitudinally irregularly rugose, distinctly widened apically, in lateral view distinctly curved, its length twice its apical width, its spira-

cles slightly protruding; following tergites smooth, and second metasomal suture absent; ovipositor sheath slender, with sparse long setae, its length 0.31 times fore wing, longer than first tergite.

Colour.— Brownish yellow; scutellum, metanotum, propodeum and metasoma dark brownish yellow, metasoma subapically dark; antenna dark brown, its basal six segments yellow; palpi yellow; legs brownish yellow; wing membrane hyaline, pterostigma brown, veins brownish to pale brown.

Marshiella sinensis spec. nov.
(figs 281-284)

Material.— Holotype, ♀ (ZAU), Yunnan, Dali, Butterfly spring, 13.v.1981, He Junhua, no. 814519.

Holotype, ♀, length of body 2.4 mm, of fore wing 2.2 mm.

Head.— Width of head in dorsal view 1.8 times its length; antennal segments 21, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 3.2, 2.8 and 1.5 times their width, respectively; seventh segment normal, as long as eighth segment, and longer than sixth segment; length of maxillary palp 0.7 times height of head; OOL:OD:POL = 15:4:8; length of eye in dorsal view 1.5 times temple; temple roundly narrowed behind eyes; temple, vertex and frons nearly smooth; frons medio-longitudinally widely raised, forming a reversed triangular area; face punctate-rugose, ventrally with a thin median carina, its width 1.5 times its height; intertentorial line 2.6 times tentorio-ocular line; clypeus nearly smooth and convex, its width twice its height; dorsal margin of clypeus far above level of ventral margin of eye; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly and medially coarsely crenulate, ventrally rather longitudinally rugose, remainder smooth; precoxal sulcus widely developed and rugose; remainder of mesopleuron smooth; metapleuron irregularly rugose; notauli fully present, narrow and crenulate, posteriorly medially with a short longitudinal carina; remainder of mesoscutum smooth; scutellar suture deep with three carinae; scutellum smooth; propodeum irregularly rugose, posteriorly sharply slanted and medially longitudinally concave.

Wings.— Fore wing: length of vein 1-R1 0.57 times length of pterostigma; r issued slightly behind middle of pterostigma; r:2-SR:SR1+3-SR = 4:24:35; vein m-cu postfurcal; 1-CU1:2-CU1 = 1:17, cu-a nearly interstitial. Hind wing: 1-M:1r-m = 38:5; cu-a present.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 5.6, 11.7 and 10.0 times their width, respectively; length of both hind tibial spurs 0.28 times hind basitarsus.

Metasoma.— First tergite longitudinally rugose, slightly widened apically, in lateral view distinctly curved, its length 2.4 times its apical width, its spiracles narrowly protruding; following tergites smooth, without suture between second and third tergites; ovipositor sheath slender, with sparse long setae, its length 0.27 times fore wing, longer than first tergite; ovipositor slender, sharp apically.

Colour.— Reddish brown; face, clypeus and mandibles yellow, scutellar suture, scutellum, metanotum, propodeum and metasoma dark reddish brown; antenna dark brown, its basal three segments yellowish; legs brownish, coxae, trochanters

and tarsi brownish yellow; wing membrane hyaline with brownish setae, pterostigma brown, veins brown to pale brown.

Genus *Meteorus* Haliday, 1835
(figs 235-244)

Meteorus Haliday, 1835: 24 (as subgenus of *Perilitus*); Muesebeck, 1923: 7; Shenefelt, 1969: 48; Huddleston, 1980: 11, 1983: 395; Shaw, 1985: 306; Tobias, 1986: 184; Maetô, 1986: 405, 1988a: 321, 1988b: 581, 1989a: 581, 1989b: 768, 1990: 81. Type species (designated by Haliday in Westwood, 1840): *Ichneumon pendulator* Latreille, 1799.

Saprotichus Holmgren, 1868: 430. Type species (designated by Viereck, 1914): *Saprotichus chinensis* Holmgren, 1868.

Pachythechus Cameron, 1912: 84. Type species (designated by Viereck, 1914): *Pachythechus ruficeps* Cameron, 1912 (= *Meteorus cameroni* Shenefelt, 1969, replacement name for *ruficeps* Cameron, preoccupied by *M. ruficeps* Nees, 1834).

Diagnosis.— Antenna with 23-28 segments, apical segment without spine, scapus truncate apically, short, not reaching top of head, its length about 1.5 times its height, about twice pedicellus; inter-antennal distance slightly longer than diameter of socket; maxillary palp with 6 segments; labial palp with 3 segments; eye large and bare; occipital carina complete, joining hypostomal carina far above base of mandible; frons concave, almost smooth; epistomal suture present; anterior tentorial pits large and deep; clypeus slightly convex, its width more than twice its height; malar suture well-developed; mandibles slender, overlapping each other when closed at least about two-third of their length, tapered towards apex, with a fine medio-longitudinal carina, and upper tooth much longer than lower tooth, acute; precoxal sulcus completely present, wide and rugose-crenulate; prepectal carina complete; mesosternal groove deep; postpectal carina absent; mesopleural suture crenulate; notauli completely present, deep and crenulate; scutellar suture deep and with several carinae; scutellum convex medially, lateral carina absent, with small medio-posterior depression; propodeum irregularly coarsely rugose; vein 1-R1 of fore wing about as long as pterostigma; vein 1-SR of fore wing present, vein r-m of fore wing usually present, but sometimes absent; vein M+CU1 of fore wing completely sclerotized; vein 3A of fore wing shortly present; vein M+CU of hind wing much longer than vein 1-M; vein cu-a of hind wing subvertical; vein 2-SC+R of hind wing long; vein SR of hind wing unsclerotized; marginal cell of hind wing narrowed to apex or parallel-sided, not apically broadened; legs slender; claws simple and slender; first metasomal tergite slender and long, ventrally usually meeting or nearly meeting at least medially, sometimes fused basally, tubular, spiracles at middle or slightly behind, dorsope and laterope usually present, but sometimes absent; second and following tergites smooth; second and third tergites with lateral fold; metasomal tergites with a single subapical row of setae; hypopygium simple, sparsely shortly setose; ovipositor sheath slender, and transversely carinate, setose; length of sheath about twice first tergite; ovipositor slender, straight, and acute apically, dorsal valve with a weak subapical notch.

Biology.— (Partly gregarious) parasites of larval Lepidoptera (Geometridae, Noctuidae, Thaumetopeidae, Satyridae, Nymphalidae, Pyralidae, Tortricidae, Hepialidae, Zygaenidae, Tineidae, Lycaenidae, Lasiocampidae, Gelechiidae, Lymantriidae,

Arctiidae, Nolidae and Momphidae). Some species are parasites of Coleoptera (Cisidae, Melandryidae, Scarabaeidae, Biphyllidae, Cerambycidae, Scolytidae, Chrysomelidae and Tenebrionidae) and of Neuroptera (*Meteorus oculatus* Ruthe, 1862).

Distribution.—Cosmopolitan; large genus.

Note.—Species of the genus *Meteorus* without vein r-m of fore wing are very similar to members of the genus *Perilitus* Nees. They seem to illustrate the phylogenetic pathway from the genus *Meteorus* to *Perilitus*; the latter persistently lacks the vein r-m of fore wing (Tobias, 1986). *M. varinervis* Tobias, 1986, only has the left wing without vein r-m, while *M. erratus* spec. nov. described below has the vein r-m always absent. The biology of the *M. erratus* spec. nov. is unknown, but interestingly, the hosts of *M. varinervis* Tobias are beetle larvae. Therefore, it may indicate a transition not only morphologically but also biologically from *Meteorus* to *Perilitus* because species of the genus *Perilitus* are also parasitising beetles (Tobias, 1986).

Species of *Meteorus* without vein r-m of fore wing can be separated from the genus *Perilitus* Nees by having the mandible with a fine medio-longitudinal carina, width of the clypeus twice or more its height; the basal two thirds of the first metasomal tergite fused ventrally, tube-shaped, without dorsope and laterope; and vein 1-M of the hind wing much shorter than 1r-m. They are also similar to members of the genus *Orionis* Shaw, 1988, but *Meteorus* differs in having the first metasomal tergite more robust, its length about 3 times its apical width (instead of more than 7 times), the frons smooth and without frontal carina, the antenna longer, the apical segment of antenna without spine, the apical half of vein 2-1A of fore wing unsclerotized, the vein 3A of fore wing shortly present and length of the ovipositor sheath about twice first metasomal tergite.

Meteorus erratus spec. nov.

(figs 235-244)

Material.—Holotype, ♀ (ZAU), Guizhou, Mt Fanjing, Huixiangping, 11-13.vii.1993, Chen Xuexin, no. 948937. Paratypes (3 ♀♀ + 3 ♂♂): 1 ♀ (RMNH), Yunnan, Kunming, 30.iii.1981, He Junhua, no. 813905; 2 ♀♀ + 2 ♂♂ (ZAU), Yunnan, Kunming, 30.iii.1981, He Junhua, nos 811131, 811134, 811137, 811180; 1 ♂ (ZAU), Liaoning, Shengyang, Dongling, 10.x.1994., He Junhua, no. 948164.

Holotype, ♀, length of body 5.0 mm, of fore wing 4.5 mm.

Head.—Width of head 2.1 times its medial length; antenna with 28 segments, thickened medially, length of third segment 1.5 times fourth segment, length of third, fourth and penultimate segments 2.9, 1.9 and 1.2 times their width, respectively; length of maxillary palp 1.1 times height of head; length of eye in dorsal view twice temple; temple behind eye distinctly, almost linearly, narrowed; OOL:OD:POL = 17:9:15; vertex and temple finely coriaceous; frons distinctly concave, almost smooth, ventrally (near antennal sockets) with several weak median rugae; face narrow, its width almost as long as its height and width of clypeus, weakly medio-longitudinally convex, sparsely punctate, entirely setose; inter-tentorial line 4.8 times tentorio-ocular line; clypeus slightly convex, punctate, ventral margin slightly concave medially, its width 2.5 times its height; malar space very narrow, its length 0.33 times basal width of mandible.

Mesosoma.—Length of mesosoma 1.7 times its height; pronotal side shiny, largely coarsely crenulate, only dorsally smooth; precoxal sulcus completely, wide and

rugose-crenulate; remainder of mesopleuron largely smooth, dorsally rugose; metapleuron coarsely reticulate; mesoscutum punctate, almost smooth, completely setose; notauli completely present, deep and crenulate, meeting posteriorly and forming a large coarsely rugose depression posteriorly (fig. 240); scutellar suture deep and with several carinae; scutellum convex medially, almost smooth; propodeum irregularly coarsely rugose, with dorsal face and posterior face forming a right angle, without carinae.

Wings.— Fore wing: length of 1-R1 1.1 times pterostigma; r arising from middle of pterostigma; 1-SR present, r-m absent; r:2-SR:SR1+3-SR = 7:28:78; m-cu interstitial; 1-CU1:2-CU1:cu-a = 3:26:9; M+CU1 completely sclerotized; apical half of 2-1A unsclerotized. Hind wing: M+CU:1-M:1r-m:2-SC+R = 48:10:18:13; cu-a subvertical; 2-SC+R long; SR entirely unsclerotized.

Legs.— Hind coxa rugose-punctate; length of hind femur, tibia and basitarsus 4.4, 9.8 and 10.0 times their width, respectively; length of hind tibial spurs 0.33 and 0.34 times basitarsus.

Metasoma.— First tergite slender and long, its length 2.9 times its apical width, its apical width 3.2 times its basal width, gradually widened from base to apex, ventrally largely fused, tubular, dorsope and laterope absent, spiracles about at middle and rather protruding, its surface smooth except some indistinct rugae between spiracles; length of second tergite 0.9 times median length of third tergite, 0.35 times first tergite; second and following tergites smooth; hypopygium simple, with sparse and short setae; ovipositor sheath slender, and transversely carinate, setose; length of sheath twice first tergite, 0.50 times of fore wing; ovipositor slender and acute apically, dorsal valve with a weak subapical notch.

Colour.— Black; clypeus, area between posterior ocellus and eye reddish brown, metasoma (except first tergite) dark reddish brown; antenna dark brown, basally brownish; mandible (except apex), palpi, tegulae and legs pale yellow, fore and middle femur rather darkened, hind femur reddish, hind tibia apically and hind tarsus brownish; joint of femur and trochanter, and telotarsus brownish; wing membrane hyaline with brownish setae, pterostigma brown, veins brown to pale brown.

Variation.— Length of body 4.5-5.4 mm, of fore wing 3.8-4.2 mm; antennal segments of female 23 (3), 28 (1), of male 25 (1), 26 (1); vertex and temple smooth and shiny; first metasomal tergite of male largely longitudinally striate, dorsope distinct before spiracles; clypeus, area between posterior ocellus and eye and face sometimes yellowish brown; specimens from Yunnan have hind legs reddish, coxa brownish, tibia apically and tarsus darkened; all antennal segments longer than wide; length of sheath 2.0-2.2 times first tergite, 0.45-0.50 times fore wing.

Genus *Microctonus* Wesmael, 1835

(figs 285-331)

Microctonus Wesmael, 1835: 54; Shenefelt, 1969: 101; Shaw, 1985: 330. Type species (designated by Foerster, 1862): *Perilitus aethiops* Nees, 1834.

Gamosecus Provancher, 1880: 167. Type species (designated by Viereck, 1914): *Gamosecus mellinus* Provancher, 1880. Syn. by Dalla Torre, 1898.

Diagnosis.— Antennal segments 16-40, scapus short, about twice as long as wide, apical segment without spine; maxillary palp with 5 segments; labial segments with 3 segments; occipital carina complete, or weaker dorsally than laterally, or dorsally

absent, ventrally curved towards and joining hypostomal carina; eyes bare; malar suture and epistomal suture present; mandibles overlapping for less than half length of mandible, its length less than 6 times basal width; metapleuron entirely irregularly rugose; notuali and precoxal sulcus present; scutellum smooth; propodeum irregularly carinate with confused rugae between carinae, medio-posterior impression distinct; marginal cell of fore wing comparatively short; length of vein 1-R1 of fore wing usually not longer than pterostigma; veins 1-SR+M and r-m of fore wing absent; vein M+CU1 of fore wing completely sclerotized; tarsal claw simple; first metasomal tergite ventrally open, usually without dorsope, sometimes present, laterope absent; second and following tergites smooth; second and basal part of third tergite with lateral fold; hypopygium small to medium-sized, usually glabrous; ovipositor slender and setose, length of setae longer than width of sheath; ovipositor slender, longer than first metasomal tergite, straight or moderately curved.

Biology.— Parasites of adult Coleoptera, in particular the families Chrysomelidae, Carabidae, Curculionidae, Cerambycidae, Alleculidae, and Tenebrionidae.

Distribution.— Cosmopolitan.

Note.— The genus was recorded as new generic record from Taiwan province by Chou (1987) without listing species. In this paper the first species from China are described.

Key to the Chinese species of *Microctonus* Wesmael

1. Vein 1-R1 of fore wing as long as pterostigma (figs 295, 300); combined length of apical two segments of maxillary palp 1.6-1.7 times length of third segment (fig. 299); dorsope of first metasomal segment absent (figs 298, 303); occipital carina complete (figs 297, 301); antennal segments 28-40 2
- Vein 1-R1 of fore wing distinctly shorter than (0.46-0.85) pterostigma (figs 285, 308, 316, 320); combined length of apical two segments of maxillary palp 1.0-1.2 times length of third segment (fig. 294); dorsope of first segment usually present (figs 290, 311, 319, 323, 325); occipital carina usually shortly interrupted medially (figs 306, 310, 313, 317, 322); antennal segments 18-24 3
2. Antennal segments of ♂ 31-34, of ♀ 28; apical antennal segments of female longer than wide; antennal sockets slightly raised (fig. 302); hind coxa smooth; vein 1-CU1 of fore wing longer (fig. 300); vein 1-M of hind wing shorter than 2-SC+R (fig. 300); length of body 2.4-3.5 mm. Zhejiang and Fujian *M. cretus* spec. nov.
- Antennal segments of ♂ 39-40, of ♀ unknown (but more than 26); apical antennal segments of female as long as wide; antennal sockets distinctly raised (fig. 296); hind coxa distinctly rugose; vein 1-CU1 of fore wing shorter (fig. 295); vein 1-M of hind wing longer than 2-SC+R (fig. 295); length of body 2.5-3.5 mm. Guangxi ..
..... *M. longicornis* spec. nov.
3. Length of 1-R1 of fore wing 0.70-0.85 times length of pterostigma (figs 304, 312, 328); vein SR1+3-SR of fore wing more or less straight apically (figs 304, 312, 328); dorsope of first metasomal tergite absent (figs 304, 315, 331) 4
- Length of 1-R1 of fore wing 0.45-0.65 times length of pterostigma (figs 285, 308, 316, 320, 325); vein SR1+3-SR of fore wing evenly curved (figs 285, 308, 316, 320, 325); dorsope of first tergite present (figs 290, 311, 319, 323, 325) 6

4. Vein 2-SC+R of hind wing much longer than vein 1r-m (fig. 328); first metasomal tergite nearly smooth (fig. 331); middle lobe of mesoscutum almost smooth and sparsely setose; length of body 1.6 mm. Gaungdong *M. dinghuensis* spec. nov.
- Vein 2-SC+R of hind wing shorter than or as long as vein 1r-m (figs 304, 312); first tergite distinctly striate or rugose (figs 307, 315); middle lobe of mesoscutum rugose or rugulose and setose 5
5. Length of ovipositor sheath longer, 0.45 times fore wing; length of first tergite 2.1 times its apical width, its surface almost entirely longitudinally finely rugose (fig. 307); mesopleuron largely smooth; third antennal segment longer than fourth segment; vein 1-CU1 of fore wing shorter (fig. 304); vein 1r-m of hind wing as long as vein 2-SC+R (fig. 304); length of body 1.5-2.2 mm. Liaoning
..... *M. brevicornis* spec. nov.
- Length of ovipositor sheath shorter, 0.30 times fore wing; length of first tergite 1.8 times its apical width, its surface longitudinally rugose, apically broadly smooth (fig. 315); mesopleuron largely rugose; third antennal segment as long as fourth segment; vein 1-CU1 of fore wing longer (fig. 312); vein 1r-m of hind wing much longer than vein 2-SC+R (fig. 312); length of body 2.2 mm. Zhejiang
..... *M. simulans* spec. nov.
6. Antennal segments 26(♀) or 30-31(♂); face as wide as high (fig. 287); length of eye in dorsal view 1.5 times temple (fig. 288); first tergite basally distinctly narrow (fig. 290); female reddish yellow with propodeum and first metasomal tergite brownish; length of body 3.2-3.6 mm. Qinghai *M. maae* spec. nov.
- Antennal segments 19-24(♀) or 20-29(♂); face wider than high (figs 309, 318, 321); length of eye in dorsal view 1.2-1.4 times temple (figs 310, 317, 322); colour of first tergite and body variable; length of body 1.4-3.0 mm 7
7. Occipital carina widely interrupted medio-dorsally (fig. 322); first metasomal tergite slightly widened apically, weakly rugose (fig. 323); propodeum posteriorly with some pointed carinae; length of body 1.4 mm. Zhejiang
..... *M. neptunus* spec. nov.
- Occipital carina shortly interrupted medio-dorsally (figs 317, 310, 326); first tergite distinctly widened apically, distinctly rugose (figs 311, 319, 325); propodeum posteriorly without pointed carinae; length of body 1.9-3.0 mm 8
8. Antenna of female with 19 segments, shorter than body; propodeum with areola and posterior area more or less distinct; length of vein 1-M of hind wing 0.7 times vein 1r-m (fig. 308); length of body 1.8-2.0. Yunnan *M. mesus* spec. nov.
- Antenna of female with 21-24 segments, longer than body; propodeal areola indistinct; length of vein 1-M of hind wing 0.5 times vein 1r-m (figs 316, 324) 9
9. Body completely pale brownish yellow; pterostigma yellowish; antenna brown, basally brownish yellow; first metasomal tergite less widened apically, its surface sparsely longitudinally striate (fig. 319); length of body 2.3 mm. Shanxi
..... *M. galbus* spec. nov.
- Body dark reddish brown but head yellowish brown; pterostigma brown; antenna entirely dark brown; first metasomal tergite distinctly widened apically, its surface distinctly longitudinally striate (fig. 325); length of body 2.1-3.0 mm. Qinghai *M. aethioides* Loan

Microctonus aethiopoidea Loan, 1975
(figs 324-327)

Microctonus aethiopoidea Loan, 1975: 33; Tobias, 1986: 235.

Material.— 1 ♀ + 1 ♂ (ZAU), Qinghai, Menyuan Fengzhakou ?, 3.vii.1990, 18.vii.1990, M-724, M-318, nos 910199, 910254.

Distribution.— China: Qinghai; Holarctic region.

Note.— This species is new to China.

Microctonus brevicornis spec. nov.
(figs 304-307)

Material.— Holotype, ♀ (ZAU), Liaoning, Shengyang, Dongling, v-vi.1994, Lou Juxian, no. 947528. Paratypes (1 ♀ + 5 ♂♂): 1 ♂ (RMNH), same locality and collector as holotype, 10.vii.1994, no. 947258; 1 ♀ + 2 ♂♂ (ZAU), same as holotype, but nos 947523, 947525, 947535; 2 ♂♂ (ZAU), same locality and collector as holotype, 10.vii.1994, nos 947259, 947249.

Holotype, ♀, length of body 2.2 mm, of fore wing 1.9 mm.

Head.— Width of head in dorsal view 1.8 times its length; antennal segments 23, antenna slightly shorter than body, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.8, 3.3 and 1.3 times their width, respectively; apical two segments of maxillary palp short, their combined length 1.2 times third segment; length of maxillary palp 0.7 times height of head; occipital carina shortly interrupted medio-dorsally; OOL:OD:POL = 11:2:10; length of eye in dorsal view 1.4 times temple; temple roundly narrowed behind eyes; temple and vertex smooth, remotely setose; frons smooth; face evenly convex, granulate, setose, its width 1.5 times its height; intertentorial line 2.3 times tentorio-ocular line; clypeus slightly convex, superficially rugose, ventral margin medially evenly curved, its width 2.1 times its height; width of clypeus less than width of face; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side anteriorly and posteriorly crenulate, medially and ventrally granulate to smooth; precoxal sulcus fully present, irregularly rugose; remainder of mesopleuron largely smooth; notauli narrow and crenulate, posteriorly narrow and with a weak median carina; middle lobe of mesoscutum rugose and setose, lateral lobes glabrous; scutellar suture deep with one carina; scutellum smooth, medio-posterior depression transverse with one fine carina; propodeum reticulate-rugose.

Wings.— Fore wing: pterostigma 3.2 times as long as wide; length of vein 1-R1 0.7 times length of pterostigma; r issued behind middle of pterostigma, its length 0.45 times width of pterostigma; vein SR1+3-SR rather straight apically; r:2-SR:SR1+3-SR = 5:18:37; 1-CU1:2-CU1 = 2.5:12.5. Hind wing: 1-M:1r-m:2-SC+R = 6:8:8.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 5.6, 10.8 and 8.2 times their width, respectively; length of hind tibial spurs 0.28 and 0.24 times hind basitarsus.

Metasoma.— Length of first tergite 2.1 times its apical width, first tergite gradually widened from its base, its spiracles behind middle, protruding, laterope and dorsope absent, its surface longitudinally finely rugose; ovipositor sheath rather slender,

its length 0.45 times fore wing, 1.7 times first tergite, setose; ovipositor slender, straight, subapically with a dorsal notch.

Colour.— Brownish yellow; head, pronotum and mesoscutum paler, yellowish; scutellum and its sides, metanotum and propodeum brownish; basal half of first tergite yellowish; ovipositor sheath brown; legs yellow, telotarsus brown; antenna brown, basal two segments brownish yellow; wing membrane hyaline, pterostigma and veins yellowish.

Variation.— Length of body 1.5-2.2 mm, of fore wing 1.5-1.9 mm; antennal segments 23(♀) or 21-25(♂). Male similar to female except: length of antenna longer than body; body dark reddish brown with legs and first two metasomal segments yellowish or body reddish brown with mesoscutum blackish red, legs and first two metasomal tergites yellowish; pterostigma pale brown.

Note.— This species is very similar to *M. harpali* Watanabe, but differs in having the temple short, 0.7 times length of eye in dorsal view, and the first metasomal tergite much shorter, its length only 2.1 times its apical width. This species also resembles *M. melanopus* Ruthe, 1856, but differs in having the antennal segments 23 (♀) or 21-25(♂), the vein SR1+3-SR of fore wing more straight, the length of vein 1-R1 longer, and the ovipositor straight.

Microctonus cretus spec. nov.

(figs 300-303)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt Tianmu, 2-4.vi.1990, He Junhua, no. 904807. Paratypes (3 ♂♂, ZAU): 1 ♂, same locality as holotype, 18.vi.1983, Ma Yun, no. 830926; 1 ♂, Fujian, Mt Wuyi, 17.vii.1986, Wang Jiashe, no. 865391; 1 ♂, Fujian, Kangshang, 10.ix.1983, Wang Jiashe, no. 854253.

Holotype, ♀, length of body 2.9 mm, of fore wing 2.8 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 28, antenna longer than (1.1 times) body, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.2, 2.6 and 1.7 times their width, respectively; apical two segments of maxillary palp long, their combined length 1.6 times third segment; length of maxillary palp equal to height of head; occipital carina complete; OOL:OD:POL = 11:5:13; length of eye in dorsal view 1.6 times temple; temple roundly distinctly narrowed behind eyes; temple and vertex smooth, remotely setose; frons slightly flat, smooth; face nearly flat, setose, nearly smooth, medio-longitudinally superficially transversely rugulose, its width 1.2 times its height; intertentorial line 2.7 times tentorio-ocular line; clypeus convex, nearly smooth, more sparsely setose than face, ventral margin thin, medially slightly concave, its width twice its height; width of clypeus less than width of face; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely coarsely crenulate, dorsal margin smooth; precoxal sulcus wide, posteriorly narrow, irregularly rugose; remainder of mesopleuron largely smooth, dorsally with some rugae; notauli narrow, deep and crenulate, posteriorly rugose with a short weak median carina; middle lobe of mesoscutum weakly rugose, densely setose, lateral lobes glabrous; scutellar suture deep with three carinae; scutellum smooth, medio-posterior depression distinct, transverse; propodeum irregularly sparsely reticulate-rugose, posteriorly carinae more or less distinct.

Wings.— Fore wing: pterostigma 2.9 times as long as wide; length of vein 1-R1 equal to length of pterostigma; r issued slightly behind middle of pterostigma, its length 0.58 times width of pterostigma; vein SR1+3-SR nearly straight apically; r:2-SR:SR1+3-SR = 7:19:52; 1-CU1:2-CU1 = 4:15. Hind wing: 1-M:1r-m:2-SC+R = 7:12:9.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 5.3, 11.0 and 8.0 times their width, respectively; length of hind tibial spurs 0.33 and 0.29 times hind basitarsus.

Metasoma.— Length of first tergite 2.4 times its apical width, first tergite gradually widened from its base, spiracles behind middle, slightly protruding, laterope and dorsope absent, its surface longitudinally sparsely regularly striate, basally smooth; hypopygium glabrous; ovipositor sheath slender, its length 0.32 times fore wing, 1.2 times first tergite, sparsely setose, ovipositor slender, slightly curved downwards.

Colour.— Dark reddish brown; head reddish yellow; mandibles and palpi yellow; antenna brown, basal three segments reddish yellow; stemmaticum black; prothorax and legs brownish yellow, hind tibia and tarsus brownish; sheath brown; wing membrane hyaline, pterostigma and veins brown.

Variation.— Male similar to female, but length of body 2.4-3.5 mm, of fore wing 2.4-3.0 mm; antennal segments 31-34.

Microctonus dinghuensis spec. nov.
(figs 328-331)

Material.— Holotype, ♀ (BMNH), China, Guangdong, Dinghu Mts, 60 km W of Guangzhou, v.1983, Boucek.

Holotype, ♀, length of body 1.6 mm, of fore wing 1.6 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 20, antenna slightly longer than length of body, length of third segment equal to fourth segment, length of third, fourth and penultimate segments 4.4, 4.0 and 2.1 times their width, respectively; apical two segments of maxillary palp slender and short, their combined length 1.2 times third segment; length of maxillary palp 0.55 times height of head; occipital carina widely interrupted medially; OOL:OD:POL = 10:3:9; length of eye in dorsal view 1.3 times temple; temple first parallel-sided, then distinctly narrowed behind eyes; temple and vertex smooth; frons flat, smooth; face slightly convex, rugose, setose, its width 1.3 times its height; intertentorial line 2.5 times tentorio-ocular line; clypeus slightly convex, nearly smooth, ventral margin evenly curved, its width 2.2 times its height; width of clypeus less than width of face; length of malar space 0.65 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly, medially and posteriorly sparsely crenulate, remainder largely smooth; precoxal sulcus present, shallow, irregularly rugose; remainder of mesopleuron largely smooth; notauli distinct, crenulate, posteriorly narrow with a short smooth carina; middle lobe of mesoscutum nearly smooth, sparsely setose, lateral lobes glabrous; scutellar suture deep with a distinct median carina; scutellum smooth, medio-posterior depression distinct with a short median carina; propodeum irregularly areolate with rugae between carinae.

Wings.— Fore wing: pterostigma 3.2 times as long as wide; length of vein 1-R1 0.72 times length of pterostigma; r issued slightly behind middle of pterostigma, its length 0.42 times width of pterostigma; vein SR1+3-SR curved; r:2-SR:SR1+3-SR = 3:12:31; 1-CU1:2-CU1 = 2:9. Hind wing: 1-M:1r-m:2-SC+R = 5:5:10.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 5.7, 12.2 and 8.4 times their width, respectively; length of hind tibial spurs 0.32 and 0.27 times hind basitarsus.

Metasoma.— Length of first tergite 1.9 times its apical width, first tergite widened apically, dorsope and laterope absent, its spiracles behind middle, slightly protruding, its surface with same obscure rugae, nearly smooth; hypopygium medium-sized, glabrous; ovipositor sheath slender, 0.28 times fore wing, 1.3 times first tergite, sparsely setose, ovipositor slender, straight.

Colour.— Yellowish brown; face, clypeus and malar space yellow; antenna dark brown, its basal six segments yellowish brown; legs and sheath yellowish brown; wing membrane hyaline, pterostigma and veins brownish yellow.

Microctonus galbus spec. nov.
(figs 316-319)

Material.— Holotype, ♀ (ZAU), Shanxi, Linfen, 27.v.1986, Fan Jinjing, no. 864134.

Holotype, ♀, length of body 2.3 mm, of fore wing 2.1 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 22, antenna as long as body, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 4.0, 3.0 and 2.0 times their width, respectively; apical two segments of maxillary palp short, their combined length 1.1 times third segment; length of maxillary palp 0.7 times height of head; occipital carina narrowly interrupted medio-dorsally; OOL:OD:POL = 13:4:10; length of eye in dorsal view 1.3 times temple; temple roundly narrowed behind eyes; temple and vertex smooth and sparsely setose; frons flat, smooth; face flat, nearly granulate, its width 1.3 times its height; intertentorial line 2.3 times tentorio-ocular line; clypeus slightly convex, nearly smooth, ventrally thin, medially evenly curved, its width twice its height; width of clypeus less than width of face; length of malar space 0.6 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side anteriorly, medially and posteriorly rugose-crenulate, dorsal margin smooth; precoxal sulcus wide, shallow, irregularly rugose; remainder of mesopleuron smooth, antero-dorsally irregularly rugose; notauli narrow, crenulate, posteriorly narrow with some longitudinal rugae; middle lobe of mesoscutum superficially rugose, densely setose, lateral lobes largely glabrous; scutellar suture wide and deep with one carina; scutellum smooth, medio-posterior depression large and transverse; propodeum irregularly sparsely reticulate-rugose, posteriorly carinae more or less distinct.

Wings.— Fore wing: pterostigma 3.1 times as long as wide; length of vein 1-R1 0.46 times length of pterostigma; r issued distinctly behind middle of pterostigma, its length 0.36 times width of pterostigma; vein SR1+3-SR evenly curved; r:2-SR:SR1+3-SR = 4:19:30; 1-CU1:2-CU1 = 3:15. Hind wing: 1-M:1r-m:2-SC+R = 6:10:10.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 6.2, 12.1

and 9.0 times their width, respectively; length of hind tibial spurs 0.30 and 0.26 times hind basitarsus.

Metasoma.— Length of first tergite 2.5 times its apical width, first tergite gradually widened from its base, spiracles behind middle, protruding, dorsope present, laterope absent, its surface sparsely longitudinally weakly striate, apically smooth; hypopygium glabrous; ovipositor sheath missing; ovipositor slender, straight, apically sharp, its length 0.45 times fore wing, 1.9 times first tergite.

Colour.— Brownish yellow; apex of metasoma darker; antenna brown, basally brownish yellow; legs brownish yellow; wing membrane hyaline, pterostigma yellowish, veins yellowish brown.

Note.— This species is similar to *M. secalis* Halliday, 1833, in colour pattern, but can be easily distinguished from the latter by having the body colour much paler, the antenna with 22 segments, the occipital carina shortly interrupted medio-dorsally, and the pterostigma 3.1 times as long as wide.

Microctonus longicornis spec. nov.
(figs 295-299)

Material.— Holotype, ♀ (ZAU), Guangxi, Longsheng, Neichujiang, 24.vi.1982, He Junhua, no. 823422. Paratypes (6 ♂♂): 1 ♂ (RMNH), Guangxi, Longsheng, Longping, 25-26.vi.1982, He Junhua, no. 823825; 1 ♂ (ZAU), same data as holotype, but no. 823409; 2 ♂♂ (ZAU), Guangxi, Jinxiu, Dayaoshan, 16km, 14.vi.1982, He Junhua, nos 822909, 822931; 1 ♂ (ZAU), Guangxi, Longsheng, Longping, 25-26.vi.1982, He Junhua, no. 823807.

Holotype, ♀, length of body 3.5 mm, of fore wing 3.0 mm.

Head.— Width of head in dorsal view 1.9 times its length; antennal segments 26 (incomplete), length of third segment 1.3 times fourth segment, length of third and fourth segments 3.8 and 2.3 times their width, respectively; antennal sockets distinctly raised; apical two segments of maxillary palp long, their combined length 1.7 times third segment; length of maxillary palp 0.95 times height of head; occipital carina complete; OOL:OD:POL = 10:4:10; length of eye in dorsal view 1.6 times temple; temple distinctly narrowed behind eyes; temple and vertex smooth and sparsely setose; frons medially nearly flat, smooth; face weakly rugose, densely setose, medio-dorsally with a minute protuberance, its width 1.1 times its height; intertentorial line 3.0 times tentorio-ocular line; clypeus convex, punctate-rugose, ventrally thin, medially slightly emarginated, nearly smooth, its width 2.1 times its height; width of clypeus less than width of face; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side largely crenulate-rugose, dorsal margin smooth; precoxal sulcus wide, irregularly rugose; speculum of mesopleuron smooth, dorsal 1/3 of mesopleuron rugose; notauli narrow, deep and crenulate, posteriorly moderately wide, foveate-rugose; mesoscutum superficially rugose, densely setose, lateral lobes posteriorly glabrous; scutellar suture deep with three carinae; scutellum smooth, medio-posterior depression large, transverse with three fine carinae; propodeum irregularly rugose, near basal margin smooth, posteriorly carinae distinct.

Wings.— Fore wing: pterostigma 3.2 times as long as wide; length of vein 1-R1 equal to length of pterostigma; r issued about middle of pterostigma, its length 0.54

times width of pterostigma; vein SR1+3-SR nearly straight apically; r:2-SR:SR1+3-SR = 7:21:57; 1-CU1:2-CU1 = 3.5:21. Hind wing: 1-M:1r-m:2-SC+R = 10:13:8.

Legs.— Hind coxa distinctly rugose; length of hind femur, tibia and basitarsus 5.5, 12.0 and 8.6 times their width, respectively; length of hind tibial spurs 0.30 and 0.27 times hind basitarsus.

Metasoma.— Length of first tergite 2.3 times its apical width, first tergite gradually widened from its base, its spiracles behind middle, protruding, laterope and dorsope absent, its surface longitudinally regularly striate, apico-medially smooth; hypopygium small and glabrous; ovipositor sheath slender, its length 0.30 times fore wing, 1.06 times first tergite, sparsely setose; ovipositor slender, straight, apically slightly curved downwards.

Colour.— Black; orbits, prosternum and metasoma after first tergite reddish brown; malar space, clypeus, mandibles, palpi, tegulae and legs yellowish brown, hind femur, tibia and tarsus darker; antenna dark brown, basal two segments yellowish brown; ovipositor sheath brown; wing membrane hyaline, pterostigma and veins brownish.

Variation.— Male similar to female except: length of body 2.5-3.5 mm, of fore wing 2.7-3.0 mm; antennal segments 38-40, much longer (1.6 times) than body; body dark reddish brown to blackish.

Note.— This species is similar to *M. brevicollis* Haliday, 1833, but differs in having the head and antenna much darker, the antenna much longer, with 26 (incomplete, ♀) or 38-40 (♂) segments; the mesoscutum postero-medially without longitudinal rugae, the medio-posterior depression of scutellum larger, the hind coxa distinctly rugose and the first metasomal tergite much more slender.

Microctonus maae spec. nov.

(figs 285-294)

Material.— Holotype, ♀ (ZAU), Qinghai, Mengyuanfengzakou [?], 21.vii.1990, M-382, no. 910200. Paratypes (2 ♂♂ in ZAU): 2 ♂♂, same locality as holotype, 3 & 14.vii. 1990, C-36 & Liu, nos 910197, 910220.

Holotype, ♀, length of body 3.2 mm, of fore wing 3.5 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 26, antenna slightly longer than body, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.8, 3.0 and 1.7 times their width, respectively; apical two segments of maxillary palp short, their combined length 1.2 times third segment; length of maxillary palp 0.7 times height of head; occipital carina narrowly interrupted medio-dorsally; OOL:OD:POL = 12:4:12; length of eye in dorsal view 1.5 times temple; temple roundly narrowed behind eyes; temple and vertex smooth and sparsely setose; frons medially slightly concave, smooth with some rugae between antennal sockets; face evenly convex, granulate, densely setose, its width equal to its height; intertentorial line 3.1 times tentorio-ocular line; clypeus weakly punctate-rugose, sparsely setose, ventral margin thin, medially nearly straight, its width 1.9 times its height; width of clypeus as long as width of face; length of malar space 0.45 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side anteriorly, medially and posteriorly crenulate, ventrally and dorsally longitudinally rugose,

area near dorsal margin nearly smooth; precoxal sulcus medially present, shallow, irregularly rugose; remainder of mesopleuron largely smooth, dorsally weakly rugose; notauli narrow, crenulate, posteriorly with distinct longitudinal-median carina; middle lobe of mesoscutum finely punctate, densely setose, lateral lobes largely glabrous; scutellar suture with one distinct carina; scutellum convex, smooth, medio-posterior depression minute and transverse; propodeum irregularly (somewhat transversely) rugose, baso-laterally nearly smooth, median and lateral carinae more or less distinct.

Wings.— Fore wing: pterostigma 3.8 times as long as wide; length of vein 1-R1 0.52 times length of pterostigma; r issued behind middle of pterostigma, its length 0.56 times width of pterostigma; vein SR1+3-SR evenly curved; r:2-SR:SR1+3-SR = 7:25:42; 1-CU1:2-CU1 = 4:19, 1-CU1 oblique. Hind wing: 1-M:1r-m:2-SC+R = 6:15:13.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 5.6, 13.3 and 9.3 times their width, respectively; length of hind tibial spurs 0.29 and 0.25 times hind basitarsus.

Metasoma.— Length of first tergite 2.2 times its apical width, first tergite basally narrow, distinctly widened towards its spiracles, after it slightly widened, spiracles behind middle of tergite, slightly protruding, laterope absent, dorsope present and small, its surface weakly longitudinally rugose, before spiracles with short median and lateral carinae; hypopygium glabrous; ovipositor sheath slender, its length 0.14 times fore wing, 1.4 times first tergite, sparsely setose; ovipositor slender, nearly straight.

Colour.— Reddish yellow; mesoscutum dark red tinged with brown, metanotum and propodeum black; apical half of first tergite, lateral margin of second tergite and first-third sternites dark red tinged with black; palpi pale yellow, apical two segments brownish; sheath dark brown; antenna dark brown, basal five segments brownish yellow; legs brownish yellow, telotarsus brown; wing membrane hyaline, pterostigma yellow, veins yellowish brown to yellow.

Variation.— Male similar to female except: length of body 3.6 mm, of fore wing 3.3 mm; antennal segments 30-31; spiracles of first tergite more protruding; body black, clypeus, temple behind eyes, and second tergite dark reddish; antenna entirely dark brown; palpi brown; legs dark brown, femora apically and tibia basally yellowish brown.

Note.— This species is similar to *M. aethiopoides* Loan, 1975, but differs in having the body larger, the antennal segments 26(♀) or 30-31 (♂), the antenna basally distinctly yellowish, the side of mesosoma of female reddish yellow, and the pterostigma entirely yellow.

Etymology.— This species is named in honor of Ms Yun Ma, who has been working for nearly 20 years as a technical assistant at the Zhejiang Agricultural University (ZAU). She has made important contributions to the curation and extension of the Hymenoptera collection of ZAU.

Microctonus mesus spec. nov.
(figs 308-311)

Material.— Holotype, ♀ (ZAU), Yunnan, Ruili, 6.v.1981, He Junhua, no. 814098. Paratypes (2 ♀♀ + 1 ♂): 1 ♀ (RMNH), same data as holotype; 1 ♀ (ZAU), same data as holotype; 1 ♂ (ZAU), Yunnan, Anning, Wenquan, 9-13.vii.1988, Chen Xuexin, no. 884832.

Holotype, ♀, length of body 1.9 mm, of fore wing 1.9 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 19, antenna slightly shorter than (0.9 times) body, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 4.4, 3.6 and 1.7 times their width, respectively; apical two segments of maxillary palp short, their combined length 1.2 times third segment; length of maxillary palp 0.6 times height of head; occipital carina shortly interrupted medio-dorsally; OOL:OD:POL = 10:3:9; length of eye in dorsal view 1.3 times temple; temple first parallel-sided, then distinctly narrowed behind eyes; temple and vertex smooth and remotely setose; frons nearly flat, smooth, with some rugae near sockets; face finely transversely rugulose, setose, medio-dorsally with a minute protuberance, its width 1.3 times its height; intertentorial line 2.8 times tentorio-ocular line; clypeus indistinctly rugulose, shiny, ventral margin thin, medially nearly straightly, its width 2.1 times its height; width of clypeus less than width of face; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side anteriorly and medially sparsely rugose, posteriorly crenulate, dorsally smooth; precoxal sulcus narrow and shallow, irregularly rugose; remainder of mesopleuron largely smooth, only antero-dorsally narrowly with some rugae; notauli narrow, indistinctly crenulate, posteriorly narrow with a short median carina; middle lobe of mesoscutum rugulose, densely setose, lateral lobes largely glabrous; scutellar suture deep, with one carina; scutellum smooth, medio-posterior depression large, transverse with one carina; propodeum sparsely rugose, carinae weak but distinct, areola and posterior area rather well defined.

Wings.— Fore wing: pterostigma 2.9 times as long as wide; length of vein 1-R1 0.52 times length of pterostigma; r issued slightly behind middle of pterostigma, its length 0.4 times width of pterostigma; vein SR1+3-SR curved; r:2-SR:SR1+3-SR = 4.5:17:34; 1-CU1:2-CU1 = 2:14. Hind wing: 1-M:1r-m:2-SC+R = 6:8:9.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 5.6, 12.0 and 8.5 times their width, respectively; length of hind tibial spurs 0.35 and 0.29 times hind basitarsus.

Metasoma.— Length of first tergite twice its apical width, first tergite distinctly widened before spiracles, behind spiracles slightly widened, spiracles behind middle of tergite, slightly protruding, dorsope present but small, laterope shallowly present, its surface longitudinally finely striate-rugose; ovipositor sheath slender, its length 0.23 times fore wing, 1.2 times first tergite, densely setose; ovipositor slender, slightly curved downwards.

Colour.— Brownish yellow; dorsal face of mesosoma and apex of metasoma darker; head ventrally yellow; antenna brown, basal four segments brownish yellow; sheath brown; legs brownish yellow; wing membrane hyaline, pterostigma and veins pale brown.

Variation.— Length of body 1.8-2.0 mm, of fore wing 1.8-1.9 mm; male similar to female except for having 21 antennal segments, the first metasomal tergite narrower and the body colour being slightly darker.

Note.— This species is very similar to *M. melanopus* Ruthe, 1856, but differs in having the mesopleuron largely smooth, the precoxal sulcus much narrower, the

antenna of female yellowish basally, the vein 1-M of hind wing shorter than 1r-m and the vein SR1+3-SR slightly less curved.

Microctonus neptunus spec. nov.
(figs 320-323)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt W Tianmu, 25.vi.1984, Chen Xuexin, no. 842336.

Holotype, ♀, length of body 1.4 mm, of fore wing 1.5 mm.

Head.— Width of head in dorsal view 1.8 times its length; antennal segments 20, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 4.3, 3.6 and 1.6 times their width, respectively; apical two segments of maxillary palp short, their combined length 1.2 times third segment; length of maxillary palp 0.6 times height of head; occipital carina widely interrupted medio-dorsally; OOL:OD:POL = 10:2:7; length of eye in dorsal view 1.3 times temple; temple roundly narrowed behind eyes; temple and vertex smooth and remotely setose, nearly glabrous; frons nearly flat, smooth; face finely rugulose, nearly granulate, its width 1.3 times its height; intertentorial line 3.0 times tentorio-ocular line; clypeus convex, nearly smooth, ventral margin medially straight, its width 2.4 times its height; width of clypeus shorter than width of face; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly coarsely crenulate, remainder largely smooth; precoxal sulcus invisible (covered by glue); mesopleuron largely smooth; notauli distinct, but shallow, coarsely crenulate, posteriorly narrow; middle lobe of mesoscutum weakly rugose, medio-longitudinally concave, densely setose, lateral lobes glabrous; scutellar suture wide and deep with one carina; scutellum smooth with distinct transverse medio-posterior depression; propodeum irregularly sparsely reticulate, postero-laterally carinae slightly pointed.

Wings.— Fore wing: pterostigma 3.0 times as long as wide; length of vein 1-R1 0.69 times length of pterostigma; r issued about middle of pterostigma, its length 0.44 times width of pterostigma; vein SR1+3-SR evenly curved; r:2-SR:SR1+3-SR = 4:13:27; 1-CU1:2-CU1 = 2.5:9.5. Hind wing: 1-M:1r-m:2-SC+R = 3.5:5:7.5.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 5.7, 11.3 and 9.0 times their width, respectively; length of hind tibial spurs subequal, 0.25 times hind basitarsus.

Metasoma.— Length of first tergite 2.2 times its apical width, first tergite slightly widened apically, spiracles behind its middle, not protruding, laterope absent, dorsope indistinct, its surface basally and apically nearly smooth, medially longitudinally sparsely (weakly) striate; ovipositor sheath slender, its length 0.24 times fore wing, 1.2 times first tergite, distinctly sparsely setose; ovipositor slender, straight, subapically with a dorsal notch.

Colour.— Head yellow, mesosoma and metasoma dark reddish yellow, dorsal part of mesosoma brownish, area around ocelli brownish; antenna brown, basal four segments yellowish; legs yellow; wing membrane hyaline; pterostigma brownish yellow, veins brownish to yellowish.

Note.— This species is similar to *M. melanopus* Ruthe, 1856, but differs in having

the occipital carina widely interrupted medio-dorsally, the vein 1-CU1 of fore wing longer, the vein 2-SC+R of hind wing much longer than vein 1-M, the pterostigma paler, and the ovipositor straight.

Microctonus simulans spec. nov.
(figs 312-315)

Material.— Holotype, ♀ (ZAU), Zhejiang, Haiyan, 19.x.1985, Wang Hongxiang, no. 853406.

Holotype, ♀, length of body 2.2 mm, of fore wing 2.0 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 25, slightly shorter than body, third segment as long as fourth segment, length of third, fourth and penultimate segments 3.3, 3.3 and 1.3 times their width, respectively; apical two segments of maxillary palp short, their combined length equal to third segment; length of maxillary palp 0.6 times height of head; occipital carina shortly interrupted medio-dorsally; OOL:OD:POL = 12:4:12; length of eye in dorsal view 1.2 times temple; temple roundly distinctly narrowed behind eyes; temple and vertex smooth and remotely setose; frons flat, smooth; face evenly convex, finely granulate, medio-longitudinally shortly finely transversely rugulose, dorsally with a minute protuberance, its width 1.4 times its height; intertentorial line 2.5 times tentorio-ocular line; clypeus slightly, nearly smooth, shiny, ventral margin medially nearly straight, its width 2.1 times its height; width of clypeus less than width of face; length of malar space 0.6 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side anteriorly and posteriorly sparsely crenulate, medially, ventrally and dorsally smooth, subdorsally rugose; precoxal sulcus wide, irregularly rugose; remainder of mesopleuron anteriorly and dorsally distinctly rugose, only speculum nearly smooth; notauli narrow and crenulate, posteriorly very narrow; middle lobe of mesoscutum superficially rugulose, setose, lateral lobes glabrous; scutellar suture deep with one carina; scutellum smooth, medio-posterior depression distinct and transverse; propodeum sparsely reticulate-rugose, basally rugae weaker, carinae irregular and more or less distinct.

Wings.— Fore wing: pterostigma 3.0 times as long as wide; length of vein 1-R1 0.85 times length of pterostigma; r issued behind middle of pterostigma, its length 0.58 times width of pterostigma; vein SR1+3-SR nearly straight apically; r:2-SR:SR1+3-SR = 7:20:45; 1-CU1:2-CU1 = 6:13. Hind wing: 1-M:1r-m:2-SC+R = 8:11:6.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 5.6, 12.0 and 8.4 times their width, respectively; length of hind tibial spurs 0.32 and 0.28 times hind basitarsus.

Metasoma.— Length of first tergite 1.8 times its apical width, first tergite distinctly widened apically, spiracles behind middle, distinctly protruding, laterope and dorsope absent, its surface longitudinally and irregularly rugose, apically broadly smooth; hypopygium medium-sized and glabrous; ovipositor sheath slender, its length 0.32 times fore wing, 1.5 times first tergite, densely setose; ovipositor slender, straight, apically slightly curved downwards.

Colour.— Yellowish brown; dorsal face of mesosoma and metasoma dark reddish brown; apex of metasoma reddish brown; frons medially and stemmaticum brown; antenna dark brown, basal four segments yellowish brown; palpi yellowish; tegulae

and legs brownish yellow, tarsi darker; wing membrane hyaline, pterostigma yellow, borders yellow, veins pale brown to colourless.

Note.— This species is similar to *M. punctifrontis* Watanabe, 1955, but differs in having the first metasomal tergite much shorter, its surface longitudinally sparsely rugose, apically broadly smooth; the occipital carina shortly interrupted medially; the mesopleuron largely rugose; and the veins 1-R1 and 1-CU1 of fore wing longer.

Genus *Myiocephalus* Marshall, 1898
(figs 336-345)

Loxocephalus Foerster, 1862: 252; Shenefelt, 1969: 48; Shaw, 1985: 328. Type species (by monotypy & original designation): *Loxocephalus longipes* Foerster, 1862. Preoccupied by *Loxocephalus* Eberhard, 1862.

Myiocephalus Marshall [in: André], 1898: 218; Shenefelt, 1969: 115; Shaw, 1985: 328. Type species (by monotypy): *Myiocephalus boops* Wesmael, 1835. Syn. with *Loxocephalus* Foerster, 1862 by Shaw, 1985.

Spilomma Morley, 1909: 211. Type species (by monotypy): *Spilomma falconivibrans* Morley, 1909. Syn. by Muesebeck, 1936.

Diagnosis.— Antennal segments 28-30, apical segment without spine; maxillary palp with 5 segments; labial palp with 3 segments; occipital carina complete, ventrally joining hypostomal carina; eyes of female bulging laterally and anteriorly (fig. 342); frons and vertex rugulose; pronotum smooth; mesopleuron finely rugulose; precoxal sulcus absent; mesoscutum and scutellum finely rugulose, shiny; notauli absent; scutellar suture without carina; pterostigma narrow; veins 1-SR+M and r-m of fore wing absent; vein M+CU1 of fore wing distinctly sclerotized; vein SR1+3-SR ending near wing apex; marginal cell of fore wing large; vein M+CU of hind wing much longer than 1-M; legs slender, length of hind femur more than 6 times its width; metasoma strongly compressed, in dorsal view less than 0.25 times as wide as propodeum; first metasomal tergite without dorsope, laterope present submedially, spiracles slightly protruding; hypopygium large, glabrous, apically with a row of long setae; ovipositor sheath slender, about 0.8 times as long as first tergite, about 0.10 times fore wing, sparsely setose.

Biology.— Unknown; associated with ant nests of the genus *Formica*, but not reared. This association needs critical evaluation (Shaw, 1985).

Distribution.— Small Holarctic genus; three species known.

Myiocephalus boops (Wesmael, 1835)
(figs 336-345)

Microctonus boops Wesmael, 1835: 59.

Loxocephalus boops; Tobias, 1986: 247.

Loxocephalus longipes Foerster, 1862: 252.

Material.— 2 ♀♀ + 2 ♂♂ (BMNH): Taiwan, Tseuy Feng, 2000m, viii.[19]79, I. Gauld; 1 ♀ (ZAU): Heilongjiang, Dailing, 24.vii.1977, He Junhua, no. 771714.

Distribution.— China: Heilongjiang & Taiwan; Holarctic region.

Genus *Perilitus* Nees, 1818
(figs 346-387)

Perilitus Nees, 1818: 302; Shenefelt, 1969: 117; Shaw, 1985: 331. Type species (designated by Haliday in Westwood, 1840): *Bracon rutilus* Nees, 1812.
Scirtetes Hartig, 1838: 255. Type species: no species included. Syn. by Dalla Torre, 1898.

Diagnosis.— Antenna with 20-40 segments, scapus short, its length two times or less than its width; maxillary palp with 5 segments; labial palp with 3 segments; eyes bare, without setae; occipital carina complete or medio-dorsally reduced, ventrally curved towards and joining hypostomal carina; clypeus wider or narrower than face; malar suture present; mandible without medio-longitudinal carina, at most medio-basally rugose, but usually with a ventral carina; propodeum posteriorly with distinct median depression; viens 1-SR and 1-SR+M of fore wing present; vein r-m of fore wing absent; vein M+CU1 of fore wing completely sclerotized; veins SR and 2-M of hind wing unsclerotized; tarsal claws simple; first metasomal tergite petiolate, narrow basally, distinctly broader apically, its spiracles at middle or slightly behind middle, dorsally always sculptured and ventrally never fused, dorsope and laterope absent, but sometimes present; hypopygium medium-sized, sparsely setose; ovipositor sheath slender.

Biology.— Parasites of adult Coleoptera, in particular of Curculionidae, Chrysomelidae and Melandryidae. An Australian species has been reared from nymphs of a morabine grasshopper (Blackith, 1967).

Distribution.— Cosmopolitan; medium-sized genus. Nine species are described from China in this paper. One unidentified species was previously reported from Hunan province, which is actually a new species described below.

Key to Chinese species of the genus *Perilitus* Nees

1. Vein 1-R1 of fore wing as long as or longer than length of pterostigma (figs 364, 355, 363, 367); apex of marginal cell much closer to wing apex than to pterostigma (figs 364, 355, 363, 367); position of vein m-cu of fore wing and body colour variable 2
- Vein 1-R1 of fore wing shorter than length of pterostigma (fig. 359); apex of marginal cell much closer to pterostigma than to wing apex (fig. 359); vein m-cu of fore wing distinctly postfurcal (fig. 359); body dark reddish brown; length of body 2.8-3.0 mm. Heilongjiang *P. xynus* spec. nov.
2. Laterope of first metasomal tergite large and deep (figs 350, 352, 374); ovipositor sheath broader, transversely rugose, its setae much shorter than its width (fig. 350) 3
- Laterope of first metasomal tergite absent (figs 366, 370, 387); ovipositor sheath slender, nearly smooth, its setae as long as or longer than its width (fig. 383) 4
3. Vein cu-a of fore wing interstitial (fig. 346); body brownish yellow, dorsal face of mesosoma brown; antennal segments 27; body smaller; length of body 2.6 mm. Yunnan *P. lateropus* spec. nov.
- Vein cu-a of fore wing distinctly postfurcal (fig. 371); body yellowish brown,

- metanotum, propodeum and first metasomal tergite dark; antennal segments 34; body larger; length of body 3.8 mm. Zhejiang *P. liui* spec. nov.
4. Vein 1-SR of fore wing comparatively long (figs 379, 384); vein cu-a of fore wing interstitial (figs 379, 384); vein m-cu of fore wing distinctly antefurcal (figs 379, 384); body yellowish 5
- Vein 1-SR of fore wing short (figs 355, 363, 367, 375); vein cu-a of fore wing distinctly postfurcal (figs 355, 363, 367, 375); vein m-cu of fore wing slightly postfurcal (figs 355, 363, 367, 375); body black or brownish yellow with propodeum and first metasomal tergite partly brown 6
5. Occipital carina complete (fig. 386); vein 1-SR of fore wing as long as vein m-cu (fig. 384); pronotal side largely macro-punctate; medio-posterior depression of scutellum large and transverse; antennal segments 36 (♀) or 39 (♂); antenna of male dark brown; body completely brownish yellow; length of body 5.0-5.5. Hainan *P. longivenus* spec. nov.
- Occipital carina shortly interrupted dorso-medially (fig. 380); vein 1-SR of fore wing much shorter than vein m-cu (fig. 379); pronotal side largely crenulate; medio-posterior depression of scutellum small; antennal segments 34-35 (♀) or 36 (♂); antenna of male brownish yellow, apically darker; body brownish yellow with mesoscutum black; length of body 4.7-5.3 mm. Hubei, Guizhou, Guangxi and Yunnan *P. nigriscutum* spec. nov.
6. Dorsope present (fig. 378); body almost entirely black; antenna of male with 38-39 segments; large species, length of body 4.2-4.6 mm. Guizhou *P. longus* spec. nov.
- Dorsope absent (figs 358, 366, 370); body at least partly yellowish; antennal segments of male unknown; smaller species, length of body 2.4-3.8 mm 7
7. Body blackish brown, head pale brownish yellow; width of head twice its length; length of eye 1.9 times temple (fig. 356); length of first metasomal tergite 1.8 times its apical width (fig. 358); antennal segments of female 28-30; length of body 3.0-3.6. Zhejiang *P. ruficephalus* spec. nov.
- Body brownish yellow or reddish yellow, propodeum and first metasomal tergite brownish; width of head 1.7-1.8 times its length; length of eye 1.6 times temple (figs 364, 369); length of first tergite 2.1-2.4 times its apical width (figs 366, 370); antennal segments of female 24 (unknown of *P. oulemae*) 8
8. Face medially with a small protuberance; clypeus distinctly convex; lateral lobes of mesoscutum setose; precoxal sulcus wide and coarsely crenulate; propodeum and metapleuron not differentiated, similarly reticulate; vein 1-SR of fore wing much longer (fig. 367); first metasomal tergite longitudinally weakly rugose (fig. 370); length of body 3.8 mm. Hunan *P. oulemae* spec. nov.
- Face medially without a small protuberance; clypeus slightly convex; lateral lobes of mesoscutum glabrous; precoxal sulcus narrow and regularly crenulate; propodeum and metapleuron differentiated, propodeum posteriorly with strong carinae; vein 1-SR of fore wing shorter (fig. 363); first metasomal tergite longitudinally regularly striate (fig. 366); length of body 2.4 mm. Zhejiang *P. aequorus* spec. nov.

Perilitus aequorus spec. nov.
(figs 363-366)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt Gutian, 20.vii.1986, Xu Huiliang, no. 863693.

Holotype, ♀, length of body 2.4 mm, of fore wing 2.4 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 24, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 3.0, 2.4 and 1.5 times their width, respectively, flagellum except first segment thickened; apical segments of maxillary palp missing; OOL:OD:POL = 9:5:13; occipital carina complete, straight in dorsal view; length of eye in dorsal view 1.6 times temple; temple roundly narrowed behind eyes; temple, vertex and frons smooth; frons flat; face nearly flat, finely transversely punctate-rugose, its width 1.3 times its height; intertentorial line 3.2 times tentorio-ocular line; clypeus slightly convex, finely punctate, ventral margin evenly curved, its width 2.6 times its height; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly and posteriorly crenulate, remainder largely smooth; precoxal sulcus narrow, regularly crenulate, anterior third absent; mesopleuron largely smooth, shiny, dorsally with some rugae; metapleuron small, irregularly rugose; notauli narrow and crenulate, posteriorly narrow and rugose; mesoscutum medially finely punctulate, shiny and densely setose, lateral lobes glabrous; scutellar suture deep with one distinct carina; scutellum smooth, medio-posterior depression distinct; propodeum irregularly rugose, posteriorly with strong transverse and lateral carinae.

Wings.— Fore wing: length of vein 1-R1 1.1 times length of pterostigma; r issued from middle of pterostigma; vein SR1+3-SR ending near wing apex; 1-SR:m-cu = 3:13; r:2-SR:SR1+3-SR = 8:22:60; m-cu slightly postfurcal; 1-CU1:2-CU1 = 4:17. Hind wing: 1-M:1r-m:2-SC+R = 8:12:10.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 5.1, 11.1 and 9.0 times their width, respectively; length of hind tibial spurs 0.33 and 0.27 times hind basitarsus.

Metasoma.— Length of first tergite 2.4 times its apical width, first tergite widened apically, spiracles at middle of tergite, not protruding, laterope and dorsope absent, its surface distinctly longitudinally regularly striate, apically smooth; following tergites smooth; second tergite and third tergite basally with lateral fold; hypopygium small, sparsely setose, nearly smooth; ovipositor sheath missing; ovipositor slender, its length 0.35 times fore wing, 1.4 times first tergite, subapically without notch dorsally and ventrally without teeth.

Colour.— Reddish yellow; head paler, side of scutellum, metanotum, propodeum and first tergite dark brown, basal third of first tergite yellow, second and third tergites latero-basally brownish; antenna brown, basally yellowish; legs brownish yellow, apical third of hind tibia and hind tarsus darker; wing membrane hyaline, pterostigma and veins yellow to colourless.

Note.— This species is similar to *P. rutilus* (Nees, 1812), but differs in having 24 antennal segments, the first flagellar segment much narrower than following segments; the precoxal sulcus narrow, regularly crenulate; the mesopleuron largely smooth; and the propodeum posteriorly with strong transverse and lateral carinae.

Perilitus lateropus spec. nov.
(figs 345-354)

Material.— Holotype, ♀ (ZAU), Yunnan, Butterfly Spring, 11.v.1981, He Junhua, no. 810747.

Holotype, ♀, length of body 2.6 mm, of fore wing 2.6 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 27, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 4.3, 3.7 and 1.7 times their width, respectively; length of maxillary palp 0.9 times height of head; OOL:OD:POL = 14:4:9; length of eye in dorsal view 1.4 times temple; temple first parallel-sided, then distinctly narrowed behind eyes; temple, vertex and frons smooth; face weakly rugose-punctate, nearly flat, its width 1.4 times its height; intertentorial line twice tentorio-ocular line; clypeus smooth, dorsally convex, ventral margin medially straight, its width 1.7 times its height; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side largely crenulate (medially weakly), near dorsal margin smooth; precoxal sulcus fully present, S-shaped, rugose; remainder of mesopleuron smooth except rugose dorsal area; metapleuron irregularly rugose; notauli deep, narrow and crenulate; mesoscutum punctate and densely setose; scutellar suture deep and wide with one carina; scutellum smooth with small medio-posterior depression (with one median carina); propodeum irregularly rugose, without distinct carinae.

Wings.— Fore wing: length of vein 1-R1 1.1 times length of pterostigma; r issued from middle of pterostigma; vein SR1+3-SR ending near wing apex; 1-SR:m-cu = 2.5:16; r:2-SR:SR1+3-SR = 8:22:65; m-cu interstitial; cu-a almost interstitial. Hind wing: 1-M:1r-m:2-SC+R = 12:8:8.

Legs.— Hind coxa antero-dorsally rugose; length of hind femur, tibia and basitarsus 6.1, 11.7 and 9.3 times their width, respectively; length of hind tibial spurs 0.32 and 0.29 times hind basitarsus.

Metasoma.— Length of first tergite 2.3 times its apical width, first tergite widened apically, spiracles behind middle, just protruding, laterope large and deep, at basal third, dorsope absent, its surface irregularly rugose, apico-laterally longitudinally striate; following tergites and hypopygium smooth; second tergite and basal part of third tergite with lateral fold; ovipositor sheath comparatively wide, much wider than (1.3 times) width of hind basitarsus, its length 0.31 times fore wing, 1.5 times first tergite, its surface distinctly transversely rugose, densely setose, length of setae much shorter than width of sheath; ovipositor wide and flat, subapically without a notch dorsally and ventrally without teeth.

Colour.— Brownish yellow; mesoscutum, scutellum, metanotum, propodeum and first tergite medially brownish; sheath yellowish brown; legs yellow, tarsus darker; wing membrane subhyaline, pterostigma yellowish brown, basally paler, veins dark yellowish brown to yellow.

Note.— This species is similar to *P. luteus* (Szépligeti, 1914), but differs in having the veins m-cu and cu-a of fore wing almost interstitial, and the antenna consisting of 27 segments. It is also similar to *P. areolaris* Gerdin & Hedqvist, 1984, but differs in having the vein cu-a of fore wing interstitial, the ovipositor sheath wider, its setae much shorter than width of sheath, and the body mainly brownish yellow.

Perilitus liui spec. nov.
(figs 371-374)

Material.— Holotype, ♀ (ZAU), Zhejiang, Qinyuan, Mt Baishanzu, 18.iv.1994, Wu Hong, no. 946040.

Holotype, ♀, length of body 3.8 mm, of fore wing 3.4 mm.

Head.— Width of head in dorsal view 1.8 times its length; antennal segments 34, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 4.2, 3.6 and 1.6 times their width, respectively; length of maxillary palp as long as height of head; OOL:OD:POL = 18:5:12; length of eye in dorsal view 1.3 times temple; temple distinctly narrowed behind eyes; temple and vertex smooth and setose; frons smooth; face nearly flat, weakly rugose, its width 1.5 times its height; intertentorial line 2.2 times tentorio-ocular line; clypeus punctate-rugose, ventrally smooth, ventral margin medially straight, its width 2.1 times its height; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side largely crenulate-rugose; precoxal sulcus fully present, wide, irregularly rugose; remainder of mesopleuron smooth except rugose antero-dorsal area; metapleuron irregularly rugose; notauli deep, narrow and crenulate, posteriorly wide and irregularly rugose; mesoscutum weakly punctulate, nearly smooth; scutellar suture deep with one distinct carina; scutellum weakly rugulose, nearly smooth, medio-posterior depression small; propodeum irregularly rugose and distinctly carinate, dorsal face short, posterior area large and slanted, moderately convex, latero-posteriorly slightly pointed.

Wings.— Fore wing: length of vein 1-R1 0.9 times length of pterostigma; r issued from middle of pterostigma; vein SR1+3-SR ending near wing apex; 1-SR:m-cu = 5.5:21; r:2-SR:SR1+3-SR = 8:23:63; m-cu interstitial; 1-CU1:2-CU1 = 3:19. Hind wing: 1-M:1r-m:2-SC+R = 8:20:11.

Legs.— Hind coxa distinctly rugose; length of hind femur, tibia and basitarsus 5.5, 11.7 and 7.5 times their width, respectively; length of hind tibial spurs 0.27 and 0.23 times hind basitarsus.

Metasoma.— Length of first tergite 2.3 times its apical width, first tergite widened apically, spiracles behind middle, just protruding, laterope deep and large, at basal third, dorsope absent, its surface irregularly rugose, laterally longitudinally regularly striate; following tergites smooth; second and basal part of third tergites with lateral fold; hypopygium nearly smooth; ovipositor sheath comparatively wide, distinctly greater than (1.7 times) width of hind basitarsus, its length 0.32 times fore wing, 1.3 times first tergite, its surface distinctly transversely striate, densely setose, length of setae much shorter than width of sheath; ovipositor flat and wide, subapically without a notch dorsally and ventrally without teeth.

Colour.— Yellowish brown; metanotum, propodeum and first tergite brownish; antenna dark yellowish brown; palpi yellowish; leg brownish yellow, telotarsus brown, other segments of tarsi and hind tibia apically rather yellowish brown; wing membrane hyaline with brownish setae, pterostigma and veins yellowish brown.

Note.— This species is named after Prof. Dr Liu Shu-sheng, the well-known Chinese entomologist of Zhejiang Agricultural University, Hangzhou.

Perilitus longus spec. nov.
(figs 375-378)

Material.— Holotype, ♂ (ZAU), Guizhou, Mt Fanjing, Huixiangping, 11.vii.1993, Xu Zaifu, no. 936604. Paratype (1 ♂; ZAU): 1 ♂, same locality and date, Yao Songlin, no. 937044.

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

Head.— Width of head in dorsal view twice its length; antennal segments 39, length of antenna 1.5 times length of body, length of third segment 1.3 times fourth segment, length of third, fourth and penultimate segments 2.6, 2.0 and 1.8 times their width, respectively; length of maxillary palp 1.3 times height of head; OOL:OD:POL = 17:8:14; occipital carina complete; length of eye in dorsal view 1.4 times temple; temple distinctly narrowed behind eyes; temple and vertex finely punctate, shiny, nearly smooth; frons smooth, concave; face transversely rugose dorsally, ventrally finely punctate, nearly smooth, submedially longitudinally slightly concave, its width 1.7 times its height; intertentorial line 1.4 times tentorio-ocular line; clypeus smooth, convex, ventral margin medially slightly concave, its width 2.1 times its height; length of malar space 1.4 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side largely reticulate-rugose; precoxal sulcus medially widely present and irregularly rugose; remainder of mesopleuron dorsally and anteriorly rugose, only speculum and ventrally smooth; metapleuron completely irregularly rugose; notauli deep, narrow and crenulate; mesoscutum finely punctulate, nearly smooth, entirely setose; scutellar suture deep with three distinct carinae; scutellum smooth and convex, medio-posterior depression transverse and finely crenulate; propodeum coarsely irregularly rugose, without distinct carinae.

Wings.— Fore wing: length of vein 1-R1 1.2 times length of pterostigma; r issued from middle of pterostigma; vein SR1+3-SR ending near wing apex; 1-SR:m-cu = 5:20; r:2-SR:SR1+3-SR = 8:22:72; m-cu interstitial; 1-CU1:2-CU1 = 2:30. Hind wing: 1-M:1r-m:2-SC+R = 20:26:15.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.6, 10.6 and 8.8 times their width, respectively; length of hind tibial spurs 0.34 and 0.31 times hind basitarsus.

Metasoma.— Length of first tergite 2.1 times its apical width, first tergite distinctly widened apically, spiracles behind middle, slightly protruding, laterope absent, dorsope present and large, its surface distinctly longitudinally regularly striate; following tergites smooth; second tergite with lateral fold.

Colour.— Blackish brown; face, clypeus, orbits and mandibles yellowish brown, prothorax ventrally and tegulae dark reddish brown; antenna dark brown to black; palpi yellowish; legs yellowish brown; hind tibia (except base) and tarsus brown; wing membrane brownish, pterostigma and veins brown.

Variation.— Length of body 4.2-4.6 mm, of fore wing 4.0-4.2 mm, antennal segments 38-39; vein m-cu of fore wing slightly postfurcal.

Note.— This species is similar to *P. longiradialis* Tobias, 1986, but differs in having the antenna with 38-39 segments, the vein SR1+3-SR more straight and ending near wing apex, the vein cu-a of fore wing almost interstitial, and the colour of legs much paler.

Perilitus longivenus spec. nov.
(figs 384-387)

Material.— Holotype, ♀ (BMNH), China, Hainan, Tien Feng Mts, v.[19]83, Boucek. Paratype (1 ♂): 1 ♂ (BMNH), same data as holotype.

Holotype, ♀, length of body 5.0 mm, of fore wing 4.4 mm.

Head.— Width of head in dorsal view twice its length; antennal segments 36, its length 1.1 times length of body, third segment as long as fourth segment, length of third, fourth and penultimate segments 3.5, 3.5 and 1.8 times their width, respectively; length of maxillary palp 1.1 times height of head; OOL:OD:POL = 9:6:10; occipital carina complete; eye large, length of eye in dorsal view 2.1 times temple; temple sharply narrowed behind eyes; temple and vertex punctate; vertex near posterior ocelli and frons transversely striate; face punctate, dorsally transversely rugose and with a minute protuberance, its width equal to its height; intertentorial line 2.6 times tentorio-ocular line; clypeus flat, smooth, ventral margin medially round, its width twice its height, width of clypeus slightly greater than width of face; length of malar space 0.5 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side anteriorly, medially and posteriorly crenulate, ventrally nearly smooth, dorsally punctate-rugose; precoxal sulcus fully present, wide and shallow, irregularly rugose; mesopleuron largely punctate, dorsally rugose; metapleuron irregularly rugose; metapleural flange finger-like, round apically; notauli deep, narrow and crenulate, posteriorly wide and irregularly rugose; mesoscutum and scutellum finely punctate, shiny; scutellar suture with five distinct carinae; scutellum with small medio-posterior depression; propodeum short, dorsal face and posterior face forming a right angle, irregularly rugose, with distinct lateral carinae.

Wings.— Fore wing: length of vein 1-R1 1.2 times length of pterostigma; r issued behind middle of pterostigma; vein SR1+3-SR ending near wing apex; r:2-SR:SR1+3-SR = 9:28:83; 1-SR:m-cu:2-SR+M = 11:10:11; 1-SR long; m-cu distinctly antefurcal; cu-a interstitial. Hind wing: 1-M:1r-m:2-SC+R = 14:16:11.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 6.2, 12.1 and 10.7 times their width, respectively; length of hind tibial spurs subequal, 0.30 times hind basitarsus.

Metasoma.— Length of first tergite 2.5 times its apical width, first tergite widened apically, spiracles behind middle, obviously protruding, laterope and dorsope absent, its surface distinctly longitudinally regularly striate, apically smooth; following tergites smooth; second tergite and third tergite basally with lateral fold; ovipositor sheath slender, its length 0.45 times fore wing, 1.1 times first tergite, its width less than width of hind basitarsus, sparsely setose, length of setae longer than width of sheath; ovipositor slender, subapically with a notch dorsally, ventrally without teeth.

Colour.— Brownish yellow; posterior part of propodeum and first metasomal tergite medially brown, first tergite basally pale yellow; face, clypeus, scapus, pedicellus and tegulae yellow; flagellum brownish yellow, apically dark; legs brownish yellow; fore legs paler, hind tibia and tarsus darker; sheath brownish yellow, apically brown; wing membrane hyaline, pterostigma and veins yellowish brown, outer mar-

gin of pterostigma and veins C+SC+R brownish.

Variation.— Male similar to female, but differs in length of body 5.5 mm, of fore wing 4.7 mm; antennal segments 39, much thicker and darker; apical half of first tergite dark brown; length of eye 1.3 times temple; width of face 1.5 times its height; width of clypeus narrower than width of face.

Note.— This species is similar to *P. nigriscutum* spec. nov., their difference listed in the key above.

Perilitus nigriscutum spec. nov.
(figs 379-383)

Material.— Holotype, ♀ (ZAU), Hubei, Lixian, 1979, Ming Guangpei, no. 870415. Paratypes (3 ♀♀ + 1 ♂): 1 ♀ (RMNH), Hubei, 1982, staff member of Agricultural Department of Hubei Province, no. 827004; 1 ♀ (ZAU), Guizhou, Guiyang, 16.v.1981, He Junhua, no. 814155; 1 ♀ (ZAU), Guangxi, Leye, x.1982, Wang Bing, no. 826450; 1 ♂ (ZAU), Yunnan, Mangshi, 9.v.1981, He Junhua, no. 813203.

Holotype, ♀, length of body 5.0 mm, of fore wing 5.1 mm.

Head.— Width of head in dorsal view 1.9 times its length; antennal segments 35, its length 1.1 times length of body, third segment as long as fourth segment, length of third, fourth and penultimate segments 3.3, 3.3 and 1.9 times their width, respectively; length of maxillary palp 0.9 times height of head; OOL:OD:POL = 9:6:10; occipital carina shortly interrupted medio-dorsally; eye large, length of eye in dorsal view 2.5 times temple; temple sharply narrowed behind eyes; temple and vertex punctate; frons small, slightly concave, smooth; face densely punctate, its width 1.1 times its height; intertentorial line 3.6 times tentorio-ocular line; clypeus flat, nearly smooth, ventral margin medially round, its width 2.1 times its height; width of clypeus greater than width of face; length of malar space 0.4 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely macro-punctate; precoxal sulcus fully present, shallow and wide, irregularly rugose; mesopleuron largely punctate, shiny, dorsally rugose; metapleuron small, irregularly rugose; metapleural flange large, finger-like; notauli deep, narrow and crenulate, posteriorly wide, foveate; mesoscutum punctate, shiny, entirely setose; scutellar suture deep with three distinct carinae; scutellum finely punctate, nearly smooth, medio-posterior depression transverse; propodeum short, finely rugose, with distinct median and lateral carinae.

Wings.— Fore wing: length of vein 1-R1 1.1 times length of pterostigma; r issued behind middle of pterostigma; vein SR1+3-SR ending near wing apex; 1-SR:m-cu:2-SR+M = 5:12:8; r:2-SR:SR1+3-SR = 8:20:75; m-cu distinctly antefurcal; 1-CU1:2-CU1 = 1:18. Hind wing: 1-M:1r-m:2-SC+R = 13:13:10.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 6.0, 11.0 and 10.0 times their width, respectively; length of hind tibial spurs 0.27 and 0.23 times hind basitarsus.

Metasoma.— Length of first tergite 2.5 times its apical width, first tergite widened apically, spiracles behind middle, slightly protruding, laterope and dorsope absent, its surface weakly longitudinally foveate-rugose, medially and apically nearly smooth; following tergites smooth; second tergite and base of third tergite with lateral fold; hypopygium medium-sized, nearly glabrous; ovipositor sheath slender, apically slightly widened, its length 0.34 times fore wing, 1.4 times first tergite, its

width less than width of hind basitarsus, sparsely setose, length of setae longer than width of sheath; ovipositor slender.

Colour.— Brownish yellow, mesoscutum black; antenna brownish yellow, apically darker; legs brownish yellow; sheath yellowish, apically brown; wing membrane hyaline, pterostigma and veins brownish yellow.

Variation.— Length of body 4.7-5.3 mm, of fore wing 4.1-5.1 mm; antennal segments 34-35 (♀) or 36 (♂); vein cu-a of fore wing distinctly interstitial; frontal aspect of head, scapus and pedicellus yellowish.

Male is similar to female, but differs in having antennal segments wider and length of antenna 1.3 times as long as body; OOL:OD:POL = 12:7:11; length of eye in dorsal view 1.3 times temple; width of face 1.8 times its height; width of clypeus shorter than width of face; intertentorial line twice tentorio-ocular line; length of malar space 0.8 times basal width of mandible; flagellum dark brown; body entirely brownish yellow, and only apex of metasoma brownish.

Note.— This species is similar to *P. kokoujevi* Tobias, 1986, but can be separated by having the body brownish yellow, the vein SR1+3-SR not S-shaped, the antenna with 34-36 segments, much longer than length of body, and the vein cu-a of fore wing interstitial.

Perilitus oulemae spec. nov.
(figs 367-370)

Euphorine braconid (!), Xia et al, 1988: 32.
Perilitus spec., He et al, 1991: 40.

Material.— Holotype, ♀ (ZAU), Hunan, Changsha, vii.1981, Wu Huifen, ex a pupa of *Oulema oryzae* (Kuwayama), no. 816061.

Holotype, ♀, length of body 3.8 mm, of fore wing 3.3 mm.

Head.— Width of head in dorsal view 1.8 times its length; remaining antennal segments 8, length of third segment 1.1 times fourth segment, length of third and fourth segments 2.8 and 2.7 times their width, respectively; length of maxillary palp 1.1 times height of head; OOL:OD:POL = 12:5:11; length of eye in dorsal view 1.6 times temple; temple roundly narrowed behind eyes; temple and vertex finely punctulate, nearly smooth; frons smooth, flat; face transversely rugose-punctate, densely setose, medially with a small protuberance, its width 1.3 times its height; intertentorial line 2.3 times tentorio-ocular line; clypeus distinctly convex, sparsely punctate, nearly smooth, ventral margin medially straight, its width 1.9 times its height; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side anteriorly and posteriorly coarsely crenulate, postero-ventrally largely smooth, remainder largely rugose; precoxal sulcus fully present, wide, coarsely crenulate; mesopleuron largely finely punctate, dorsally rugose; metapleuron reticulate as propodeum; notauli deep, narrow and crenulate, posteriorly wide, not reaching posterior margin of mesoscutum; mesoscutum finely punctate, lateral lobes posteriorly nearly smooth, entirely setose; scutellar suture wide and deep, with three distinct carinae; scutellum smooth, medio-posterior depression very small, almost absent; propodeum reticulate, without distinct carinae.

Wings.— Fore wing: length of vein 1-R1 1.1 times length of pterostigma; r issued from middle of pterostigma; vein SR1+3-SR ending near wing apex; 1-SR:m-cu = 5:15; r:2-SR:SR1+3-SR = 8:23:62; m-cu slightly postfurcal; 1-CU1:2-CU1 = 3:22. Hind wing: 1-M:1r-m:2-SC+R = 10:12:10.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 5.5, 11.0 and 9.3 times their width, respectively; length of hind tibial spurs 0.32 and 0.27 times hind basitarsus; claws simple.

Metasoma.— Length of first tergite 2.1 times its apical width, first tergite distinctly widened apically, spiracles behind middle, slightly protruding, laterope and dorsope absent, its surface weakly longitudinally rugose, medially rugae weaker; following tergites smooth; second tergite with lateral fold; ovipositor sheath slender, narrower than width of hind basitarsus, its length 0.29 times fore wing, 1.1 times first tergite, sparsely setose, length of setae longer than width of sheath; ovipositor slender, subapically with a notch dorsally, ventrally without teeth.

Colour.— Brownish yellow; mesoscutum, scutellum and first tergite reddish, propodeum and metapleuron brownish; antenna yellowish brown; palpi pale yellow; legs brownish yellow, hind tibia apically darker; ovipositor sheath brown; wing membrane hyaline, pterostigma and veins yellowish brown.

Biology.— Parasite of pupa of *Oulema oryzae* (Kuwayama) (= *Lema oryzae*) (Chrysomelidae).

Note.— This species is similar to *P. rutilus* (Nees, 1812), but differs in having the first metasomal tergite weakly longitudinally rugose, spiracles just protruding, the vein 1-SR of fore wing longer, the notauli posteriorly wider and foveate, the vein m-cu of fore wing slightly postfurcal, and the metapleuron and propodeum similarly reticulate. It also resembles *P. areolaris* Gerdin & Hedqvist, 1984, but can be separated from the latter by having the body largely brownish yellow, only propodeum and first tergite brown, the scutellar suture with 3 carinae, the scutellum without medio-posterior depression, the precoxal sulcus wide, the ovipositor apically without teeth ventrally, and the propodeum and metapleuron similarly reticulate.

Perilitus ruficephalus spec. nov
(figs 355-358)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt Tianmu, 20.vii.1987, Chen Xuexin, no. 872154. Paratypes (1 ♀ + 3 ♂♂; ZAU, RMNH): 1 ♂, same data as holotype, no. 872147; 1 ♀, same locality as holotype, 21.vii.1987, Lou Xiaoming, no. 874395; 2 ♂♂, same locality as holotype, 2-4.vi.1990, Shi Zuhua, nos 901873, 901876.

Holotype, ♀, length of body 3.0 mm, of fore wing 3.0 mm.

Head.— Width of head in dorsal view twice its length; antennal segments 30, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 2.9, 2.4 and 1.2 times their width, respectively; apical segments of maxillary palp missing; OOL:OD:POL = 11:5:10; occipital carina dorsally reduced; length of eye in dorsal view 1.9 times temple; temple roundly narrowed behind eyes; temple and vertex smooth; frons flat, smooth; face flat, medially weakly transversely rugose, laterally finely punctulate, nearly smooth, its width 1.5 times its height; intertentorial line 2.1 times tentorio-ocular line; clypeus slightly convex, finely punctate, nearly smooth, ventral margin medially evenly curved, its width 1.8 times its height;

length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side largely irregularly crenulate, dorsally sparsely punctate; precoxal sulcus fully present, shallow and wide, irregularly foveate-rugose; mesopleuron only speculum smooth, remainder punctate or rugose; metapleuron irregularly rugose; notauli narrow and crenulate, posteriorly narrow and foveate; mesoscutum finely punctate, shiny, entirely setose; scutellar suture with three distinct carinae; scutellum finely punctate, medio-posterior depression narrow and transverse; propodeum irregularly rugose, posteriorly with irregular carinae.

Wings.— Fore wing: length of vein 1-R1 1.1 times length of pterostigma; r issued from middle of pterostigma; vein SR1+3-SR ending near wing apex; 1-SR:m-cu = 4:15; r:2-SR:SR1+3-SR = 7:22:70; m-cu slightly postfurcal; 1-CU1:2-CU1 = 2:20. Hind wing: 1-M:1r-m:2-SC+R = 7:13:12.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 5.2, 10.7 and 8.6 times their width, respectively; length of hind tibial spurs subequal, 0.30 times hind basitarsus.

Metasoma.— Length of first tergite 1.8 times its apical width, first tergite widened apically, spiracles behind middle, not protruding, laterope and dorsope absent, its surface distinctly longitudinally rugose, basally sparsely irregularly rugose; following tergites smooth; second tergite and main part of third tergite with lateral fold; ovipositor sheath slender, much narrower than width of hind basitarsus, its length 0.28 times fore wing, 1.3 times first tergite, sparsely setose, its setae as long as or longer than width of sheath; ovipositor slender, subapically with a notch dorsally, ventrally without teeth.

Colour.— Blackish brown; head pale brownish yellow; face and clypeus yellow; antenna brown, scapus brownish yellow; prothorax and metasoma after first tergite reddish; legs brownish yellow, hind tibia and tarsus brownish; wing membrane hyaline, pterostigma and veins yellowish brown.

Variation.— Length of body and fore wing 3.0-3.5 mm, antennal segments 28-30 (♀) or 28-31 (♂), prothorax, metathorax and metasoma after first tergite largely reddish brown; occipital carina of male complete; colour of male darker, head reddish, occipit black, hind tibia and tarsus brown.

Note.— This species is similar to *P. areolaris* Gerdin & Hedqvist, 1984, but differs in having the medio-posterior depression of scutellum smaller, the scutellar suture with three carinae, and the ovipositor apically without teeth ventrally.

Perilitus xynus spec. nov.
(figs 359-362)

Material.— Holotype, ♀ (ZAU), Heilongjiang, Harbin, ix.1987, Tian Feng, ex a chrysolimid adult, no. 875466. Paratypes (2 ♀♀ + 2 ♂♂; ZAU, 1 ♂; RMNH), same data as holotype.

Holotype, ♀, length of body 3.0 mm, of fore wing 2.4 mm.

Head.— Width of head in dorsal view 1.8 times its length; antennal segments 22, length of third segment equal to fourth segment, length of third, fourth and penultimate segments 3.3, 3.0 and 1.3 times their width, respectively; apical segments of maxillary palp missing; OOL:OD:POL = 9:5:13; length of eye in dorsal view 1.6 times

temple; temple behind eyes parallel-sided, posteriorly narrowed; temple and vertex smooth and setose; frons longitudinally finely rugose, area near middle ocellus smooth; face finely transversely rugose, submedially longitudinally slightly concave, its width equal to its height; intertentorial line 3.9 times tentorio-ocular line; clypeus convex, dorsally nearly smooth, ventrally rugose, ventral margin medially straight, its width 1.7 times its height; malar suture distinct; length of malar space 0.4 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side anteriorly narrowly crenulate, ventrally and medially largely longitudinally rugose, dorsal margin smooth; precoxal sulcus fully present and shallow, anteriorly wide, irregularly foveate-rugose; mesopleuron nearly smooth; metapleuron irregularly rugose; notauli narrow and crenulate, posteriorly narrow; mesoscutum punctate, densely setose, lateral lobes posteriorly glabrous; scutellar suture with one distinct carina; scutellum smooth, medio-posterior depression small with one median carina, posterior margin medially raised; propodeum finely reticulate-rugose, without distinct carinae.

Wings.— Fore wing: length of vein 1-R1 0.7 times length of pterostigma; r issued behind middle of pterostigma; vein SR1+3-SR evenly curved; 1-SR:m-cu = 3:14; r:2-SR:SR1+3-SR = 4:24:42; m-cu distinctly postfurcal; 1-CU1:2-CU1 = 6:16. Hind wing: 1-M:1r-m:2-SC+R = 10:10:7.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.8, 11.0 and 9.3 times their width, respectively; length of hind tibial spurs 0.32 and 0.25 times hind basitarsus.

Metasoma.— Length of first tergite 2.4 times its apical width, first tergite distinctly curved in lateral view, in dorsal view distinctly widened from its base, behind spiracles slightly narrowed apically, nearly parallel-sided, spiracles behind middle of tergite, laterope and dorsope absent, its surface distinctly longitudinally regularly striate, medially narrowly and apically smooth; following tergites smooth; second tergite with lateral fold; hypopygium medium-sized, sparsely setose, nearly smooth; ovipositor sheath missing; ovipositor slender, its length 0.31 times fore wing, 1.3 times first tergite, slightly curved downwards apically, subapically with a notch dorsally, ventrally without teeth.

Colour.— Dark reddish brown; face, clypeus, mandibles, malar space yellowish, prothorax, second and third metasomal tergites reddish brown, antenna brown, basally paler; legs brownish yellow, femora darker; wing membrane hyaline, pterostigma and veins brownish.

Variation.— Length of body 2.8-3.0 mm, of fore wing 2.4-2.5 mm, antennal segments of male 24; ovipositor sheath of paratypes also missing.

Biology.— Reared from an adult chrysomelid.

Note.— This species is similar to *P. dubius* (Wesmael, 1838), but differs in having the vein m-cu of fore wing distinctly postfurcal, the vein 2-SC+R of hind wing shorter than vein 1r-m, and the legs entirely brownish yellow.

Genus *Peristenus* Foerster, 1862

(figs 388-449)

Peristenus Foerster, 1862: 25; Shenefelt, 1969: 36 (as synonym of *Leiophron* Nees, 1818); Shaw, 1985: 332.

Type species (by original designation): *Microctonus barbiger* Wesmael, 1835 [= *Leiophron pallipes* Curtis, 1833].

Diagnosis.— Antennal segments 16-33, apical segment without spine; maxillary palp with 5 segments; labial palp with 3 segments; occipital carina complete, ventrally joining hypostomal carina, at least connected by a branch; malar suture present; notauli distinct; prepectal carina complete; metapleuron entirely rugose; notauli well-defined, crenulate, posteriorly joining just before posterior margin of mesoscutum; spiracles of propodeum at about basal fifth of propodeum; veins 1-SR+M, m-cu, 2-CU1, 3-CU1 of fore wing fully developed; veins r-m, 2-1A of fore wing absent; vein M+CU1 of fore wing unsclerotized; basal, subbasal and first discal cells of fore wing similarly setose; veins cu-a and 1-1A of hind wing fully present; tarsal claws simple; first metasomal tergite widened apically, dorsope and laterope absent, ventrally fused or touching basally; metasomal tergites behind first tergite smooth; second suture absent; second tergite with lateral fold; hypopygium medium-sized, densely setose; ovipositor sheath slender, short, and densely setose; ovipositor slender, distinctly curved downwards; aedeagus of male usually round apically and longer than parameres.

Biology.— Parasites of Hemiptera (Miridae). The early instar nymphs are parasitized and the mature parasite larva emerge from either the mature host nymphs or the adults.

Distribution.— Holarctic, Afrotropical and Oriental regions; medium-sized genus.

Key to Chinese species of the genus *Peristernus* Foerster

1. Mesonotum smooth, absolutely lacking punctation, sometimes only anteriorly with weak punctation (fig. 401) 2
- Mesonotum distinctly punctate (fig. 394) 5
2. Vein 1-R1 of fore wing about half as long as width of pterostigma (fig. 404); head entirely black; hind legs brown; antennal segments of female 16-19; flagellar segments of female slightly thickened and transverse apically (fig. 408); occipital carina connected to hypostomal carina by a branch (fig. 407); length of body 2.0-3.0 mm. China: Xinjiang, Inner Mongolia; Palaearctic region *P. picipes* (Curtis)
- Vein 1-R1 of fore wing about as long as or longer than width of pterostigma (figs 399, 410, 415); head usually with reddish spots; hind legs yellowish, at most hind tibia apically and hind tarsus slightly darker; antennal segments of female 20-24 (but unknown of *P. spretus* spec. nov.); flagellar segments of female and occipital carina variable 3
3. Head, prothorax and mesonotum reddish; vein 1-R1 of fore wing slightly shorter (0.84 times) than width of pterostigma (fig. 399); vein m-cu of fore wing just anterofurcal (fig. 399); legs entirely brownish yellow; length of body 2.8 mm. Guangxi .. *P. spretus* spec. nov.
- Body entirely black; vein 1-R1 of fore wing as long as or longer than (1.0-1.3 times) width of pterostigma (figs 410, 415); vein m-cu of fore wing interstitial or just postfurcal (figs 410, 415); legs with hind tibia apically and hind tarsus slightly darker 4

4. Occipital carina connected to hypostomal carina by a branch (cf. fig. 407); antennal segments of female 23-24; flagellar segments of female broadened and transverse apically, length of penultimate segment 1.1 times its width (fig. 418); first metasomal tergite distinctly widened apically, its length 1.8 times its apical width (fig. 419); length of body 2.5-3.3 mm. Zhejiang *P. furvus* spec. nov.
 - Occipital carina joining hypostomal carina directly (cf. fig. 391); antennal segments of female 22; flagellar segments of female not widened apically, length of penultimate segment 1.6 times its width (fig. 414); first tergite slightly widened apically, its length 2.3 times its apical width (fig. 413); length of body 2.3 mm. Yunnan *P. levigatus* spec. nov.
5. Body yellowish brown, metanotum, propodeum and first metasomal tergite dark brown; antennal segments 20 (♀) or 19-20 (♂); length of body 2.2-2.7 mm. Liaoning *P. xanthos* spec. nov.
 - Body black, at most with pale parts; antennal segments variable 6
6. Antennal segments of male 31-33 7
 - Antennal segments of male 20-25 8
7. Vein cu-a of fore wing almost interstitial (fig. 425); vein r of fore wing short (fig. 425); length of first metasomal tergite 1.5 times its apical width (fig. 429); mesopleuron more smooth (fig. 428); veins of fore wing yellowish; antennal segment 31; length of body 3.0 mm. Liaoning *P. procerus* spec. nov.
 - Vein cu-a of fore wing distinctly postfurcal (fig. 420); vein r of fore wing comparatively long (fig. 420); length of first metasomal tergite twice its apical width (fig. 424); mesopleuron more rugose (fig. 423); veins of fore wing distinctly brown; antennal segment 33; length of body 3.8 mm. Zhejiang *P. rugosus* spec. nov.
8. First tergite shorter, 1.5 times its apical width (fig. 437); basal cell much sparser setose than first discal cell; frons, mesopleuron and mesoscutum macropunctate (fig. 435); propodeum without a distinct narrow punctate basal area; occipital carina ventrally connected to hypostomal carina by a branch (cf. fig. 407). Length of body 3.1 mm. Zhejiang *P. prodigiosus* spec. nov.
 - First tergite longer, 1.7-2.2 times its apical width (figs 430, 441, 445); basal and first discal cells similarly setose; frons, mesopleuron punctate or finely punctate (figs 431, 440, 447); mesoscutum largely rugose or smooth; propodeum with a distinct narrow punctate basal area; occipital carina variable 9
9. Occipital carina ventrally connected to hypostomal carina by a branch (cf. fig. 407); vein m-cu of fore wing distinctly antefurcal (fig. 430); antennal segment 21-22 (♀) or 20 (♂); length of body 2.7-2.9 mm. Guangxi *P. nitidoides* spec. nov.
 - Occipital carina joining hypostomal carina ventrally (cf. fig. 391); vein m-cu of fore wing just antefurcal to postfurcal (fig.); antennal segment 20-24 (♀) or 23-25 (♂); length of body 2.7-3.3 mm 10
10. Frons distinctly punctate (figs 439, 440); basal flagellar segments of male wider than female and punctate, with many sensillae (figs 442, 443); first metasomal tergite slightly widened apically, 1.8-2.2 times its apical width (fig. 441); length of body 2.6-3.2 mm. Liaoning, Hunan, and Taiwan *P. pallipes* (Curtis)
 - Frons finely punctate, nearly smooth (figs 446, 447); basal flagellar segments of male smooth and not wider than of female, without sensillae (figs 448, 449); first metasomal tergite distinctly widened apically, 1.7 times its apical width (fig. 445); length of body 2.7-3.3 mm. Zhejiang and Hunan *P. montanus* spec. nov.

Peristenus furvus spec. nov.
(figs 415-419)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt W Tianmu, Laodian-Xianrending, 1250-1547 m, 17-18.v.1988, Xu Huiliang, no. 885962; Paratypes (4 ♀♀ + 2 ♂♂): 1 ♀ (RMNH), same locality and date, Xu Huiliang, no. 885818; 1 ♀ (ZAU), same locality and date, Fan Jinjiang, no. 884436; 1 ♂ (ZAU), same locality, 6.vi.1989, Ma Qun, no. 895127; 2 ♀♀ + 2 ♂♂ (ZAU), Zhejiang, Mt W Tianmu, 27, 29.vii.1984, 21.vii.1987, 2-4.vi.1990, Wu Xiaojing, Qian Ying, Chen Xuexin, He Junhua, nos 844317 (♀), 842847 (♂), 873067 (♀), 904794 (♂).

Holotype, ♀, length of body 3.3 mm, of fore wing 2.7 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 24, apically distinctly thickened (fig. 418), apical segment long, length of third segment 1.25 times fourth segment, length of third, fourth and penultimate segments 3.3, 2.7 and 1.1 times their width, respectively; apical (= fifth) segment of maxillary palp 1.7 times fourth segment; length of maxillary palp 0.9 times height of head; occipital carina ventrally connected to hypostomal carina by a branch; OOL:OD:POL = 12:4:12; length of posterior side of stemmaticum 1.8 times its lateral sides; eye in dorsal view as long as temple; temple roundly slightly narrowed behind eyes; vertex and temple smooth; frons finely punctate, medially smooth, with a thin median frontal carina; face densely evenly punctate and setose, its width 1.4 times its height; intertentorial line 2.6 times tentorio-ocular line; clypeus sparsely punctate, nearly smooth, with sparse long setae, ventral margin round and medially slightly raised, its width 2.3 times its height; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely crenulate, dorsally punctate, medio-ventrally narrowly smooth; precoxal sulcus only medially narrowly present, distinctly oblique, sparsely crenulate; remainder of mesopleuron largely smooth, antero-dorsally punctate-rugose; notauli well-defined, crenulate; mesoscutum smooth and glabrous, only middle lobe anteriorly punctate and setose; scutellar suture wide with one distinct median carina and two weak carinae; scutellum, nearly smooth, medio-posterior depression small and semicircular; propodeum entirely reticulate-rugose, only basally narrowly punctate with a distinct basal transverse carina.

Wings.— Fore wing: length of vein 1-R1 0.44 times length of pterostigma, equal to width of pterostigma; r very short, issued just behind middle of pterostigma; r:2-SR:SR1+3-SR = 2:25:45; m-cu interstitial; 1-CU1:2-CU1 = 5:23, 1-CU1 oblique. Hind wing: 1-M:1r-m:2-SC+R = 13:16:10.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.3, 10.0 and 8.3 times their width, respectively; length of hind tibial spurs 0.36 and 0.33 times hind basitarsus.

Metasoma.— Length of first tergite 1.8 times its apical width, its surface irregularly longitudinally rugose, apically distinctly widened, spiracles at middle of tergite; ovipositor sheath just visible, 0.05 times fore wing, slender, and densely setose; ovipositor slender and distinctly curved downwards.

Colour.— Black; temple behind eyes with a narrow spot; clypeus reddish brown; palpi yellowish; antenna yellowish brown, apically darker; metasoma behind first tergite dark reddish brown; tegulae and legs yellowish brown, hind tibia apically and tarsus slightly darker; wing membrane hyaline with many brownish setae;

pterostigma brown, basally narrowly paler, veins brownish to colourless.

Variation.— Length of body 2.5-3.3 mm, of fore wing 2.4-2.7 mm, antennal segments 23-24, male similar to female, but the penultimate segment of antenna 1.5 times its width; aedeagus apically round and longer than parameres.

Note.— This species is similar to *P. laeiventrus* (Ruthe, 1856), but differs in having the first metasomal tergite much shorter and distinctly widened apically.

Peristernus levigatus spec. nov.
(figs 410-414)

Material.— Holotype, ♀ (ZAU), Yunnan, Lanchang, 20.iv.1981, He Junhua, no. 814340; Paratype: 1 ♂ (ZAU), Yunnan, Jinchi, 17.v.1983, Liao Yichang, no. 841275.

Holotype, ♀, length of body 2.3 mm, of fore wing 2.3 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 22, antenna shorter than body, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.0, 2.5 and 1.6 times their width, respectively; apical (fifth) segment of maxillary palp 1.2 times fourth segment; length of maxillary palp 0.7 times height of head; occipital carina ventrally joining hypostomal carina; OOL:OD:POL = 11:4:10; length of posterior side of stemmaticum 2.2 times its lateral sides; eye in dorsal view as long as temple; temple roundly narrowed behind eyes; vertex and temple smooth, remotely setose; frons finely punctate, nearly smooth, with a thin median frontal carina; face densely evenly finely punctate and setose, its width 1.4 times its height; intertentorial line 2.8 times tentorio-ocular line; clypeus nearly flat, smooth and shiny, with sparse long setae, ventral margin round and medially slightly raised, its width 2.1 times its height; malar space as long as basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely crenulate, only antero-dorsally and postero-ventrally narrowly smooth; precoxal sulcus medially narrowly present, deep and crenulate; remainder of mesopleuron largely smooth, dorsally punctate-rugose; notauli narrow and crenulate; mesoscutum smooth and glabrous, only middle lobe anteriorly finely punctate and setose; scutellar suture with one distinct median carina; scutellum smooth, medio-posterior depression small; propodeum entirely reticulate-rugose, only basally narrowly punctate with a distinct basal transverse carina.

Wings.— Fore wing: length of vein 1-R1 0.55 times length of pterostigma, 1.3 times width of pterostigma; r issued about middle of pterostigma, very short; 2-SR:SR1+3-SR = 15:33; m-cu just postfurcal; 1-CU1:2-CU1 = 4:15. Hind wing: 1-M:1r-m:2-SC+R = 9:9:6.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 3.8, 8.8 and 8.0 times their width, respectively; length of hind tibial spurs 0.45 and 0.40 times hind basitarsus.

Metasoma.— Length of first tergite 2.3 times its apical width, its surface longitudinally irregularly rugose, apical margin smooth, apically slightly widened, nearly parallel-sided, spiracles behind middle; ovipositor sheath just visible, 0.05 times fore wing, slender, and densely setose; ovipositor slender and distinctly curved downwards.

Colour.— Black; temple behind eyes with a narrow spot; clypeus brownish; palpi and tegulae yellowish; mandibles yellowish brown; antenna brown, basally paler; metasoma behind first tergite rather dark reddish brown; legs brownish yellow; hind coxae brown, but apex of hind tibia and tarsus darker; sheath brown; wing membrane hyaline with many brownish setae; pterostigma brown, basally pale, veins brownish to yellowish.

Variation.— Male generally similar to female, but differs in having head largely reddish brown, vertex broadly, frons, face dorsally, genae brown; the hind coxae brownish yellow; and the aedeagus longer than parameres.

Note.— This species is similar to *P. laeviventris* (Ruthe, 1856), but differs in having 22 antennal segments, the length of the penultimate antennal segment 1.6 times its width, the hind coxae of male brownish yellow, and OOL:POL = 11:10.

Peristenus montanus spec. nov.
(figs 444-449)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt Fengyang, 12.viii.1984, Sheng Lirong, no. 843508. Paratypes (3 ♂♂; ZAU, 1 ♂; RMNH): 1 ♂, same locality and collector as holotype, but 15.viii.1984, no. 843639; 2 ♂♂, Zhejiang, Mt Baishanzu, 7.v.1993, Wu Hong, nos 946581, 946532; 1 ♂, Hunan, Mt Tianping, 18.vi.1981, Tong Xingwang, no. 846580.

Holotype, ♀, length of body 2.9 mm, of fore wing 2.5 mm.

Head.— Width of head in dorsal view 1.4 times its length; antennal segments 24, apically not distinctly wider, third segment smooth without sensillum, fourth segment smooth with one sensillum, length of third segment 1.4 times fourth segment, length of third, fourth and penultimate segments 4.3, 2.7 and 1.5 times their width, respectively; apical (fifth) segment of maxillary palp 1.9 times fourth segment; length of maxillary palp 0.8 times height of head; occipital carina joining hypostomal carina ventrally; OOL:OD:POL = 12:5:10; basal side of stemmaticum 2.5 times lateral sides; length of eye in dorsal view equal to temple; temple nearly parallel-sided, then slightly narrowed behind eyes; temple and vertex nearly smooth, temple remotely setose; frons flat, finely punctate, nearly smooth, with a thin median frontal carina; face densely finely punctate, densely setose, its width 1.3 times its height; intertentorial line 2.5 times tentorio-ocular line; clypeus flat, nearly smooth, with sparse long setae, ventral margin round and medially slightly raised, its width twice its height; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side largely crenulate, dorsally punctate, medio-ventrally nearly smooth; precoxal sulcus only medially present, oblique, deep and crenulate; remainder of mesopleuron largely smooth, medially with punctures or rugae, dorsally rugose; notauli narrow, crenulate; densely punctate and setose, lateral lobes posteriorly narrowly smooth; scutellar suture wide, lateral margin low, with one median carina; scutellum nearly smooth, medio-posterior depression small with a median carina; propodeum nearly entirely reticulate-rugose, only basally narrowly punctate with a distinct basal transverse carina.

Wings.— Fore wing: length of vein 1-R1 0.4 times length of pterostigma, equal to width of pterostigma; r short, issued behind middle of pterostigma; 1-SR short; r:2-SR:SR1+3-SR = 2:20:40; m-cu just antefurcal; 1-CU1:2-CU1 = 3:23, 1-CU1 oblique.

Hind wing: 1-M:1r-m:2-SC+R = 15:15:8.

Legs.— Hind coxa finely punctate, nearly smooth; length of hind femur, tibia and basitarsus 5.4, 10.0 and 9.2 times their width, respectively; length of hind tibial spurs 0.42 and 0.38 times hind basitarsus.

Metasoma.— Length of first tergite 1.7 times its apical width, its surface longitudinally irregularly rugose, apically distinctly widened, spiracles at middle of tergite; ovipositor sheath just visible.

Colour.— Black; metasoma after first tergite dark reddish brown; antenna brownish yellow, apically darker; palpi yellowish; tegulae and legs brownish yellow, tarsi somewhat darkened; wing membrane hyaline with brownish setae; pterostigma brown, veins brownish to yellowish.

Variation.— Male similar to female, but differs in having the length of body 2.7-3.3 mm, of fore wing 2.6-2.7 mm; the antenna with 25 segments, its basal segments similar to those of female, smooth, not widened.

Note.— This species is similar to *P. pallipes* (Curtis, 1833), but differs in having the antenna with 24 (♀) or 25 (♂) segments, basal segments of male not wide and smooth; the frons finely punctate, nearly smooth; the first tergite distinctly widened apically, 1.7 times its apical width.

Peristernus nitidoides spec. nov.

(figs 430-433)

Material.— Holotype, ♀ (ZAU), Guangxi, Tianlin, 29.v.1982, He Junhua, no. 822582. Paratypes (1 ♀ + 2 ♂♂; ZAU, RMNH): 1 ♀, same data as holotype, but no. 822596; 1 ♂, Guangxi, Jinxiu, Mt Dayao, 16 km, 15.vi.1982, He Junhua, no. 823079; 1 ♂, Guangxi, Jinxiu, Mt Dayao, 9-16.vi.1982, He Junhua, no. 822650.

Holotype, ♀, length of body 2.7 mm, of fore wing 2.3 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 22, third and four segments with 1 and 2 sensillae, respectively, length of third segment 1.5 times fourth segment, length of third, fourth and penultimate segments 3.8, 2.5 and 1.3 times their width, respectively; apical (fifth) segment of maxillary palp 2.2 times fourth segment; length of maxillary palp 0.8 times height of head; occipital carina ventrally connected to hypostomal carina by a branch; OOL:OD:POL = 10:4:8; length of posterior side of stemmaticum 1.6 times its lateral side; length of eye in dorsal view 1.5 times temple; temple roundly narrowed behind eyes; vertex and temple smooth, remotely setose; frons finely densely punctate, with a thin median frontal carina; face finely punctate and densely setose, its width 1.2 times its height; intertentorial line 2.3 times tentorio-ocular line; clypeus nearly smooth, shiny, with sparse long setae, ventral margin round and medially slightly raised, its width 2.3 times its height; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side largely crenulate, dorsally punctate, postero-ventrally smooth; precoxal sulcus anteriorly absent, medially oblique and deep, sparsely crenulate, posteriorly narrow and finely crenulate; remainder of mesopleuron coarsely rugose-punctate, dorsally coarsely rugose, only anteriorly (anterior to precoxal sulcus) smooth; notauli well-defined, narrow, crenulate; mesoscutum densely punctate and setose, only lateral lobes posteriorly narrowly smooth; scutellar suture without lateral margins, with one distinct

median carina and several weak carinae; scutellum cone-shaped, smooth, medio-posterior depression small, transverse and with a short median carina; propodeum distinctly reticulate-rugose, only basally narrowly punctate with a distinct basal transverse carina.

Wings.— Fore wing: length of vein 1-R1 0.7 times length of pterostigma, 1.2 times width of pterostigma; r issued just behind middle of pterostigma; r:2-SR:SR1+3-SR = 5:16:39; m-cu distinctly antefurcal; 1-CU1:2-CU1 = 4:20. Hind wing: 1-M:1r-m:2-SC+R = 12:11:7.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 4.7, 10.0 and 10.0 times their width, respectively; length of hind tibial spurs 0.39 and 0.32 times hind basitarsus.

Metasoma.— Length of first tergite 1.7 times its apical width, its surface longitudinally rugose, apically distinctly widened, spiracles at middle of tergite; ovipositor sheath just visible, 0.04 times fore wing, slender, and densely setose; ovipositor slender and distinctly curved downwards.

Colour.— Black; clypeus reddish; face reddish brown; antenna yellowish brown, basally paler; metasoma after first tergite rather dark reddish brown; palpi and legs yellow, hind tibia apically and tarsus darker; wing membrane hyaline with many brownish setae; pterostigma brown, basally pale, veins yellowish.

Variation.— Length of body 2.7-2.9 mm, of fore wing 2.3-2.6 mm; antennal segments 21-22; male generally similar to female (including having 22 antennal segments), but differs in having the antenna apically dark brown, its penultimate segment twice its width, and the aedeagus longer than the parameres.

Note.— This species is similar to *P. nitidis* Curtis, 1833, but differs in having the malar space as long as basal width of mandibles, the vein m-cu distinctly antefurcal, the vein 1-R1 of fore wing 1.2 times width of pterostigma, and the frons finely punctate.

Peristenus pallipes (Curtis, 1833)
(figs 438-443)

Leiophron pallipes Curtis, 1833: 476; Shenefelt, 1969: 43.

Euphorus pallidipes; Marshall, 1887: 56; Watanabe, 1937: 130.

Brachistes nocturnus Viereck, 1905: 276. Syn. by Muesebeck & Walkley, 1951.

Euphorus mellipes Cresson, 1872: 227. Syn. by Muesebeck, 1936.

Microctonus punctatus Provancher, 1883: 17. Syn. by Muesebeck, 1936.

Leiophron (Peristenus) pallipes; Tobias, 1986: 240 (English translation: 420).

Material.— 1 ♂ (BMNH), Taiwan, Tseuy Feng, 2000m, viii.[19]79, I. Gauld; 1 ♀ + 4 ♂ ♂ (ZAU), Liaoning, Shengyang, Dongling, vi-vii.1994, 21.vi.1994, Lou Juxian, nos 947795, 947814, 947778, 947796, 947712; 2 ♂ ♂ (ZAU), Hunan, Mt Tianping, 8, 11.vi.1982, Tong Xinwang, nos 846579, 846567.

Distribution.— China: Liaoning, Hunan, Taiwan; Holartic region.

Note.— Frons may be more densely punctate, with some rugae near middle ocellus and mesopleuron may be largely smooth.

Peristernus picipes (Curtis, 1833)
(figs 404-409)

Leiophron picipes Curtis, 1833: 476; Shenefelt, 1969: 45.

Euphorus coactus Marshall, 1887: 59. Syn. by Richards, 1967.

Leiophron (*Peristenus*) *picipes*; Tobias, 1986: 240 (English translation: 417).

Material.— 5 ♀♀ + 4 ♂♂ + 1 ? (ZAU): 1 ♀ + 2 ♂♂ + 1 ?, Xinjiang, Urumqi, 27.vii.1987, Ma Qi, nos 879147, 819755, 879162, 879182, 879154; 1 ♂, Xinjiang, Xinyuan, 12.viii.1988, Ma Qi, no. 888789; 1 ♂, Xinjiang, Hoboksar, 18.vii.1990, Ma Qi, no. 907454; 1 ♀, Xinjiang, Musuowan, 1.ix.1985, Ma Qi, no. 860144; 1 ♀, Xinjiang, Tianchi, 6.viii.1991, He Junhua, no. 913434; 1 ♀, Xinjiang, Kurle, 8.vii.1991, He Junhua, no. 913516; 1 ♀, Inner Mongolia, Tumd Zuoqi, 25.vii.1978, Chen Heming, no. 871941; 1 ♀ (RMNH), Xinjiang, Urumqi, 27.vii.1987, Ma Qi, no. 819755.

Distribution.— China: Xingjiang, Inner Mongolia; Palaearctic region.

Note.— This species is new for China.

Peristenus procerus spec. nov.

(figs 425-429)

Material.— Holotype, ♂ (ZAU), Liaoning, Shengyang, Dongling, 21.vi.1994, Lou Juxian, no. 947694.

Holotype, ♂, length of body 3.0 mm, of fore wing 3.0 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 31, basally thick, slender towards its apex, each segment (except scapus and pedicellus) punctate with many sensillae, length of third segment 1.36 times fourth segment, length of third, fourth and penultimate segments 3.2, 2.3 and 1.9 times their width, respectively; apical (fifth) segment of maxillary palp 1.4 times fourth segment; length of maxillary palp 0.9 times height of head; occipital carina joining hypostomal carina ventrally; OOL:OD:POL = 13:6:12; length of posterior side of stemmaticum twice its lateral side; eye in dorsal view as long as temple; temple behind eyes parallel-sided, posteriorly narrowed; vertex medially smooth; temple sparsely punctate and setose, smooth; frons densely punctate, ventro-medially concave, with a thin median frontal carina; face densely punctate and setose, medio-dorsally a small protuberance, its width 1.5 times its height; intertentorial line 2.9 times tentorio-ocular line; clypeus nearly flat, smooth, with sparse long setae, ventral margin round and medially slightly raised, its width 2.5 times its height; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely crenulate-rugose, medio-ventrally narrowly and dorsally smooth; precoxal sulcus present, semicircular, regularly crenulate, anteriorly absent; remainder of mesopleuron largely smooth, mat, dorsally rugose; notauli narrow, crenulate; mesoscutum punctate and setose, lateral lobes posteriorly smooth and mat; scutellar suture wide with one distinct median carina; scutellum sparsely punctate, nearly smooth, medio-posterior depression small with a median carina; propodeum entirely reticulate-rugose, only basally narrowly punctate with distinct a basal transverse carina.

Wings.— Fore wing: length of vein 1-R1 0.50 times length of pterostigma, 1.2 times width of pterostigma; r short, issued behind middle of pterostigma; r:2-SR:SR1+3-SR = 2:20:39; m-cu just postfurcal; 1-CU1:2-CU1 = 1:21, cu-a almost interstitial. Hind wing: 1-M:1r-m:2-SC+R = 9:13:6.

Legs.— Hind coxa finely punctate, nearly smooth; length of hind femur, tibia and basitarsus 4.4, 9.5 and 7.4 times their width, respectively; length of hind tibial spurs 0.48 and 0.42 times hind basitarsus.

Metasoma.— Length of first tergite 1.55 times its apical width, its surface longitudinally rugose, basally smooth, apically slightly widened, spiracles at middle of tergite, dorsal carinae present basally, dorsope weak; aedeagus apically rounded and longer than parameres.

Colour.— Black; clypeus and metasoma after first tergite dark reddish brown; antenna dark yellowish brown; palpi yellowish; fore and middle legs brownish yellow; hind legs brown; wing membrane hyaline with dense brownish setae; pterostigma brown, veins yellowish.

Note.— This species is similar to *P. facialis* Thomson, 1891, but differs in having the antenna with 31 segments and the hind legs brown.

Peristenus prodigiosus spec. nov.
(figs 434–437)

Material.— Holotype, ♂ (ZAU), Zhejiang, Mt Gutian, 20.vii.1986, Xu Weiliang, no. 863045.

Holotype, ♂, length of body 3.1 mm, of fore wing 2.7 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 23, all flagellar segments with many sensillae, length of third segment 1.4 times fourth segment, length of third, fourth and penultimate segments 3.4, 2.4 and 1.4 times their width, respectively; apical (fifth) segment of maxillary palp 1.8 times fourth segment; length of maxillary palp 0.8 times height of head; occipital carina ventrally connected with hypostomal carina by a branch; OOL:OD:POL = 13:5:10; length of posterior side of stemmaticum twice its lateral side; length of eye in dorsal view 1.2 times temple; temple behind eyes parallel-sided, posteriorly slightly narrowed; temple sparsely punctate, nearly smooth; vertex smooth; frons densely macropunctate, with a median frontal carina; face densely punctate and setose, its width 1.4 times its height; intertentorial line 1.9 times tentorio-ocular line; clypeus flat, smooth, only margins with long setae, ventral margin round and medially slightly raised, its width twice its height; malar space as long as basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side anteriorly, medially and posteriorly coarsely crenulate, remainder macropunctate; precoxal sulcus only medially shortly present, crenulate; remainder of mesopleuron entirely macropunctate-rugose; notauli relatively wide, coarsely crenulate; mesoscutum densely macropunctate and setose, lateral lobes sparsely punctate, posteriorly narrowly smooth; scutellar suture wide, without lateral margins, with one distinct median carina and several weak carinae; scutellum cone-shaped, punctate, medio-posterior depression minute; propodeum entirely reticulate-rugose, basally with indistinct punctate area.

Wings.— Fore wing: length of vein 1-R1 0.45 times length of pterostigma, and equal to width of pterostigma; r short, issued at middle of pterostigma; r:2-SR:SR1+3-SR = 2.5:14:29; m-cu just postfurcal; 1-CU1:2-CU1 = 4:15; 1-CU1 oblique; basal cell much sparser setose than first discal cell. Hind wing: 1-M:1r-m:2-SC+R = 10:11:5.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 3.7, 9.0 and 7.7 times their width, respectively; length of hind tibial spurs 0.48 and 0.43 times hind basitarsus.

Metasoma.— Length of first tergite 1.5 times its apical width, its surface longitu-

dinally irregularly rugose, apically distinctly widened, spiracles at middle of tergite; aedeagus longer than parameres.

Colour.— Black; clypeus and a small spot temple behind eyes reddish; palpi and tegulae yellowish; antenna yellowish brown, apically darker; metasoma after first tergite rather dark reddish brown; legs brownish yellow, hind tibia apically brown; wing membrane hyaline with brownish setae; pterostigma brown, its extreme base pale, veins C+SC+R, 1-R1, 2-SC and SR1+3-SR of fore wing brown, remainder colourless.

Note.— This species is similar to *P. pallipes* (Curtis, 1833), but differs in having the first tergite shorter, the basal cell of fore wing much sparser setose than the first discal cell, the frons, mesoscutum and mesopleuron macropunctate, and the temple with a reddish spot behind the eyes.

Peristenus rugosus spec. nov.
(figs 420-424)

Material.— Holotype, ♂ (ZAU), Zhejiang, Mt W Tianmu, Xianrending, 2-4.vi.1990, Wang Xinggen, no. 903428.

Holotype, ♂, length of body 3.8 mm, of fore wing 3.4 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 33, antenna basally thick, becoming slender towards its apex, each segment (except scapus and pedicellus) punctate with many sensillae, length of third segment 1.3 times fourth segment, length of third, fourth and penultimate segments 2.6, 2.0 and 1.8 times their width, respectively; apical (fifth) segment of maxillary palp 1.9 times fourth segment; length of maxillary palp 0.9 times height of head; occipital carina joining hypostomal carina ventrally; OOL:OD:POL = 13:6:11; length of posterior side of stemmaticum 2.2 times its lateral side; length of eye in dorsal view equal to temple; temples nearly parallel-sided, posteriorly slightly narrowed; vertex smooth; temple sparsely punctate and setose, smooth, and shiny; frons densely punctate, ventro-medially concave, with a weak median frontal carina; face densely punctate-rugose, densely setose, its width 1.6 times its height; intertentorial line 2.5 times tentorio-ocular line; clypeus flat, nearly smooth, with sparse long setae, ventral margin round and medially slightly raised, its width 2.8 times its height; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely crenulate, dorsally punctate, medio-ventrally nearly smooth; precoxal sulcus wide and shallow, irregularly rugose, anteriorly absent; remainder of mesopleuron medially and dorsally rugose, only speculum and antero-ventrally narrowly smooth; notauli narrow, crenulate; mesoscutum densely punctate and setose, only lateral lobes posteriorly narrowly smooth; scutellar suture wide, lateral margin absent, with one distinct median carina and 8 weak lateral carinae; scutellum small, cone-shaped, punctate, nearly smooth, medio-posterior depression small with a median carina; propodeum entirely reticulate-rugose, only basally narrowly punctate with a distinct basal transverse carina.

Wings.— Fore wing: length of vein 1-R1 0.5 times length of pterostigma, 1.4 times width of pterostigma; r issued behind middle of pterostigma; r:2-SR:SR1+3-SR =

4:18:45; m-cu antefurcal; 1-CU1:2-CU1 = 4:22, 1-CU1 oblique. Hind wing: 1-M:1r-m:2-SC+R = 11:15:8.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.4, 9.4 and 6.5 times their width, respectively; length of hind tibial spurs 0.50 and 0.42 times hind basitarsus.

Metasoma.— Length of first tergite twice its apical width, its surface longitudinally irregularly rugose, apically widened, spiracles near middle (basal 0.45) of tergite; dorsal carinae weakly present basally; aedeagus apically rounded and longer than parameres.

Colour.— Black; metasoma after first tergite dark reddish brown; mandibles reddish yellow; antenna brown, basally yellowish brown; palpi yellowish; tegulae and fore and middle legs brownish yellow, tibia darker; hind legs brown, trochanters and tibia basally paler; wing membrane hyaline with many brownish setae; pterostigma and veins brown, base of pterostigma pale.

Note.— This species is similar to *P. procerus* spec. nov., but differs in having the mesopleuron more rugose, the vein r of fore wing longer, the vein cu-a of fore wing distinctly postfurcal, the veins of fore wing distinctly brown and the first metasomal tergite twice as long as its apical width.

Peristenus spretus spec. nov.
(figs 399-403)

Material.— Holotype, ♂ (ZAU), Guangxi, Tianlin, Langping, 30.vi.1982, He Junhua, no. 822034.

Holotype, ♂, length of body 2.8 mm, of fore wing 2.5 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 23, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 3.0, 2.8 and 1.8 times their width, respectively; apical segments of maxillary palp missing; occipital carina joining hypostomal carina ventrally; OOL:OD:POL = 12:4:10; length of posterior side of stemmaticum twice its lateral side; length of eye in dorsal view 0.9 times temple; temple slightly widened, round behind eyes; temple and vertex smooth, remotely setose; frons finely punctate, nearly smooth, ventrally with a thin median carina; face evenly slightly convex, finely punctate, nearly smooth, densely setose, its width 1.4 times its height; intertentorial line 2.3 times tentorio-ocular line; clypeus slightly convex medially, smooth, shiny, with long setae, its ventral margin thin, round and medially slightly raised, its width 2.3 times its height; length of malar space 1.2 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side largely crenulate, antero-dorsally and postero-ventrally narrowly smooth; precoxal sulcus only medially narrowly present, deep and crenulate; remainder of mesopleuron largely smooth, antero-dorsally weakly rugose; notauli narrow, deep and crenulate; mesoscutum smooth, only middle lobe anteriorly weakly punctate and setose; scutellar suture wide with one median carina; scutellum nearly smooth, medio-posterior depression small; propodeum reticulate-rugose, basally narrowly nearly smooth.

Wings.— Fore wing: length of vein 1-R1 0.5 times length of pterostigma, 0.84 times width of pterostigma; r issued behind middle of pterostigma, extremely short;

2-SR:SR1+3-SR = 19:43; m-cu just antefurcal; 1-CU1:2-CU1 = 5:20. Hind wing: 1-M:1r-m:2-SC+R = 11:10:10.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.0, 9.4 and 8.3 times their width, respectively; length of hind tibial spurs 0.44 and 0.40 times hind basitarsus.

Metasoma.— Length of first tergite 1.8 times its apical width, its surface longitudinally irregularly rugose, apically widened, spiracles behind middle, not protruding; aedeagus apically obtuse and longer than parameres.

Colour.— Dark reddish brown; head (but frons and vertex brownish), prothorax and mesoscutum reddish yellow; antenna yellowish brown, apically darker; palpi and tegulae yellowish; legs brownish yellow; wing membrane hyaline, pterostigma brownish, its base pale; veins brownish to pale.

Note.— This species is similar to *P. laeviventris* (Ruthe, 1856), but differs in having head, prothorax and mesoscutum reddish yellow, and the legs entirely brownish yellow.

Peristernus xanthos spec. nov.
(figs 388-398)

Material.— Holotype, ♀ (ZAU), Liaoning, Shengyang, Dongling, 10.vii.1994, Lou juxian, no. 947205. Paratypes (2 ♀♀ + 5 ♂♂): 1 ♂ (RMNH), same data as holotype, no. 947252; 2 ♀♀ + 4 ♂♂ (ZAU), same data as holotype, nos 947191, 947208, 947183, 947195, 947238, 947244.

Holotype, ♀, length of body 2.2 mm, of fore wing 2.2 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 20, antenna apically distinctly widened, its length distinctly shorter than body, length of third segment 1.3 times fourth segment, length of third, fourth and penultimate segments 4.0, 2.7 and 1.2 times their width, respectively; apical (fifth) segment of maxillary palp 1.4 times fourth segment; length of maxillary palp 0.5 times height of head; occipital carina directly joining hypostomal carina ventrally; OOL:OD:POL = 11:3.5:8; length of posterior side of stemmaticum twice its lateral side; length of eye in dorsal view 1.1 times temple; temples parallel-sided, posteriorly slightly narrowed; temple and vertex nearly smooth, remotely setose; frons flat, densely punctate, with a weak median carina and some rugae below middle ocellus; face punctate, densely covered with white setae, its surface hardly visible, its width 1.2 times its height; intertentorial line 2.7 times tentorio-ocular line; clypeus nearly flat, smooth, shiny, with sparse long setae, ventral margin round and medially slightly raised, its width 2.6 times its height; malar space as long as basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely crenulate, antero-ventrally longitudinally rugose, dorsally and medio-ventrally punctate, nearly smooth; precoxal sulcus only medially narrowly present, oblique, crenulate; remainder of mesopleuron entirely sparsely punctate, shiny, surface between punctures smooth, dorsally rugose; notauli narrow, crenulate; mesoscutum densely punctate and setose, only lateral lobes posteriorly narrowly smooth; scutellar suture wide with one median carina; scutellum lower than mesoscutum, sparsely punctate, nearly smooth, medio-posterior depression small with a median carina; propodeum nearly entirely reticulate-rugose, basally narrowly punctate with distinct basal transverse carina.

Wings.— Fore wing: length of vein 1-R1 0.5 times length of pterostigma, equal to width of pterostigma; r issued slightly behind middle of pterostigma; 1-SR short; r:2-SR:SR1+3-SR = 3:13:30; m-cu antefurcal; 1-CU1:2-CU1 = 1:16. Hind wing: 1-M:1r-m:2-SC+R = 10:10:6.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 4.5, 10.0 and 8.3 times their width, respectively; length of hind tibial spurs 0.36 and 0.32 times hind basitarsus.

Metasoma.— Length of first tergite 1.7 times its apical width, its surface longitudinally irregularly rugose, apically distinctly widened, spiracles behind middle of tergite, not protruding; ovipositor sheath slender, short, its length 0.03 times fore wing, densely setose; ovipositor not visible.

Colour.— Yellowish brown; metanotum, propodeum and first tergite dark brown; antenna brownish yellow, dark towards its apex; palpi yellowish; tegulae and legs brownish yellow; wing membrane hyaline, pterostigma brown, its base pale; veins brownish to yellowish.

Variation.— Length of body 2.2-2.7 mm, of fore wing 2.0-2.2 mm; antennal segments 20 (♀) or 19-20 (♂), occipital carina ventrally may be connected to hypostomal carina by a branch. Male similar to female, but differs in having antenna not widened apically, the penultimate segment twice its width; metanotum, propodeum and first tergite yellowish brown to brown; vein r nearly absent; aedeagus shorter than parameres, apically acute.

Note.— This species seems peculiar among the species with the mesoscutum punctate because its body is largely yellowish brown.

Genus *Proclithrophorus* Tobias & Belokobylskij, 1981

(figs 450-458)

Proclithrophorus Tobias & Belokobylskij, 1981: 358 (English translation: 79); Shaw, 1985: 333. Type species (by original designation): *Proclithrophorus mandibularis* Tobias & Belokobylskij, 1981.

Diagnosis.— Head strongly transverse and much broader than mesosoma; antenna inserted near clypeus; antennal segments 22-23, scapus subtriangular dorsally, fourth segment distinctly longer than third segment; mandible enormously enlarged, about 1.5 times as long as height of head, with deep rectangular incision at apex; clypeus subhorizontally protruding forwards and semicircular; face not developed; maxillary palp 5-segmented; labial palp 3-segmented; malar suture absent; prepectal carina present; precoxal sulcus complete and broad; notauli deep and complete; scutellar suture deep, wide with a median carina; propodeum with posterior areolar area concave; marginal cell of fore wing short, length of vein 1-R1 slightly shorter than pterostigma; vein 1-SR+M and r-m of fore wing absent; vein cu-a of fore wing postfurcal; vein M+CU of hind wing about 6 times 1-M; legs slender; tarsal claws normal; first metasomal tergite distinctly gradually widened from base to apex; dorsope large; hypopygium medium-sized; ovipositor sheath slender and setose, slightly shorter than metasoma.

Biology.— Unknown.

Didistribution.— East Palaearctic region; one species.

Note.— This genus is new for China.

Proclithrophorus mandibularis Tobias & Belokobylskij, 1981
(figs 450-458)

Proclithrophorus mandibularis Tobias & Belokobylskij, 1981: 359 (English translation: 80); van Achterberg, 1993: 185.

Material.— 1 ♀ (ZAU), Jilin, Mt Changbai, 10.viii.1977, He Junhua, no. 771409.

Distribution.— China: Jilin; Far East Russia.

Note.— The specimen agrees well with the original description.

Genus *Pygostolus* Haliday, 1833
(figs 459-478)

Pygostolus Haliday, 1833: 263; Shenefelt, 1969: 122; van Achterberg, 1982: 137, 1985: 353; Shaw, 1985: 334; Tobias, 1986: 221; van Achterberg, 1992b: 350. Type species (by monotypy): *Ichneumon sticticus* Fabricius, 1798.

Diagnosis.— Apex of antenna with spine; maxillary palp 5-segmented; labial palp 3-segmented; occipital carina complete, comparatively low on head, and joining hypostomal carina distinctly above base of mandible; epistomal suture distinct; malar suture shallowly impressed; anterior subalar depression with carina; prepectal carina complete; mesosternum flattened and of female felty setose, velvet-like; precoxal sulcus (of Holarctic species) complete; metapleural flange large and obtuse, comparatively thin; notauli complete, its inner side carinate; vein 1-SR of fore wing present; vein 1-SR+M of fore wing present; vein M+CU1 of fore wing sclerotized; plical lobe of hind wing rather medium-sized; vein 1-M of hind wing much shorter than vein 1r-m; tarsal claws robust and simple; fore and middle tarsi normal; all tarsi of both sexes with dense, whitish setae ventrally, without ventral row of setae; dorsal face of propodeum not well differentiated from posterior part and without posterior areola; first metasomal tergite robust, parallel-sided behind spiracles; dorsope large and deep; laterope very deep and large; second metasomal tergite smooth; hypopygium of female normal, medium-sized, smooth and apically truncate; ovipositor strongly compressed, knife-like, deep, straight or rather curved, and with shallow notch, and indistinct ventral teeth; ovipositor sheath wide, densely transversely striate, rather flat, subtruncate apically and setose, and its length 0.2-0.3 times fore wing.

Biology.— Parasites of (mainly) adult Curculionidae, less commonly of Chrysomelidae.

Distribution.— Holarctic region with 5 known species; Neotropical region (at least 5 undescribed species according to Shaw (1985). Two species from China are reported, including one new to science.

Note.— This genus is new to the fauna of China.

Key to Chinese species of the genus *Pygostolus* Haliday

1. Antennal segments 26-30; vein SR1 of fore wing 10-13 times vein r (fig. 471); vein m-cu of fore wing interstitial to distinctly antefurcal (fig. 471); pterostigma of female infuscate; length of body 2.3-3.6 mm *P. falcatus* (Nees)

- Antennal segments 33; vein SR1 of fore wing 8 times vein r (fig. 477); vein m-cu of fore wing distinctly postfurcal (fig. 477); pterostigma of female yellow; length of body 4.8 mm *P. tibetensis* spec. nov.

Pygostolus falcatus (Nees, 1834)
(figs 471-475)

Leiophron falcatus Nees, 1834: 44.

Pygostolus falcatus; Shenefelt, 1969: 122-123; Aeschlimann, 1980: 145; Tobias, 1986: 222; van Achterberg, 1992: 354.

Bassus testaceus; Fallén, 1813: 18 (nec Fabricius, 1798).

Material.— 1 ♂ (ZAU), Gansu, Zhengyuan, vii.1981, Cao Wei, no. 816317.

Distribution.— China: Gansu; Europe.

Note.— The colour of the male is much paler than that of the female. This species is new to the fauna of China.

Pygostolus tibetensis spec. nov.
(figs 476-478)

Material.— Holotype, ♀ (ZAU), Xizhang (Tibet), Zamu, 2700 m, 21.vii.1978, Li Fasheng, no. 871949.

Holotype, ♀, length of body 4.8 mm, of fore wing 5.5 mm.

Head.— Antennal segments 33, third segment as long as fourth segment, length of third, fourth and penultimate segments 3.8, 3.8 and 2.0 times their width respectively; length of maxillary palp 1.1 times height of head; OOL:OD:POL = 8:10:11; length of eye in dorsal view 1.5 times temple; temple behind eye slightly swollen, posteriorly slightly contracted; vertex and frons smooth; frons slightly concave medially; face and clypeus nearly smooth; clypeus strongly convex; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side coarsely crenulate anteriorly and finely crenulate posteriorly, remainder largely smooth; precoxal sulcus complete, distinctly and narrowly crenulate; remainder of mesopleuron largely smooth; metapleuron rugose ventrally, largely smooth dorsally; mesoscutum largely smooth; notauli complete and deep, with a distinct short median carina posteriorly; scutellar sulcus wide with a median carina and some rugae; scutellum convex, smooth; propodeum densely and coarsely reticulate-rugose with a short median carina basally.

Wings.— Fore wing: r:SR1:2-SR = 10:80:28; marginal cell comparatively short and narrow; 1-CU1:2-CU1 = 6:24; 1-CU1 oblique; m-cu postfurcal. Hind wing: spurious part of vein R1 weakly pigmented.

Legs.— Hind coxa laterally punctate, remainder largely smooth; length of hind femur, tibia and basitarsus 5.7, 12.4 and 6.6 times their width, respectively; hind tibial spurs subequal, 0.3 times hind basitarsus.

Metasoma.— Length of first tergite 1.5 times its apical width, longitudinally rugose, medially smooth; length of ovipositor sheath 0.25 times fore wing, longer than height of metasomal apex, and 0.55 times width of hind tibia medially; ovipositor gradually curved and relatively slender.

Colour.— Reddish yellow; flagellum darker towards its apex and brown apically; stemmaticum, first-fourth metasomal sternites medially and posteriorly brown; apex of mandible and ovipositor sheath dark brown; pterostigma yellow, basally pale yellow, veins pale brown to brown; wing membrane subhyaline.

Note.— This new species is similar to *P. multiarticulatus* (Ratzeburg, 1852), but differs from the latter in having the antennal segments 33, the vein m-cu of fore wing distinctly postfurcal, and the body reddish yellow. It is also related to *P. sticticus* (Fabricius), but can be separated from the latter by having the ovipositor distinctly curved, and the maximum width of ovipositor sheath much less than median width of hind tibia.

Genus *Ropalophorus* Curtis, 1837
(figs 479-486)

Ropalophorus Curtis, 1837: 118; Shenefelt, 1969: 124; Shaw, 1985: 335; Yang, 1989: 91. Type species (by original designation): *Ropalophorus clavicornis* Wesmael, 1835.

Rhopalophorus Blanchard, 1840: 331. Unjustified emendation, preoccupied by *Rhopalophorus* Serville, 1834.

Eustalocerus Foerster, 1862: 251. New name for *Rhopalophorus* Blanchard.

Diagnosis.— Antenna short, geniculate, clavate, with 9-10 segments; scapus and apical segment elongate; antenna inserted near the middle level of eye; maxillary palp 5-segmented, its second segment enlarged, ovoid; labial palp 2-segmented, the second segment swollen; mandible bidentate, its teeth subequal; eye setose, convergent below; malar suture and epistomal suture distinct; shortest distance between eyes greater than width of clypeus; mesoscutum smooth and shining; notauli complete, crenulate and narrow; scutellar sulcus with carina; prepectal carina present; mesopleuron largely smooth; precoxal sulcus present; metapleuron rugose; propodeum areolate with postero-lateral corners prominent, posterior face sharply declivous and deeply concave; legs slender; vein 1-SR and 1-SR+M of fore wing present; vein r-m and CU1b of fore wing absent; vein M+CU1 distinctly sclerized; marginal cell of fore wing short, its length along its anterior border as long as length of pterostigma; vein M+CU much longer than 1-M; first tergite petiolate, strongly bent over at middle, longitudinally rugose, widened from base towards apex; dorsope large and deep; second and following tergites smooth; hypopygium small, sparsely setose; ovipositor sheath slender and densely setose; ovipositor strongly compressed, curved, apically narrow and sharp, with a dorsal notch subapically.

Biology.— Parasites of adult Scolytidae.

Distribution.— Holarctic region; small genus with three known species, one of which occurs only in China.

Ropalophorus polygraphus Yang, 1989

Ropalophorus polygraphus Yang, 1989: 92.

Biology.— This species was reared from the braconid cocoons collected in the galleries of *Polygraphus polygraphus* Linnaeus on pine trees (Yang, 1989).

Distribution.— China: Shaanxi and Gansu.

Note.— This species is included according to Yang (1989). No specimen was

available for this study. This species is closely related to the type species, *R. clavicornis* (Wesmael), but differs in having 9 antennal segments, the vein 1-CU1 of fore wing longer and the vein 1-M of hind wing shorter.

Genus *Spathicopsis* van Achterberg, 1977
(figs 487-496)

Spathicopsis van Achterberg, 1977: 27; van Achterberg, 1985: 357. Type species (by original designation): *Spathicopsis flavocephala* van Achterberg, 1977.

Diagnosis.— Antennal segments 25-26; maxillary palp 6-segmented, labial palp 3-segmented; eye bare; occipital carina complete; epistomal and malar sutures present; prepectal carina complete; precoxal sulcus largely reduced; metapleural flange large, blunt; notauli complete; scutellum small; parastigma medium-sized; vein 1-SR+M and CU1b absent; vein 2-1A largely absent; length of hind femur about 5.0 times its apical width; tarsi relatively stout and short; dorsal surface of propodeum rather shorter than its posterior surface; length of first metasomal tergite 1.5-1.6 times its apical width, subsessile; dorsople large and deep, forming with very large and deep laterople a diplople; second and following tergites smooth; hypopygium small; ovipositor sheath slender, 0.12-0.13 times fore wing; ovipositor straight and its apex depressed, in dorsal view with the sides subparallel and in lateral view narrowed apically.

Biology.— Unknown.

Distribution.— Holarctic and Oriental; one species.

Note.— Because Fujian province belongs to the Oriental part of China, this genus is recorded here for the first time from the Oriental region as well as from China.

Spathicopsis flavocephala van Achterberg, 1977
(figs 487-496)

Spathicopsis flavocephala van Achterberg, 1977: 27; Tobias, 1986: 221; Belokobylskij, 1996: 295.

Material.— 2 ♂♂ (ZAU), Fujian, Mt Meihua, 1100-1400 m, 23-24.vii.1988, Fan Jiang, nos 886556, 886558.

Distribution.— China: Fujian; Holarctic region.

Genus *Streblocera* Westwood, 1833
(figs 497-538, 616-624)

Streblocera Westwood, 1833: 342; De Saeger, 1946: 144; Čapek & Snoflák, 1959: 345; Shenefelt, 1969: 125; Shaw, 1985: 337; Tobias, 1986: 235; Belokobylskij, 1987: 162; Chou, 1990: 91; Chao, 1993: 61. Type species (by monotypy): *Streblocera fulviceps* Westwood, 1833.

Eutanycerus Foerster, 1862: 251. Type species (by original designation): *Eutanycerus halidayanus* Foerster, 1862. Syn. by Dalla Torre, 1898.

Cosmophorida Hedqvist, 1955: 93. Type species (by original designation): *Cosmophorus flaviceps* Marsall, 1897. Syn. by Čapek & Snoflák, 1959.

Streblocera subgenus *Asiastreblocera* Belokobylskij, 1987: 161 (English translation: 3); Chou, 1990: 93; Chao, 1993: 61. Type species (by original designation): *Streblocera cornuta* Chao, 1964.

Diagnosis.— Head transverse; female antenna raptorial; scapus incrassate, 2-12 times as long as wide, with basal horn or raised longitudinal carina, or without any process; third segment sometimes slender and with long acute apex; antenna geniculated at third, or seventh to tenth segment or not geniculated; maxillary palp with 6 segments; labial palp with 3 segments; occipital carina complete, sometimes dorso-medially narrowly interrupted, ventrally joining or remaining separate from hypostomal carina; face sometimes with acute horn (figs 49, 51); malar suture present; precoxal carina and notauli present; veins 1-SR+M and r-m of fore wing absent; tarsal claws simple; metasoma comparatively robust; first tergite distinctly widened apically, dorsope and laterope usually present, but sometimes absent, spiracles behind middle; second and following tergites smooth; fifth sternite sometimes with pair of teeth; ovipositor sheath slender, setose; ovipositor curved.

Biology.— Parasites of Chrysomelidae.

Distribution.— Palaearctic, Oriental, Afrotropical and Neotropical regions; medium-sized genus.

Note.— Belokobylskij (1987) divided this genus into three subgenera. Here the subgeneric division is reassessed, consequently five subgenera, i. e., *Asiastreblocera* Belokobylskij, *Cosmophoridia* Hedqvist, *Eutanycerus* Foerster, *Villocera* subgenus nov., *Streblocera* Westwood are recognized. 44 species belonging to the above five subgenera are reported from China in this paper, of which six are new to science.

Subgenus *Asiastreblocera* Belokobylskij, 1987
(figs 47-54)

Streblocera subgenus *Asiastreblocera* Belokobylskij, 1987: 161 (English translation: 3); Chou, 1990: 93; Chao, 1993: 61. Type species (by original designation): *Streblocera cornuta* Chao, 1964.

Diagnosis.— Antenna of female geniculated at third segment, scapus long, inner concave side sparsely setose, without any process, third segment very slender and long, nearly half as long as scapus, lanceolate, slightly flattened, fourth segment joining to third segment at about its middle; all segments movably articulated to each other; occipital carina nearly complete, ventrally remaining separated from hypostomal carina; face nearly as long as high, more or less convex, medially with an acute horn (figs 49, 51); first metasomal tergite distinctly constricted at basal 0.3; fifth metasomal sternite of female with pair of short, acute teeth; ovipositor very short, hardly extending beyond hypogygium.

Biology.— Unknown.

Distribution.— Small East Palaearctic subgenus (China and Far East Russia); two species known.

Key to species of the subgenus *Asiastreblocera* Belokobylskij

1. Face with a shorter, simple median horn; antennal segments of ♀ 19; mesoscutum with a short, distinct median carina posteriorly; first metasomal tergite smooth; length of body (♀) 4 mm *A. cornuta* (Chao)
- Face with a comparatively longer horn, which has a median carina; antennal segments of ♀ 17; mesoscutum without distinct median carina posteriorly; first ter-

gite longitudinally coarsely rugose; length of body (♀) 3 mm
 *A. dayuensis* (Wang)

Streblocera (Asiastreblocera) cornuta (Chao, 1964)
 (figs 47-54)

Streblocera cornuta Chao, 1964: 156.

Streblocera (Asiastreblocera) cornuta; Belokobylskij, 1987: 161 (English translation: 3); Chao, 1993: 61.

Material.— 1 ♀ (ZAU), Zhejiang, Anji, 11.xii.1991, He Junhua, no. 915990.

Distribution.— China: Zhejiang and Fujian.

Note.— This species was originally described from Fujian province (Tachulan).

Streblocera (Asiastreblocera) dayuensis (Wang, 1983)

Streblocera dayuensis C. Wang, 1983b: 231.

Streblocera (Asiastreblocera) dayuensis; Belokobylskij, 1987: 162, 164 (English translation: 4, 7); Chou, 1990: 93.

Distribution.— China: Shaanxi and Taiwan; Far East Russia (Maritime Terr.)

Note.— This species was originally found in Shaanxi province (Dayu) and later reported from Russia. No specimen was available for study.

Subgenus *Cosmophoridia* Hedqvist, 1955
 (figs 532-534)

Cosmophoridia Hedqvist, 1955: 93. Type species (by original designation): *Cosmophorus flaviceps* Marshall, 1897.

Diagnosis.— Antenna of female not distinctly geniculated; scapus of female long, without any process, inner concave side long and densely setose; third segment normal, slightly longer than fourth segment; basal flagellar segments fused; face distinctly wider than long, more or less convex, without an acute horn medially; mandible modified, with wide ventral lamella; occipital carina nearly complete, ventrally joining hypostomal carina; first metasomal tergite with dorsope; fifth metasomal sternite of female without pair of short, acute teeth; ovipositor long, distinctly extending beyond sternites.

Biology.— Unknown.

Distribution.— Palearctic and North Oriental regions; at present only *Streblocera (C.) flaviceps* Marshall is included.

Streblocera (C.) flaviceps Marshall, 1897
 (figs 532-534)

Cosmophorus flaviceps Marshall, 1898: 208; Shenefelt, 1969: 127; Tobias, 1986: 237.

Cosmophoridia flaviceps; Hedqvist, 1955: 93.

Streblocera (Cosmophoridia) flaviceps; Belokobylskij, 1987: 162, 168 (English translation: 3, 10)

Material.— 1 ♀ (ZAU), Zhejiang, Mt W Tianmu, Xianrending, 2-4.vi.1990, Lou Yonggren, no. 900851.

Distribution.— China: Zhejiang; Russian Far East; Europe.

Subgenus *Eutanycerus* Foerster, 1862
(figs 497-531)

Eutanycerus Foerster, 1862: 251. Type species (by original designation): *Eutanycerus halidayanus* Foerster, 1862.

Streblocera subgenus *Cosmophoridia*; Belokobylskij, 1987: 161; Chou, 1990: 91; Chao, 1993: 61.

Diagnosis.— Antenna of female not distinctly or distinctly geniculated at ninth segment, sometimes at eighth or tenth segment; scapus of female long, with or without basal horn, inner concave side usually less setose, at most apically densely setose; third segment normal, slightly longer than fourth segment; basal seven flagellar segments usually fused; face distinctly wider than long, more or less convex, medially without an acute horn; mandible normal, without wide ventral lamella; occipital carina nearly complete, ventrally usually joining hypostomal carina; first metasomal tergite usually with dorsope, rarely without; fifth metasomal sternite of female without pair of teeth; ovipositor long, distinctly extending beyond sternites.

Biology.— Parasites of Chrysomelidae.

Distribution.— Palaearctic, Oriental, Afrotropical and Neotropical regions, especially in East Palaearctic and Oriental regions.

Key to Chinese species of the subgenus *Eutanycerus* Foerster

1. Flagellum not or not distinctly geniculated (figs 507, 532; fig. 19 in Chou, 1990; fig. 1 in Wang, 1986) 2
- Flagellum distinctly geniculated (figs 498, 512, 522; figs 14-18 in Chou, 1990) 4
2. Antennal segments 21; first to seventh flagellar segments without small prominence; first metasomal tergite medially smooth; length of body 2.7 mm. Sichuan .
..... *S. sichuanensis* Wang
- Antennal segments 23-24; second to seventh flagellar segments with small prominence ventrally; first metasomal tergite medially striate or nearly entirely smooth 3
3. First flagellar segment 3.0-3.4 times its width, 1.5 times pedicellus (fig. 19 in Chou, 1990), without sensillum; length of first metasomal tergite 2.8-3.1 times its apical width, its surface nearly smooth (fig. 252 in Chou, 1990); length of body 3.3-3.4 mm. Taiwan *S. primotina* Chou
- First flagellar segment twice its width, as long as pedicellus (fig. 507), with 3 sensillae; length of first metasomal tergite 2.3 times its apical width, its surface longitudinally striate (fig. 510); length of body 3.1 mm. Fujian
..... *S. linearata* spec. nov.
4. Flagellum geniculated at its sixth segment (fig. 20 in Chou, 1990); length of body 2.2-2.3 mm. Taiwan *S. curta* Chou
- Flagellum geniculated at seventh or eighth segment (figs 498, 512, 518, 522) 5
5. Flagellum geniculated at its eighth segment (fig. 25 in Chou, 1990; fig. 2 in Chao, 1993) 6
- Flagellum geniculated at seventh segment (figs 498, 512, 518, 522) 7

6. Length of body 2.3-2.9 mm; eighth flagellar segment without prominence (fig. 25 in Chou, 1990); length of body 2.3-2.9 mm. Taiwan *S. octava* Chou
- Length of body 4.2 mm; eighth flagellar segment with distinct horn-like prominence (fig. 2 in Chao, 1993); length of body 4.2 mm. Fujian *S. ekphora* Chao
7. Scapus with horn near base (figs 498, 518, 528) 8
- Scapus without horn near base (figs 512, 522, 538) 21
8. First to seventh flagellar segments serrate (fig. 8 in Chao, 1993); length of body 3.8 mm. Fujian *S. chaoi* nom. nov.
- First to seven flagellar segments not serrate (figs 498, 518, 528) 9
9. Sixth flagellar segment more or less with hook-like prominence, not firmly fused to seventh segment (figs 512, 536; figs 27, 28 in Chou, 1990) 10
- Sixth flagellar segment without hook-like prominence, firmly fused to seventh segment (figs 498, 518; figs 13, 29 in Chou, 1990) 18
10. Scapus very long, 9.8 times as long as wide, 2.5 times as long as height of head (fig. 27 in Chou, 1990); body 6.0-6.5 mm. Taiwan *S. amplissima* Chou
- Scapus shorter, 6.0-8.5 times as long as wide, 1.3-2.1 times as long as height of head; body 3.3-4.8 mm 11
11. Length of antenna from eighth flagellar segment to apex of antenna less than length of scapus 12
- Length of antenna from eighth flagellar segment to apex of antenna more than length of scapus 13
12. Scapus 7.2-8.5 times as long as wide; first flagellar segment with 11 sensillae; length of body 4.3 mm. Taiwan *S. lienhuachihensis* Chou
- Scapus 6.0 times as long as wide; first flagellar segment with 2 sensillae; length of body 3.3-3.5 mm. Taiwan *S. tsuifengensis* Chou
13. Antennal segments 19-22; length of body 24-2.6 mm. Jilin, Liaoning, Hebei, Shaanxi, Henan, Shandong, Anhui, Jiangsu, Zhejiang, Hubei, Hunan, Fujian and Yunnan; Japan; Russian Far East *S. okadai* Watanabe
- Antennal segments 24-27 14
14. First to seventh flagellar segments wider, first segment with 4-7 sensillae 15
- First to seventh flagellar segments rather narrow, first segment without sensillum; length of body 3.8 mm. Taiwan *S. destituta* Chou
15. Scapus with a horn at basal 0.4 at inner side (fig. 513); antennal segments 25 (♀) or 23 (♂); length of body 3.7-3.9 mm. Guizhou *S. jingdingensis* spec. nov.
- Scapus with a horn (at most) at basal third ventrally (figs 528, 538); antennal segments variable 16
16. Scapus with a minute horn (fig. 528); seventh flagellar segment with a long, distinct horn-like prominence (fig. 528); length of body 3.4-3.7 mm. Zhejiang *S. cornis* spec. nov.
- Scapus with a much larger horn (fig. 536; fig. 31 in Chou, 1990); seventh flagellar segment with a small horn-like prominence (fig. 536; fig. 31 in Chou, 1990) 17
17. First flagellar segment with five to seven sensillae; mesosoma dark brown except proscutum; length of body 5-6 mm. Zhejiang, Sichuan *S. emeiensis* Wang
- First flagellar segment with four sensillae; mesosoma brownish yellow except propodeum; length of body 4.8 mm. Taiwan *S. taiwanensis* Chou
18. Scapus 9.0-9.9 times as long as wide, twice as long as height of head (fig. 29 in Chou, 1990); length of body 4.3-4.9 mm. Taiwan *S. nantouensis* Chou

- Scapus 5.0-8.0 times as long as wide, 1.3-1.6 times as long as height of head (figs 498, 518) 19
- 19. Scapus with a narrow and acute basal horn, its length 7.3-8.0 times its width (fig. 14 in Chou, 1990); length of body 3.8 mm. Taiwan *S. sungkangensis* Chou
- Scapus with a broad and obtuse basal horn, its length 5.0-5.3 times its width (figs 498, 518) 20
- 20. Scapus with a broad horn at basal third (fig. 498); eighth flagellar segment with a horn-like prominence (fig. 498); scapus 5.0 times as long as wide (fig. 498); antenna with 22 segments; length of body 2.7 mm. Zhejiang *S. obtusa* spec. nov.
- Scapus with a narrow horn at basal 0.4 (fig. 518); eighth flagellar segment without a horn-like prominence (fig. 518); scapus 5.6 times as long as wide (fig. 518); antenna with 29 segments; length of body 6.1 mm. Fujian .. *S. gigantea* spec. nov.
- 21. Scapus more robust (fig. 18 in Chou, 1990), 4.0 times as long as wide, with lamelliform carina near apex; antennal segments 31-32; length of body 4.0-4.7 mm. Taiwan *S. nigra* Chou
- Scapus slender (figs 21-23 in Chou, 1990), 7.5-9.8 times as long as wide, without lamelliform carina near apex; antennal segments 21-22 22
- 22. First to seventh flagellar segments serrate (fig. 522) 23
- First to seventh flagellar segments not serrate (fig. 538) 24
- 23. Antennal segments 21-22; basal flagellar segments slightly serrate (fig. 23 in Chou, 1990); first metasomal tergite distinctly striate (fig. 245 in Chou, 1990); occipital carina joining hypostomal carina ventrally; Length of body 3.1-3.2 mm. Taiwan *S. kenchingi* Chou
- Antennal segments 24; basal flagellar segments deeply serrate (fig. 522); first metasomal tergite nearly smooth (fig. 526); occipital carina remaining separated from hypostomal carina ventrally; length of body 4.2-4.5 mm. Zhejiang *S. distincta* spec. nov.
- 24. Lateral lobes of mesoscutum densely setose anteriorly (fig.163); scapus 7.5-7.8 times as long as wide; length of body 2.9-3.0 mm. Taiwan *S. opima* Chou
- Lateral lobes of mesoscutum only with very few setae along its anterior margin (fig. 153); scapus 8.0-9.4 times as long as wide 25
- 25. Body dark brown; length of first metasomal tergite 2.7-2.9 times its width; scapus 9.2-9.4 times along as wide; first flagellar segment with two sensillae; length of body 3.4-3.5 mm. Taiwan *S. adusta* Chou
- Body brownish yellow; length of first metasomal tergite 2.4 times its width; scapus about 8.0 times as long as wide; first flagellar segment with three sensillae; length of body 3.0-3.2 mm. Guangxi *S. guangxiensis* You & Zhou

Streblocera (E.) *adusta* Chou, 1990

Streblocera (Cosmophorida) *adusta* Chou, 1990: 94.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) amplissima Chou, 1990

Streblocera (Cosmophoridia) amplissima Chou, 1990: 94.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) chaoi nom. nov.

Streblocera (Cosmophoridia) serrata Chao, 1993: 65. Preoccupied by *S. serrata* Granger, 1949.

Distribution.— China: Fujian.

Note.— This species is similar to *S. serrata* Granger, 1949, but differs in having the antenna serrate in a different shape, the mesonotum and propodeum black and the body smaller. No specimens were available for this study.

Streblocera (E.) cornis spec. nov.

(figs 527-531)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt W Tianmu, 8-10.x.1982, Ma Yun, no. 826142. Paratypes (7 ♀♀): 1 ♀ (RMNH), same locality, 10-12.ix.1983, Wan Xingsheng, no. 834039; 2 ♀♀ (ZAU), same as holotype; 5 ♀♀ (ZAU), same locality, 1-10.ix.1982, Wang Cangsong (no. 825903), 9.x.1982, Zhu Kuanyan (no. 825997), 25.vi.1983, Shi Zuhua (no. 831582), 27.vii.1984, Qian Ying (no. 842844).

Holotype, ♀, length of body 3.5 mm, of fore wing 3.4 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 25, scapus long, incrassate, 7.1 times its width and 1.7 times height of head, at basal quarter with a minute spine; flagellum geniculated at seventh flagellar segment; first to seventh flagellar segments ventrally carinate; sixth and seventh flagellar segments produced into hook-like prominence apico-ventrally, prominence on sixth segment much smaller; first flagellar segment with 7 sensillae, its length 1.3 times its width, as long as times pedicellus and 1.4 times as long as second flagellar segment; second flagellar segment with 7 sensillae, 0.9 times its width and as long as third segment; third flagellar segment with 8 sensillae; length of penultimate segment 1.5 times its width; length of scapus : length of antenna from pedicellus to seventh flagellar segment: length of antenna from eighth flagellar segment to apex = 60:48:94; length of maxillary palp 1.1 times height of head; OOL:OD:POL = 13:4:6; occipital carina complete, ventrally curved towards and joining hypostomal carina; length of eye in dorsal view 1.3 times temple; temple sparsely setose, roundly narrowed behind eyes; vertex smooth; frons medially smooth, laterally and anteriorly with strong carinae; face finely punctate and densely setose, its width 1.6 times its height; intertentorial line 1.5 times tentorio-ocular line; epistomal suture more or less impressed; clypeus finely punctate and densely setose, ventral margin with a pair of small tubercles, its width 2.8 times its height; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side anteriorly, medially and posteriorly crenulate, remainder smooth; precoxal sulcus wide and

crenulate, remainder of mesopleuron largely smooth; notauli narrow, deep and crenulate, posteriorly wide, rugose with a short median carina; middle lobe of mesoscutum densely setose, lateral lobes glabrous; scutellar suture deep with one median carina; propodeum reticulate-rugose, basally weakly rugose with a short median carina, areola not defined.

Wings.— Fore wing: length of vein 1-R1 0.70 times length of pterostigma; r emitting behind middle of pterostigma, 0.4 times width of pterostigma; r:2-SR:SR1+3-SR = 6:20:48; vein 2-R1 long; vein m-cu interstitial; 1-CU1:2-CU1 = 3:20. Hind wing: 1-M:1r-m:2-SC+R = 6:10:11.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 6.2, 12.5 and 10.0 times their width, respectively; length of hind tibial spurs 0.23 and 0.27 times hind basitarsus.

Metasoma.— Length of first tergite twice its apical width, its surface distinctly longitudinally striate, dorsope large, laterope absent, distance across spiracles 0.62 times distance from spiracles to apex of tergite; ovipositor sheath slender, its length 0.14 times fore wing, 0.83 times hind basitarsus, setose; ovipositor slightly curved downwards apically.

Colour.— Dark yellowish brown, dorsal face of mesosoma and first metasomal tergite dark brown, pronotal side ventrally and second segment of metasoma much paler (yellowish); antenna brown, scapus and pedicellus yellowish brown; palpi and tegulae pale yellow; legs brownish yellow, hind tibia darker; ovipositor sheath black; wing membrane hyaline; pterostigma brown, basally pale, veins brownish to colourless.

Variation.— Length of body 3.4-3.7 mm, of fore wing 3.2-3.4 mm; antennal segments 24-25; scapus 7.0-7.4 times its width; length of first tergite 2.0-2.1 times its apical width.

Streblocera (E.) curta Chou, 1990

Streblocera (Cosmophoridia) curta Chou, 1990: 95.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) destituta Chou, 1990

Streblocera (Cosmophoridia) destituta Chou, 1990: 96.

Material.— 1 ♀ (BMNH), Taiwan, Tseuy Feng, 2000m, viii.(19)79, I. Gauld.

Distribution.— China: Taiwan.

Streblocera (E.) distincta spec. nov.

(figs 522-526)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt W Tianmu, Xianrending, 2-4.vi.1990, Lou Yonggen, no. 900097. Paratypes (2 ♀♀ + 3 ♂♂; ZAU, (RMNH), same locality and collecting date, Shi Zuhua, He Junhua, Shi Zuhua, Wang Xinggen, Lou Yonggen, nos 905265, 902175, 903224, 900837, 901910.

Holotype, ♀, length of body 5.0 mm, of fore wing 4.2 mm.

Head.— Width of head in dorsal view 1.4 times its length; antennal segments 24, scapus long, incrassate, 11.8 times its width and 2.3 times height of head, without horn, ventrally weakly carinate; flagellum geniculated at seventh flagellar segment; first to seventh flagellar segments ventrally deeply serrate; seventh flagellar segment produced into hook-like prominence apico-ventrally; first flagellar segment without sensillum, 1.1 times its width, 0.8 times as long as pedicellus and as long as second flagellar segment; second flagellar segment with 2 sensillae, as long as its width and equal to third segment; third flagellar segment with 4 sensillae; length of penultimate segment 1.4 times its width; length of scapus:length of pedicellus to seventh flagellar segment:length of antenna from eighth flagellar segment to apex = 72:43:75; length of maxillary palp 0.9 times height of head; OOL:OD:POL = 15:6:8; occipital carina complete, ventrally remaining separated from hypostomal carina; length of eye in dorsal view 1.2 times temple; temple sparsely setose, first parallel-sided, posteriorly roundly narrowed; vertex smooth; frons medially with strong curved carinae; face finely punctate and densely setose, its width 1.3 times its height; intertentorial line 3.0 times tentorio-ocular line; epistomal suture absent; clypeus finely punctate and densely setose, along apical margin with a pair of small tubercles, its width 2.7 times its height; length of malar space 0.5 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side anteriorly, medially and posteriorly crenulate, dorsally smooth; precoxal sulcus wide, crenulate, remainder of mesopleuron largely smooth; notauli narrow, deep and crenulate, posteriorly wide and rugose; middle lobe of mesoscutum densely setose, lateral lobes glabrous; scutellar suture with three carinae; propodeum reticulate-rugose, basally narrowly nearly smooth with a short median carina, areola not defined.

Wings.— Fore wing: length of vein 1-R1 0.75 times length of pterostigma; r emitting behind middle of pterostigma, 0.3 times width of pterostigma; r:2-SR:SR1+3-SR = 6:31:62; vein m-cu slightly antefurcal; 1-CU1:2-CU1 = 3:26. Hind wing: 1-M:1r-m:2-SC+R = 6:19:9.

Legs.— Hind coxa sparsely punctate, nearly smooth; length of hind femur, tibia and basitarsus 5.8, 12.0 and 10.0 times their width, respectively; length of hind tibial spurs 0.23 and 0.27 times hind basitarsus.

Metasoma.— Length of first tergite 3.5 times its apical width, its surface smooth, apical third with weak smooth longitudinal striae, dorsope and laterope absent, distance across spiracles 0.43 times distance from spiracles to apex of tergite; ovipositor sheath slender, its length 0.21 times fore wing, 1.8 times hind basitarsus, ventrally long setose; ovipositor distinctly curved upwards, subapically with a small dorsal notch.

Colour.— Head yellowish brown, mesosoma reddish brown, metanotum, propodeum and metasoma dark brown, second tergite and metasomal sternites reddish; hypopygium yellowish; antenna brown, scapus and pedicellus yellowish brown; palpi pale yellow; legs yellowish brown; ovipositor sheath black; wing membrane subhyaline, pterostigma brown, basally pale, veins brown to yellowish.

Variation.— Length of body 4.4-5.0 (♀) or 3.9-4.3 (♂) mm, of fore wing 3.9-4.2 (♀) or 3.5-4.1 (♂) mm; antennal segments 24 (♀) or 24-26 (♂). Male antenna: scapus 4.6

times its width, 0.6 times height of head, 3.1 times pedicellus; first flagellar segment 1.2 times pedicellus and as long as second flagellar segment.

Streblocera (E.) ekphora Chao, 1993

Streblocera (Cosmophoridia) ekphora Chao, 1993: 62.

Distribution.— Fujian.

Note.— No specimens were available for this study.

Streblocera (E.) emeiensis Wang, 1981
(fig. 536)

Streblocera emeiensis J. Wang, 1981a: 107.

Material.— 14 ♀♀ + 14 ♂♂ (ZAU, RMNH), Zhejiang, Mt W Tianmu, 20-21.vii.1987, 3-4.ix.1987, 5-6.vi.1989, 2-4.vi.1990, 7.vi.1992, 12.vi.1993, Chen Xuexin, Fan Jinjiang, He Junhua, Lou Xiaoming, Lou Yonggen, Ma Jufa, Ma Qun, Shi Zuhua, & Wang Xinggen, nos 873492 (♀), 877177 (♀), 877200 (♀), 876820 (♀), 875582 (♀), 873078 (♂), 872070 (♂), 874561 (♂), 873779 (♂), 873593 (♂), 872018 (♂), 891675 (♀), 892852 (♀), 894952 (♂), 891365 (♂), 904456 (♀), 901909 (♀), 900814 (♀), 900691 (♀), 902345 (♀), 903225 (♂), 901955 (♂), 903223 (♂), 900639 (♂), 901944 (♀), 902187 (♂), 920979 (♂), 934541 (♀); 1 ♀ (ZAU), Sichuan, Mt Emei, 2.ix.1962, Wang Yunzai, no. 801699; 1 ♂ (ZAU), Sichuan, Mt Emei, 8.vii.1980, He Junhua, no. 802161; 1 ♂ (ZAU), Guangxi, Jinxiu, Daoyaoshan, 16 km, 14.vi.1982, He Hunhua, no. 822922.

Distribution.— Zhejiang, Sichuan and Guangxi.

Note.— One specimen (♀, no. 934541) from Mt W Tianmu has the ninth flagellar segment produced into a hook-like prominence apico-ventrally.

Streblocera (E.) gigantea spec. nov.
(figs 517-521)

Material.— Holotype, ♀ (ZAU), Fujian, Mt Wuyi, Huanggang, 16.vii.1994, Chen Xuexin, no. 948712.

Holotype, ♀, length of body 6.1 mm, of fore wing 5.1 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 29, scapus long, incrassate, 5.6 times its width and 1.7 times height of head, at basal 0.4 of scapus with a broad, obtuse horn; flagellum geniculated at seventh flagellar segment; first to seventh flagellar segments firmly fused, ventrally weakly carinate; seventh flagellar segment produced into hook-like prominence apico-ventrally; first flagellar segment with 10 sensillae, its length 2.4 times its width, as long as pedicellus and 1.1 times second flagellar segment; second flagellar segment with 12 sensillae, its length 1.9 times its width and as long as third segment; third flagellar segment with 12 sensillae; length of penultimate segment 1.8 times its width; length of scapus:length of pedicellus to seventh flagellar segment:length of antenna from eighth flagellar segment to apex = 50:54:100; length of maxillary palp 1.1 times height of head; OOL:OD:POL = 17:6:7; occipital carina complete, ventrally curved towards and joining hypostomal carina; length of eye in dorsal view 1.5 times temple; temple sparsely setose, slightly roundly narrowed behind eyes; vertex smooth; frons medially smooth, laterally and anteriorly with strong carinae; face finely punctate and

densely setose, its width 1.3 times its height; intertentorial line 1.8 times tentorio-ocular line; epistomal suture weakly developed; clypeus finely punctate and densely setose, along apical margin with a pair of small tubercles, its width 2.9 times its height; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.75 times its height; pronotal side anteriorly, medially and posteriorly crenulate, dorsally and ventrally smooth; precoxal sulcus wide, sparsely crenulate, remainder of mesopleuron largely smooth; notauli narrow, deep and crenulate; middle lobe of mesoscutum densely setose, lateral lobes glabrous; scutellar suture deep with one median carina; propodeum irregularly rugose, basally narrowly nearly smooth with a short median carina, areola not defined.

Wings.— Fore wing: length of vein 1-R1 0.72 times length of pterostigma; r emitting behind middle of pterostigma, 0.5 times width of pterostigma; r:2-SR:SR1+3-SR = 10:32:76; vein m-cu interstitial; 1-CU1:2-CU1 = 4:30. Hind wing: 1-M:1r-m:2-SC+R = 10:18:13.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 7.4, 14.2 and 12.0 times their width, respectively; length of hind tibial spurs 0.17 and 0.20 times hind basitarsus.

Metasoma.— Length of first tergite 2.3 times its apical width, its surface smooth, apical half laterally longitudinally striate, dorsope and laterope distinct, distance across spiracles 0.65 times distance from spiracles to apex of tergite; ovipositor sheath slender, its length 0.17 times fore wing, 0.9 times hind basitarsus, ventrally and apically setose.

Colour.— Reddish brown; antenna dark yellowish brown, from eighth flagellar segment to apex pale brown; palpi pale yellow; prothorax, tegulae and legs yellow; metanotum, propodeum, first metasomal tergite dark brown to black; metasoma after first tergite reddish; second tergite yellowish; ovipositor sheath black; wing membrane subhyaline; pterostigma dark brown, basally pale, veins dark brown to yellow.

Streblocera (E.) guangxiensis You & Xiong, 1988
(fig. 538)

Streblocera guangxiensis You & Xiong, 1988a: 169.

Material.— 1 ♀ (ZAU), Guangxi, Guixian, 8.xi.1979, Insect Survey Group of Guangxi Zhaung Autonomous Region, no. 801049.

Distribution.— China: Guangxi.

Streblocera (E.) janus spec. nov.
(figs 511-516)

Material.— Holotype, ♀ (ZAU), Guizhou, Mt Fanjing, Jinding, 12.vii.1993, Chen Xuexin, no. 938382. Paratype: 1 ♂ (ZAU), same locality and collecting date, Yao Songlin, no. 836705.

Holotype, ♀, length of body 3.9 mm, of fore wing 3.8 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 25,

scapus long, incrassate, its length 6.9 times its width and 1.8 times height of head, at basal 0.4 with an acute small horn at inner side; flagellum geniculated at seventh flagellar segment; first to seventh flagellar segments ventrally carinate, but carina on first segment weaker; seventh flagellar segment produced into hook-like prominence apico-ventrally, prominence on sixth segment much smaller; first flagellar segment with 6 sensillae, 1.3 times its width, 0.9 times pedicellus and 1.6 times second flagellar segment; second flagellar segment with 7 sensillae, 0.7 times its width and 0.8 times third segment; third flagellar segment with 8 sensillae; length of penultimate segment 1.5 times its width; length of scapus:length of antenna from pedicellus to seventh flagellar segment:length of antenna from eighth flagellar segment to apex = 70:43:94; length of maxillary palp 1.1 times height of head; OOL:OD:POL = 16:6:9; occipital carina complete, ventrally joining hypostomal carina; length of eye in dorsal view 1.6 times temple; temple sparsely setose, roundly narrowed behind eyes; vertex smooth; frons smooth, anteriorly with distinct longitudinal carinae; face finely punctate and densely setose, its width 1.5 times its height; intertentorial line 1.5 times tentorio-ocular line; epistomal suture more or less impressed; clypeus finely punctate and densely setose, along apical margin with a pair of small tubercles, its width 2.6 times its height; length of malar space 0.9 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side anteriorly, medially and posteriorly crenulate, remainder smooth; precoxal sulcus wide and crenulate, remainder of mesopleuron largely smooth; notauli narrow, deep and crenulate, posteriorly with a short median carina; middle lobe of mesoscutum densely setose, lateral lobes glabrous; scutellar suture deep with one median carina and two weak lateral carinae; propodeum reticulate-rugose, basally narrowly smooth with a short median carina, areola not defined.

Wings.— Fore wing: length of vein 1-R1 0.8 times length of pterostigma; r emitting behind middle of pterostigma, 0.44 times width of pterostigma; r:2-SR:SR1+3-SR = 8:25:68; vein 2-R1 long; vein m-cu interstitial; 1-CU1:2-CU1 = 3:24. Hind wing: 1-M:1r-m:2-SC+R = 6:13:12.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 6.4, 13.1 and 12.7 times their width, respectively; length of hind tibial spurs 0.24 and 0.26 times hind basitarsus.

Metasoma.— Length of first tergite 2.1 times its apical width, its surface distinctly longitudinally striate, dorsope large, laterope absent, distance across spiracles 0.7 times distance from spiracles to apex of tergite; ovipositor sheath slender, its length 0.13 times fore wing, 0.92 times hind basitarsus, ventrally and apically setose.

Colour.— Yellowish brown; dorsal face of mesosoma and metasoma dark brown, second metasomal tergite reddish; prothorax, tegulae and legs yellow; antenna brown, scapus and pedicellus yellowish brown; palpi pale yellow; ovipositor sheath black; wing membrane hyaline; pterostigma brown, basally pale, veins brownish to colourless.

Variation.— Male: length of body 3.7 mm, of fore wing 3.5 mm; antennal segments 23; length of scapus 5.6 times its width, 0.7 times height of head, and 3.1 times pedicellus; first flagellar segment as long as pedicellus, and 0.9 times third flagellar segment.

Streblocera (E.) kenchingi Chou, 1990

Streblocera (Cosmophoridia) kenchingi Chou, 1990: 96.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) lienhuachihensis Chou, 1990

Streblocera (Cosmophoridia) lienhuachihensis Chou, 1990: 97.

Material.— 1 ♀ (ZAU), Hubei, Leifeng, viii.1979, Ming Guanpei, no. 870416.

Distribution.— China: Hubei and Taiwan.

Streblocera (E.) linearata spec. nov.
(figs 506-510)

Material.— Holotype, ♀ (ZAU), Fujian, Mt Wuyi, Huanggang, 16.vii.1994, Chen Xuexin, no. 948713.

Holotype, ♀, length of body 3.1 mm, of fore wing 2.8 mm.

Head.— Width of head in dorsal view 1.4 times its length; antennal segments 23, scapus long, incrassate, its length 7.4 times its width and 1.2 times height of head, without horn; flagellum not geniculate, second to seventh flagellar segments weakly carinate ventrally, sixth and seventh segments apico-ventrally with a small hook-like prominence; first flagellar segment with 3 sensillae, its length twice its width, as long as pedicellus and 1.4 times second flagellar segment; second flagellar segment with 4 sensillae, 1.3 times its width and 0.9 times third segment; third flagellar segment with 4 sensillae; length of penultimate segment 1.5 times its width; length of scapus: length of pedicellus to apex = 25:77; length of maxillary palp 1.2 times height of head; OOL:OD:POL = 16:5:5; occipital carina complete, ventrally joining hypostomal carina; length of eye in dorsal view 1.1 times temple; temple smooth, densely setose, roundly narrowed behind eyes; vertex medially smooth; frons medially smooth, ventrally with smooth rugae; face densely punctate and setose, its width 1.8 times its height; intertentorial line 1.6 times tentorio-ocular line; epistomal suture more or less impressed; clypeus smooth, sparsely setose, apical margin slightly raised, along apical margin with a pair of small tubercles, its width 2.2 times its height; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side largely smooth, only antero-medially and posteriorly crenulate; precoxal sulcus narrow, crenulate, remainder of mesopleuron largely smooth; notauli narrow, deep and crenulate, posteriorly with a short median carina; middle lobe of mesoscutum densely setose, lateral lobes glabrous; scutellar suture with one median carina; propodeum reticulate-rugose, basally narrowly nearly smooth, areola not defined.

Wings.— Fore wing: length of vein 1-R1 0.7 times length of pterostigma; r emitting behind middle of pterostigma, 0.44 times width of pterostigma; r:2-SR:SR1+3-SR = 8:28:58; SR1-3-SR evenly curved, vein m-cu interstitial; 1-CU1:2-CU1 = 5:21. Hind wing: 1-M:1r-m:2-SC+R = 7:13:13.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 5.6, 12.3 and 10.0 times their width, respectively; length of hind tibial spurs 0.23 and 0.27 times hind basitarsus.

Metasoma.— Length of first tergite 2.3 times its apical width, its surface distinctly longitudinally striate, dorsope distinct, laterope absent, distance across spiracles 0.7 times distance from spiracles to apex of tergite; ovipositor sheath slender, its length 0.18 times fore wing, 1.3 times hind basitarsus, ventrally and apically long setose.

Colour.— Dark brown; head and pronotal side posteriorly yellowish brown, stemmaticum and its surroundings, and frons medially, brown; antenna brown, scapus and pedicellus yellowish brown; palpi pale yellow; metasoma ventrally reddish; legs brownish yellow; ovipositor sheath dark yellowish brown, apically black; wing membrane hyaline, pterostigma dark yellow brown, veins brownish to colourless.

Streblocera (E.) nantouensis Chou, 1990

Streblocera (Cosmophorida) nantouensis Chou, 1990: 98.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) nigra Chou, 1990

Streblocera (Cosmophorida) nigra Chou, 1990: 98.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) obtusa spec. nov.
(figs 497-505)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt Tianmu, 28.vii.1987, Chen Xuexin, no. 872084. Paratypes (1♀ + 1♂; ZAU): 1 ♀, Zhejiang, Longquan, Mt Fengyan, 22-24.viii.1982, Song Qisheng, no. 826580; 1 ♂, Zhejiang, Longquan, Mt Fengyang, 21.viii.1982, Zhu Kunyuan, no. 825023.

Holotype, ♀, length of body 2.8 mm, of fore wing 2.8 mm.

Head.— Width of head in dorsal view 1.4 times its length; antennal segments 22, scapus long, incrassate, its length 5.0 times its width and 1.7 times height of head, in basal 0.3 with a broad, obtuse horn; flagellum geniculated at seventh flagellar segment; first to seventh flagellar segments firmly fused and ventrally weakly carinate, but carina on first segment weaker; seventh and eighth flagellar segments produced into hook-like prominence apico-ventrally; first flagellar segment with 1 sensillum, its length twice its width, 0.5 times pedicellus and twice second flagellar segment; second flagellar segment with 2 sensillae, its length as long as its width and 0.9 times third segment; third flagellar segment with 3 sensillae; length of penultimate segment 1.7 times its width; length of scapus:length of antenna from pedicellus to seventh flagellar segment:length of antenna from eighth flagellar segment to apex = 50:40:60; length of maxillary palp 1.1 times height of head; OOL:OD:POL = 16:5:6;

occipital carina complete, ventrally joining hypostomal carina; length of eye in dorsal view 1.3 times temple; temple sparsely setose, roundly narrowed behind eye; vertex smooth; frons medially smooth, laterally punctate and setose, anteriorly with some weak rugae; face finely punctate and densely setose, its width 1.4 times its height; intertentorial line 1.7 times tentorio-ocular line; epistomal suture distinct; clypeus finely punctate and setose, along apical margin with a pair of small tubercles, its width 2.4 times its height; length of malar space 1.2 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.7 times its height; pronotal side anteriorly, medially and posteriorly crenulate, dorsally and ventrally nearly smooth; precoxal sulcus wide and crenulate, remainder of mesopleuron largely smooth; notauli narrow, deep and crenulate, posteriorly wide and rugose; middle lobe of mesoscutum densely setose, lateral lobes glabrous; scutellar suture deep with one median carina; propodeum areolate with rugae between carinae.

Wings.— Fore wing: length of vein 1-R1 0.7 times length of pterostigma; r emitting behind middle of pterostigma, 0.35 times width of pterostigma; r:2-SR:SR1+3-SR = 6:28:58; vein 2-R1 short; vein m-cu interstitial; 1-CU1:2-CU1 = 3:25. Hind wing: 1-M:1r-m:2-SC+R = 4:18:11.

Legs.— Hind coxa finely punctate, nearly smooth; length of hind femur, tibia and basitarsus 6.3, 13.1 and 11.0 times their width, respectively; length of hind tibial spurs 0.21 and 0.27 times hind basitarsus.

Metasoma.— Length of first tergite twice its apical width, its surface weakly longitudinally rugose, dorsope large, laterope absent, distance across spiracles 0.6 times distance from spiracles to apex of tergite; ovipositor sheath slender, its length 0.20 times fore wing, 1.3 times hind basitarsus, ventrally and apically setose.

Colour.— Pale reddish brown; head yellowish brown, metanotum, propodeum and first metasomal tergite brownish; antenna yellowish brown, eighth segment to apex brown; palpi, tegulae and legs yellow; ovipositor sheath black, basally paler; wing membrane hyaline; pterostigma brown, basal 1/3 pale, veins brownish to colourless.

Variation.— Length of body 2.8–3.5 mm, of fore wing 2.8–3.1 mm; antennal segments of male 21. Male antenna: scapus 4.8 times its width, 0.66 times height of head, 2.6 times pedicellus; first flagellar segment as long as pedicellus, 0.9 times third flagellar segment.

Streblocera (E.) octava Chou, 1990

Streblocera (Cosmophoridia) octava Chou, 1990: 99.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) okadai Watanabe, 1942

Streblocera okadai Watanabe, 1942: 10; Maetô & Nagai, 1985: 729.

Streblocera (Cosmophoridia) okadai; Chou, 1990: 100; Chao, 1993: 66.

Streblocera orientalis Chao, 1964: 154. Syn. by Chao, 1993.

Streblocera zhongmouensis J. Wang, 1982: 61. Syn. by Chao, 1993.

Streblocera shaanxiensis C. Wang, 1984: 422. Syn. by Chao, 1993.

Streblocera flava You & Xiong, 1988a: 167. Syn. by Chao, 1993.

Material.— 2 ♀♀ (RMNH), Jilin, Gongzhuling, viii-ix.1983, Wang Chenlun, nos 840137-840138; 52 ♀♀ + 8 ♂ (ZAU): 17 ♀♀, Jilin, Gongzhuling, viii-ix.1983, Wang Chenlun, nos 840135, 840139-840153; 1 ♀, Liaoning, Xiongyue, 12.viii.1964, Dai Zhonglian, no. 948351; 1 ♀, Hebei, Ganchan, 1977, Ma Zhongshi, no. 780654; 1 ♂, Shaanxi, Zhouzhi, 1979, Yang Jian, no. 791217; 1 ♀ + 1 ♂, Shandong, Huiming, 13.vii.1982, Qu Yiaoxun, ex adults of *Medythia nigrobilineata* (Motschulsky), no. 826544; 3 ♀♀ + 1 ♂, Jiangsu, Yangzhou, 1981, Yang Lianming, nos 820099, 820123; 3 ♀♀ + 1 ♂, Jiangsu, Zhenjiang, 10.vi.1980, 13.viii.1980, Shen Qiangxing, nos 810562, 810566; 1 ♀ + 1 ♂, Anhui, Puyang, 20, 25.ix.1980, Li Sikui, nos 810200, 810214; 4 ♀♀, Anhui, Yuexi, 20, 24.ix.1981, 30.iv.1981, Yang Fu'an, nos 820529, 820563; 1 ♀, Anhui, Anqing, 1981, Chen Ronghai, no. 871142; 2 ♀♀, Zhejiang, Hangzhou (Hangzhou), 3.ix.1935, Chu J.; 3 ♀♀, Zhejiang, Mt W Tianmu, 21.x.1986, 18.v.1988, Wang Cangsong, He Junhua, nos 881246, 940495-940496; 1 ♀, Zhejiang, Dongyang, 16.iv.1963, He Junhuan, no. 63062.5; 2 ♀♀, Zhejiang, Dongyang, ix-x.1980, Zhou Hongxing, no. 803576; 1 ♂, Zhejiang, Tiantai, 20-22.ix.1957, He Junhua, no. 5735.13; 1 ♀, Zhejiang, Qinyuan, 26-27.vii.1985, Wu Jinchong, no. 857886; 2 ♀♀, Jiangxi, Jiujiang, 1978-79, 31.viii.1981, Zhang Jinguang, cotton field, nos 790865, 816221; 1 ♀, Hubei, Zhushan, 28.viii.1982, He Junhua, no. 824883; 1 ♀, Hubei, Leifeng, ix.1979, Ming guangpei, no. 870403; 1 ♀, Xianming, 10.vi.1978, Luo Qigui, no. 800051; 1 ♀, Hunan, 16.ix.1935, collector unknown; 1 ♀, Fujian, Sanming, 20.xi.1980, Liu Yigya, no. 881318; 1 ♀, Yunnan, Ruili, 1.vi.1981, Wang Luzhe, soybean field, no. 814241; 1 ♂, Yunnan, Ruili, 28.iv.1981, Wang Haizheng, no. 813996; 1 ♀, Yunnan, Simo, 7.iv.1981, He Junhua, no. 814860; 1 ♀, yunnan, Lanchang, 20.iv.1981, He Junhua, no. 814395; 1 ♀, Mangshi, 1980, a staff of Agricultural Institute of Mangshi, no. 810684.

Biology.— Solitary endoparasite of *Medythia nigrobilineata* (Motschulsky) (Chrysomelidae). The mature larva emerges from the adult host (Maetô & Nagai, 1985).

Distribution.— China: North China (Kaigen), Jilin, Liaoning, Hebei, Shaanxi, Henan, Shangdong, Anhui, Jiangsu, Zhejiang, Hubei, Hunan, Fujian, Yunnan; Japan; Russian Far East.

Streblocera (E.) opima Chou, 1990

Streblocera (Cosmophoridia) opima Chou, 1990: 101.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) primotina Chou, 1990

Streblocera (Cosmophoridia) primotina Chou, 1990: 102.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) sichuanensis Wang, 1986

Streblocera sichuanensis J. Wang, 1986: 179.

Distribution.— China: Sichuan.

Note.— This species is similar to *S. macroscapa* Ruthe, but differs in having the antenna with 21 segments (the latter with 17-19), and the scapus as long as following 4 segments combined (equal to following 10 segments). No specimens were available for this study.

Streblocera (E.) sungkangensis Chou, 1990

Streblocera (Cosmophoridia) sungkangensis Chou, 1990: 103.

Material.— 7 ♀♀ + 14 ♂♂ (ZAU, RMNH): 5 ♀♀ + 13 ♂♂, Zhejiang, Mt W Tianmu, 20-22.vii.1987, 2, 4.ix.1987, 6.vi.1989, 2-4.vi.1990, Chen Xuexin, Fan jinjiang, He Junhua, Hu Hiajun, Lou Xiaoming, Lou Yonggen, Shi Zuhua, 877578 (♀), 877505 (♀), 877576 (♀), 874603 (♂), 874591 (♂), 874545 (♂), 874412 (♂), 874547 (♂), 872083 (♂), 877592 (♂), 874420 (♂), 872058 (♂), 876036 (♂), 873514 (♂), 874419 (♂), 890375 (♀), 891798 (♀), 905122 (♀), 900432 (♀), 903478 (♀), 901096 (♂), 903227 (♂); 1 ♀, Zhejiang, Anjie, Mt Longwang, 31.viii.1993, Xu Zaifu, no. 931048.

Distribution.— China: Zhejiang and Taiwan.

Streblocera (E.) taiwanensis Chou, 1990

Streblocera (Cosmophoridia) taiwanensis Chou, 1990: 104.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (E.) tsuifengensis Chou, 1990

Streblocera (Cosmophoridia) tsuifengensis Chou, 1990: 105.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Subgenus *Streblocera* Westwood, 1833

(fig. 535)

Streblocera Westwood, 1833: 342; De Saeger, 1946: 144; Capek & Snoflak, 1959: 345; Shenefelt, 1969: 125; Shaw, 1985: 337; Tobias, 1986: 235. Type species (by monotypy): *Streblocera fulviceps* Westwood, 1833.

Streblocera subgenus *Streblocera*; Belokobylskij, 1987: 161; Chou, 1990: 91; Chao, 1993: 61.

Diagnosis.— Antenna of female geniculated at third segment; scapus of female long, with or without basal horn, inner concave side usually less setose; third antennal segment of female modified and with acutely protruding corner apically, other segments normal; all antennal segments movably joining to each other; eyes normal to rather small; face distinctly wider than high, more or less convex, medially without an acute horn; mandible normal, without wide ventral lamella; occipital carina nearly complete, ventrally usually joining hypostomal carina; first metasomal tergite usually with dorsope; fifth metasomal sternite of female without pair of short, acute tooth; ovipositor long, distinctly extending beyond sternites.

Biology.— Parasites of Chrysomelidae.

Distribution.— Palearctic and North Oriental regions, especially in East Palearctic and North Oriental regions.

Key to Chinese species of the subgenus *Streblocera* Westwood

1. Scapus with a horn near its base (fig. 535; figs 1, 4, 5 in Chou, 1990) 2
 - Scapus without a horn near its base (figs 2, 9, 10 in Chou, 1990) 6
2. Scapus strongly expanded, 2.0-3.0 times as long as wide (figs 1, 4, 5 in Chou, 1990) 3
 - Scapus not expanded, 4.5-9.0 times as long as wide (fig. 535; fig. 13 in Chou, 1990) 5
3. First flagellar segment widely expanded (figs. 1, 4 in Chou, 1990), 1.5 times as long as wide; scapus 2.0-2.5 times as long as wide 4
 - First flagellar segment rather weakly expanded (fig. 5 in Chou, 1990), 3.0 times as long as wide; scapus 3.0 times as long as wide; length of body 2.7 mm. Taiwan
..... *S. latibrocha* Chou
4. First flagellar segment almost rectangular (fig. 4 in Chou, 1990); length of scapus 1.5 times height of head; length of body 2.5 mm. Taiwan *S. immensa* Chou
 - First flagellar segment almost triangular (fig. 1 in Chou, 1990); scapus as long as height of head; length of body 2.8 mm. Taiwan *S. triquetra* Chou
5. Scapus with a distinct, broad horn near base (fig. 535); antennal segments 17; length of body 2.5 mm. Jilin; Palaearctic region *S. fulviceps* Westwood
 - Scapus with a weak horn near base (fig. 13 in Chou, 1990); antennal segments 15; length of body 2.2-2.3 mm. Taiwan *S. lini* Chou
6. Scapus strongly expanded, 2.1-2.6 times as long as wide (fig. 2 in Chou, 1990); length of body 1.9-2.3 mm. Taiwan *S. emarginata* Chou
 - Scapus not expand, 4.5-9.0 times as long as wide 7
7. First flagellar segment long, 6.1-6.6 times as long as wide and 2.3-2.7 times as long as second flagellar segment; scapus 8.0-8.5 times as long as wide (figs. 9,10 in Chou, 1990) 8
 - First flagellar segment shorter, 3.7-4.7 times as long as wide and 1.3-2.0 times as long as second flagellar segment; scapus 4.4-8.0 times as long as wide (figs 6-8, 11, 12 in Chou, 1990) 10
8. Occipital carina almost straight dorsally (fig. 152 in Chou, 1990; fig. 17 in Chao, 1964); antennal segments 18 (but unknown of *S. tachulaniana* Chao) 9
 - Occipital carina convex dorsally (fig. 151 in Chou, 1990); antennal segments 16; length of body 2.6 mm. Taiwan *S. lalashanensis* Chou
9. Lower margin of clypeus without pair of tubercles; ovipositor almost straight; length of body 2.5-3.0 mm. Fujian *S. tachulaniana* Chao
 - Lower margin of clypeus with pair of tubercles; ovipositor curved; length of body 3.1-3.3 mm. Taiwan *S. meifengensis* Chou
10. Third flagellar segment strongly curved (fig. 12 in Chou, 1990) 11
 - Third flagellar segment nearly straight, or weakly curved (figs 6, 7, 8, 11 in Chou, 1990) 12
11. Distance across spiracles 0.9 times distance from spiracle to apex of first metasomal tergite; antennal segments 15; length of first metasomal tergite 1.6 times its apical width; length of body 2.1 mm. Taiwan *S. panda* Chou
 - Distance across spiracles 1.1 times distance from spiracle to apex of first tergite; antennal segments 16; length of first metasomal tergite about twice its apical width; length of body 3.0 mm. Fujian *S. shaowuensis* Chao

12. Antennal segments 17; combined length of second and following flagellar segments 1.8-1.9 times length of scapus 13
 - Antennal segments 14-16; combined length of second and following flagellar segments 2.2-2.4 times length of scapus 14
13. Scapus slender, 7.8-8.0 times as long as wide (fig. 11 in Chou, 1990); length of body 2.4-2.6 mm. Taiwan *S. chiuae* Chou
 - Scapus more robust, 5.0 times as long as wide (fig. 6 in Chou, 1990); length of body 2.8 mm. Taiwan *S. tunpuensis* Chou
14. Scapus slender, 6.0-6.3 times as long as wide (fig. 8 in Chou, 1990); body yellowish brown to brownish yellow; length of body 1.8-2.0 mm. Taiwan
 *S. helvenaca* Chou
 - Scapus rather robust, 4.4-5.1 times as long as wide (fig. 7 in Chou, 1990); body dark brown; length of body 2.4-2.5 mm. Taiwan *S. tayulingensis* Chou

Streblocera (S.) chiuae Chou, 1990

Streblocera (S.) chiuae Chou, 1990: 107.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (S.) emarginata Chou, 1990

Streblocera (S.) emarginata Chou, 1990: 107.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (S.) fulviceps Westwood, 1833
(fig. 535)

Streblocera fulviceps Westwood, 1833: 342; Watanabe, 1942: 3; Tobias, 1965: 846; Tobias, 1986: 237; Shenefelt, 1969: 127; He, 1984: 204; He & Wang, 1987: 423.

Streblocera (S.) fulviceps; Belokobylskij, 1987: 1632, 165 (English translation: 3, 7).

Material.— 1 ♀ + 1 ♂ (ZAU), Jilin, date unknown, collected by a staff member of the Agricultural Experimental Station of Jilin province, ex adults of *Chaetocnema cylindrica* Baly, no. 5641.2.

Biology.— Parasites of adults of *Chaetocnema cylindrica* Baly (Chrysomelidae).

Distribution.— China: Jilin; Palaearctic region.

Streblocera (S.) helvenaca Chou, 1990

Streblocera (S.) helvenaca Chou, 1990: 108.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (S.) immensa Chou, 1990

Streblocera (S.) immensa Chou, 1990: 109.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (S.) lalashanensis Chou, 1990

Streblocera (S.) lalashanensis Chou, 1990: 110.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (S.) latibrocha Chou, 1990

Streblocera (S.) latibrocha Chou, 1990: 110.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (S.) lini Chou, 1990

Streblocera (S.) lini Chou, 1990: 111.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (S.) meifengensis Chou, 1990

Streblocera (S.) meifengensis Chou, 1990: 112.

Material.— 1 ♀ (ZAU), Fujian, Mt Wuyi, Huanggangshan, ix.1981, Huang Juchang, no. 880778.

Distribution.— China: Fujian and Taiwan.

Streblocera (S.) panda Chou, 1990

Streblocera (S.) panda Chou, 1990: 113.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (S.) shaowuensis Chao, 1964

Streblocera shaowuensis Chao, 1964: 158.

Streblocera (S.) shaowuensis Chao, 1993: 61.

Distribution.— Fujian.

Note.— No specimens were available for this study.

Streblocera (S.) tachulaniana Chao, 1964

Streblocera tachulaniana Chao, 1964: 156.

Streblocera (S.) tachulaniana Chao, 1993: 61.

Distribution.— Fujian.

Note.— No specimens were available for this study.

Streblocera (S.) tayulingensis Chou, 1990

Streblocera (S.) tayulingensis Chou, 1990: 113.

Material.— 1 ♀ (ZAU), Zhejiang, Mt W Tianmu, Liaodian—Xianrending, 6.vi.1989, He Junhua, no. 891183; 1 ♀ (ZAU), Zhejiang, Mt W Tianmu, Xianrending, 2-4.vi.1990, Shi Zuhua, no. 902233.

Distribution.— China: Zhejiang and Taiwan.

Streblocera (S.) triquetra Chou, 1990

Streblocera (S.) triquetra Chou, 1990: 114.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (S.) tungpuensis Chou, 1990

Streblocera (S.) tungpuensis Chou, 1990: 115.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Subgenus *Villocera* nov.

(fig. 537, 616-624)

Type species: *Streblocera villosa* Papp, 1985 (? = *Streblocera xianensis* J. Wang, 1983).

Diagnosis.— Antenna of female geniculated at seventh segment; scapus of female long, without basal horn, inner concave side usually less setose; seventh antennal segment of female modified and with long protruding corner apico-ventrally; basal five flagellar segments fused; antennal sockets reaching top level of eyes in lateral view; eyes normal to rather small; face as long as high, strongly flattened and more or less tomentose, medially without an acute horn; mandible normal, without wide ventral lamella; occipital carina nearly complete, ventrally usually remaining separated from hypostomal carina; first metasomal tergite with dorsope; fifth metasomal sternite of female without pair of short, acute tooth; ovipositor long, distinctly extending beyond sternites.

Biology.— Unknown.

Distribution.— East Palaearctic and Oriental regions. Three species are included in this subgenus: *Streblocera quinaria* Chou, 1990, *Streblocera villosa* Papp, 1985, and *Streblocera xianensis* Wang, 1983.

Key to species of the subgenus *Villocera* nov.

1. Face tomentose in a characteristic form (fig. 622); first flagellar segment 1.0-1.3 times as long as wide 2
- Face pubescent normally; first flagellar segment 3.3 times as long as wide; length of body 3.3-4.5 mm. Taiwan *S. quinaria* Chou
2. Scapus with pair of small apical teeth; length of body 3.0 mm. Shaanxi *S. xianensis* Wang
- Scapus without pair of apical teeth; length of body 2.4-2.7 mm. Zhejiang, Taiwan, Fujian, Guizhou; Korea *S. villosa* Papp

Streblocera (*V.*) *quinaria* Chou, 1990

Streblocera (*Cosmophorida*) *quinaria* Chou, 1990: 103.

Distribution.— China: Taiwan.

Note.— No specimens were available for this study.

Streblocera (*V.*) *villosa* Papp, 1985
(figs 537, 616-624)

Streblocera villosa Papp, 1985: 352.

Streblocera (*Cosmophorida*) *villosa*, Chou, 1990: 106; Chao, 1993: 68.

Streblocera guizhouensis You & Luo, 1993: 216. **Syn. nov.**

Material.— 3 ♀♀ (ZAU, RMNH), Zhejiang, Mt W Tianmu, 27.vii.1988, Qian Ying, nos 940278, 940284, 940306.

Distribution.— China: Zhejiang, previously reported from Taiwan, Fujian and Guizhou; Korea.

Note.— In a recently published paper, You & Luo (1993) described *Streblocera guizhouensis* based on two specimens from Guizhou province and compared it with another Chinese species, *S. xianensis* Wang, 1983. However, from the text and figures it is evident that *S. guizhouensis* is a junior synonym of *S. villosa* Papp, 1985.

Streblocera (*V.*) *xianensis* Wang, 1983

Streblocera xianensis C. Wang, 1983c: 280.

Distribution.— China: Shaanxi.

Note.— Most likely *S. (V.) xianensis* Wang may be a senior synonym of *S. (V.) villosa* Papp, 1985, because the only reliable character for separation of *S. xianensis* from *S. villosa* is the presence of small apical teeth of the scapus. This character state is very uncommon in the family Braconidae. No specimens were available for this study.

Genus *Syntretomorpha* Papp, 1962
(figs 539-548)

Syntretomorpha Papp, 1962: 17; Shenefelt, 1969: 129; Shaw, 1985: 340; Walker, Joshi & Verma, 1990: 80.

Type species (by monotypy): *Syntretomorpha szaboi* Papp, 1962.

Diagnosis.— Antennal segments 30-31 (♀) or 32 (♂), apical segment without spine; maxillary palp 4 with segments; labial palp with 3 segments; frons medially concave; frontal carina extending to median ocellus; epistomal suture absent; malar suture present; malar space nearly as long as height of head; occipital carina completely absent; precoxal sulcus present; prepectal carina complete; notauli present and distinctly crenulate; mesocutum (except notauli) and scutellum smooth; medio-posterior depression of scutellum absent; propodeum reticulate and medio-posteriorly depressed; petiolar notch extending nearly to mesocoxal insertions; veins 1-SR+M and r-m of fore wing absent; veins M+CU1 and 2-1A of fore wing unsclerotized; vein SR1+3-SR of fore wing ending at wing margin halfway between wing apex and pterostigma; vein cu-a of fore wing nearly interstitial; vein 1r-m of hind wing absent and vein cu-a of hind wing slightly postfurcal; tarsal claws bifurcate and abruptly bent submedially; first metasomal tergite entirely fused ventrally, dorsope and laterope absent; ovipositor sheath slender and setose; ovipositor slightly longer than first metasomal tergite, distinctly curved.

Biology.— Solitary endoparasites of adult bees (Apidae).

Distribution.— Small Oriental genus; one species.

Syntretomorpha szaboi Papp, 1962
(figs 539-548)

Syntretomorpha szaboi Papp, 1962: 12 (♂); Walker, Joshi & Verma, 1990: 81 (♀).

Bracteodes ceranae You & Zhou, 1991: 158 (♀♂). *Syn. nov.*

Material.— 1 ♀ (ZAU), Hubei, Shengnongjia, 1700m, 26.viii.1982, He Junhua, no. 825564.

Biology.— Solitary endoparasites of adults of the Oriental honey bee, *Apis cerana* Fabricius (Walker, Joshi & Verma, 1990; You & Zhou, 1991).

Distribution.— China: Taiwan (Chip-Chip), Guizhou (Renhuai), Hubei (Shengnongjia); India (Nainital, northern India).

Note.— You & Zhou (1991) apparently misidentified this species as a member of the genus *Bracteodes*, because they overlooked the synapomorphies of *Bracteodes* such as frontal carinae present laterad of median carina, running more or less parallel to median carina; vein SR1 of fore wing nearly reaching wing apex; and metasoma strongly compressed, in dorsal view less than one quarter as wide as propodeum. The text and figures given by You & Zhou (1991) clearly indicate that *B. ceranae* You & Zhou is a junior synonym of *S. szaboi* Papp, 1962.

Genus *Syntretus* Foerster, 1862
(figs 332-335, 549-568)

Syntretus Foerster, 1862: 251; Shenefelt, 1969: 130; Walker, Joshi & Verma, 1990: 80; Belokobylskij, 1996: 283. Type species (by original designation): *Microctonus vernalis* Wesmael, 1835.

Diagnosis.— Antennal segments 18-30, apical segment without spine, scapus short, about twice as long as wide, pedicellus about 0.7 times as long as scapus; maxillary palp with 5 segments; labial palp with 3 segments; occipital carina present, almost complete, ventrally curved towards and joining hypostomal carina; malar

suture present; notauli absent or shallowly present but smooth; precoxal sulcus absent; propodeum entirely rugose to entirely smooth; veins 1-SR+M, r-m and 2-1A of fore wing absent; vein M+CU1 of fore wing unsclerotized; vein cu-a of hind wing reduced to a short spur or absent; vein 1-1A of hind wing absent; tarsal claw bifurcate; first metasomal tergite slender, basal half to basal two third ventrally fused, laterope usually absent, but sometimes present, dorsope absent, spiracles located behind middle of tergite; hypopygium small to medium-sized, sparsely setose; ovipositor sheath slender and setose; ovipositor slender, nearly straight.

Biology.— Parasites of adult Hymenoptera: Ichneumonidae and Apidae (Bombinae).

Distribution.— Holarctic, Afrotropical and Neotropical regions; medium-sized genus. Four species are treated in this paper, all are new to science.

Note.— This genus was reported as a new generic record to Taiwan province by Chou (1987), but no species were included. This is the first time species of this genus are reported from China.

Key to Chinese species of *Syntretus* Foerster

1. Propodeum and metapleuron entirely rugose; maxillary palpi much shorter than height of head; clypeus wider than face (fig. 333); length of malar space 0.5 times basal width of mandible (fig. 333); pterostigma 2.5 times as long as wide (fig. 332); antennal segments 28; body dark reddish brown; length of body 3.6-4.2 mm. Hainan *S. venus* spec. nov.
- Propodeum areolate or smooth; metapleuron largely smooth; maxillary palp longer than height of head; clypeus as wide as or narrower than face (figs 554, 561, 564); length of malar space 0.8-1.0 times basal width of mandible (figs 554, 561, 564); pterostigma 3.4-3.6 times as long as wide (figs 549, 560, 564); antennal segments 22-28; body colour variable; length of body 2.8-3.2 mm 2
2. First tergite shorter, 2.9 times its apical width, ventrally only basal half fused, laterope present (figs 567, 568); basal and subbasal cells sparsely setose; vein cu-a of hind wing interstitial (fig. 564); propodeum smooth, without areola; scutellum with a minute medio-posterior depression; body dark reddish yellow; length of body 2.9-3.2 mm. Zhejiang *S. glaber* spec. nov.
- First tergite longer, 3.5-4.1 times its apical width, ventrally basal two third fused, laterope absent (figs 555, 556); basal and subbasal cells densely setose; vein cu-a of hind wing antefurcal (figs 549, 560); propodeum areolate; scutellum without a minute medio-posterior depression; body yellowish or brownish; length of body 2.8-3.0 mm 3
3. Temple, vertex, frons, face, and mesoscutum punctate; face wider, 1.5 times as wide as high (fig. 561); eyes not distinctly protruding in dorsal view, length of eye 1.3 times temple (fig. 562); notauli absent; length of first tergite 4.1 times its apical width, and its surface with longitudinal rugae (fig. 563); antennal segments 22; ovipositor sheath entirely setose; length of body 2.8 mm. Guizhou *S. setosus* spec. nov.
- Temple, vertex, frons, face, and mesoscutum smooth; face narrower, 1.1 times as wide as high (fig. 554); eyes distinctly protruding in dorsal view, length of eye 1.6 times temple (fig. 553); notauli present and smooth; first tergite 3.5 times its api-

cal width, and its surface smooth (fig. 555); antennal segments 28; ovipositor sheath only ventrally and apically setose; length of body 3.0 mm. Guizhou
 *S. bulbus* spec. nov.

Syntretus bulbus spec. nov.
 (figs 549-559)

Material.— Holotype, ♀ (ZAU), Guizhou, Mt Fanjing, Jingding, 13.vii.1993, Chen Xuexin, no. 938730.

Holotype, ♀, length of body 3.0 mm, of fore wing 3.0 mm.

Head.— Width of head in dorsal view 1.6 times its length; antennal segments 28, its length 0.8 times length of body, third segment oblique apically, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 2.8, 2.3 and 2.5 times their width, respectively; combined length of apical two segments of maxillary palp 1.4 times length of third segment; length of maxillary palp 1.2 times height of head; OOL:OD:POL = 12:5:6; eyes protruding anteriorly in dorsal view (fig. 553); length of eye in dorsal view 1.6 times temple; temple roundly narrowed behind eyes; temple and vertex smooth, remotely setose; frons nearly flat, smooth; face finely granulate, nearly smooth, densely setose, medio-dorsally with a short median carina, its width 1.1 times its height; intertentorial line 2.7 times tentorio-ocular line; clypeus distinctly convex, rugose-punctate, with very long setae, ventral margin thin, medially straight, its width twice its height; clypeus as wide as face; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; antescutellar depression large; pronotal side anteriorly and posteriorly shortly crenulate, remainder largely smooth; mesopleuron smooth; metapleuron largely smooth, ventral margin with some rugae; notauli present, shallow and smooth; mesoscutum smooth and glabrous, anteriorly setose; scutellar suture deep, with a median carina; scutellum smooth without medio-posterior depression; propodeum divided by carinae into two basal area and one pentagonal posterior areola, basal area smooth, posterior areola transversely rugose, with some short rugae along median and transverse carinae.

Wings.— Fore wing: pterostigma 3.6 times as long as wide; length of vein 1-R1 1.2 times length of pterostigma; r issued distinctly behind middle of pterostigma, 0.75 times width of pterostigma; vein SR1+3-SR straight, ending at wing apex; basal and subbasal cell densely setose; r:2-SR:SR1+3-SR = 9:23:65; 1-CU1:2-CU1 = 3:14; 2-1A absent. Hind wing: 1-M:1r-m:2-SC+R = 4.5:6:11; cu-a present as a short spur; 1-1A absent.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 6.4, 12.0 and 10.0 times their width, respectively; length of hind tibial spurs 0.34 and 0.30 times hind basitarsus.

Metasoma.— Length of first tergite 3.5 times its apical width, first tergite slender, apically slightly widened, basal 2/3 ventrally fused, spiracles protruding, laterope and dorsope absent, its surface nearly smooth; following tergites smooth; second tergite with lateral fold; ovipositor sheath slender, its length 0.22 times fore wing, 0.91 times first tergite, finely transversely rugulose, apically somewhat flattened, only ventrally and apically sparsely setose, length of setae longer than width of sheath; ovipositor in sheath, not visible.

Colour.— Head brownish yellow, mesosoma pale brownish yellow pronotum anteriorly, metanotum, and propodeum blackish; metasoma reddish brown with first tergite black; antenna brown, its basal six segments yellowish; palpi, tegulae, and legs yellow, tarsi darker; ovipositor sheath black; wing membrane hyaline with many yellowish brown setae, pterostigma yellow, laterally darker, veins yellowish brown.

Note.— This species is similar to *S. conterminus* (Nees, 1834), but differs in having 28 antennal segments, the eye distinctly protruding anteriorly in dorsal view, the frons smooth and nearly flat, the face as wide as clypeus, the posterior areola of propodeum transversely rugose, the pterostigma narrower, and the ovipositor sheath with a few setae.

Syntretus glaber spec. nov.
(figs 564-568)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt Tianmu, 21.vii.1987, Chen Xuexin, no. 873099. Paratype: 1 ♂ (ZAU), same data as holotype, but no. 873111.

Holotype, ♀, length of body 3.2 mm, of fore wing 3.0 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 26, 0.8 times length of body, third segment apically oblique, length of third segment 1.2 times fourth segment, length of third, fourth and penultimate segments 3.0, 2.4 and 2.1 times their width, respectively; combined length of apical two segments of maxillary palp 1.4 times third segment; length of maxillary palp 1.2 times height of head; OOL:OD:POL = 9:5:8; length of eye in dorsal view 1.2 times temple; temple roundly narrowed behind eyes; temple and vertex smooth, remotely setose; frons flat, smooth; face nearly flat, smooth, setose, medio-dorsally with a minute protuberance, its width 1.1 times its height; intertentorial line 3.5 times tentorio-ocular line; clypeus convex, nearly smooth, with very long setae, ventral margin thin, medially straight, its width 2.2 times its height; clypeus as wide as face; length of malar space 0.8 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side only anteriorly shortly crenulate, remainder smooth; mesopleuron entirely smooth; metapleuron smooth, without metapleural flange; notauli absent; mesoscutum and scutellum glabrous and smooth; scutellar suture deep with a median carina; scutellum with a minute medio-posterior depression; propodeum smooth, only medially with some short fine transverse rugae and posteriorly with some rugae.

Wings.— Fore wing: pterostigma 3.4 times as long as wide; length of vein 1-R1 1.3 times length of pterostigma; r issued distinctly behind middle of pterostigma, 0.54 times width of pterostigma; vein SR1+3-SR straight, ending at wing apex; basal and subbasal cells sparsely setose; r:2-SR:SR1+3-SR = 7:25:72; 1-CU1:2-CU1 = 5:15; 2-1A absent. Hind wing: 1r-m:2-SC+R = 6:16; cu-a interstitial, present as a short spur; 1-1A absent.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 4.2, 9.1 and 7.7 times their width, respectively; length of hind tibial spurs 0.57 and 0.48 times hind basitarsus.

Metasoma.— Length of first tergite 2.9 times its apical width, first tergite com-

paratively short, apically slightly widened, basal half fused ventrally, laterope present and small, dorsope absent, its surface smooth, medially (1/3) with smooth short median carina and lateral carinae; following tergites smooth; second tergite with lateral fold; ovipositor sheath not visible, embedded in glue; ovipositor slender, as long as first tergite, straight, slightly curved downwards.

Colour.— Dark reddish brown; head (except frons, vertex, occiput dorsally reddish brown), prothorax, mesopleuron ventrally and legs brownish yellow, tarsi darker, hind tibia apically and tarsus brown; antenna brown, basal four segments yellowish; metasomal sternites rather reddish yellow; wing membrane hyaline with few brown setae, pterostigma and veins brown.

Variation.— Male is similar to female: length of body 2.9 mm, of fore wing 2.7 mm; mesopleuron entirely, meso- and metasternum, and middle and hind coxae basally reddish brown.

Note.— This species is similar to *S. lyctaeae* Cole, 1959, but differs in having the body dark reddish brown, the propodeum posteriorly with some rugae, the laterope of first tergite much smaller, and the basal and subbasal cells of fore wing more sparsely setose. It is also similar to *S. makarovi* Belokobylskij, 1996, but can be readily separated by having the first metasomal tergite longer, its basal half fused ventrally, its surface medially with a median carina.

Syntretus setosus spec. nov.
(figs 560-563)

Material.— Holotype, ♀ (ZAU), Guizhou, Mt Fanjing, Huixiangping, 11-13.vii.1993, Chen Xuexin, no. 948944.

Holotype, ♀, length of body 2.8 mm, of fore wing 2.5 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 22, 0.8 times length of body, third segment oblique apically, length of third segment 1.1 times fourth segment, length of third, fourth and penultimate segments 3.2, 2.5 and 3.0 times their width, respectively; combined length of apical two segments of maxillary palp 1.5 times third segment; length of maxillary palp equal to height of head; OOL:OD:POL = 11:5:6; length of eye in dorsal view 1.3 times temple; temple parallel-sided, posteriorly narrowed; temple and vertex densely finely punctate, densely setose; frons slightly concave, punctate with a weak median carina; face slightly convex, punctate, densely setose, medio-ventrally smooth, medio-dorsally with a short carina, its width 1.5 times its height; intertentorial line 2.5 times tentorio-ocular line; clypeus convex, punctate-rugose, with very long setae, ventral margin thin, medially straight, its width 2.2 times its height; clypeus narrower than face; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side anteriorly and medially shortly crenulate, remainder largely smooth; mesopleuron entirely smooth; metapleuron small, medially smooth, borders rugose; notauli absent; mesoscutum almost entirely densely punctate and setose, only latero-posteriorly narrowly glabrous; scutellar suture deep with a median carina; scutellum finely punctulate, nearly smooth, medio-posterior depression absent; propodeum divided into two large basal areas and one large pentagonal posterior areola by a short medio-basal

carina with two branches and connected to lateral carinae, basal areas smooth, posterior areola transversely rugose.

Wings.— Fore wing: pterostigma 3.5 times as long as wide; length of vein 1-R1 1.3 times length of pterostigma; r issued distinctly behind middle of pterostigma, 0.60 times width of pterostigma; vein SR1+3-SR straight, ending at wing apex; r:2-SR:SR1+3-SR = 7:28:70; 1-CU1:2-CU1 = 4:15; 2-1A absent. Hind wing: 1-M:1r-m:2-SC+R = 4:7:11; cu-a and 1-1A absent.

Legs.— Hind coxa finely punctate, nearly smooth; length of hind femur, tibia and basitarsus 5.7, 11.1 and 8.3 times their width, respectively; length of hind tibial spurs 0.40 and 0.36 times hind basitarsus.

Metasoma.— Length of first tergite 4.1 times its apical width, first tergite slender, apically slightly widened, basal two third fused ventrally, laterope and dorsope absent, apical third of its surface longitudinally irregularly rugose, apical margin smooth, remainder indistinctly punctate-rugose; following tergites smooth without lateral fold; ovipositor sheath slender, its length 0.11 times fore wing, 0.53 times first tergite, sparsely setose, length of setae longer than width of sheath; ovipositor slender, straight, slightly curved upwards apically, with a distinct subapical dorsal notch.

Colour.— Brownish yellow; dorsal face of mesosoma and first metasomal tergite blackish, vertex and frons brownish; head ventrally, palpi, tegulae yellow; antenna yellowish brown; ovipositor sheath brown; legs pale brownish yellow, tibia and tarsus slightly darker; membrane hyaline with yellowish brown setae, pterostigma and veins brownish yellow.

Syntretus venus spec. nov.
(figs 332-335)

Material.— Holotype, ♀ (BMNH), China, Hainan I., Tien Feng Mts, v. [19]83, Bouček. Paratypes (5 ♀ ♀): 3 ♀ ♀ (BMNH), 1 ♀, RMNH), 1 ♀, (ZAU), same data as holotype.

Holotype, ♀, length of body 3.6 mm, of fore wing 3.0 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 28, much shorter (0.65 times) than body, third segment oblique apically, length of third segment 1.4 times fourth segment, length of third, fourth and penultimate segments 2.8, 1.8 and 2.0 times their width, respectively; combined length of apical two segments of maxillary palp 1.2 times length of third segment; length of maxillary palp 0.64 times height of head; OOL:OD:POL = 14:7:8; length of eye in dorsal view 1.5 times temple; temple roundly narrowed behind eyes; temple and vertex punctate, nearly smooth, densely setose; frons medially concave, smooth with a median carina; face slightly convex, rugose-punctate, densely setose, medio-ventrally smooth, medio-dorsally with a short carina connected to frontal carina, its width 1.1 times its height; intertentorial line 4.7 times tentorio-ocular line; clypeus slightly convex, nearly smooth, with very long setae, ventral margin medially straight, its width 2.6 times its height; width of clypeus longer than width of face; length of malar space 0.5 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; pronotal side anteriorly and posteriorly coarsely crenulate, remainder largely smooth; mesopleuron entirely smooth; metapleuron small, completely reticulate-rugose; notauli absent; meso-

scutum anteriorly and medially finely punctate, nearly smooth, densely setose, latero-posteriorly glabrous; scutellar suture deep with a median carina; scutellum smooth, its medio-posterior depression absent; propodeum entirely irregularly reticulate-rugose.

Wings.— Fore wing: Pterostigma 2.5 times as long as wide; length of vein 1-R1 1.4 times length of pterostigma; r issued behind middle of pterostigma; vein SR1+3-SR straight, ending at wing apex; r:2-SR:SR1+3-SR = 7:20:65; 1-CU1:2-CU1 = 4:15; 2-1A present as a short spur. Hind wing: 1-M:1r-m:2-SC+R = 3:11:15; cu-a and 1-1A absent.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 4.6, 9.7 and 8.3 times their width, respectively; length of hind tibial spurs 0.52 and 0.48 times hind basitarsus.

Metasoma.— Length of first tergite 2.8 times its apical width, first tergite slender, apically distinctly widened, basal two third fused ventrally, laterope and dorsope absent, its surface smooth, median third with lateral carinae and a median carina; following tergites smooth without lateral fold; hypopygium small, sparsely setose; ovipositor sheath slender, its length 0.22 times fore wing, 0.75 times first tergite, very sparsely setose, setae as long as or longer than width of sheath; ovipositor slender, straight, slightly curved upwards, subapically with a dorsal notch.

Colour.— Dark reddish brown; vertex and temple medially, and genae yellowish brown; face and clypeus slightly reddish brown; mandibles basally and palpi yellowish; antenna brown, basally yellowish brown; mesoscutum near notauli, and scutellum reddish; metasoma after first tergite rather reddish brown; legs brownish yellow, telotarsi, hind tibia and hind basitarsus darker; wing membrane hyaline with many brownish setae; pterostigma dark brown; veins dark brown to brown.

Variation.— Length of body 3.6-4.2 mm, of fore wing 2.9-3.0 mm; antennal segments 28-29.

Note.— This species is rather similar to *S. planifacies* Belokobylskij, 1993, but can be readily separated from the latter by having the head distinctly broader in dorsal view, the face and malar space distinctly narrower, the third antennal segment much longer compared to the fourth segment, and the first metasomal tergite medially with a median carina.

Genus *Townesilitus* Haeselbarth & Loan, 1983

(figs 569-586)

Townesilitus Haeselbarth & Loan, 1983: 384; Shaw, 1985: 341; Haeselbarth, 1988: 431. Type species (by original designation): *Microctonus bicolor* Wesmael, 1835.

Diagnosis.— Antennal segments 17-30, scapus oblique apically, short, about twice as long as wide, basal flagellar segments cylindrical, not flattened or densely setose, apical segment without spine; maxillary palp with 5 segments; labial palp with 3 segments; occipital carina complete, ventrally curved towards and joining hypostomal carina; malar suture present; clypeus at least twice as wide as high, only weakly convex; width of clypeus greater than width of face; malar space short, less than 0.25 times height of eye; mesopleuron smooth; precoxal sulcus rugose; notauli present; scutellum smooth, medio-posterior depression present; propodeum cari-

nate, with irregular rugae between carinae; veins 1-SR+M and r-m of fore wing absent; vein M+CU1 of fore wing completely sclerotized; tarsal claws simple; first tergite apically about 4 times wider than basally, basally fused ventrally, dorsope absent; hypopygium medium-sized, sparsely setose; ovipositor sheath slender, longer than first metasomal tergite.

Biology.— Parasites of adult Chrysomelidae.

Distribution.— Holarctic region; small genus with six known species (Haeselbarth, 1988). Two species new to science are reported in this paper.

Note.— This genus is new to the fauna of China.

Key to Chinese species of the genus *Townesilitus* Haeselbath & Loan

1. Marginal cell of fore wing longer, vein 1-R1 of fore wing about as long as pterostigma (figs 569, 579); precoxal sulcus deeply impressed and distinctly rugose 2
- Marginal cell of fore wing shorter, vein 1-R1 of fore wing about half as long as pterostigma (fig. 583); precoxal sulcus shallowly impressed and superficially rugose; length of body 2.3 mm. Yunnan *T. mellinus* spec. nov.
2. Face narrower, as wide as high (fig. 575); eyes larger, in dorsal view 1.9 times temple (fig. 573); antenna of female basally narrow (fig. 570); hind coxa nearly smooth; hind legs more slender (fig. 571); medio-posterior depression of scutellum wide (fig. 574); pterostigma yellow; antennal segments of female 27-28, of male 33-34; length of body 2.9-3.5 mm. Zhejiang *T. pallidistigmus* spec. nov.
- Face wider than high (fig. 581); eyes smaller, in dorsal view 1.3-1.4 times temple (fig. 580); antenna of female comparatively wide basally; hind coxa rugose; hind legs more robust; medio-posterior depression of scutellum narrow; pterostigma brown; antennal segments of both sexes 22-28; length of body 2.5-3.2 mm. Zhejiang *T. deceptor* (Wesmael)

Townesilitus deceptor (Wesmael, 1835)
(figs 579-582)

Microctonus deceptor Wesmael, 1835: 66; Tobias, 1986: 231.

Townesilitus deceptor; Haeselbarth, 1988: 435.

Material.— 1 ♀ (ZAU), Zhejiang, Hangzhou, 12.vi.1987, Ma Yun, no. 870959.

Distribution.— China: Zhejiang; Palaearctic region.

Note.— This species is new to China.

Townesilitus mellinus spec. nov.
(figs 583-586)

Material.— Holotype, ♂ (ZAU), Yunnan, Kaiyuan, 1983, Liao Yichang, no. 841264.

Holotype, ♂, length of body 2.3 mm, of fore wing 1.8 mm.

Head.— Width of head in dorsal view 1.8 times its length; remaining antennal

segments 10 (incomplete), length of third segment equal to fourth segment, third and fourth segments oblique apically, length of third and fourth segments both 4.0 times their width; length of maxillary palp 0.8 times height of head; OOL:OD:POL = 12:3:8; length of eye in dorsal view 1.4 times temple; temple distinctly roundly narrowed behind eyes; temple and vertex smooth, shiny and sparsely setose; frons smooth, ventro-medially raised; face moderately convex, medially superficially punctate, nearly smooth, setose, medio-longitudinally slightly raised, its width 2.2 times its height; intertentorial line twice tentorio-ocular line; clypeus moderately convex, smooth, ventral margin thin and evenly curved, its width 2.1 times its height; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.6 times its height; pronotal side anteriorly, medially and posteriorly crenulate, remainder largely smooth; precoxal sulcus shallow, sparsely rugose; remainder of mesopleuron smooth; metapleuron small, irregularly rugose; notauli narrow, crenulate, posteriorly narrow; mesoscutum nearly glabrous, only middle lobe remotely setose; scutellar suture wide with one median carina; scutellum smooth, medio-posterior depression transverse with one median carina; propodeum irregularly carinate with rugae between carinae.

Wings.— Fore wing: pterostigma 2.9 times as long as wide; length of vein 1-R1 0.4 times length of pterostigma; r issued behind middle of pterostigma, its length 0.22 times width of pterostigma; r:2-SR:SR1+3-SR = 2:19:26; cu-a postfurcal by its length; 1-CU1 oblique; 1-CU1:2-CU1 = 3:11. Hind wing: 1-M:1r-m:2-SC+R = 4:7:4.

Legs.— Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 5.0, 11.0 and 10.0 times their width, respectively; length of hind tibial spurs 0.32 and 0.27 times hind basitarsus.

Metasoma.— Length of first tergite 2.3 times its apical width, its surface longitudinally irregularly rugose, apically slightly widened, spiracles at middle of tergite, distinctly protruding, laterope absent; following tergites smooth; second tergite very short, strongly transverse, with lateral fold.

Colour.— Yellowish brown, but head ventrally paler, side of scutellum and metanotum, and apex of metasoma darker; antenna brown, its basal five segments brownish yellow; palpi yellow; first and second tergites, and legs brownish yellow; wing membrane hyaline with yellowish brown setae, pterostigma dark yellowish brown, veins yellowish brown to pale.

Note.— This species is similar to *T. bicolor* (Wesmael, 1835), but differs in having vein cu-a of fore wing more postfurcal (distally situated by its own length), the vein 1-CU1 oblique, and the marginal cell of fore wing smaller.

Townesilitus pallidistigmus spec. nov.
(figs 569-578)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt W Tianmus, Xianrending, 2-4.vi.1990, Shi Zuhua, no. 901865. Paratypes (6 ♀♀ + 3 ♂♂): 2 ♀♀ + 3 ♂♂ (ZAU, RMNH), same locality and date, Lou Yonggen, Wang Xinggen, nos 900790, 900159, 900130, 901120, 903983; 4 ♀♀ (ZAU), Zhejiang, Mt W Tianmu, 5,6,7.vi.1989, He Junhua, Chen Xuexin, Wang Xinggen, nos 890769, 891327, 892885, 895554.

Holotype, ♀, length of body 3.0 mm, of fore wing 3.4 mm.

Head.— Width of head in dorsal view 1.7 times its length; antennal segments 28, slightly longer than body, length of third segment 1.2 times fourth segment, length of

third, fourth and penultimate segments 4.0, 3.3 and 1.5 times their width, respectively; apical segment of maxillary palp not visible, embedded in glue; OOL:OD:POL = 13:5:11; length of eye in dorsal view 1.9 times temple; temple distinctly narrowed behind eyes; temple and vertex smooth, shiny and setose; frons flat, smooth; face flat, punctate, setose, medio-longitudinally raised, its width equal to its height; intertentorial line 3.5 times tentorio-ocular line; clypeus moderately convex, smooth, ventral margin thin and medially nearly straight, its width twice its height; length of malar space 0.6 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.5 times its height; pronotal side largely crenulate-rugose, only dorsal margin and ventro-medially smooth; precoxal sulcus wide, deep, irregularly rugose; remainder of mesopleuron smooth, antero-dorsally rugose; metapleuron irregularly rugose; notauli narrow, deep and crenulate, posteriorly moderately wide, rugose with a weak median carina; mesoscutum densely punctate and setose; scutellar suture with one median carina; scutellum smooth, medio-posterior depression wide with one median carina; propodeum irregularly rugose, with median, transverse and lateral carinae more or less developed, irregular.

Wings.— Fore wing: pterostigma 3.6 times as long as wide; length of vein 1-R1 0.9 times length of pterostigma; r issued about middle of pterostigma, its length 0.58 times width of pterostigma; r:2-SR:SR1+3-SR = 7:22:68; 1-CU1 horizontal; 1-CU1:2-CU1 = 1:18. Hind wing: 1-M:1r-m:2-SC+R = 10:11:10.

Legs.— Hind coxa punctate, nearly smooth; length of hind femur, tibia and basitarsus 7.1, 13.3 and 9.7 times their width, respectively; length of hind tibial spurs 0.28 and 0.24 times hind basitarsus.

Metasoma.— Length of first tergite 2.8 times its apical width, its surface longitudinally striate, basally nearly smooth, apically widened, basal half fused ventrally, spiracles behind middle, slightly protruding, laterope absent; following tergites smooth; second and third tergites with lateral fold; hypopygium medium-sized, nearly glabrous; ovipositor sheath slender, its length 0.29 times fore wing, 1.4 times first tergite, densely setose, length of setose longer than width of sheath; ovipositor slender, slightly curved downwards, subapically with a dorsal notch.

Colour.— Black; head (but frons, vertex, occiput medially brown), prothorax (but dark brown dorso-medially), metasoma after first tergite reddish brown or yellowish brown; antenna brown, but basal three segments paler; palpi yellow; mandibles and legs brownish yellow, tarsi darker; sheath brown; wing membrane hyaline with brownish setae, pterostigma yellow, veins brownish to yellow.

Variation.— Length of body 3.0-3.5 mm, of fore wing 3.2-3.4 mm; antennal segments 27-28, 1-CU1:2-CU1 = 2:21. Male similar to female: length of body 2.9-3.0 mm, of fore wing 3.0 mm; antennal segments 33-35, pedicellus shorter; body nearly entirely dark reddish brown.

Note.— This species is similar to *T. deceptor* (Wesmael, 1835), the differences are given in the key above.

Genus *Ussuraridelus* Tobias & Belokobylskij, 1981
(figs 587-594)

Ussuraridelus Tobias & Belokobylskij, 1981: 360 (English translation: 81). Type species (by monotypy): *Ussuraridelus minutus* Tobias & Belokobylskij, 1981.

Diagnosis.— Head transverse, almost two times as wide as long; antennal segments 18, filiform, shorter than body; pedicellus large, almost equal to third segment; maxillary palp 5-segmented; labial palp 3-segmented; occipital carina absent; temple approximately as long as length of eye in dorsal view; malar suture absent; mesosoma entirely areolate; mesoscutum sharply truncate anteriorly; notauli indistinct; precoxal sulcus absent; scutellum not protruding, without lateral carina; marginal cell of fore wing very short, length of vein 1-R1 of fore wing about 0.4 times pterostigma; vein SR1+3-SR of fore wing reduced apically, unsclerotized; vein 1-SR and r-m of fore wing absent; vein m-cu of fore wing antefurcal; vein cu-a of fore wing slightly postfurcal; vein M+CU1 of fore wing unsclerotized; femora distinctly thick; hind tarsus obviously shorter than hind tibia; tarsal claws simple; first metasomal tergite thin and long, not widened apically, nearly parallel-sided, tube-like; second and third metasomal tergites almost covering all other tergites; hypopygium medium-sized; ovipositor sheath slender, setose and slightly protruding beyond apex of metasoma.

Biology.— Unknown.

Distribution.— Small East Palaearctic genus; two species, including the new species described below. This genus is new to China.

Note.— This genus is very similar to the genus *Holdawayella* Loan, 1967, but can be separated from the latter by having the vein m-cu of fore wing present, the vein 2-CU1 of fore wing completely sclerotized, the vein 1-SR of fore wing very short, at least basal half of the vein 1-1A of hind wing present, the mesoscutum, mesopleuron and scutellum completely reticulate, and the prepectal carina not differentiated from surrounding sculpture.

Key to species of the genus *Ussuraridelus* Tobias & Belokobylskij

1. Length of first metasomal tergite 5.7 times its apical width, its surface distinctly longitudinally rugose behind its spiracles; vein m-cu of fore wing postfurcal, rarely antefurcal; length of body 2.1-2.2 mm. China: Zhejiang *U. yaoae* spec. nov.
- Length of first metasomal tergite 4 times its apical width, its surface smooth; vein m-cu of fore wing antefurcal; length of body 1.8 mm. Russia..... *U. minutus* Tobias & Belokobylskij

Ussuraridelus yaoae spec. nov. (figs 587-594)

Material.— Holotype, ♀ (ZAU), Zhejiang, Mt W Tianmu, vii.1984., Chen Xuexin, no. 845647. Paratypes: 1 ♀ + 1 ♂ (ZAU), same locality and collector as holotype, but 27.vi.1984 and vii.1984, respectively, nos 842662, 845662.

Holotype, ♀, length of body 2.2 mm, of fore wing 1.8 mm

Head.— Width of head 1.9 times its median length; antennal segments 18, length of third segment 1.3 times fourth segment, length of third, fourth and penultimate segments 3.0, 2.3 and 1.5 times their width respectively; length of maxillary palp 0.8 times height of head; OOL:OD:POL = 13:3:6; eye small and bare; length of eye in dorsal view 1.1 times temple; temple behind eye parallel-sided, posteriorly roundly narrowed; vertex and frons smooth, smooth; vertex sharply declivous behind posterior

ocelli; frons slightly concave with a weak and thin median carina; face and clypeus nearly smooth; width of face 1.9 times its height; tentorial pits large, intertentorial line twice tentorio-ocular line; length of malar space equal to basal width of mandible.

Mesosoma.— Length of mesosoma 1.4 times its height; its surface entirely areolate; precoxal sulcus and notauli absent; scutellar suture wide with a median carina; propodeum posteriorly sharply declivous and medially longitudinally concave.

Wings.— Fore wing: pterostigma broad; $r:SR1+3-SR:2-SR = 4:28:18$; r emitting from middle of pterostigma; marginal cell short and narrow (fig. 587); length of 1-R1 0.35 times pterostigma; SR1+3-SR reduced and unsclerotized apically; 1-SR absent; cu-a slightly postfurcal; m-cu distinctly postfurcal. Hind wing: 2-SR+R long, as long as 1-M.

Legs.— Hind coxa smooth; length of hind femur, tibia and basitarsus 3.9, 8.2 and 7.2 times their width, respectively; length of hind inner tibial spur 0.4 times hind basitarsus.

Metasoma.— Length of first tergite 5.7 times its apical width, narrow and parallel-sided, slightly protruding at spiracles, longitudinally rugose behind spiracles; second and third tergites smooth, covering most of other tergites; ovipositor sheath slender, its length 0.06 times fore wing.

Colour.— Dark brown; palp pale brown; mandible, first-third antennal segments and legs pale brownish yellow; fourth antennal segment and coxae brownish yellow; wing membrane subhyaline, pterostigma brown; veins paler.

Variation.— Length of body 2.1-2.2 mm, of fore wing 1.8-2.0 mm; vein m-cu of fore wing of paratype (only left wing) antefurcal.

Note.— This species can be separated from the only other known species, *U. minutus* Tobias & Belokobylskij, 1981, by having vein m-cu of the fore wing postfurcal and the first metasomal tergite posteriorly distinctly longitudinally rugose.

Etymology.— This species is named in honour of Mrs. Yaping Yao, the first author's wife, who enabled him to work for one year in the Nationaal Natuurhistorisch Museum, Leiden.

Genus *Wesmaelia* Foerster, 1862

(figs 595-603)

Wesmaelia Foerster, 1862: 251; Shenefelt, 1969: 134; Shaw, 1985: 342; Papp & Chou, 1995: 345. Type species (by original designation): *Wesmaelia pendula* Foerster, 1862 (= *Wesmaelia petiolata* (Wollaston, 1858), syn. nov.).

Diagnosis.— Antennal segments 15-33; maxillary palp with 6 segments; labial segments with 3 segments; eyes with setae; frons punctate; frontal carina ending near frontal ocellus; occipital carina complete; epistomal suture and malar suture present; malar space short, less than one third height of eye; mandibles overlapping for more than half length of mandible; precoxal sulcus and notauli present; propodeum areolate; veins 1-SR+M and 2-M of fore wing present; vein r-m of fore wing absent; vein M+CU1 of fore wing unsclerotized; vein M+CU of hind wing longer than 1-M; vein cu-a of hind wing present; tarsal claws simple; inner hind spur of male subtruncate; first metasomal tergite very long, at least 0.5 times length of metasoma, wider medially than apically, entirely fused ventrally, dorsope and laterope absent; third tergite

nearly reaching apex of metasoma, covering sternites (fig. 597), without lateral fold; hypopygium of female short setose apically; ovipositor short.

Biology.— Parasites of nymphs and adults of the family Nabidae.

Distribution.— Holarctic, Oriental and Neotropical regions; small genus with four known species, of which three were recorded from Taiwan province.

Note.— This genus is included according to the existing literature (Chao, 1981; Papp & Chou, 1995). No specimens from China were available for this study. For more information about this genus in China, see Papp & Chou (1995).

Key to species of the genus *Wesmaelia* Foerster (after Papp & Chou, 1995)

1. Distal 0.2 of vein 1-R1 and vein SR1+3-SR of fore wing shortened and not meeting each other apically (fig. 3 in Papp & Chou, 1995); last flagellar segment thickened, club-shaped, penultimate flagellar segment also rather widened (fig. 7 in Papp & Chou, 1995) *W. decurta* Papp & Chou
- Distal end of vein 1-R1 and vein SR1+3-SR of fore wing evenly sclerotized and meeting each other apically (fig. 595); last two flagellar segments not widened (figs 598, 602) 2
2. Marginal cell of fore wing long, along vein 1-R1 almost twice pterostigma (fig. 2 in Papp, 1990); antenna with 15 segments, first flagellar segment short, 2.3 times longer than wide *W. topali* Papp
- Marginal cell of fore wing short, along vein 1-R1 about as long as pterostigma (figs 1, 5 in Papp & Chou, 1995); antenna with 21-22 segments, first flagellar segment 4-5 times longer than wide 3
3. First flagellar segment 1.5-1.6 times as long as second flagellar segment; inner margin of eye parallel (fig. 22 in Papp & Chou, 1995); first metasomal tergite parallel-sided along its whole length (fig. 26 in Papp & Chou, 1995) and as long as mesosoma *W. lepos* Belokobylskij
- First flagellar segment hardly longer than second flagellar segment; inner margin of eye converging ventrally (fig. 600); first metasomal tergite rather widened medially (fig. 601) and shorter than mesosoma (fig. 597) *W. petiolata* (Wollaston)

Wesmaelia decurta Papp & Chou, 1995

Wesmaelia decurta Papp & Chou, 1995: 347.

Distribution.— China: Taiwan.

Wesmaelia lepos Belokobylskij, 1992

Wesmaelia lepos Belokobylskij, 1992: 11; Papp & Chou, 1995: 349.

Distribution.— China: Taiwan; Russia: Far East Maritime Territory.

Wesmaelia petiolata (Wollaston, 1858) comb. nov.
(figs 595-603)

Euphorus petiolatus Wollaston, 1858: 23; Shenefelt, 1969: 45.

Wesmaelia pendula Foerster, 1862: 251; Chao, 1981: 308; Tobias, 1986: 229; Papp & Chou, 1995: 353. **Syn. nov.**

Distribution.— China: Fujian and Taiwan; Europe; U.S.A. and Mexico.

Note.— *Wesmaelia petiolatus* (Wollaston, 1858) is a new combination; the lectotype is here designated (BMNH, with type number 3.c.737) by the second author.

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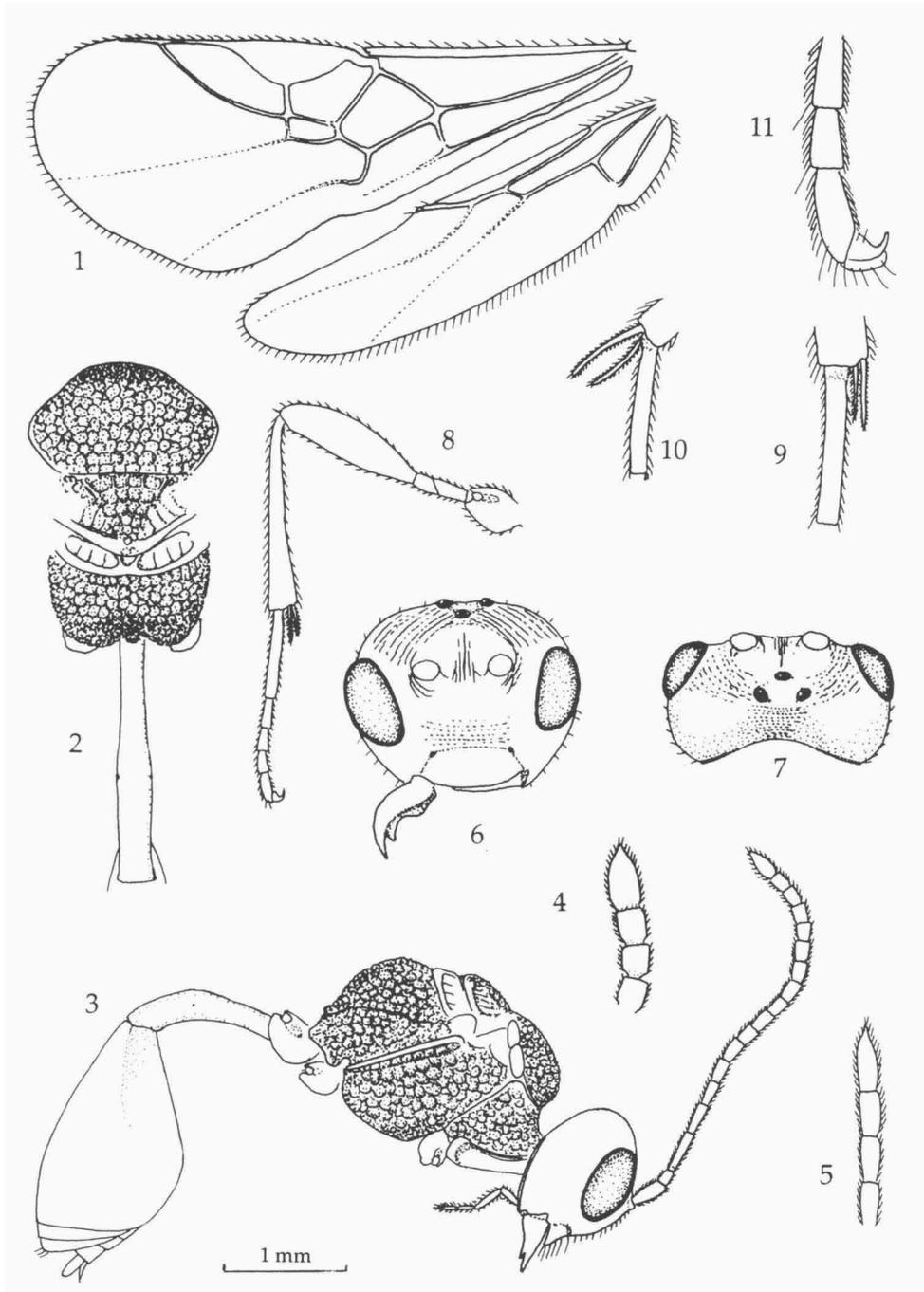
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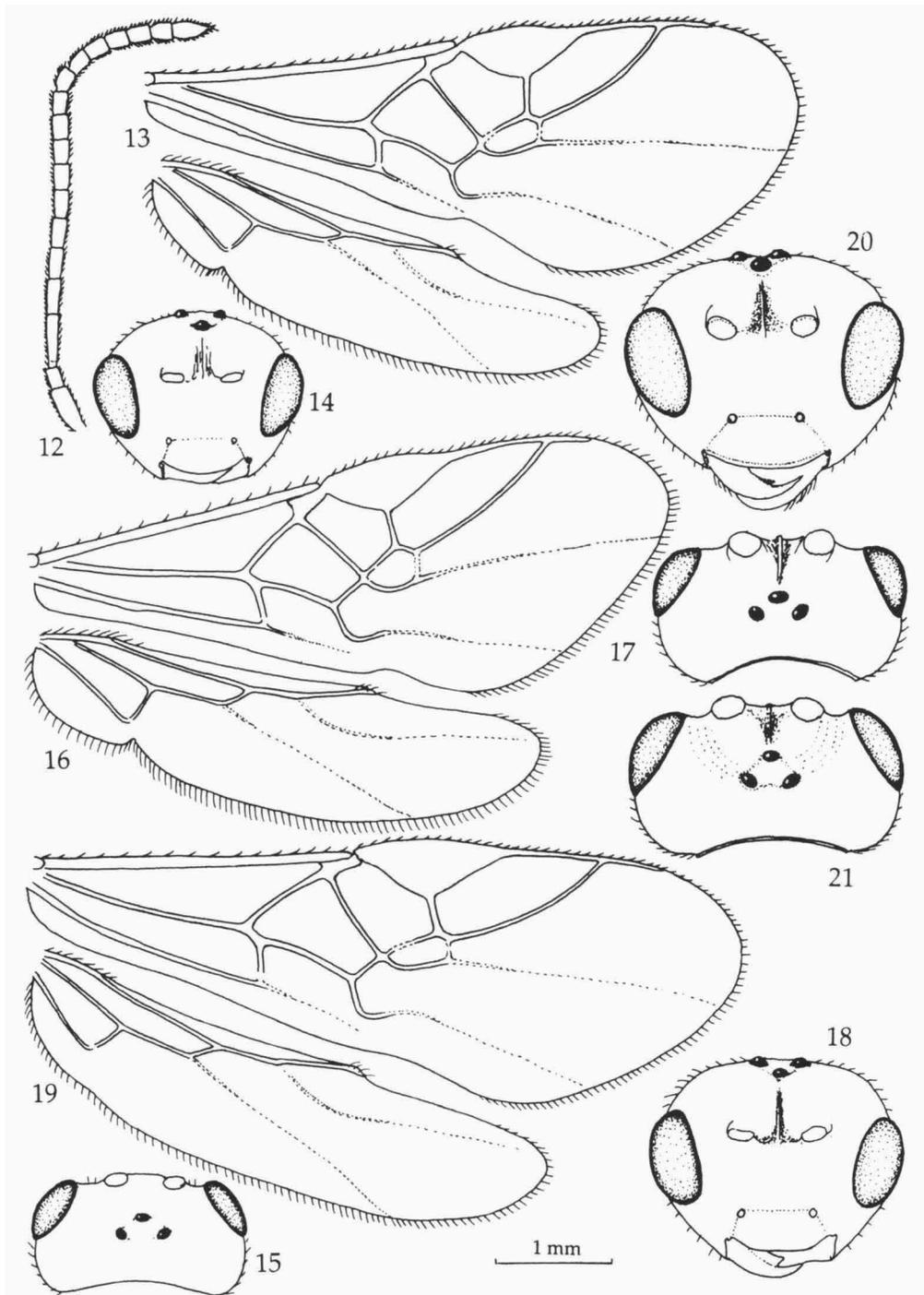
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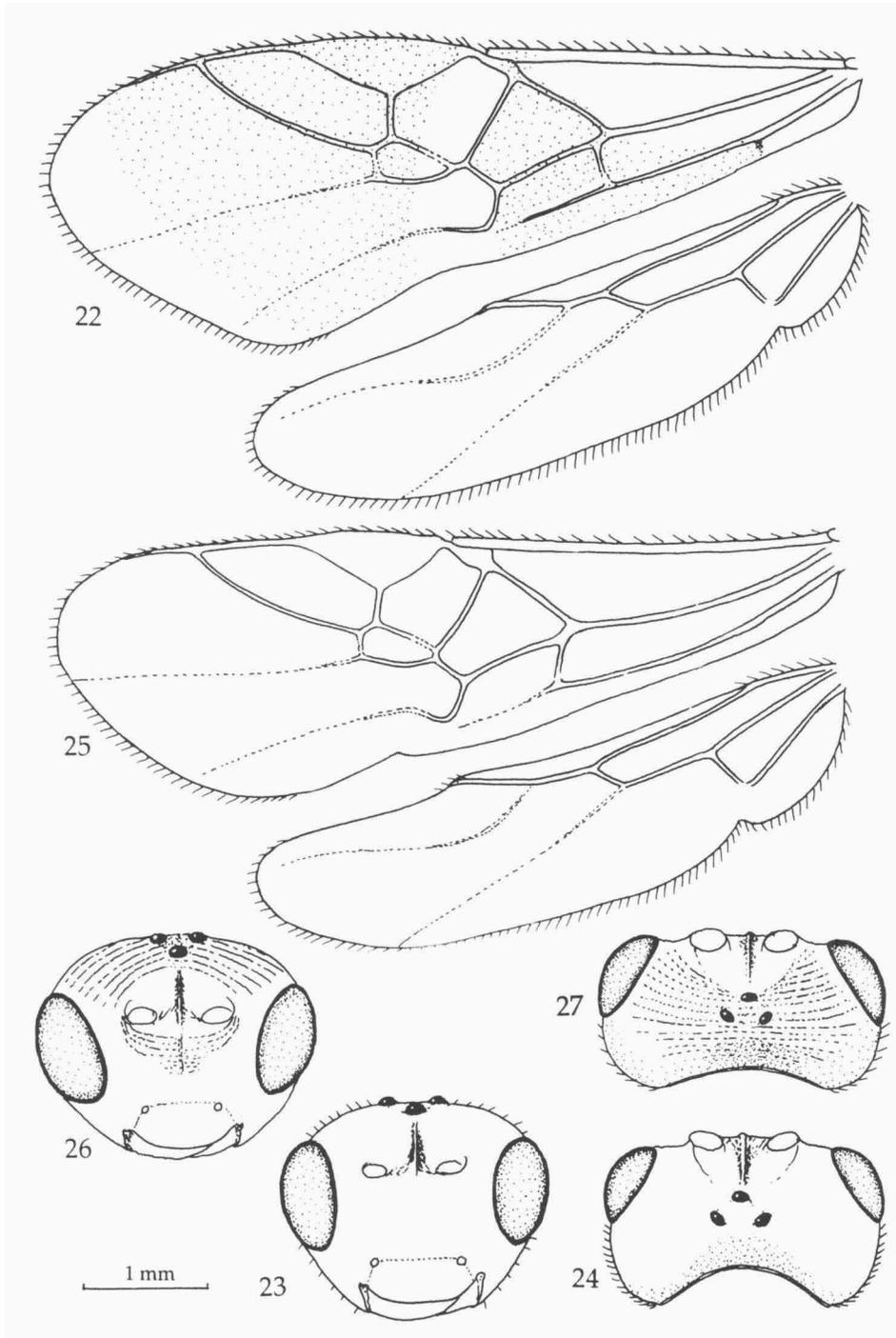
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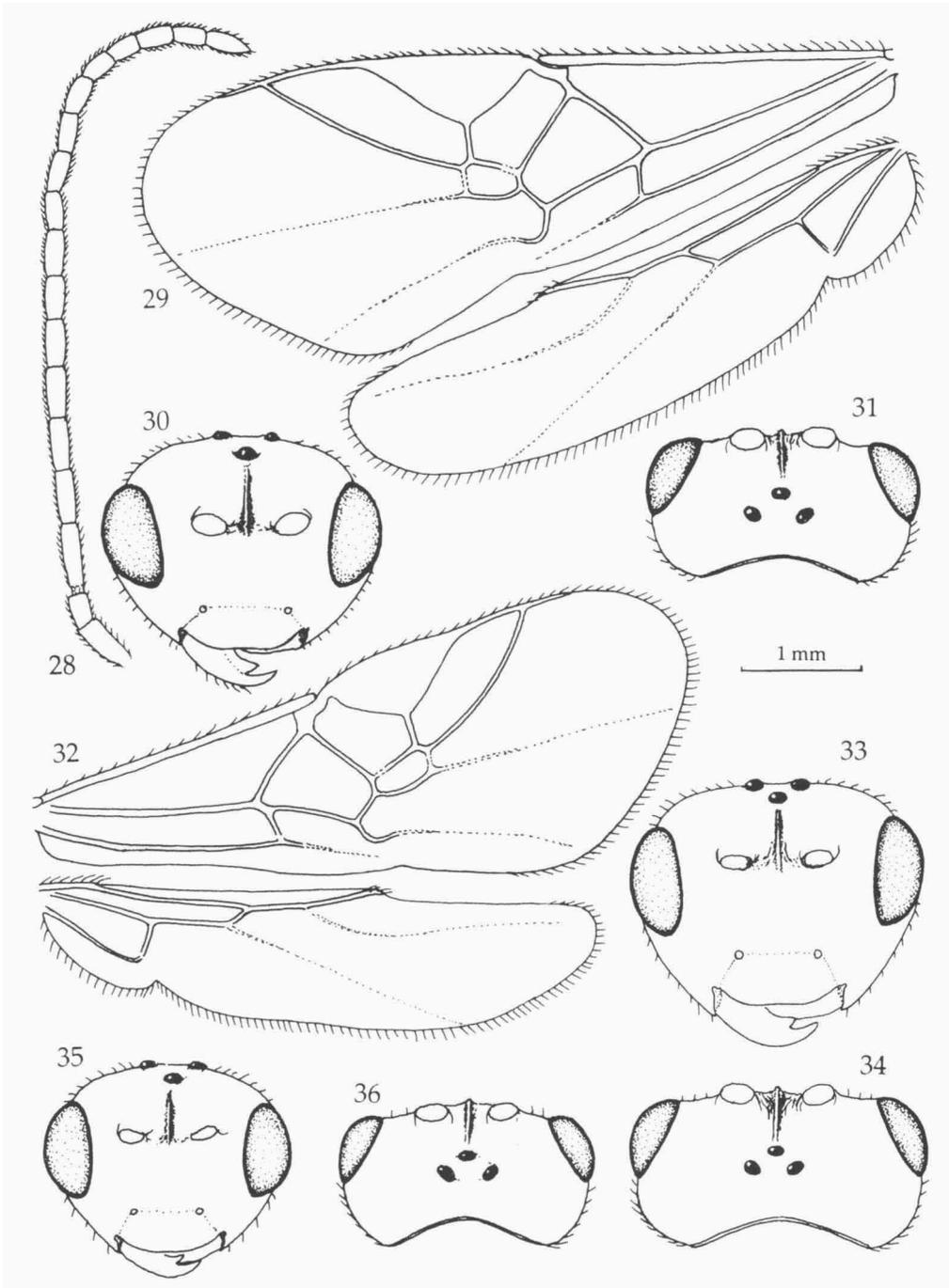
Figs 1-11, *Aridelus confusus* spec. nov., ♀, holotype, but 5 and 10 of ♂, paratype. 1, wings; 2, mesosoma and first metasomal tergite, dorsal aspect; 3, habitus, lateral aspect; 4, apex of antenna of ♀; 5, apex of antenna of ♂; 6, head, frontal aspect; 7, head, dorsal aspect; 8, hind leg, lateral aspect; 9, hind tibial spurs and basitarsus of ♀, lateral aspect; 10, hind tibial spurs and basitarsus of ♂, lateral aspect; 11, outer hind claw. 1, 3, 8: 1.8 × scale-line; 2, 6, 7: 2.1 ×; 4-5, 9-10: 3.2 ×; 11: 5.2 ×.



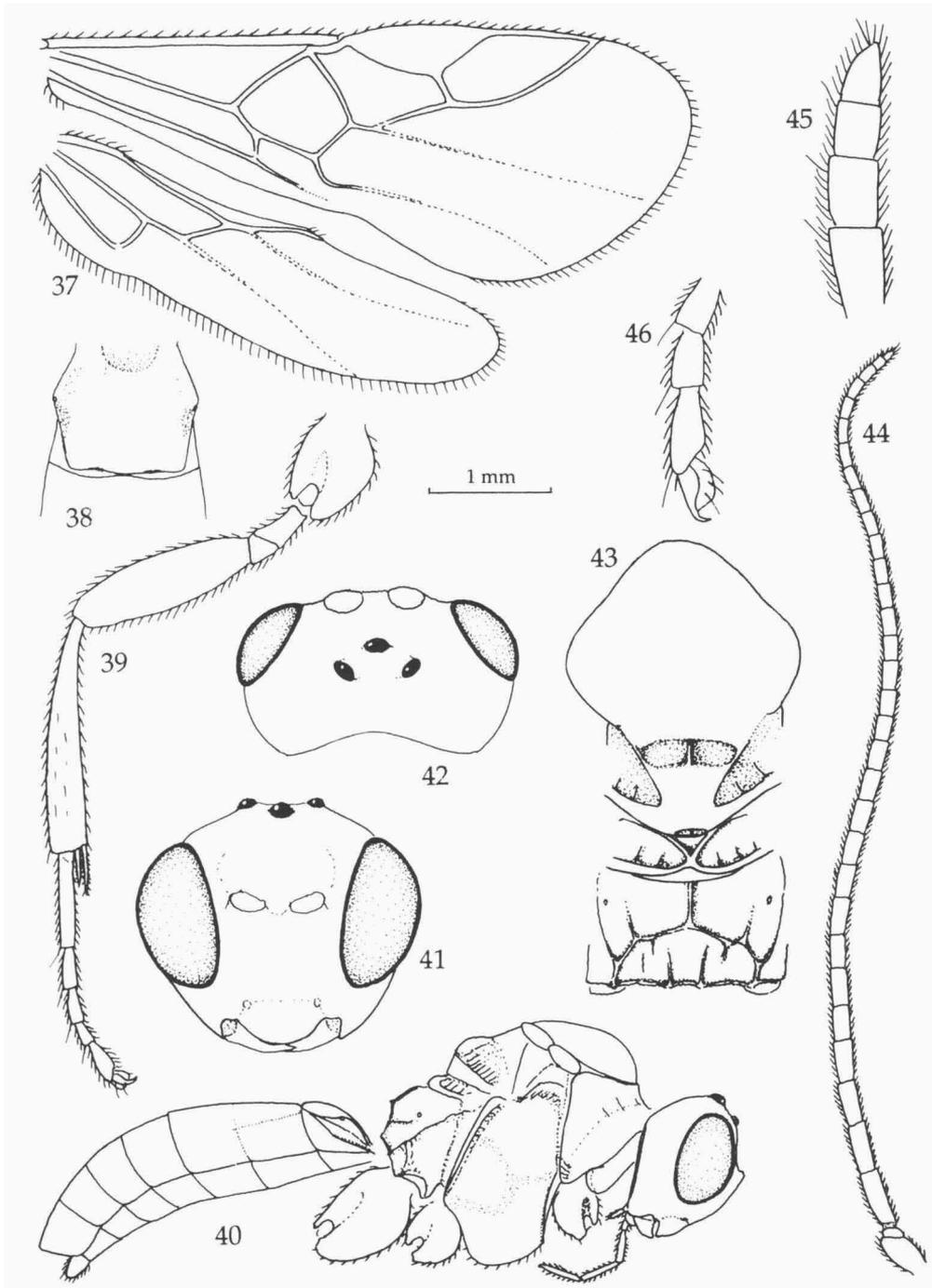
Figs 12-15, *Aridelus nigricans* Chao, ♀; figs 16-18, *A. flavicans* Chao, ♀; 19-21, *A. rufotestaceus* Tobias, ♀. 12, antenna; 13, 16, 19, wings; 14, 18, 20, head, frontal aspect; 15, 17, 21, head, dorsal aspect. 12-21: 1.8 × scale-line.



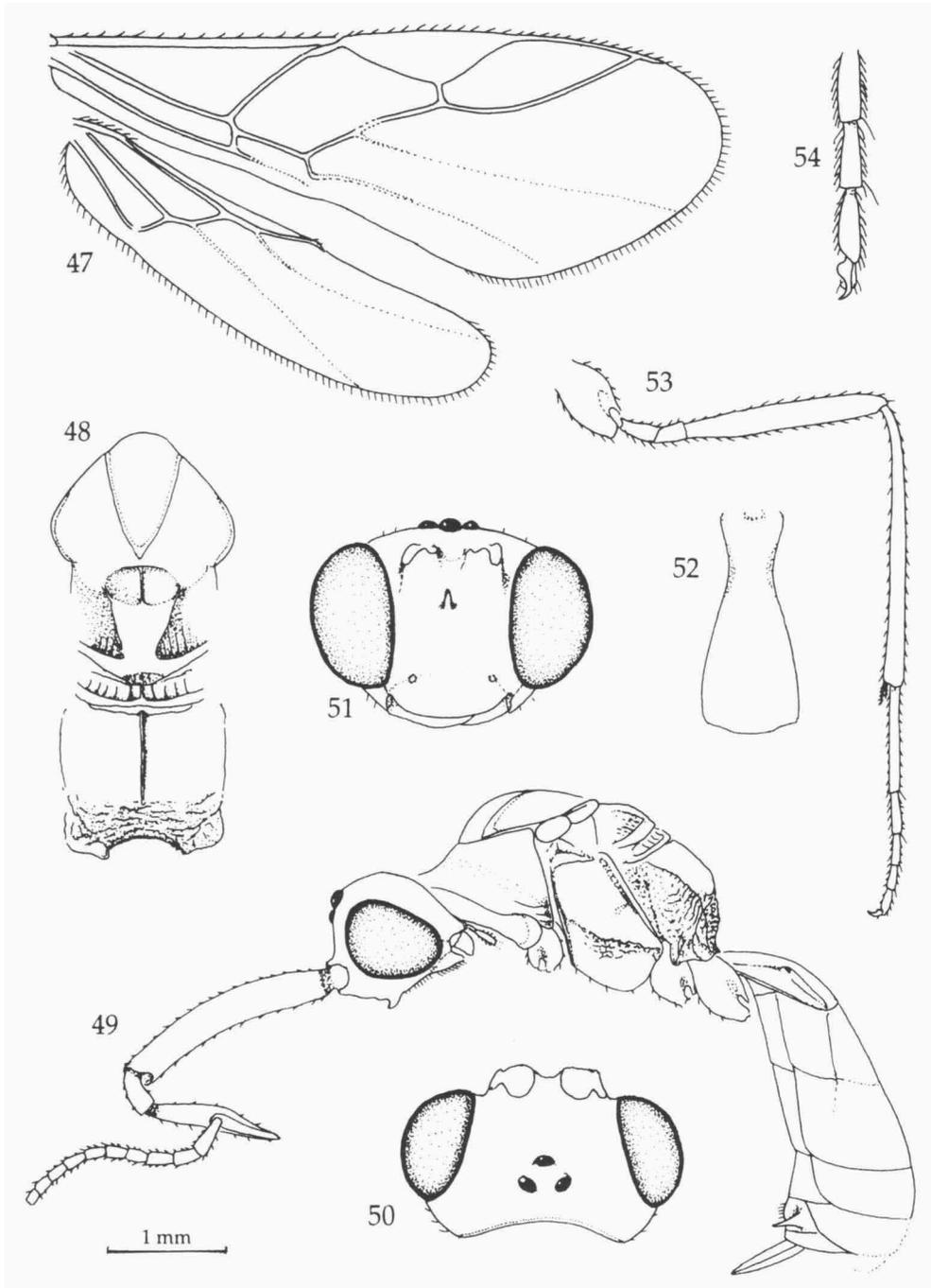
Figs 22-24, *Aridelus rutilipes* Papp, ♀; figs 25-27, *A. rufiventris* Luo & Chen, ♂. 22, 25, wings; 23, 26, head, frontal aspect; 24, 27, head, dorsal aspect. 24-27: 1.8 × scale-line.



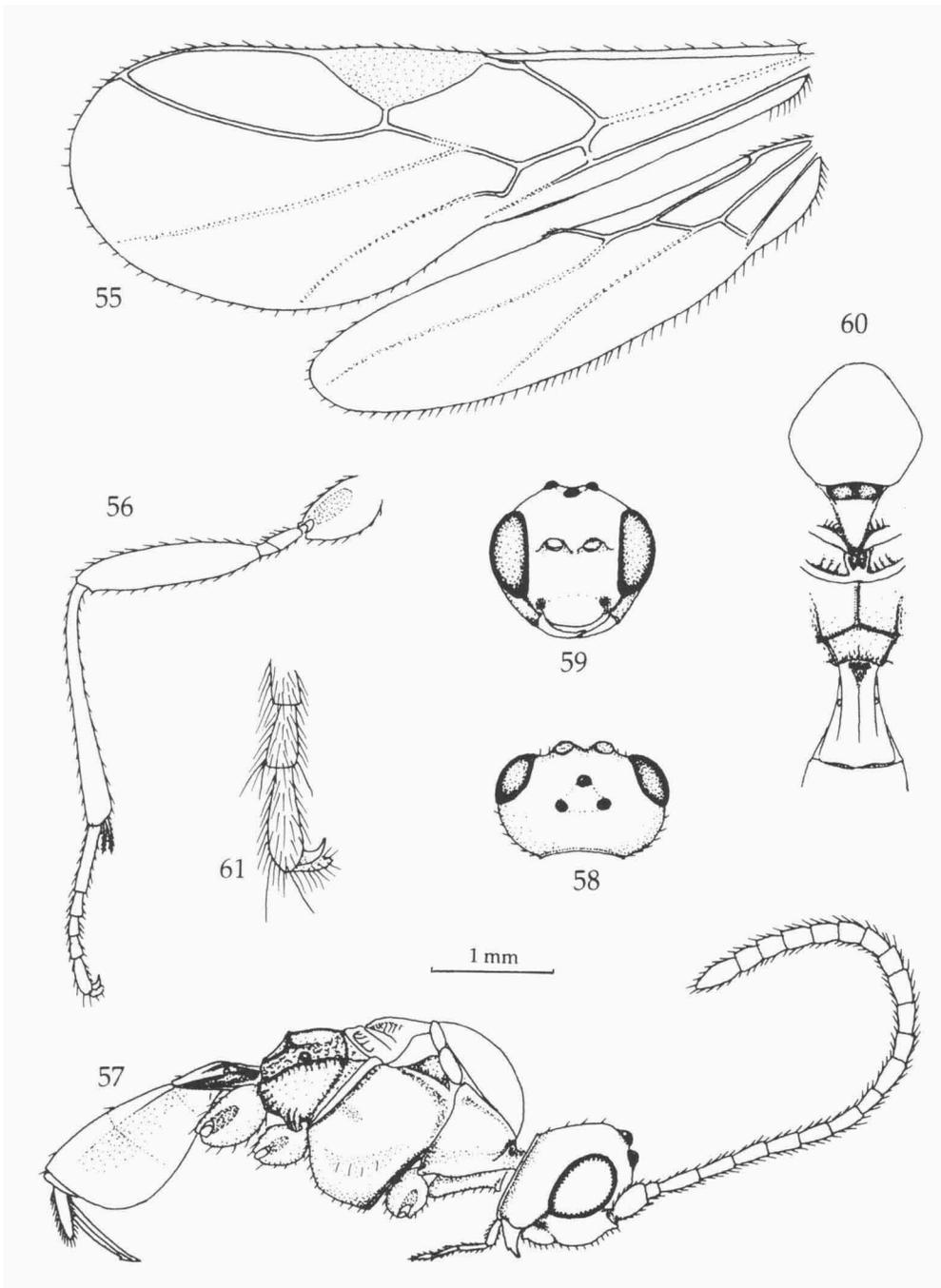
Figs 28-31, *Aridelus basalus* spec. nov., ♀, holotype; figs 32-34, *A. alternecolatus* He, ♀; 35-36, *A. sinensis* Wang, ♀. 28, antenna; 29, 32, wings; 30, 33, 35, head, frontal aspect; 31, 34, 36, head, dorsal aspect. 28-31, 33-36: 1.8 × scale-line; 32: 1.4 ×.



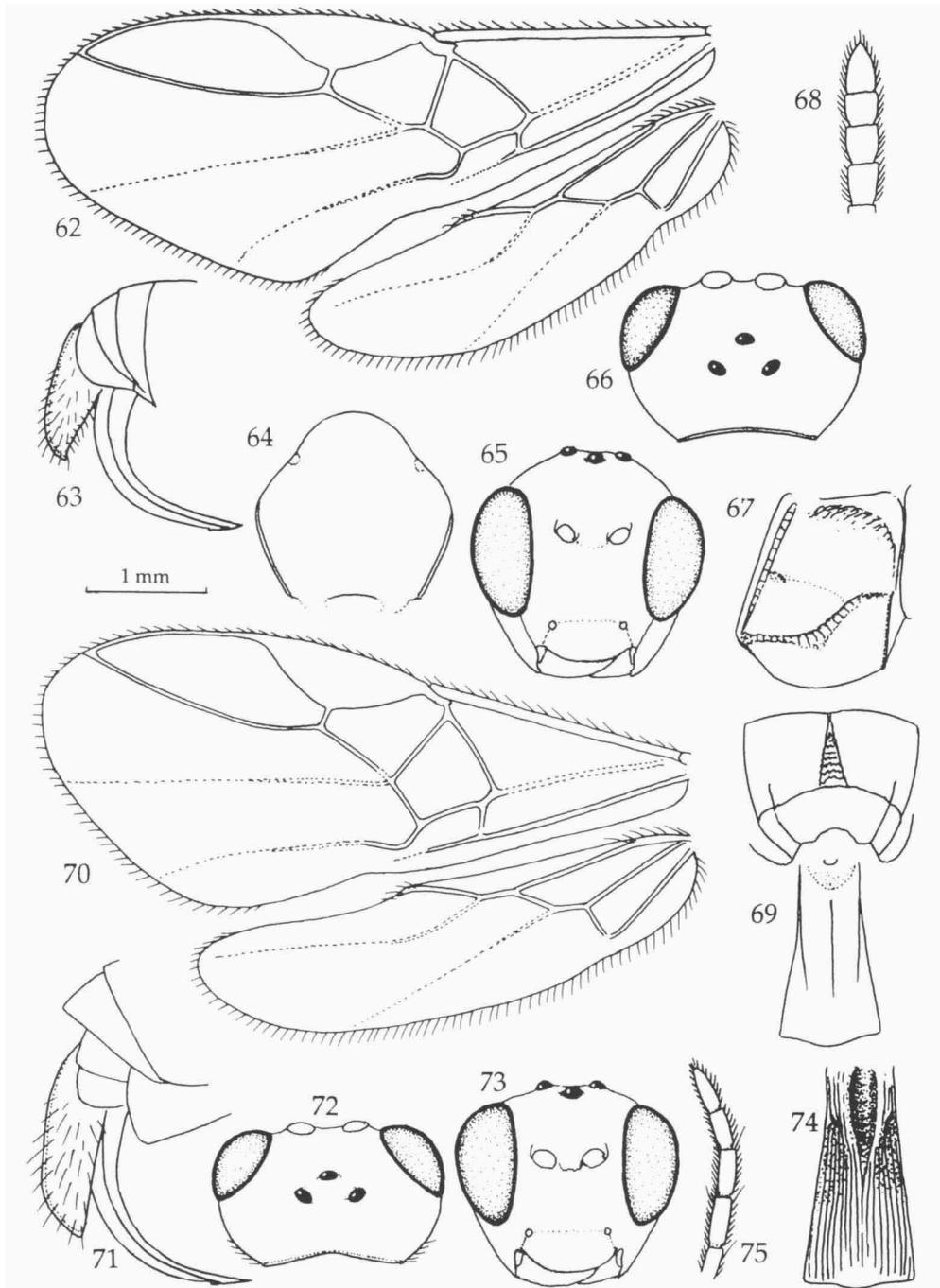
Figs 37-46, *Asiacentistes alekseevi* (Belokobylskij), ♂, China. 37, wings; 38, first and second metasomal tergites, dorsal aspect; 39, hind leg, lateral aspect; 40, habitus, lateral aspect; 41, head, frontal aspect; 42, head, dorsal aspect; 43, mesosoma, dorsal aspect; 44, antenna; 45, apex of antenna; 46, outer hind claw. 37, 39-40, 44: 2.1 × scale-line; 38, 41-43: 3.2 ×; 45: 8.0 ×; 46: 5.2 ×.



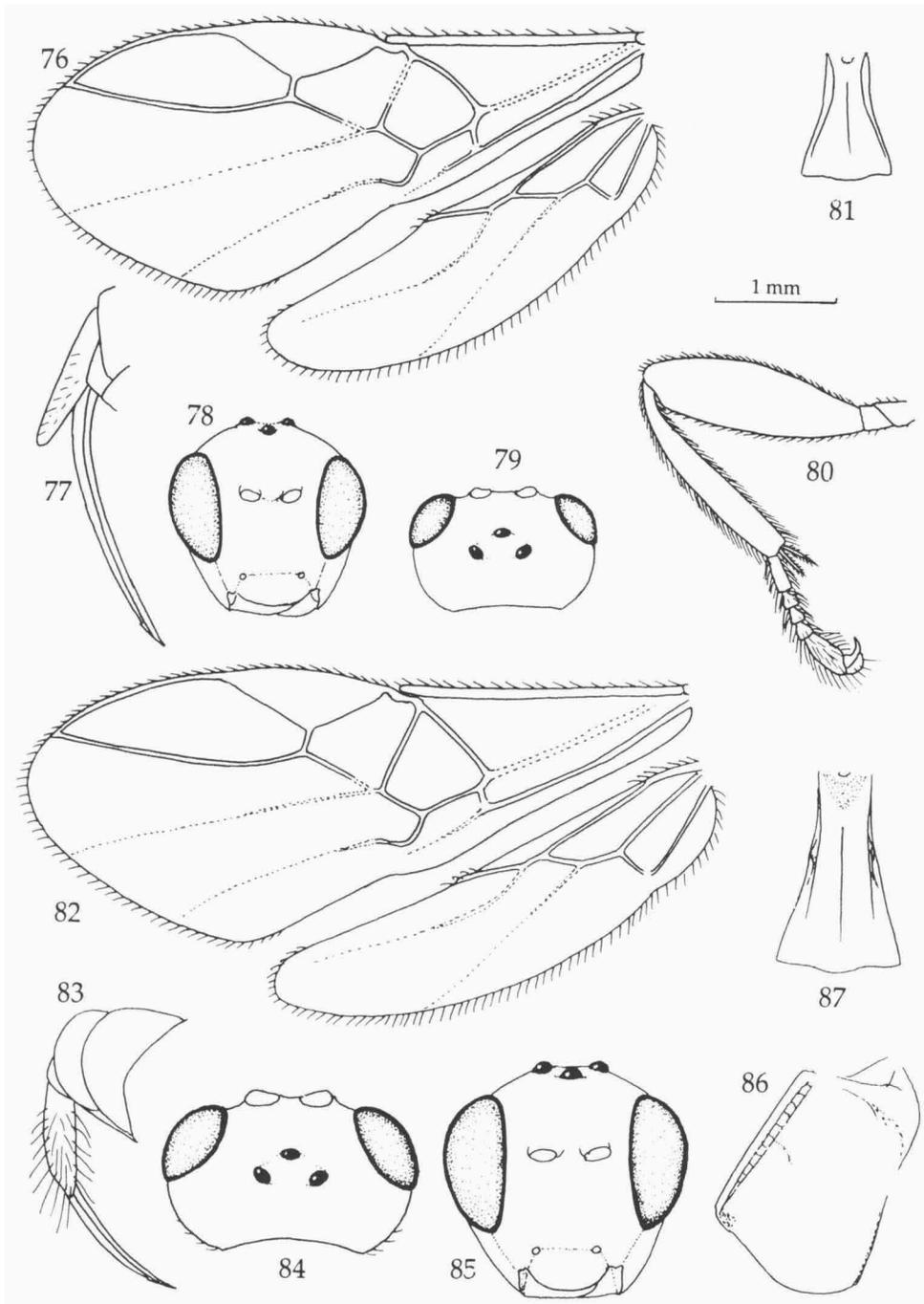
Figs 47-54, *Strebloclera (Asiastreblocera) cornuta* (Chao), ♀, China. 47, wings; 48, mesosoma, dorsal aspect; 49, habitus, lateral aspect; 50, head, dorsal aspect; 51, head, frontal aspect; 52, first metasomal tergite, dorsal aspect; 53, hind leg, lateral aspect; 54, outer hind claw. 47, 49, 53: 1.8 × scale-line; 48, 50-52: 2.5 ×; 54: 4.4 ×.



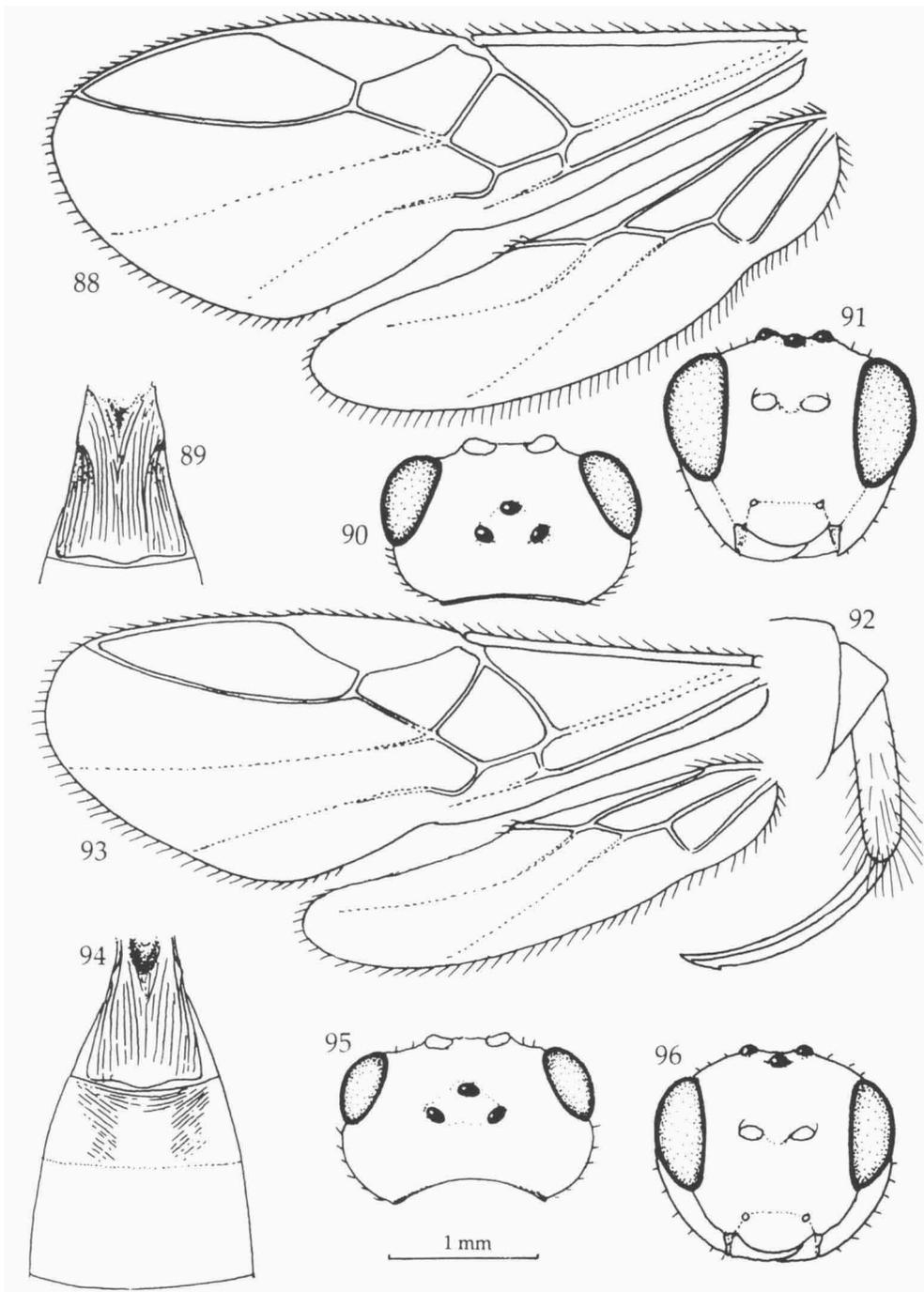
Figs 55-61, *Centistes (Syrrhizus) minutus* spec. nov., ♀, holotype. 55, wings, 56, hind legs lateral aspect; 57, habitus, lateral aspect; 58, head, dorsal aspect; 59, head, frontal aspect; 60, mesosoma and first metasomal tergite, dorsal aspect; 61, outer hind claw. 55-60: 1.8 × scale-line; 61: 4.4 ×.



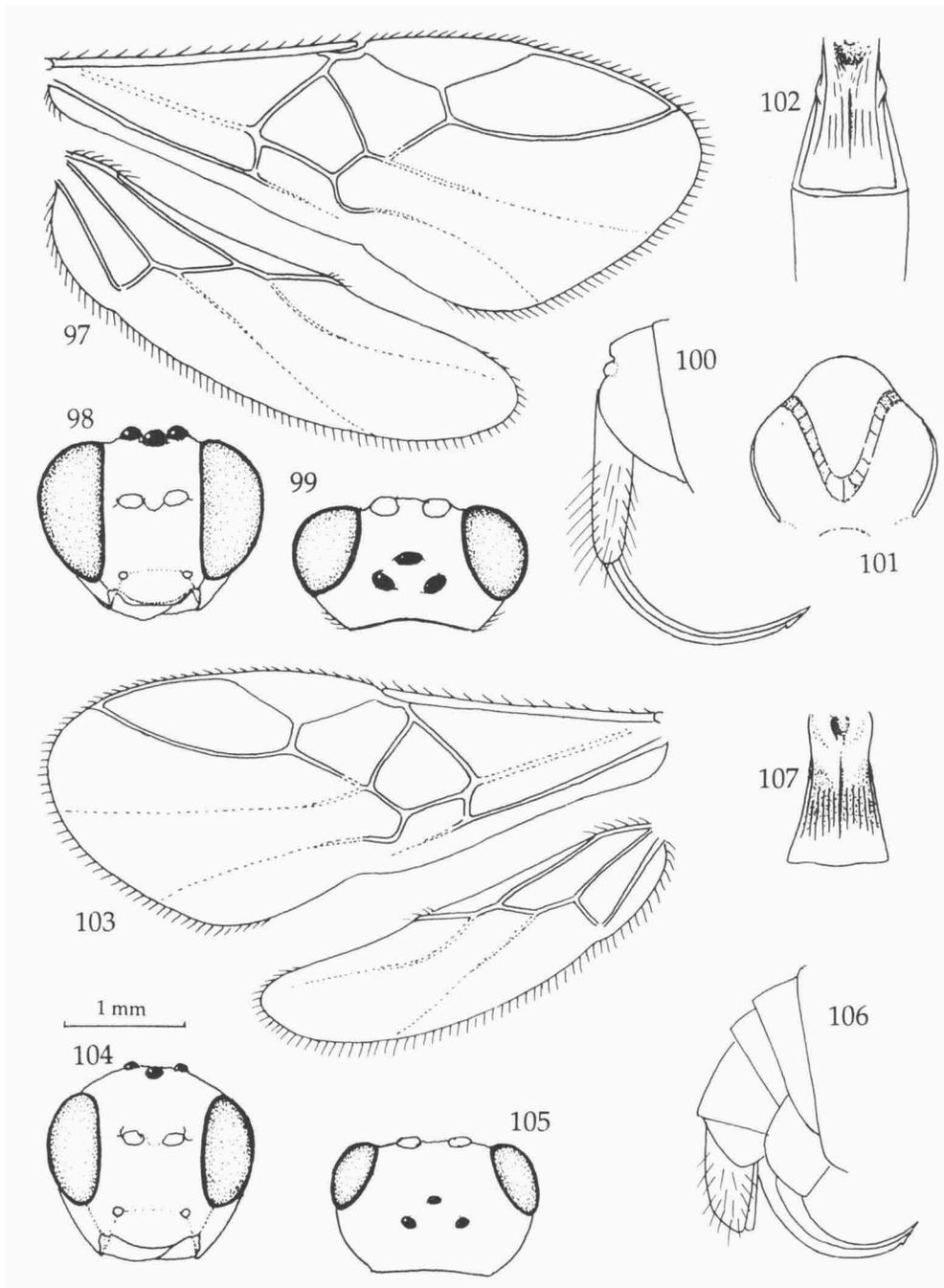
Figs 62-69, *Centistes (Centistes) yannanus* spec. nov., ♀, holotype; figs 70-75, *C. (C.) guizhouensis* spec. nov., ♀, holotype. 62, 70, wings; 63, 71, apex of metasoma, ovipositor and its sheath, lateral aspect; 64, mesoscutum, dorsal aspect; 65, 73, head, frontal aspect; 66, 72, head, dorsal aspect; 67, mesopleuron, lateral aspect; 68, 75, apex of antenna; 69, propodeum and first metasomal tergite, dorsal aspect; 74, first metasomal tergite, dorsal aspect. 62: 2.1 × scale-line; 63-67, 69, 74-75: 3.2 ×; 68: 4.4 ×; 70-71: 1.6 ×; 72-73: 2.5 ×.



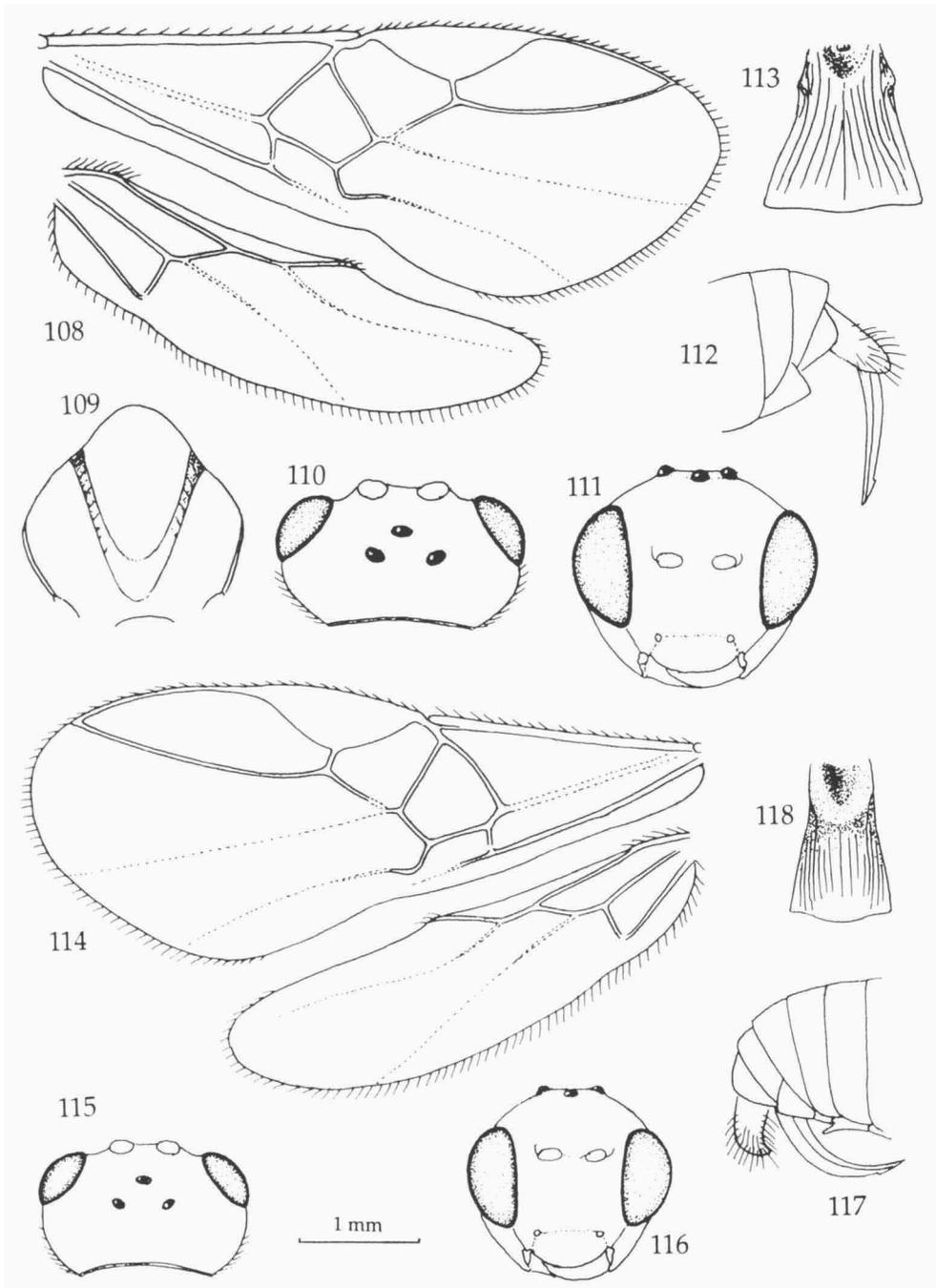
Figs 76-81, *Centistes (C.) intermedius* spec. nov., ♀, holotype; figs 82-87, *C. (C.) carinatus* spec. nov., ♀, holotype. 76, 82, wings; 77, 83, ovipositor and its sheath, lateral aspect; 78, 85, head, frontal aspect; 79, 84, head, dorsal aspect; 80, middle leg, lateral aspect; 81, 87, first metasomal tergite, dorsal aspect; 86, mesopleuron, lateral aspect. 76, 82: 2.1 × scale-line; 77-81, 83-87: 3.2 ×.



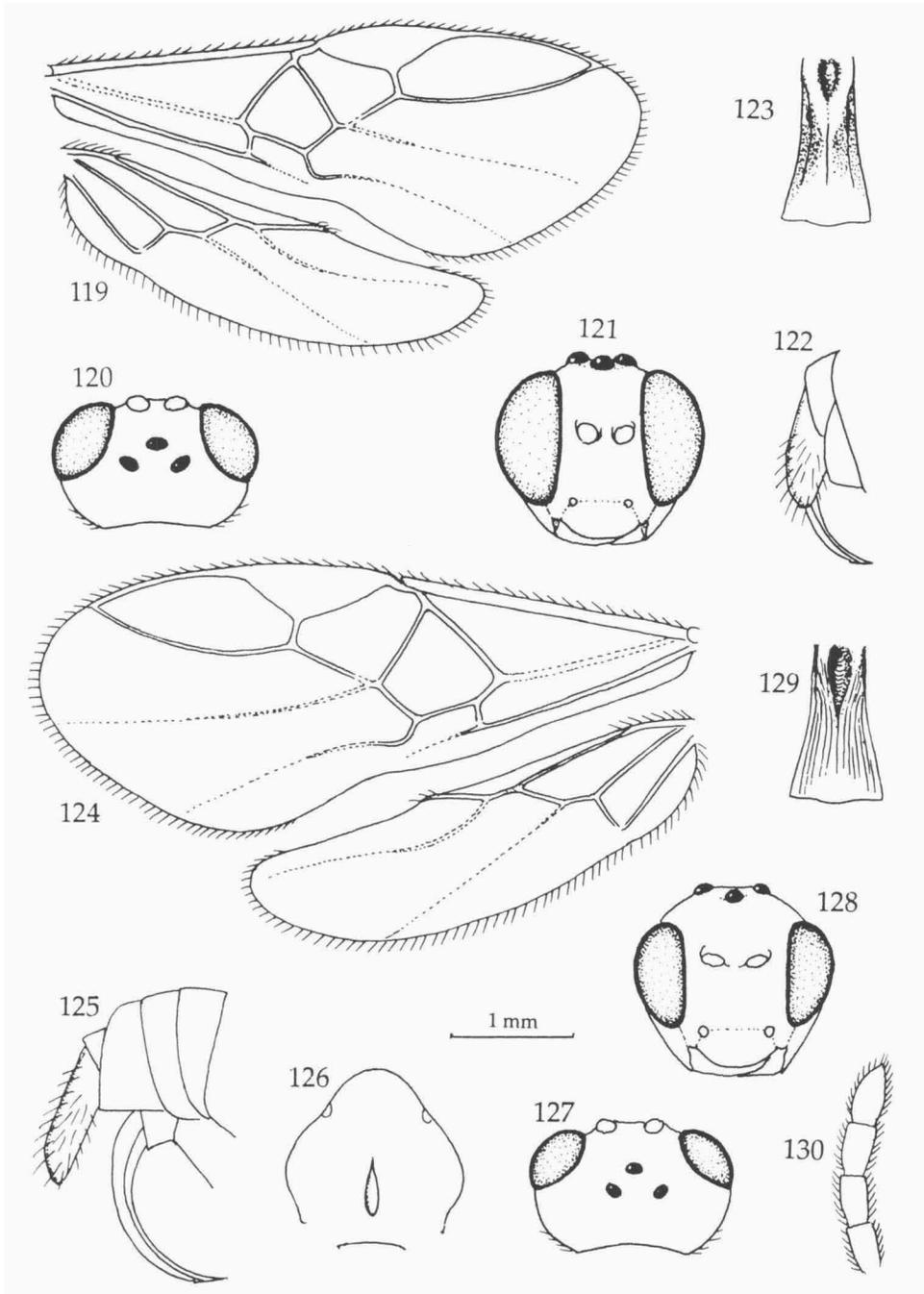
Figs 88-92, *Centistes* (*C.*) *striatus* spec. nov., ♀, holotype; figs 93-96, *C.* (*C.*) *flavus* spec. nov., ♂, holotype. 88, 93, wings; 89, first metasomal tergite, dorsal aspect; 90, 95, head, dorsal aspect; 91, 96, head, frontal aspect; 92, ovipositor and its sheath, lateral aspect; 94, first-third metasomal tergites, dorsal aspect. 88, 93: 1.8 × scale-line; 89-92, 94-96: 2.5 ×.



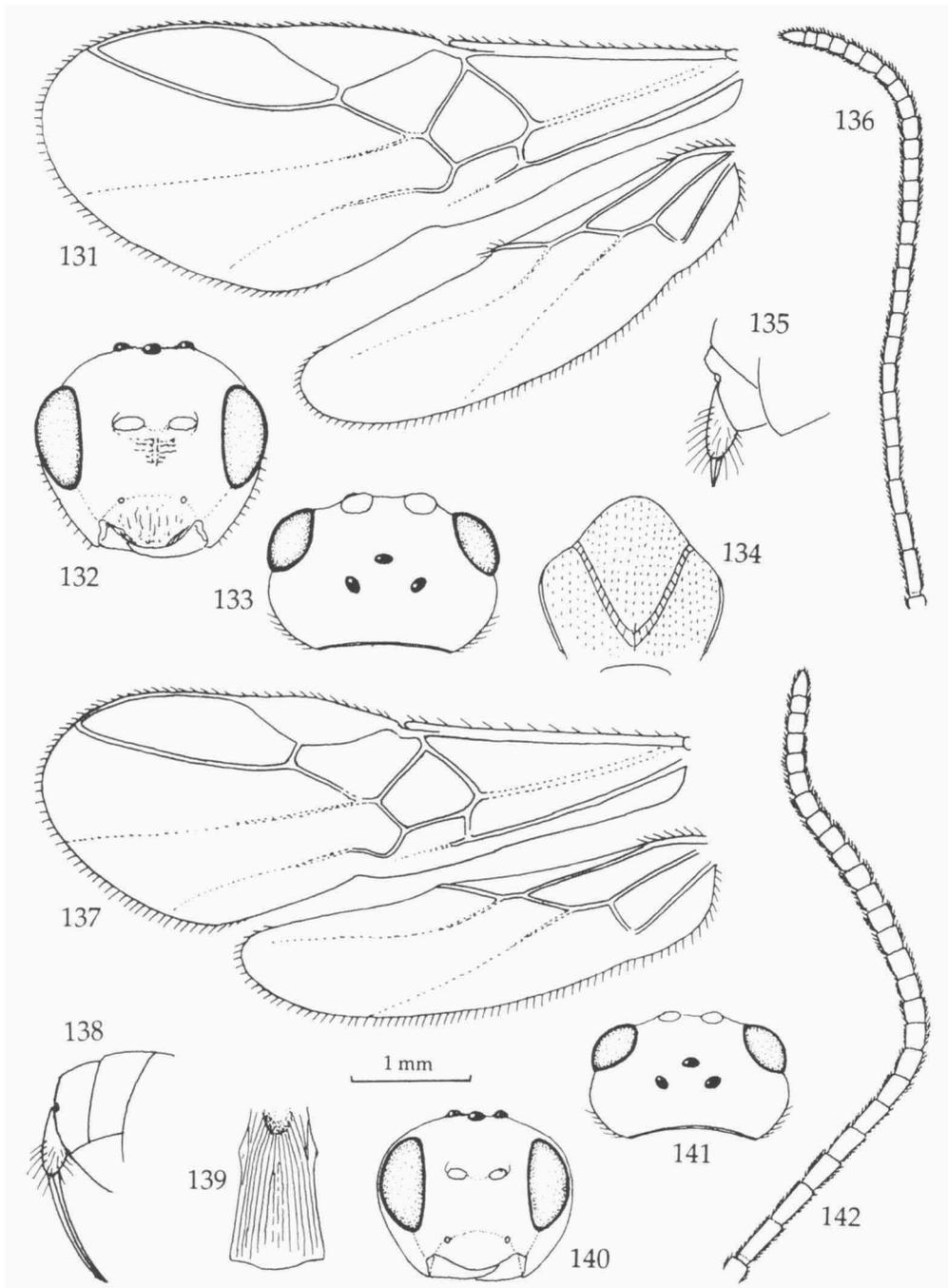
Figs 97-102, *Centistes (Ancylocentrus) semiruficus* Belokobylskij, ♀; figs 103-107, *C. (A.) medythiae* Maetô & Nagai, ♀. 97, 103, wings; 98, 104, head, frontal aspect; 99, 105, head, dorsal aspect; 100, 106, ovipositor and its sheath, lateral aspect; 101, mesoscutum, dorsal aspect; 102, first and second metasomal tergites, dorsal aspect; 107, first metasomal tergite, dorsal aspect. 97: 1.4 x scale-line; 98-102: 1.8 x; 103: 2.1 x; 104-105: 2.9 x; 106-107: 3.2 x.



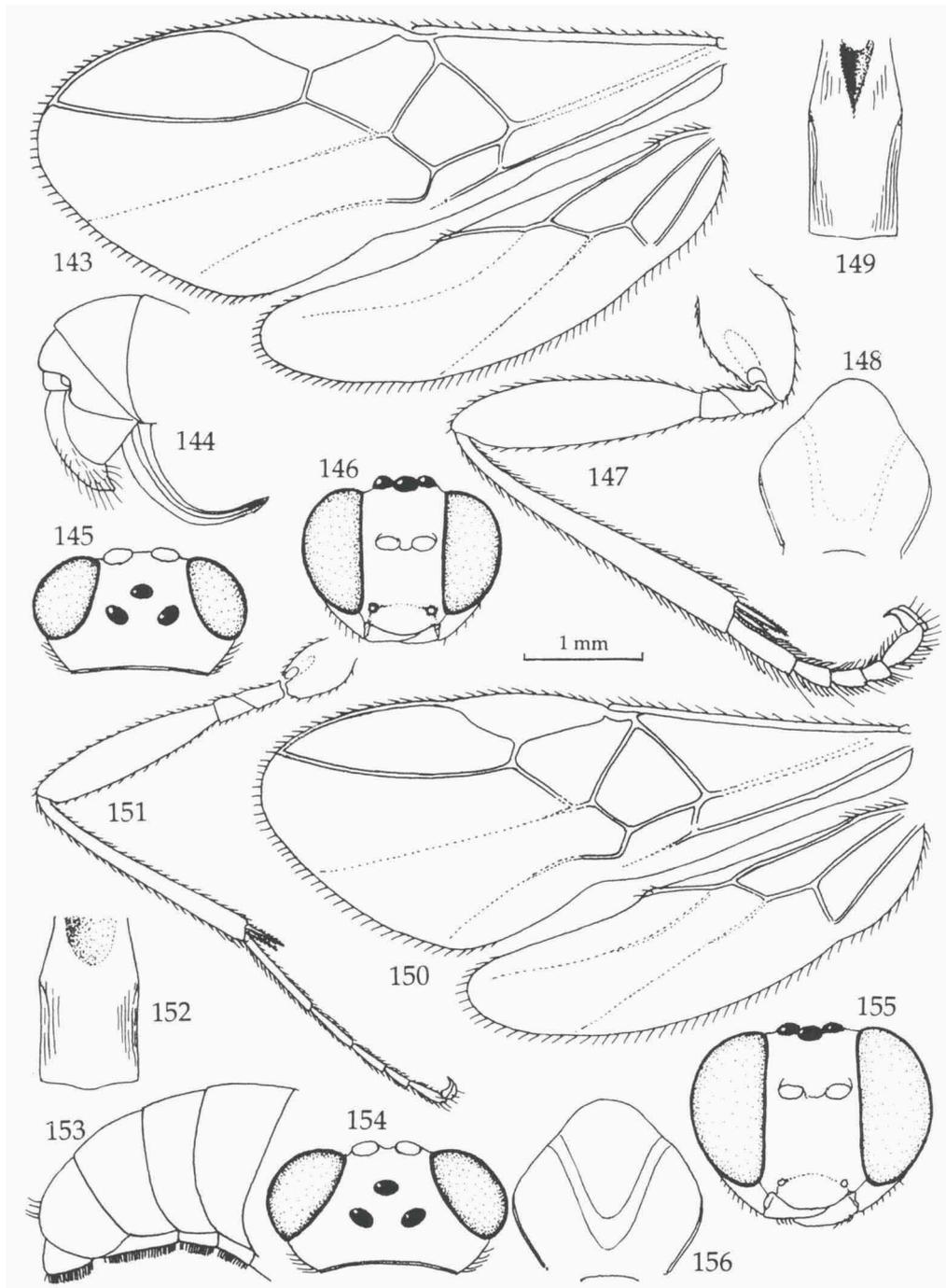
Figs 108-113, *Centistes (Ancylocentrus) semiglabratus* spec. nov., ♀, holotype; figs 114-118, *C. (A.) ater* (Nees), ♀. 108, 114, wings; 109, mesoscutum, dorsal aspect; 110, 115, head, dorsal aspect; 111, 116, head, frontal aspect; 112, 117, ovipositor and its sheath, lateral aspect; 113, 118, first metasomal tergite, dorsal aspect. 108: 1.8 × scale-line; 114: 2.1 ×; 109-113, 117: 2.5 ×; 115-116: 2.9 ×; 118: 3.2 ×.



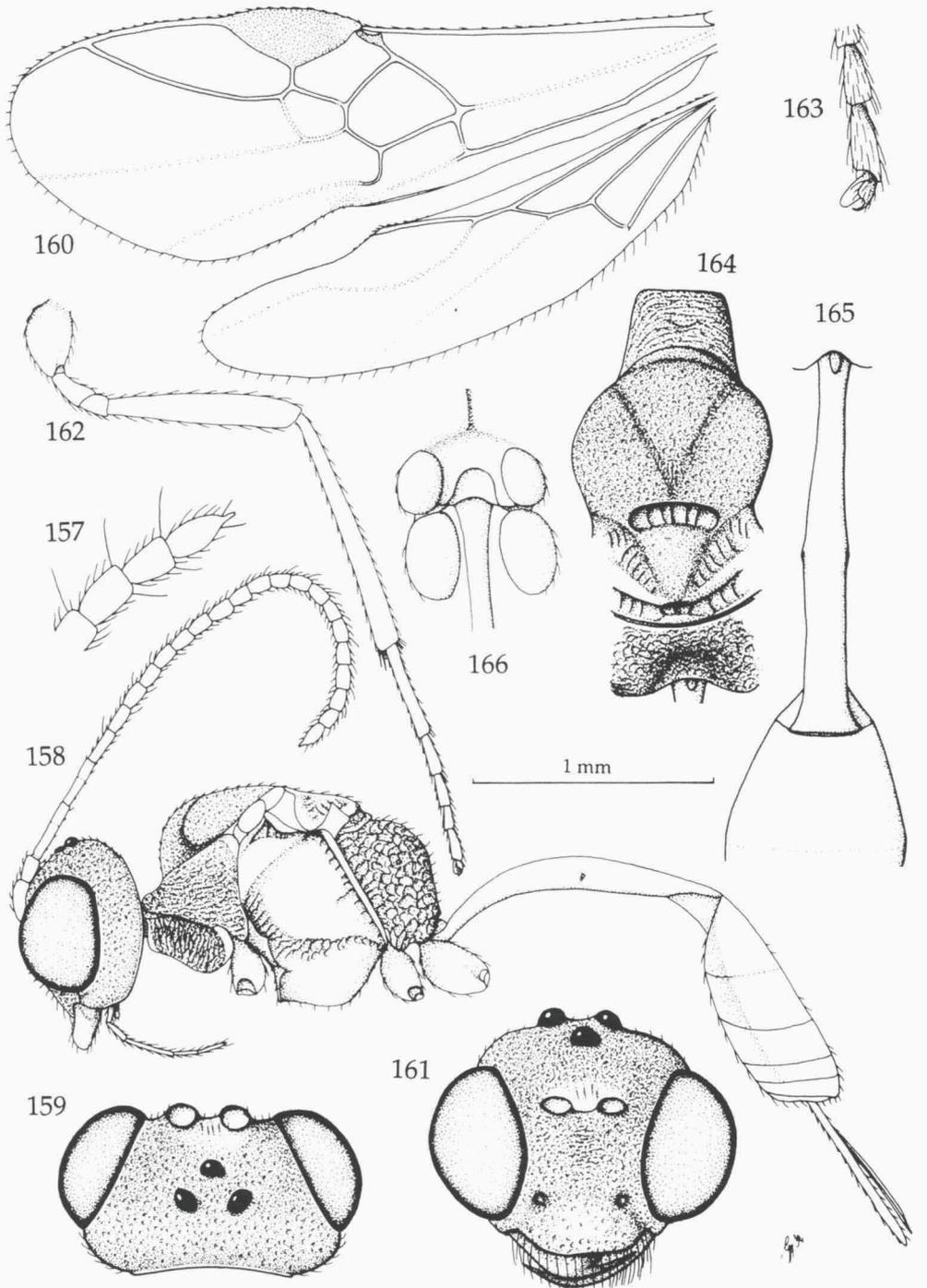
Figs 119-123, *Centistes (Ancylocentrus) ocellaris* spec. nov., ♀, holotype; figs 124-130, *C. (A.) rufus* spec. nov., ♀, holotype. 119, 124, wings, 120, 127, head, dorsal aspect; 121, 128, head, frontal aspect; 122, 125, ovipositor and its sheath, lateral aspect; 123, 129, first metasomal tergite, dorsal aspect; 126, meso-scutum, dorsal aspect; 130, apex of antenna. 119, 124: 1.8 × scale-line; 120-122, 125-129: 2.5 ×; 123: 3.2 ×; 130: 4.5 ×.



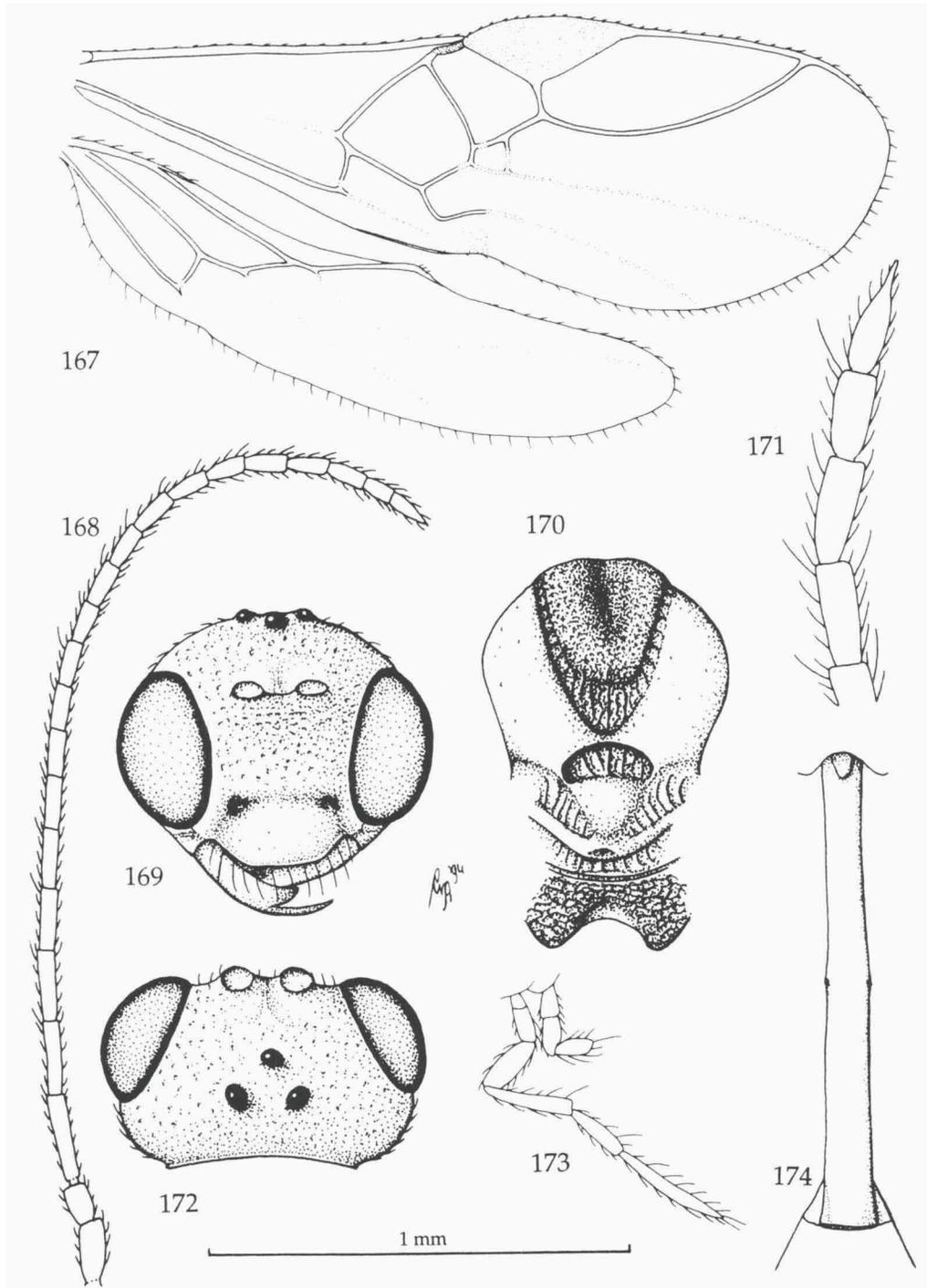
Figs 131-136, *Centistes (Ancylocentrus) punctatus* spec. nov., ♀, holotype; figs 137-142, *C. (A.) convexitemporalis* Belokobylskij, ♀. 131, 137, wings; 132, 140, head, frontal aspect; 133, 141, head, dorsal aspect; 134, mesoscutum, dorsal aspect; 135, 138, ovipositor and its sheath, lateral aspect; 136, 141, antenna of ♀; 139, first metasomal tergite, dorsal aspect. 131, 136: 2.1 × scale-line; 137, 142: 2.5 ×; 132-135, 138, 140-141: 2.9 ×; 139: 3.2 ×.



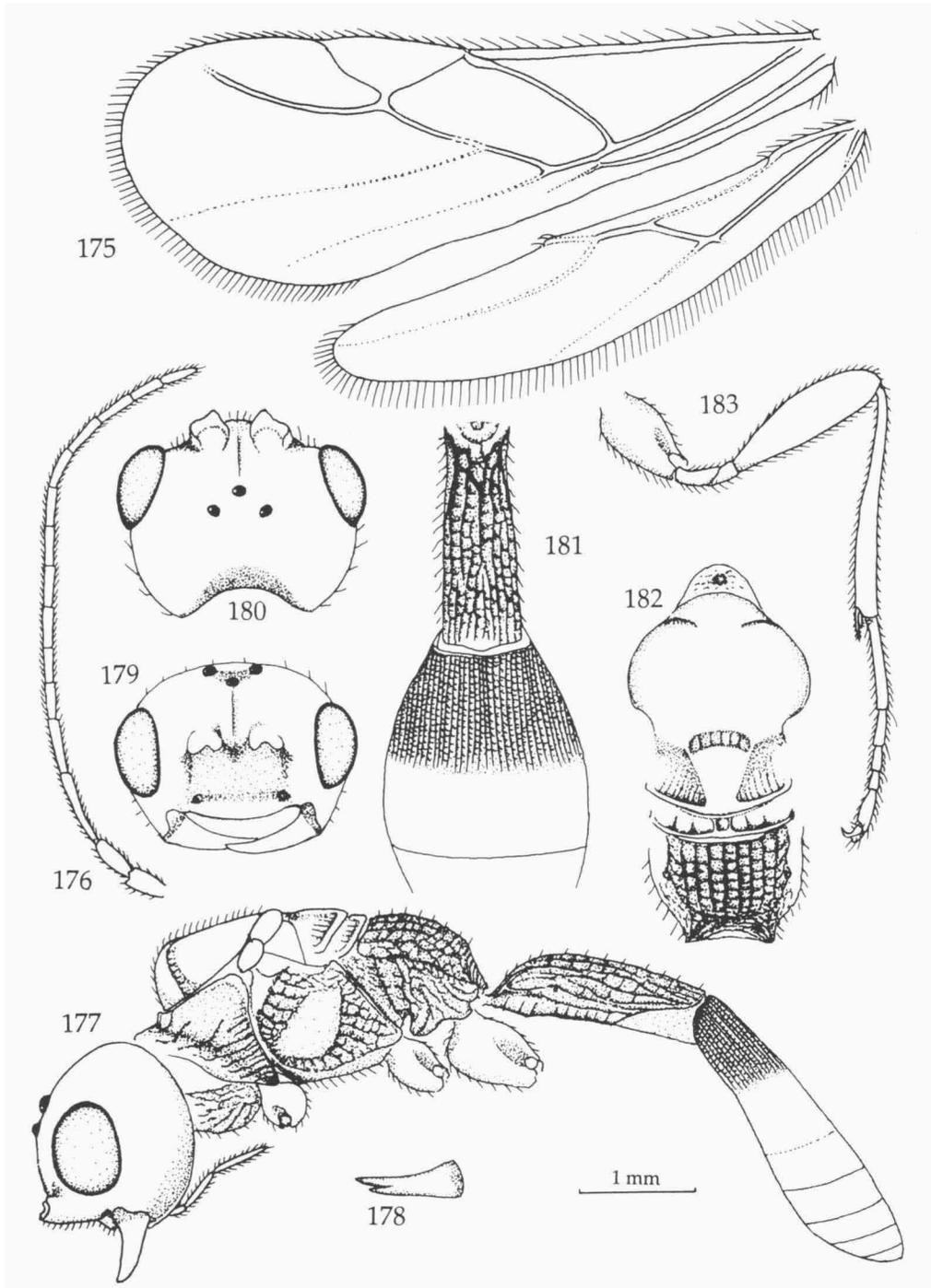
Figs 143-149, *Centistes (Ancylocentrus) brevitarsus* spec. nov., ♀, holotype; figs 150-156, *C. (A.) chaetopygidium* Belokobylskij, ♀. 143, 150, wings; 144, apex of metasoma, ovipositor and its sheath, lateral aspect; 145, 154, head, dorsal aspect; 146, 155, head, frontal aspect; 147, 151, hind leg, lateral aspect; 148, 156, mesoscutum, dorsal aspect; 149, 152, first metasomal tergite, dorsal aspect; 153, apical half of metasoma, lateral aspect. 143: 1.4 × scale-line; 144-148, 152, 154-156: 1.8 ×; 149, 153: 2.5 ×; 150-151: 1.0 ×.



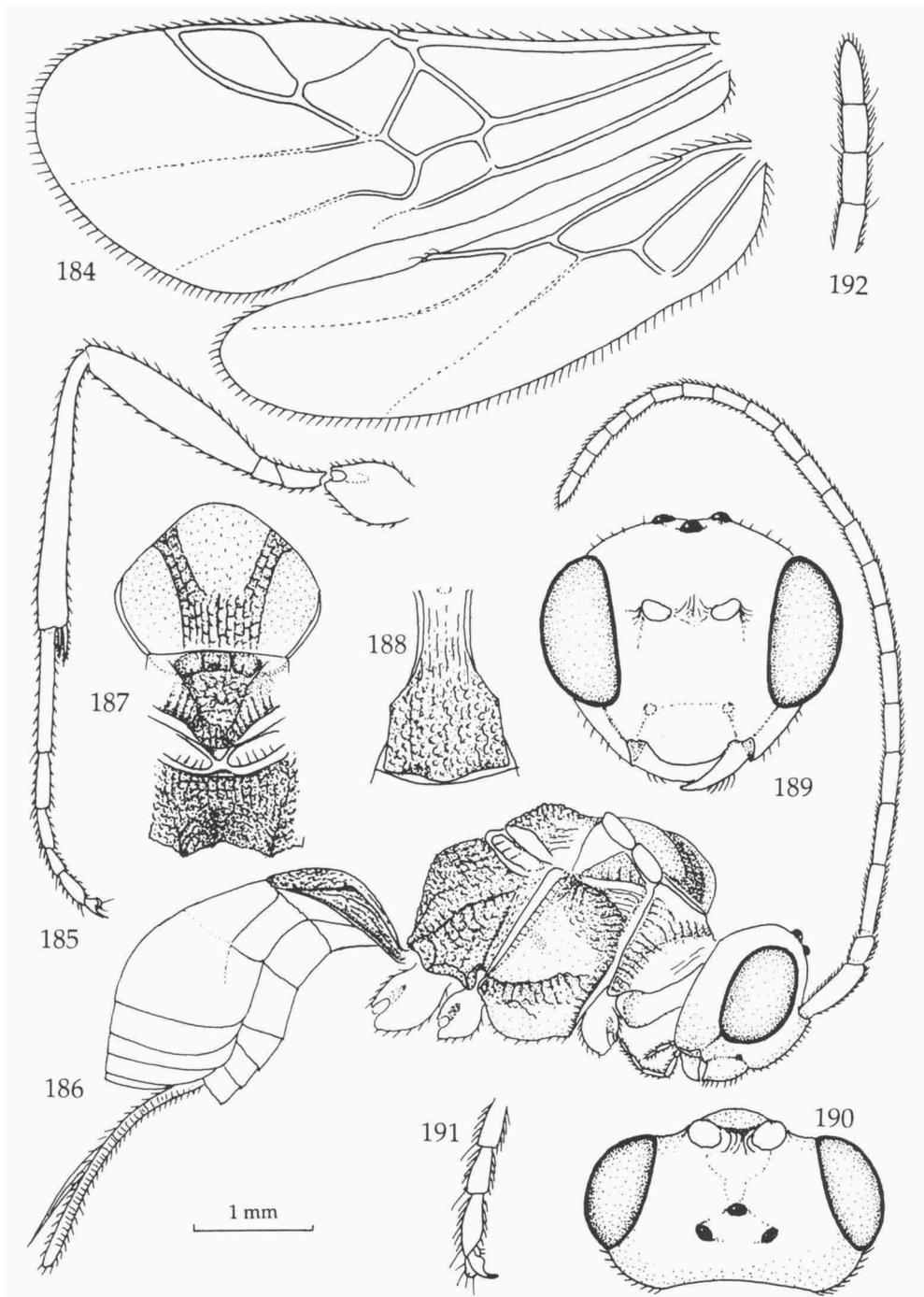
Figs 157-166, *Chrysopophthorus hungaricus* (Zilahi-Kiss), ♀, France. 157, apex of antenna; 158, habitus, lateral aspect; 159, head, dorsal aspect; 160, wings; 161, head, frontal aspect; 162, hind leg, lateral aspect; 163, outer hind claw; 164, mesosoma, dorsal aspect; 165, first and second metasomal tergites, dorsal aspect; 166, insertion of first tergite, ventral aspect. 157, 163: 2.5 × scale-line; 158, 160, 162: 1.0 ×; 159, 161, 164-166: 1.4 ×.



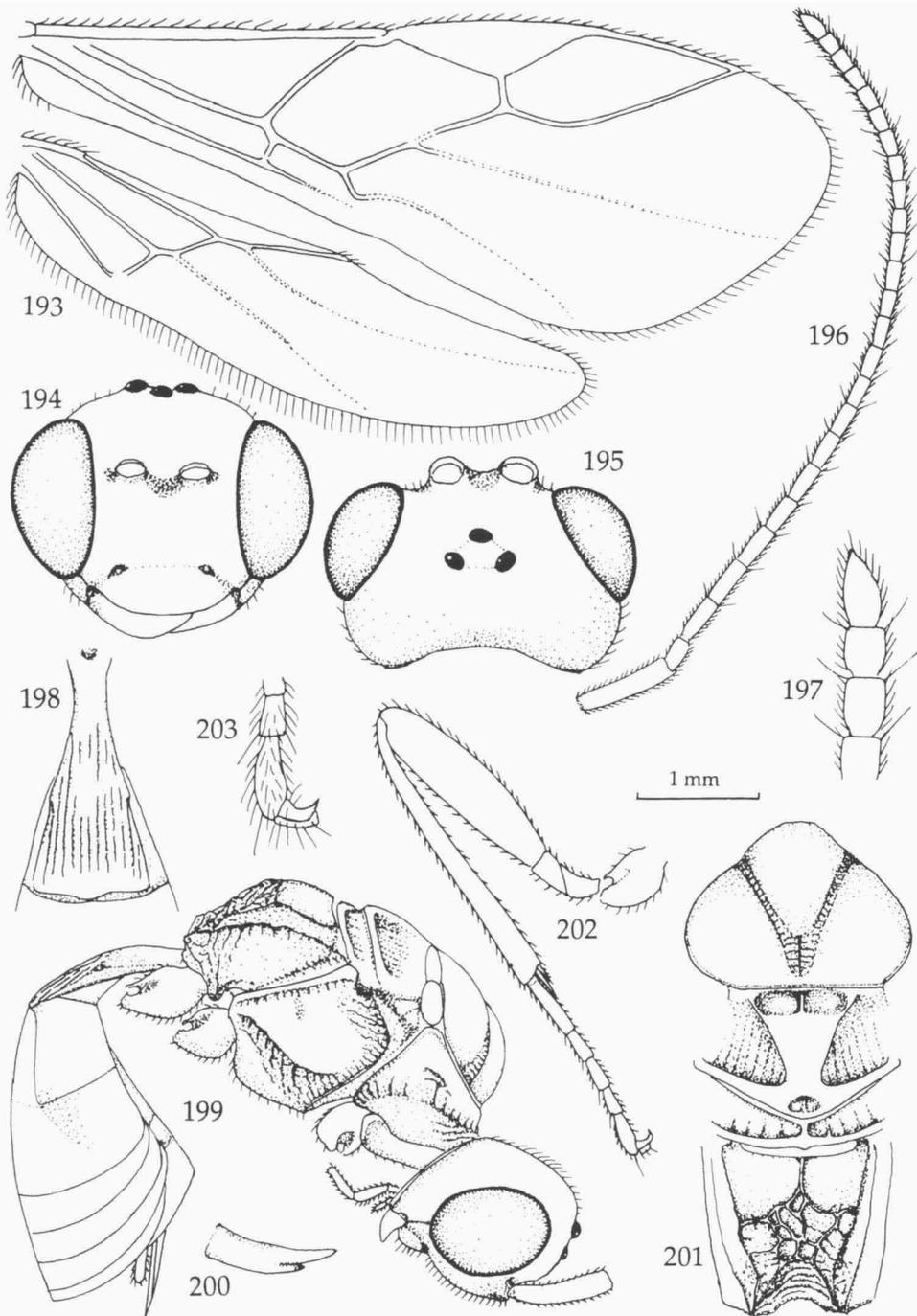
Figs 167-174, *Chrysopophthorus petiolus* Chou, ♀, France. 167, wings; 168, antenna; 169, head, frontal aspect; 170, mesosoma, dorsal aspect; 171, apex of antenna; 172, head, dorsal aspect; 173, maxillary and labial palpi, lateral aspect; 174, first metasomal tergite, dorsal aspect. 167: 0.7 × scale-line; 168-170, 172, 174: 1.0 ×; 171: 2.5 ×; 173: 1.7 ×.



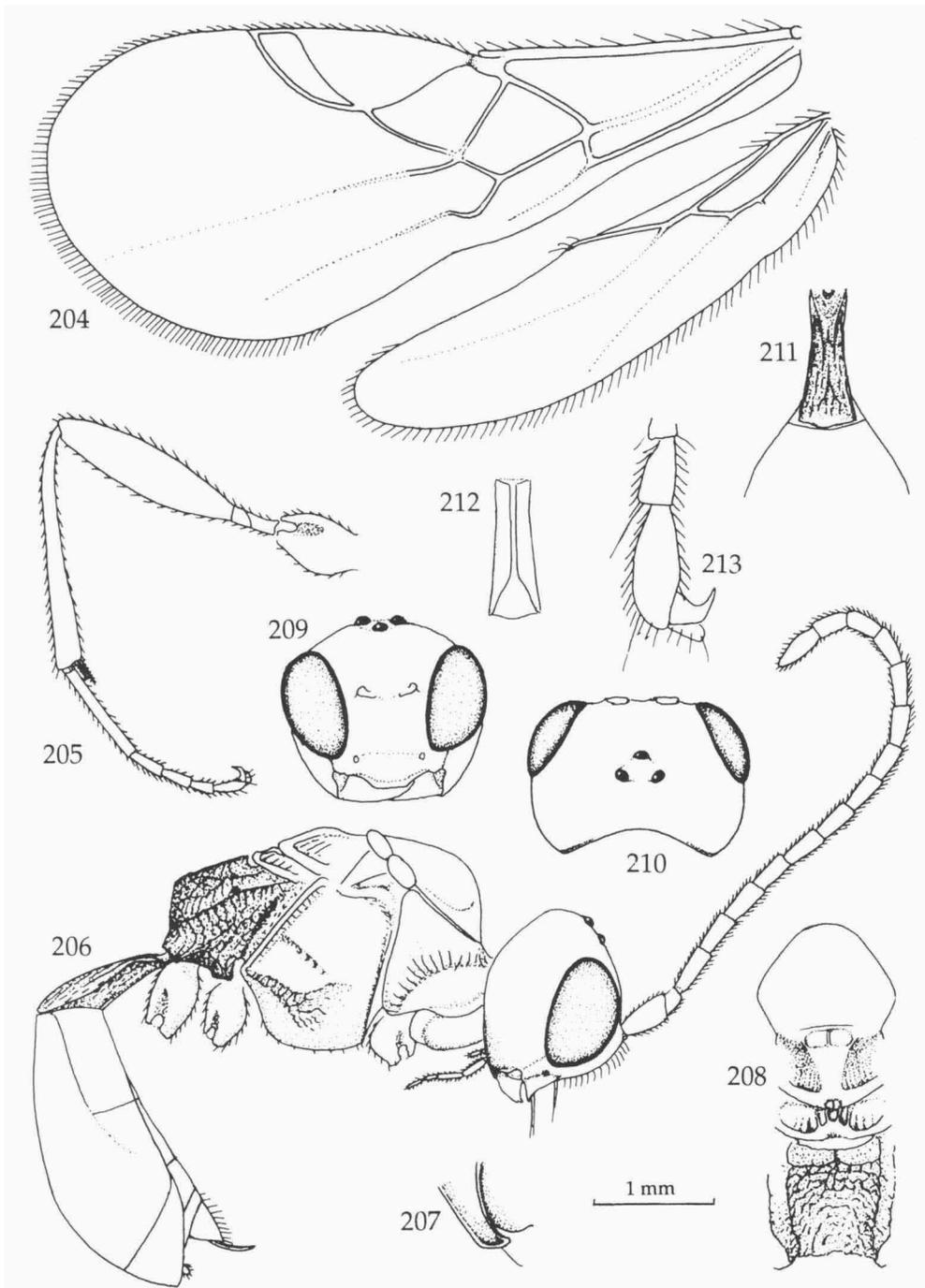
Figs 175-183, *Cosmophorus rugitergitus* spec. nov., ♂, holotype. 175, wings; 176, antenna; 177, habitus, lateral aspect; 178, mandible, frontal aspect; 179, head, frontal aspect; 180, head, dorsal aspect; 181, basal three metasomal tergites, dorsal aspect; 182, mesosoma, dorsal aspect; 183, hind leg, lateral aspect. 175-183: 3.2 × scale-line.



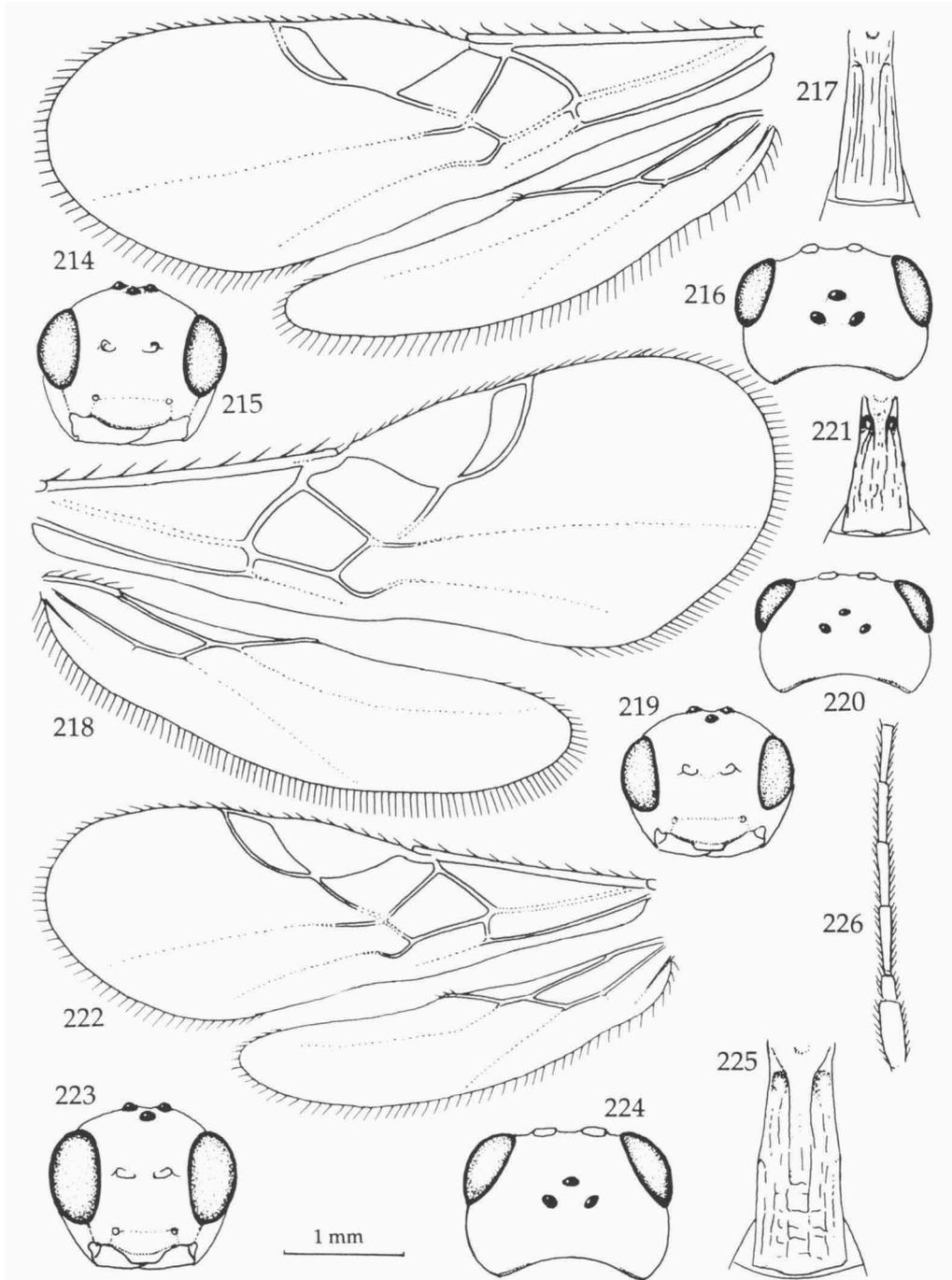
Figs 184-192, *Dinocampus coccinellae* (Schrank), ♀, China. 184, wings; 185, hind leg, lateral aspect; 186, habitus, lateral aspect; 187, mesosoma, dorsal aspect; 188, first metasomal tergite, dorsal aspect; 189, head, frontal aspect; 190, head, dorsal aspect; 191, outer hind claw; 192, apex of antenna. 184-188: 1.8 × scale-line; 189-190: 2.5 ×; 191-192: 3.2 ×.



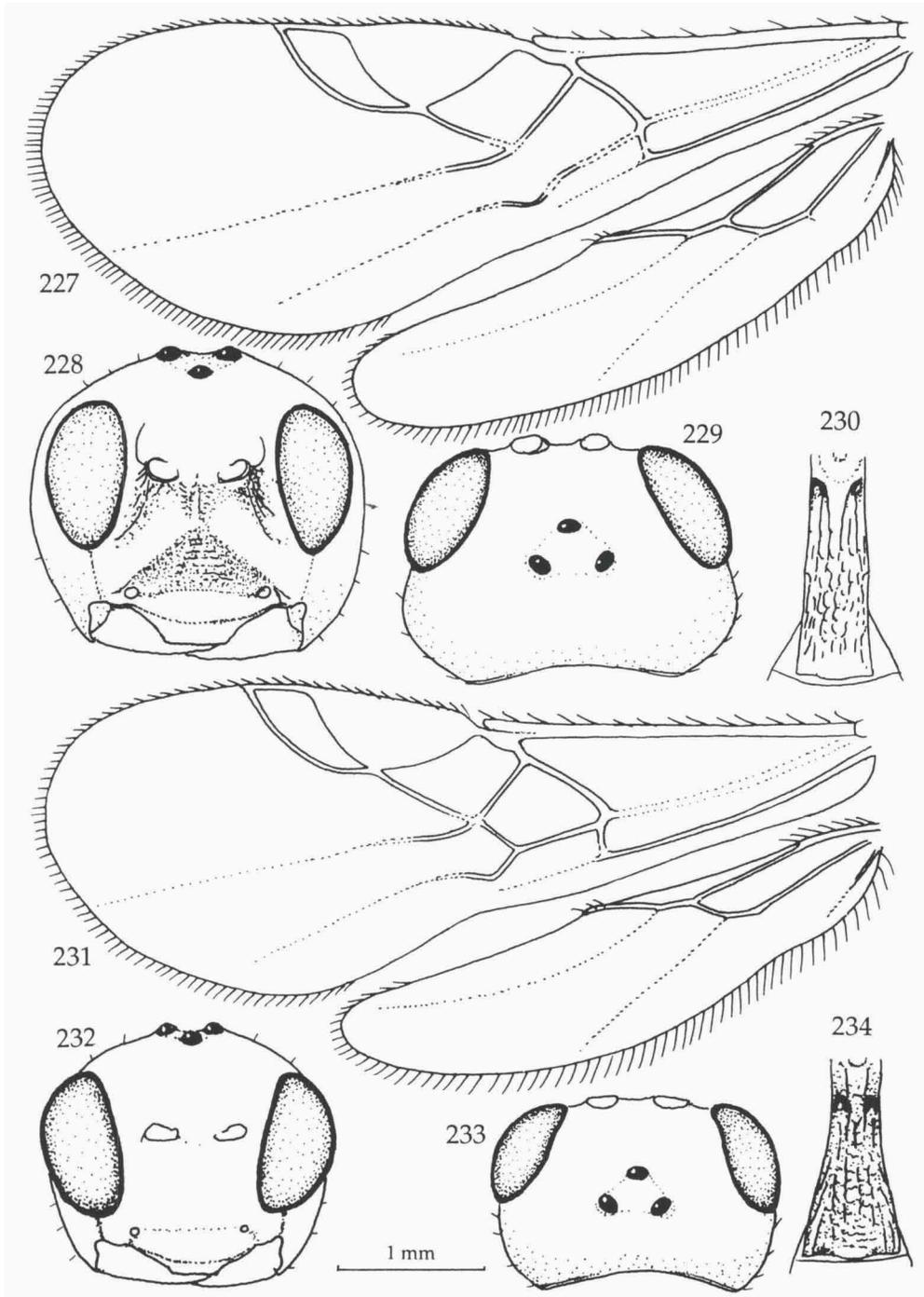
Figs 193-203, *Heia robustipes* gen. nov. & spec. nov., ♀, holotype. 193, wings; 194, head, frontal aspect; 195, head, dorsal aspect; 196, antenna; 197, apex of antenna; 198, first metasomal tergite, dorsal aspect; 199, habitus, lateral aspect; 200, mandible, lateral aspect; 201, mesosoma, dorsal aspect; 202, hind leg, lateral aspect; 203, outer hind claw. 193, 196, 199, 202: 1.8 × scale-line; 194-195, 198, 200-201: 2.5 ×; 197: 4.4 ×; 203: 3.2 ×.



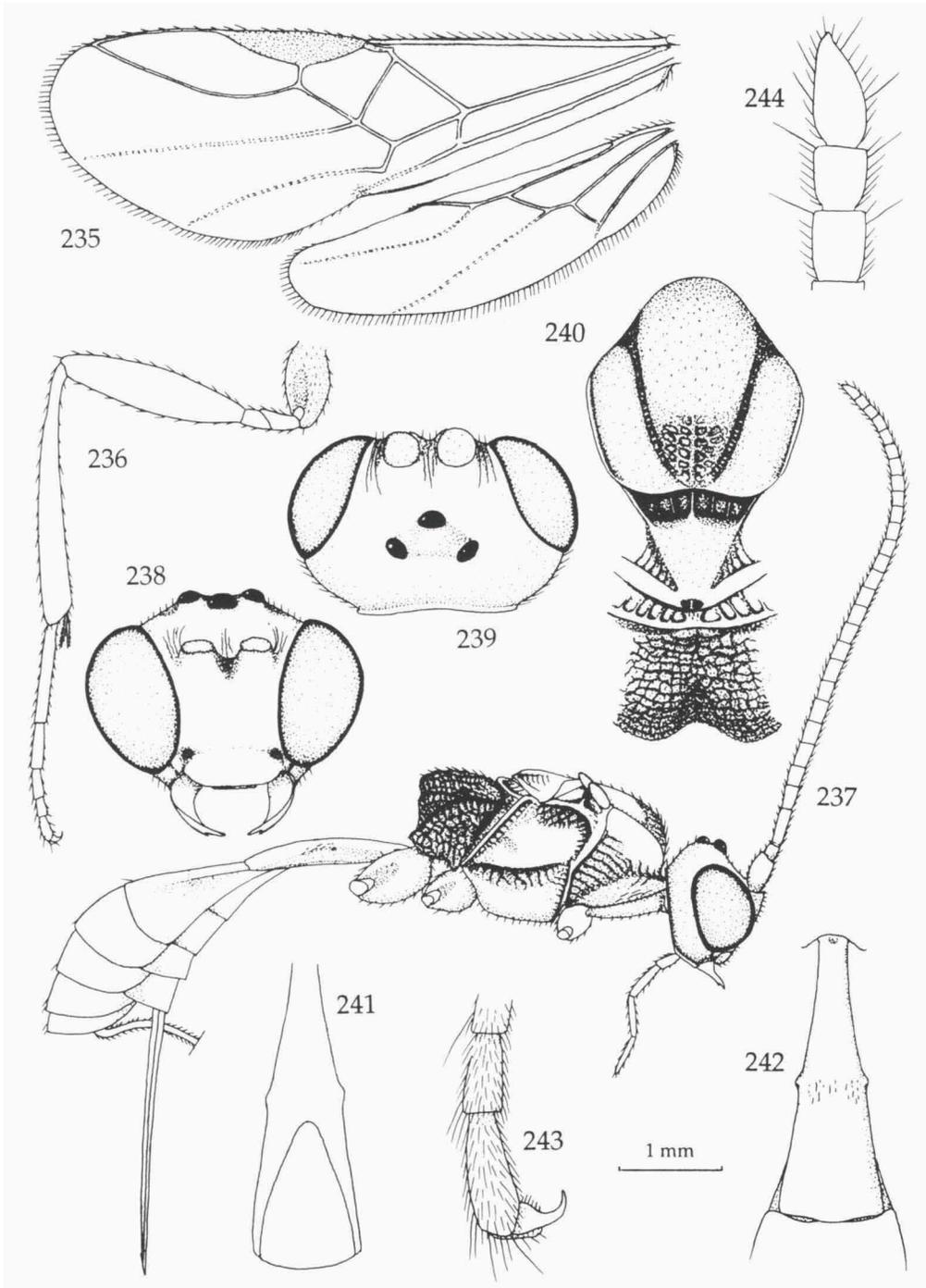
Figs 204-213, *Euphorus natalus* spec. nov., ♀, holotype. 204, wings; 205, hind leg, lateral aspect; 206, habitus, lateral aspect; 207, ventral part of occipital and hypostomal carinae, ventro-lateral aspect; 208, mesosoma, dorsal aspect; 209, head, frontal aspect; 210, head, dorsal aspect; 211, first and second metasomal tergites, dorsal aspect; 212, first metasomal tergite, ventral aspect; 213, outer hind claw. 204-212: 3.2 × scale-line; 213: 8.0 ×.



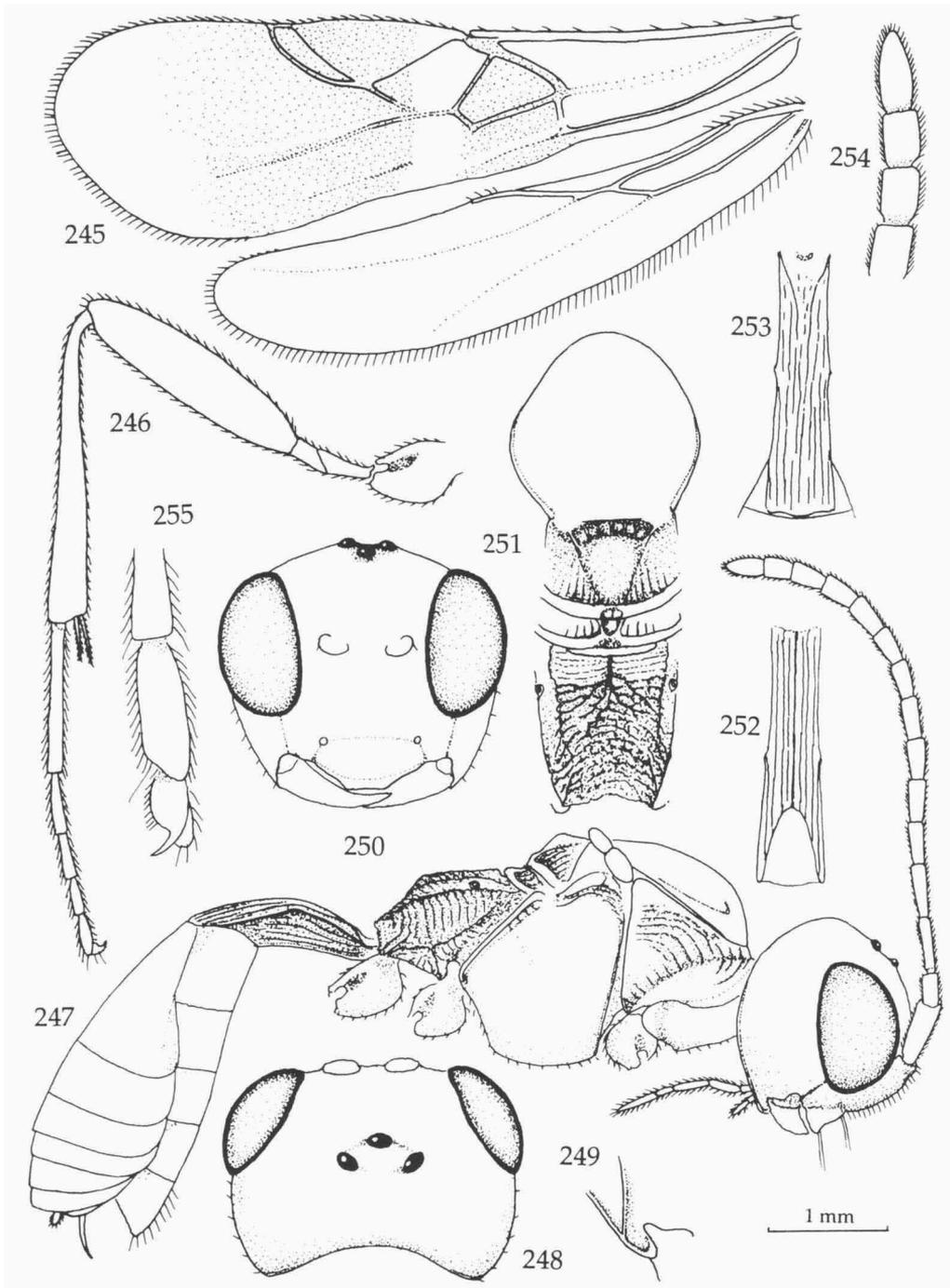
Figs 214-217, *Euphorus suturus* spec. nov., ♂, holotype; figs 218-221, *E. evidus* spec. nov., ♂, holotype; figs 222-226, *E. normalis* spec. nov., ♂, holotype. 214, 218, 222, wings; 215, 219, 223, head, frontal aspect; 216, 220, 224, head, dorsal aspect; 217, 221, 225, first metasomal tergite, dorsal aspect; 226, basal segments of antenna. 214-216, 219-220, 222-224, 226: 3.2 × scale-line; 217-218, 221: 4.4 ×; 225: 6.1 ×.



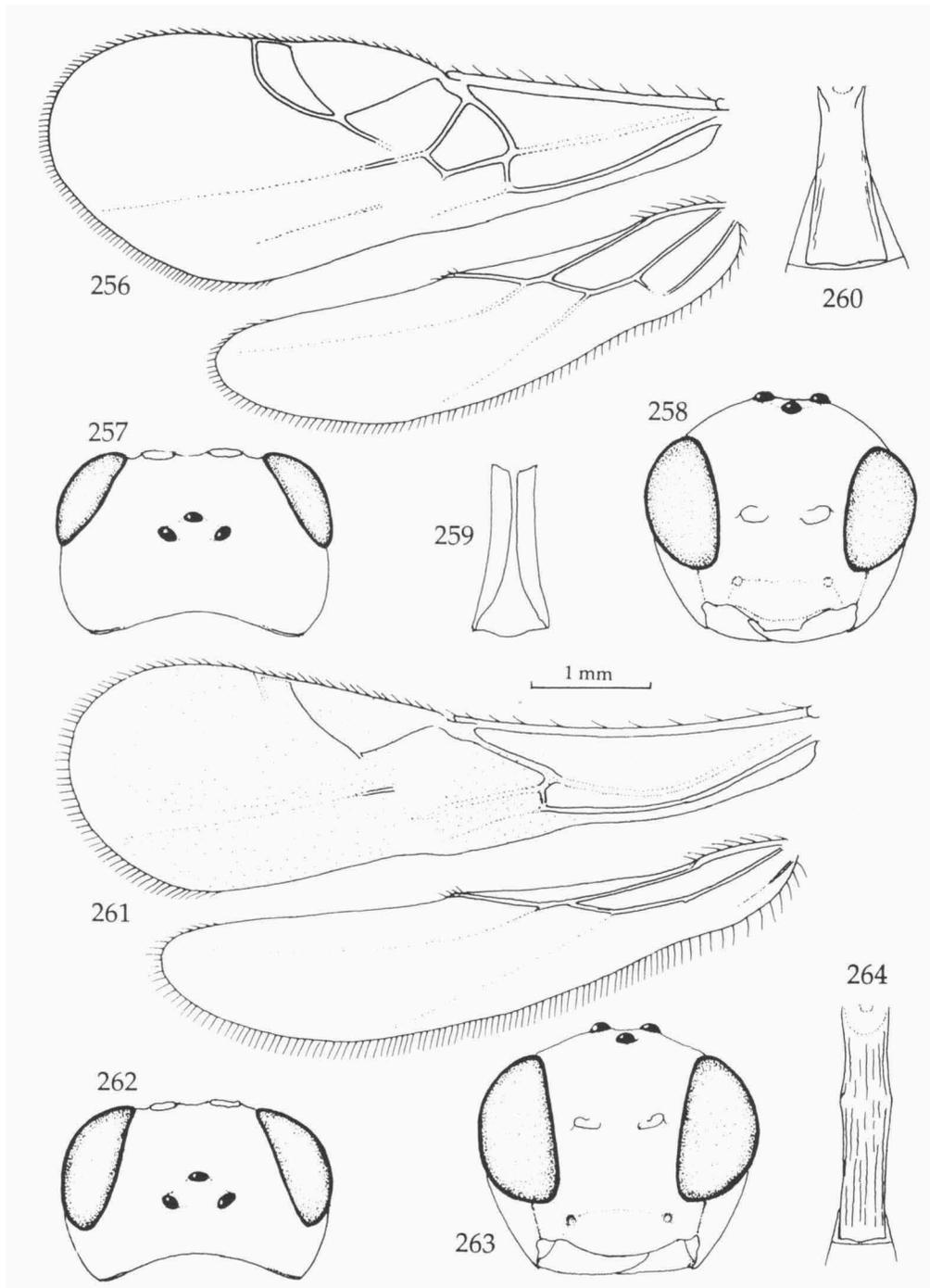
Figs 227-230, *Euphorus expansus* spec. nov., ♂, holotype; figs 231-234, *E. rufithorax* spec. nov., ♂, holotype. 227, 231, wings; 228, 232, head, frontal aspect; 229, 233, head, dorsal aspect; 230, 234, first metasomal tergite, dorsal aspect. 227: 2.1 × scale-line; 228-230, 232-234: 3.2 ×; 231: 2.5 ×.



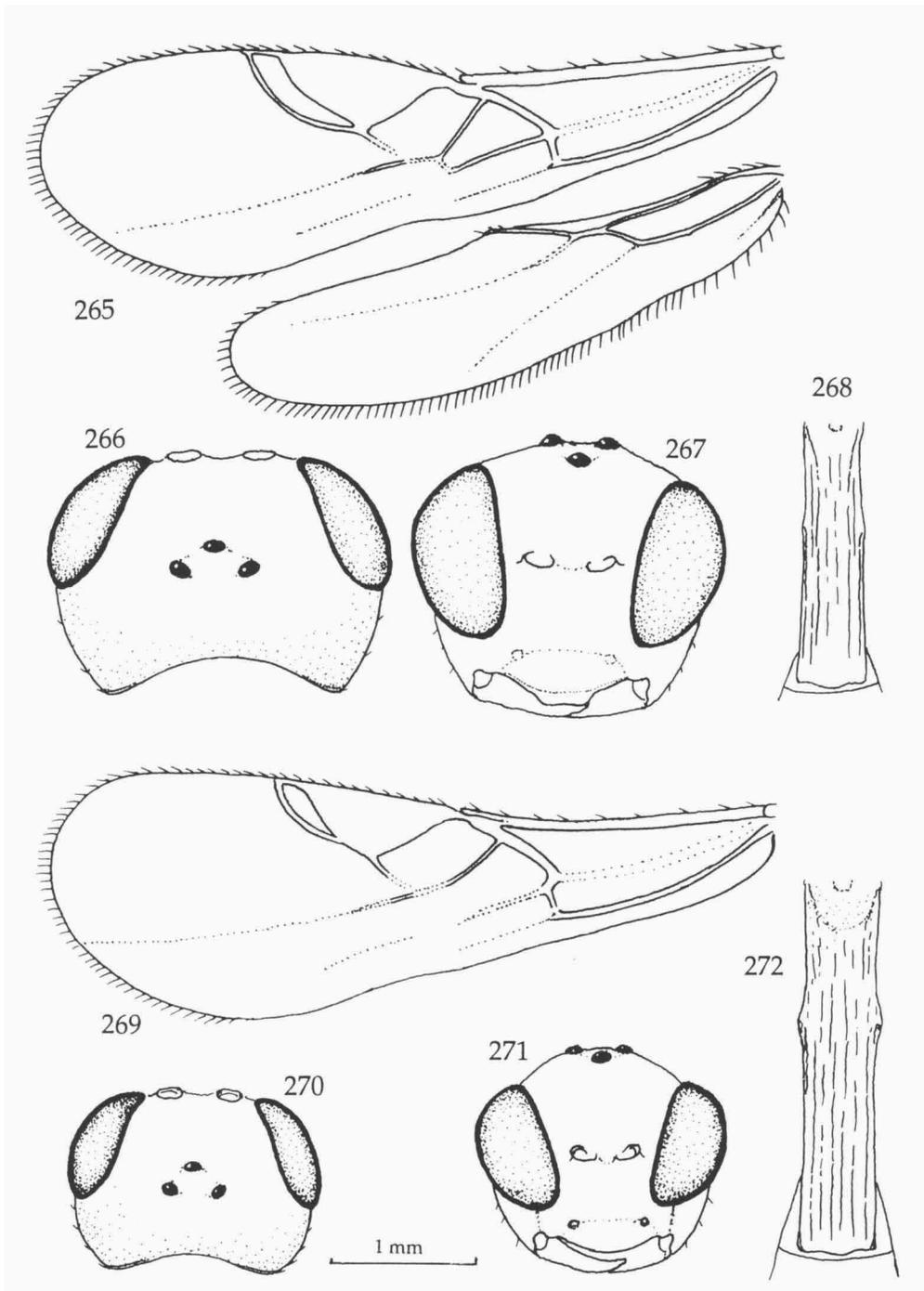
Figs 235-244, *Meteorus erratus* spec. nov., ♀, holotype. 235, wings; 236, hind leg, lateral aspect; 237, habitus, lateral aspect; 238, head, frontal aspect; 239, head, dorsal aspect; 240, mesosoma, dorsal aspect; 241, first metasomal tergite, ventral aspect; 242, first metasomal tergite, dorsal aspect; 243, outer hind claw; 244, apex of antenna. 235-237: 1.4 × scale-line; 238-242: 2.5 ×; 243-244: 6.1 ×.



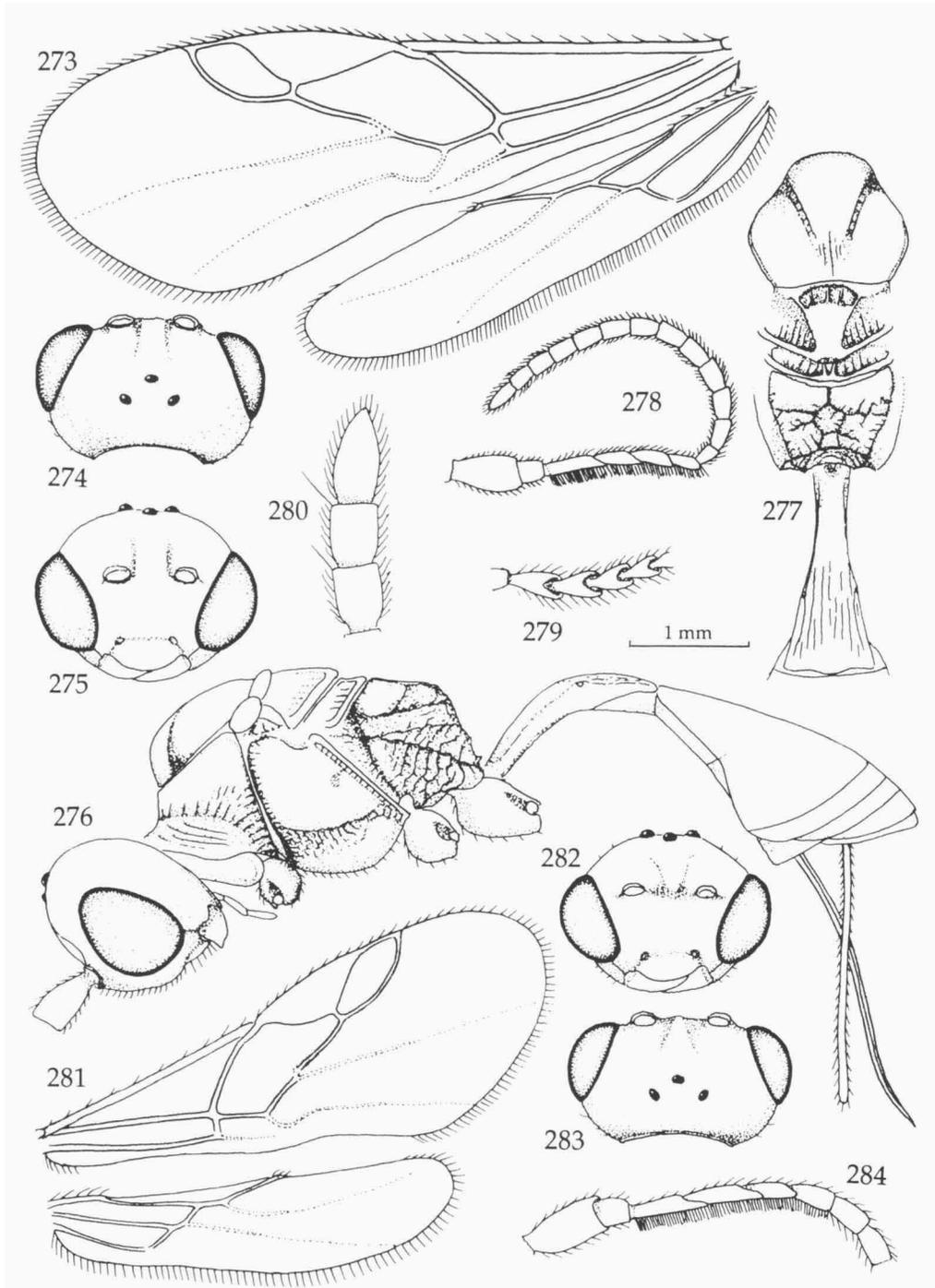
Figs 245-255, *Leiophron (Leiophron) subtilis* spec. nov., ♀, holotype. 245, wings; 246, hind leg, lateral aspect; 247, habitus, lateral aspect; 248, head, dorsal aspect; 249, ventral part of occipital and hypostomal carinae, ventro-lateral aspect; 250, head, frontal aspect; 251, mesoscutum, dorsal aspect; 252, first metasomal tergite, ventral aspect; 253, first metasomal tergite, dorsal aspect; 254, apex of antenna; 255, outer hind claw. 245-247: 2.5 × scale-line; 248-253: 3.2 ×; 254-255: 8.0 ×.



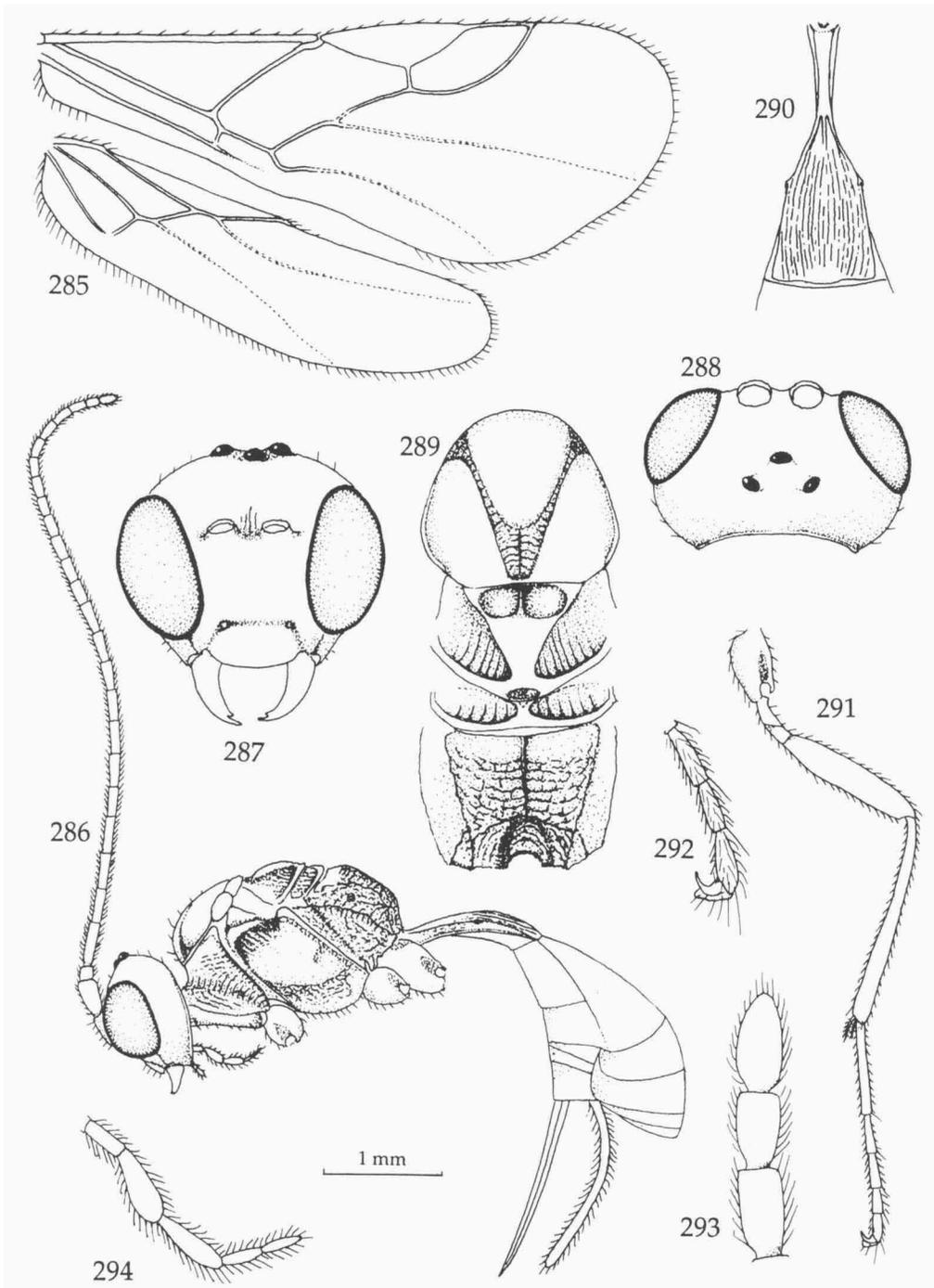
Figs 256-260, *Leiophron (Euphoriana) chengi* spec. nov., ♂, holotype; figs 261-264, *Leiophron (Leiophron) buonluoica* (Belokobylskij), ♀. 256, 261, wings; 257, 262, head, dorsal aspect; 258, 263, head, frontal aspect; 259, first metasomal tergite, ventral aspect; 260-264, first metasomal tergite, dorsal aspect. 256: 2.5 × scale-line; 257-264: 3.2 ×.



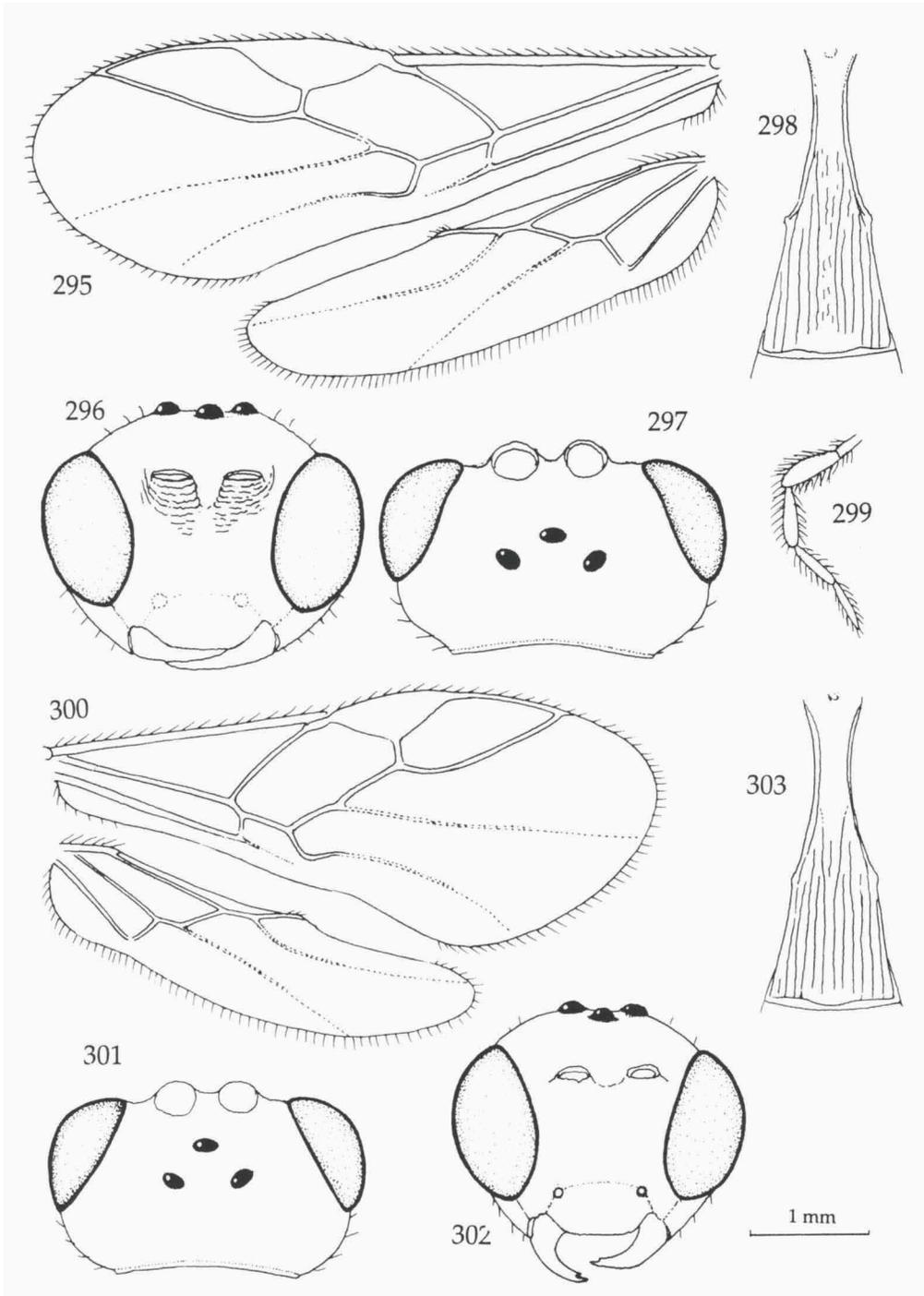
Figs 265-268 *Leiophron (Leiophron) ruficephalus* spec. nov., ♀, holotype; figs 269-272, *L. (L.) flavicarpus* spec. nov., ♀?, holotype. 265, 269, wings; 266, 270, head, dorsal aspect; 267, 271, head, frontal aspect; 268, 272, first metasomal tergite, dorsal aspect. 265: 2.5 × scale-line; 266-271: 3.2 ×; 272: 6.1 ×.



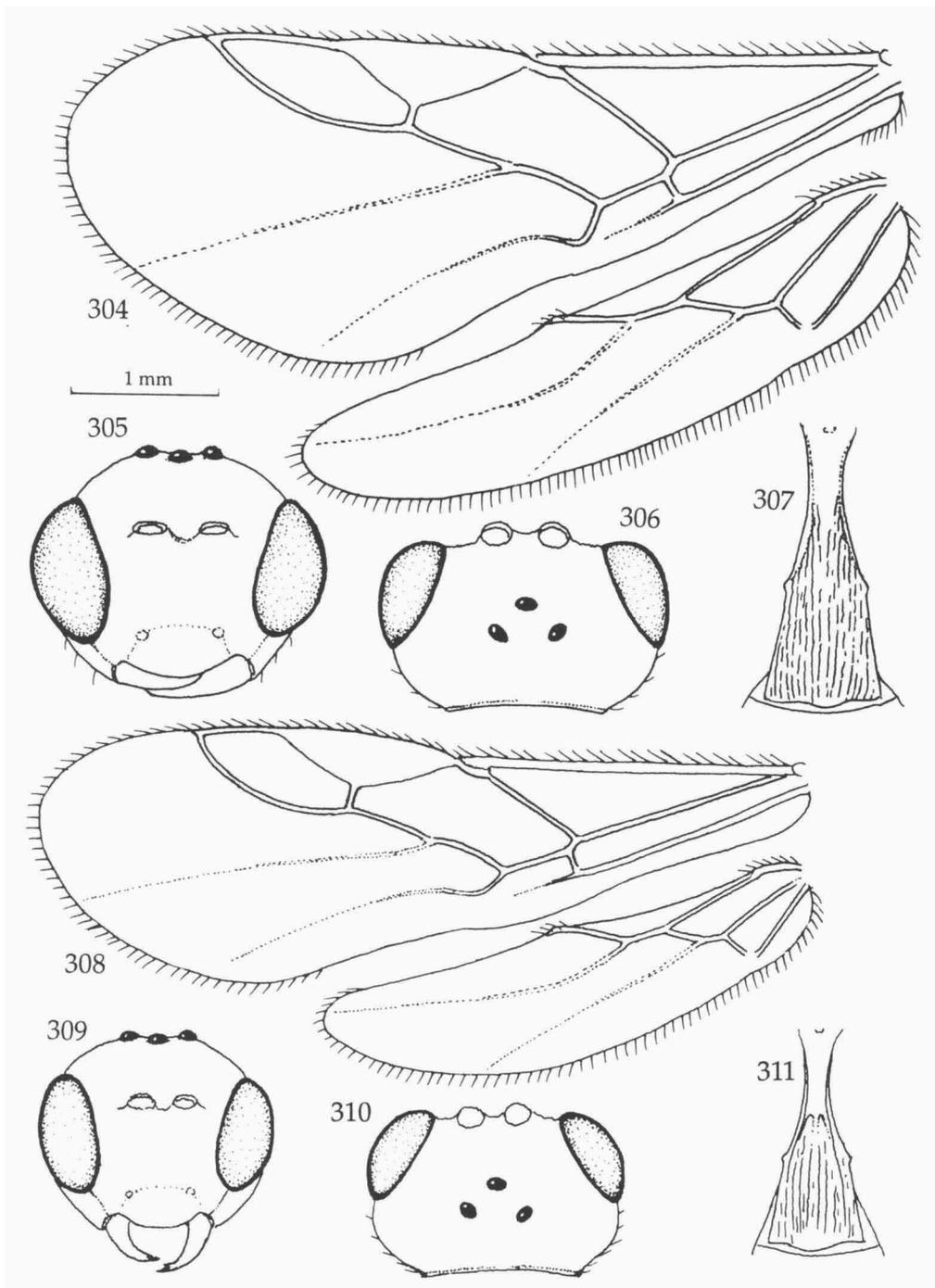
Figs 273-280, *Marshiella binarius* spec. nov., ♀, holotype; figs 281-284, *M. sinensis* spec. nov., ♀, holotype. 273, 281, wings; 274, 283, head, dorsal aspect; 275, 282, head, frontal aspect; 276, habitus, lateral aspect; 277, mesosoma and first metasomal tergite, dorsal aspect; 278, antenna, lateral aspect; 279, basal four flagellar segments, dorsal aspect; 280, apex of antenna; 284, basal half of antenna, lateral aspect. 273-279, 284: 3.2 × scale-line; 280: 8.0 ×; 281: 1.8 ×; 282-283: 2.5 ×.



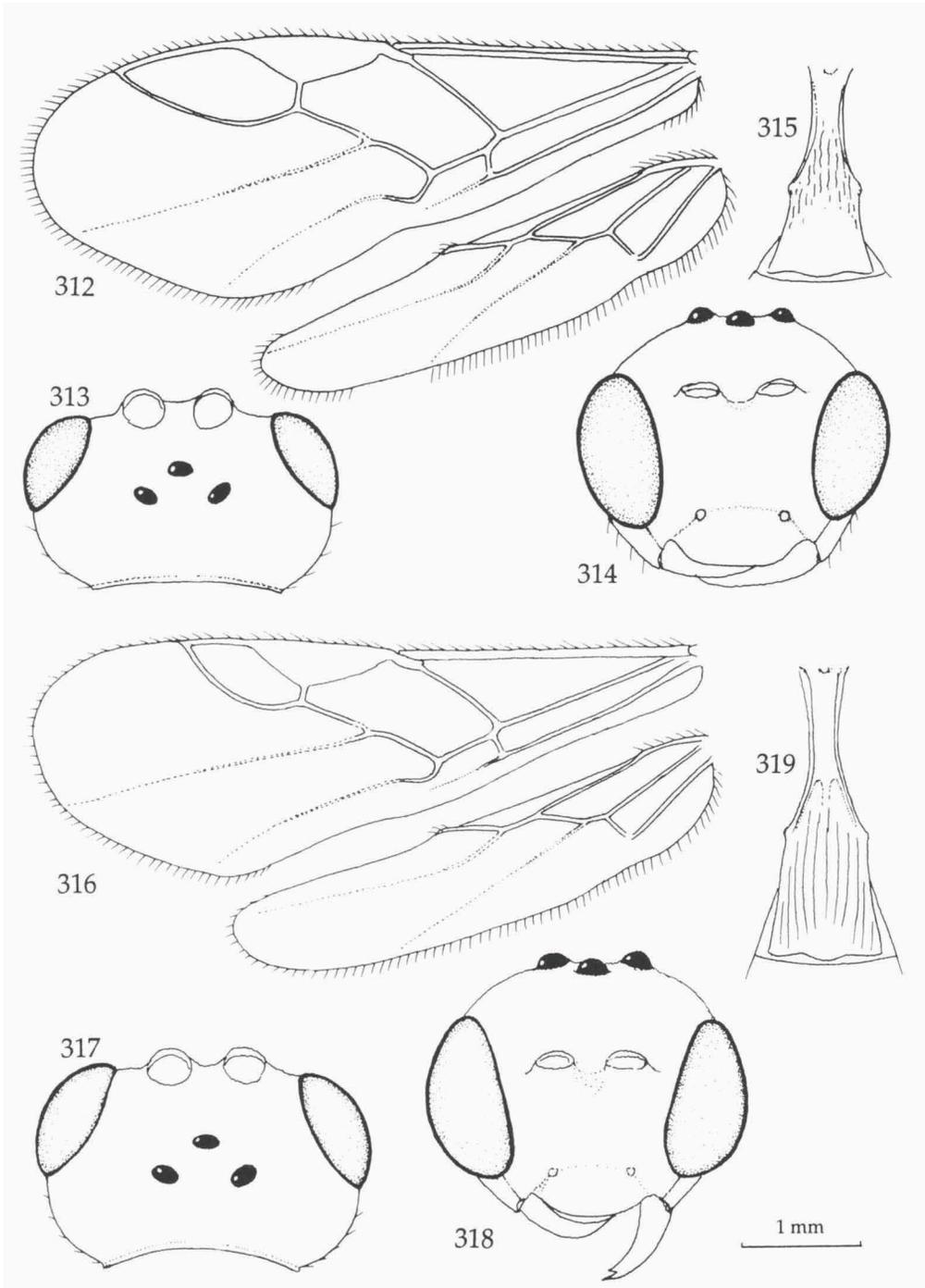
Figs 285-294, *Microctonus maae* spec. nov., ♀, holotype. 285, wings; 286, habitus, lateral aspect; 287, head, frontal aspect; 288, head, dorsal aspect; 289, mesosoma, dorsal aspect; 290, first metasomal tergite, dorsal aspect; 291, hind leg, lateral aspect; 292, outer hind claw; 293, apex of antenna; 294, maxillary palp. 285-286, 291: 1.0 × sclae-line; 287-290, 292: 1.8 ×; 293-294: 4.4 ×.



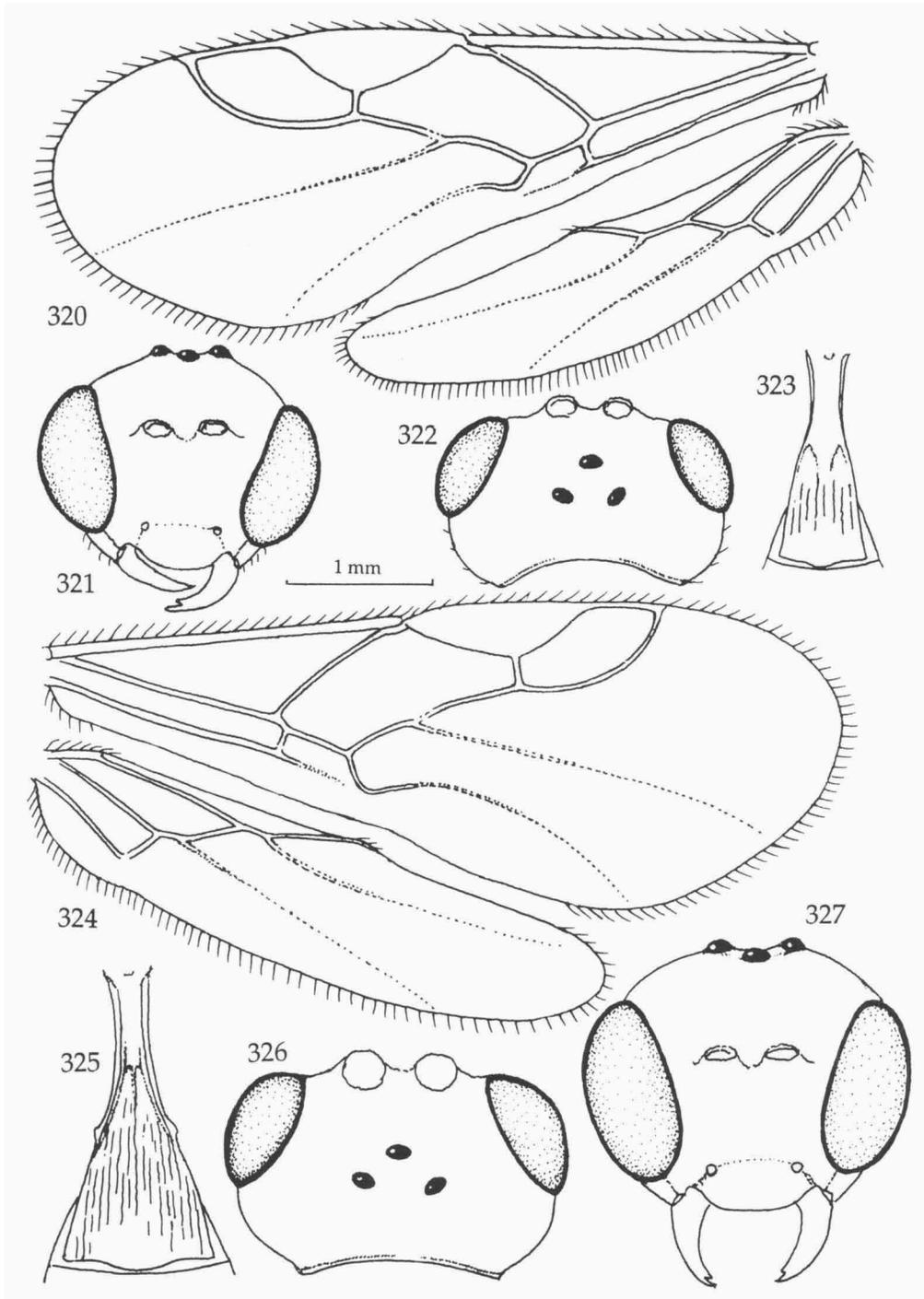
Figs 295-294, *Microctonus longicornis* spec. nov., ♀, holotype; figs 300-303, *M. cretus* spec. nov., ♀, holotype. 295, 300, wings; 296, 302, head, frontal aspect; 297, 301, head, dorsal aspect; 298, 303, first metasomal tergite, dorsal aspect; 299, maxillary palp. 295, 300: 1.8 × scale-line; 296-299, 301-303: 3.2 ×.



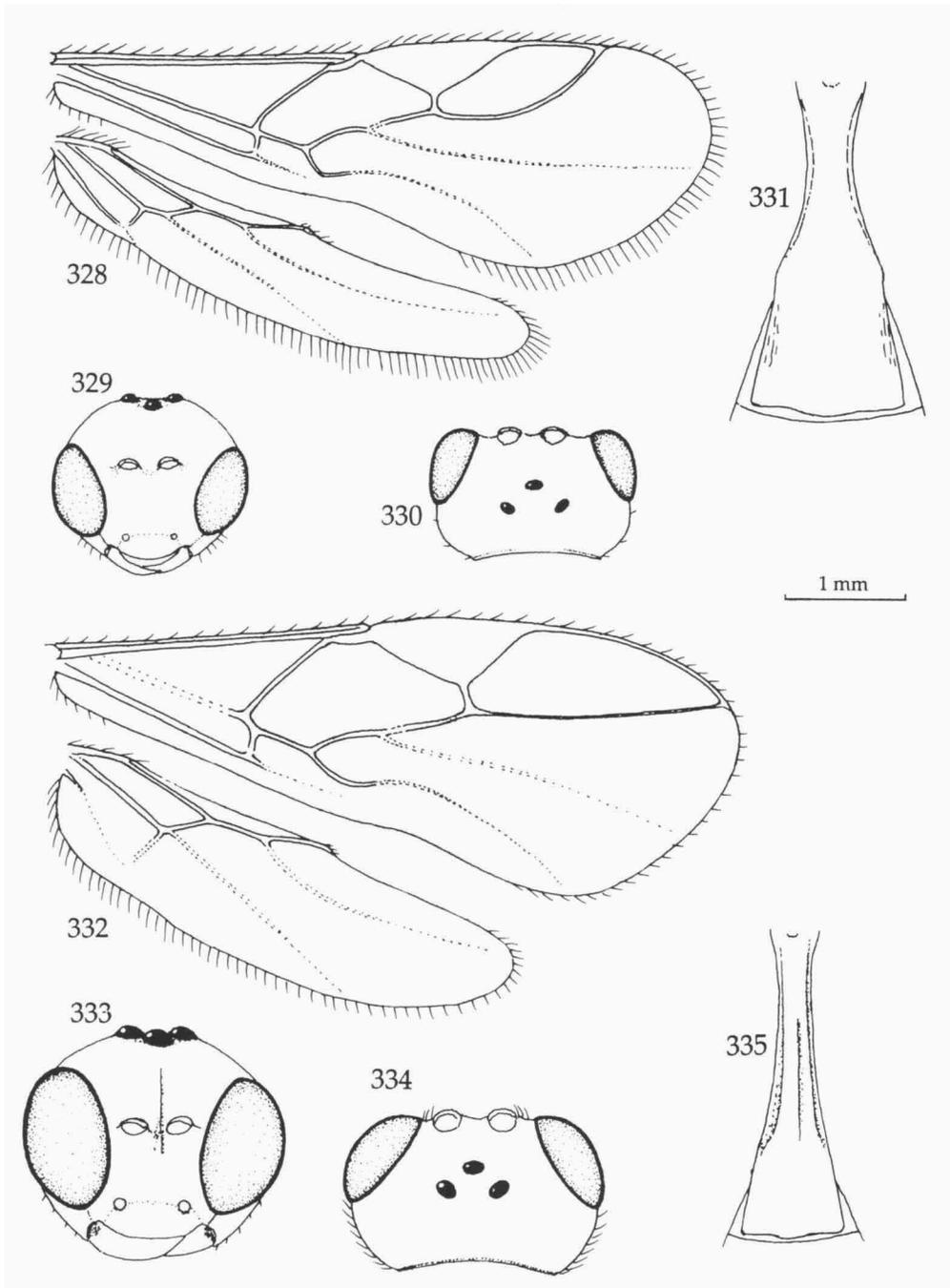
Figs 304-307, *Microctonus brevicornis* spec. nov., ♀, holotype; figs 308-311, *M. mesus* spec. nov., ♀, holotype. 304, 308, wings; 305, 309, head, frontal aspect; 306, 310, head, dorsal aspect; 307, 311, first metasomal tergite, dorsal aspect. 304, 308, 2.5 × scale-line; 305-307, 309-311: 3.2 ×.



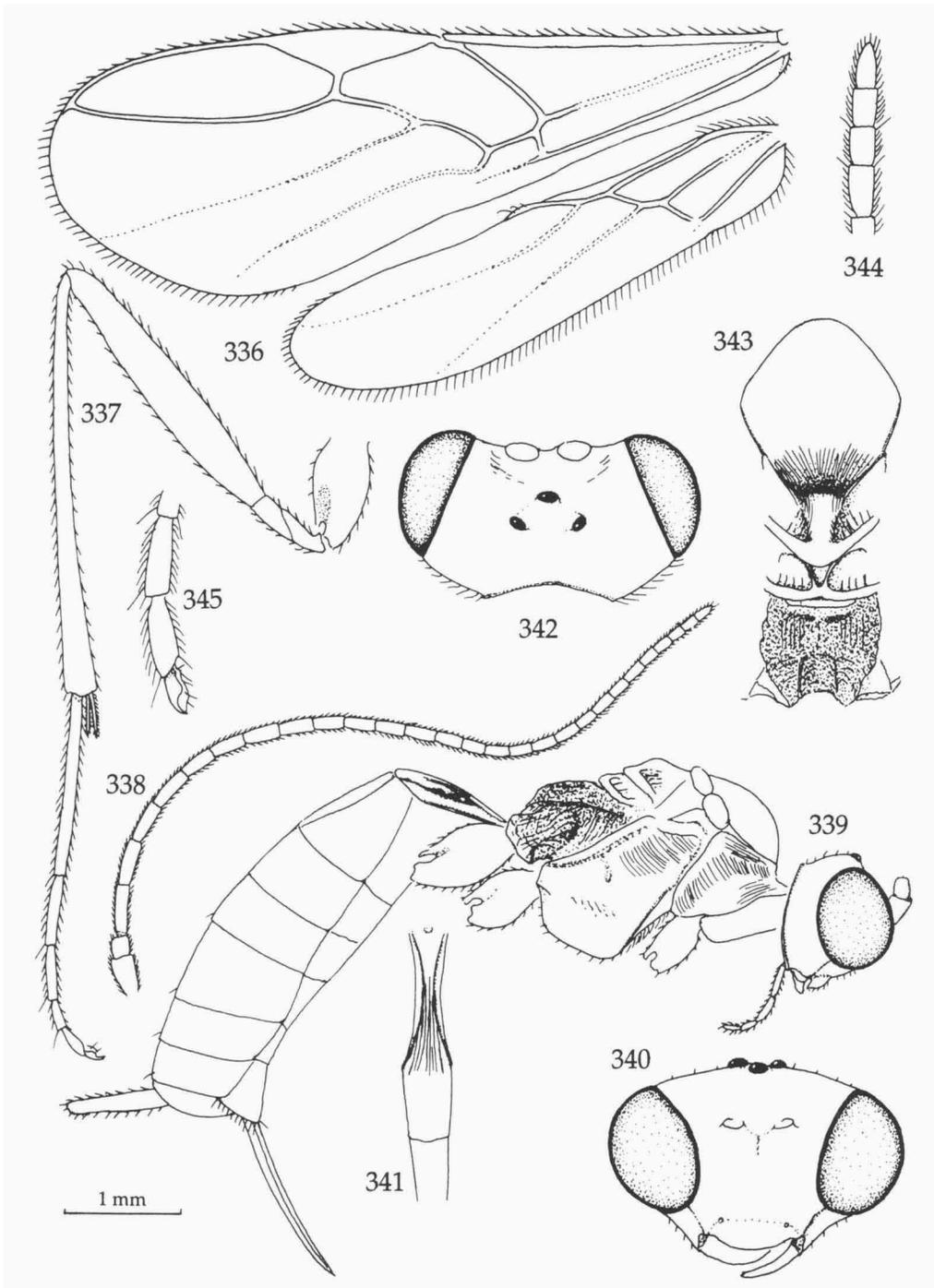
Figs 312-315, *Microctonus simulans* spec. nov., ♀, holotype; figs 316-319, *M. galbus* spec. nov., ♀, holotype. 312, 316, wings; 313, 317, head, dorsal aspect; 314, 318, head, frontal aspect; 315, 319, first metasomal tergite, dorsal aspect. 312, 316: 2.5 × scale-line; 315: 3.2 ×; 313-314, 317-319: 4.4 ×.



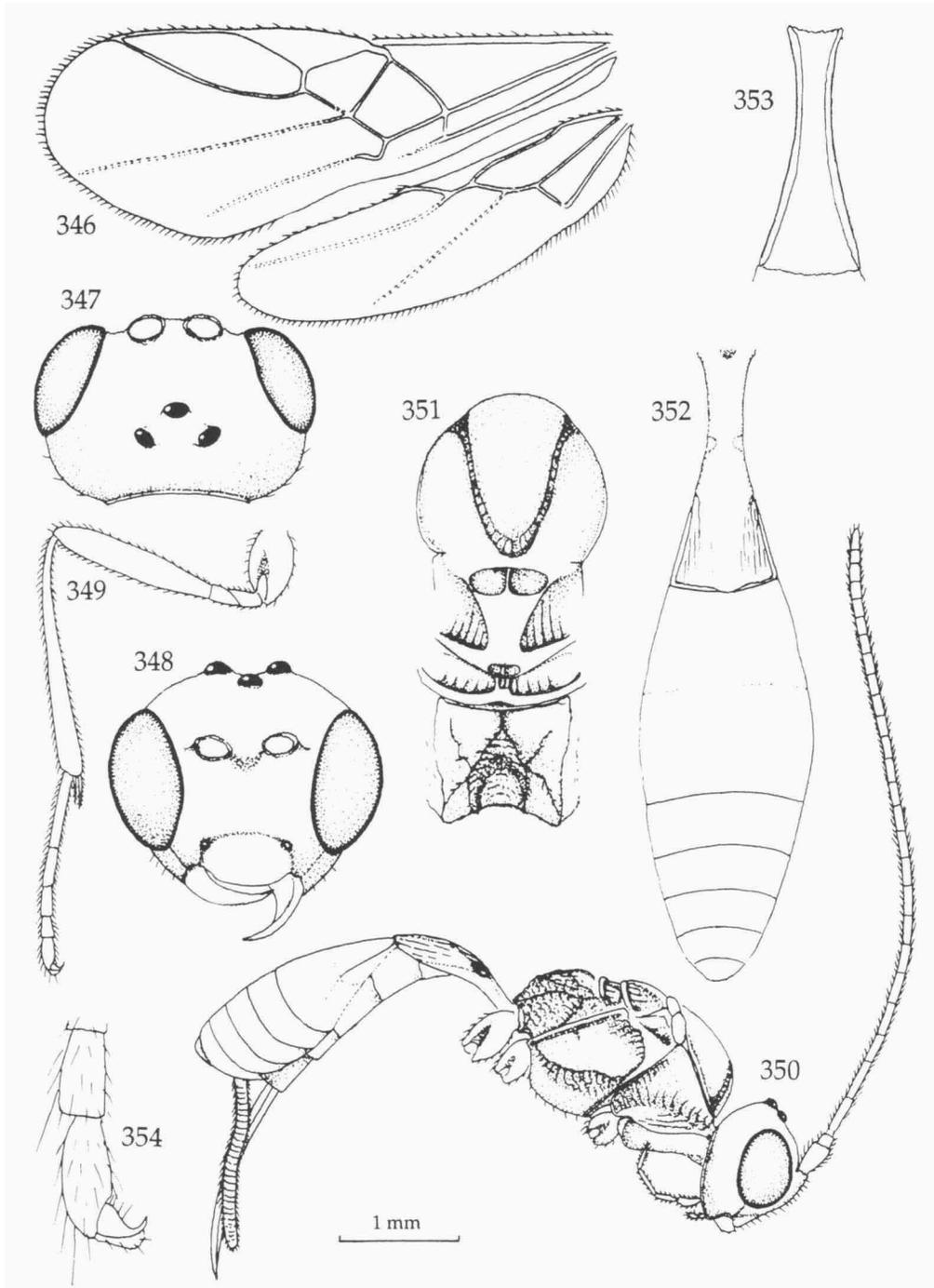
Figs 320-323, *Microctonus neptunus* spec. nov., ♀, holotype; figs 324-327, *M. aethiopoulos* Loan, ♀. 320, 324, wings; 321, 327, head, frontal aspect; 322, 326, head, dorsal aspect; 323, 325, first metasomal tergite, dorsal aspect. 320: 3.2 × scale-line; 321-323: 4.4 ×; 324: 1.8 ×; 325-327: 2.5 ×.



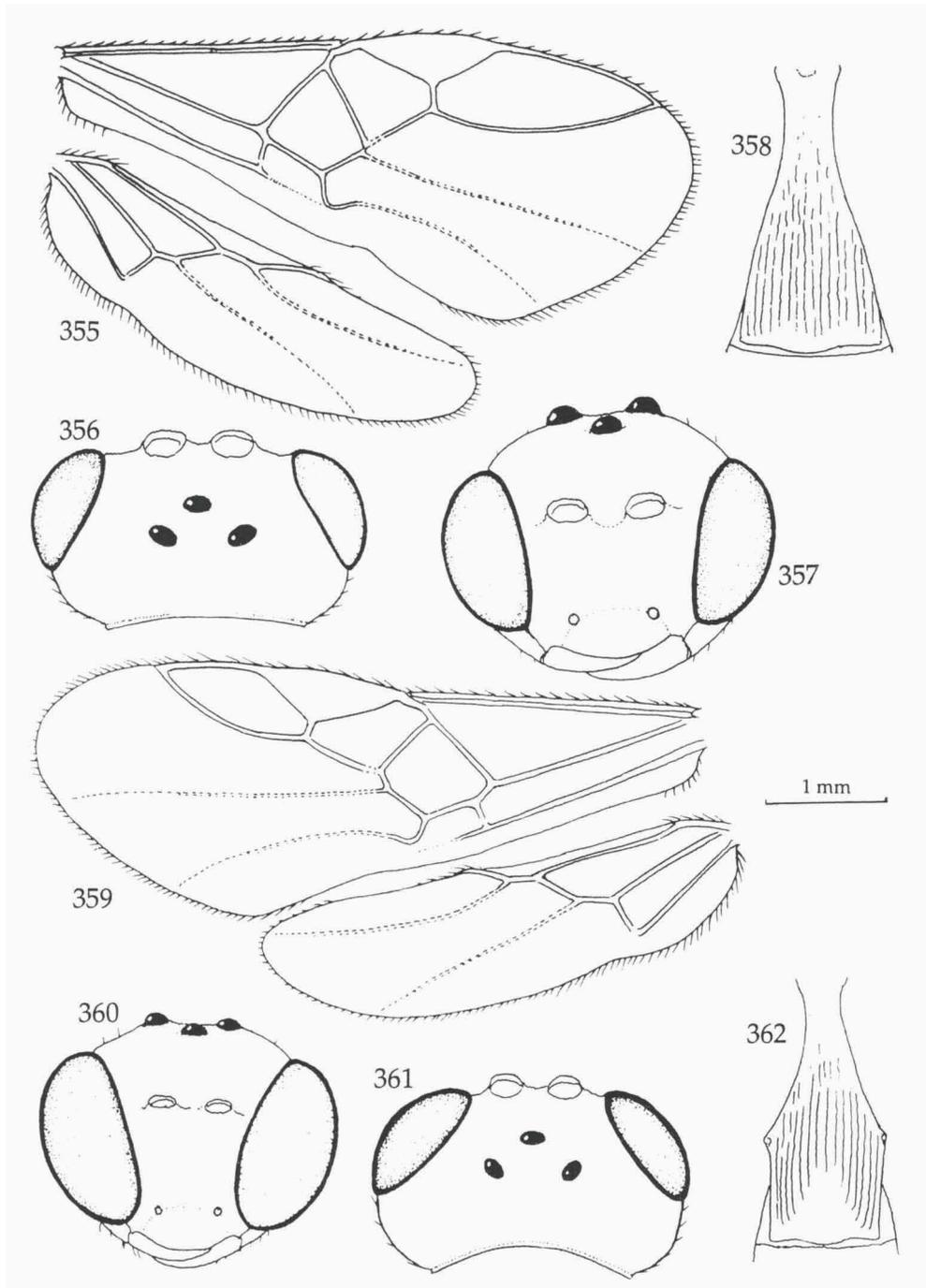
Figs 328-331, *Microctonus dinghuensis* spec. nov., ♀, holotype; figs 332-335, *Syntretus venus* spec. nov., ♀, holotype. 328, 332, wings; 329, 333, head, frontal aspect; 330, 334, head, dorsal aspect; 331, 335, first metasomal tergite, dorsal aspect. 328-330: 3.2 × scale-line; 331: 6.1 ×; 332: 1.8 ×; 333-335: 2.5 ×.



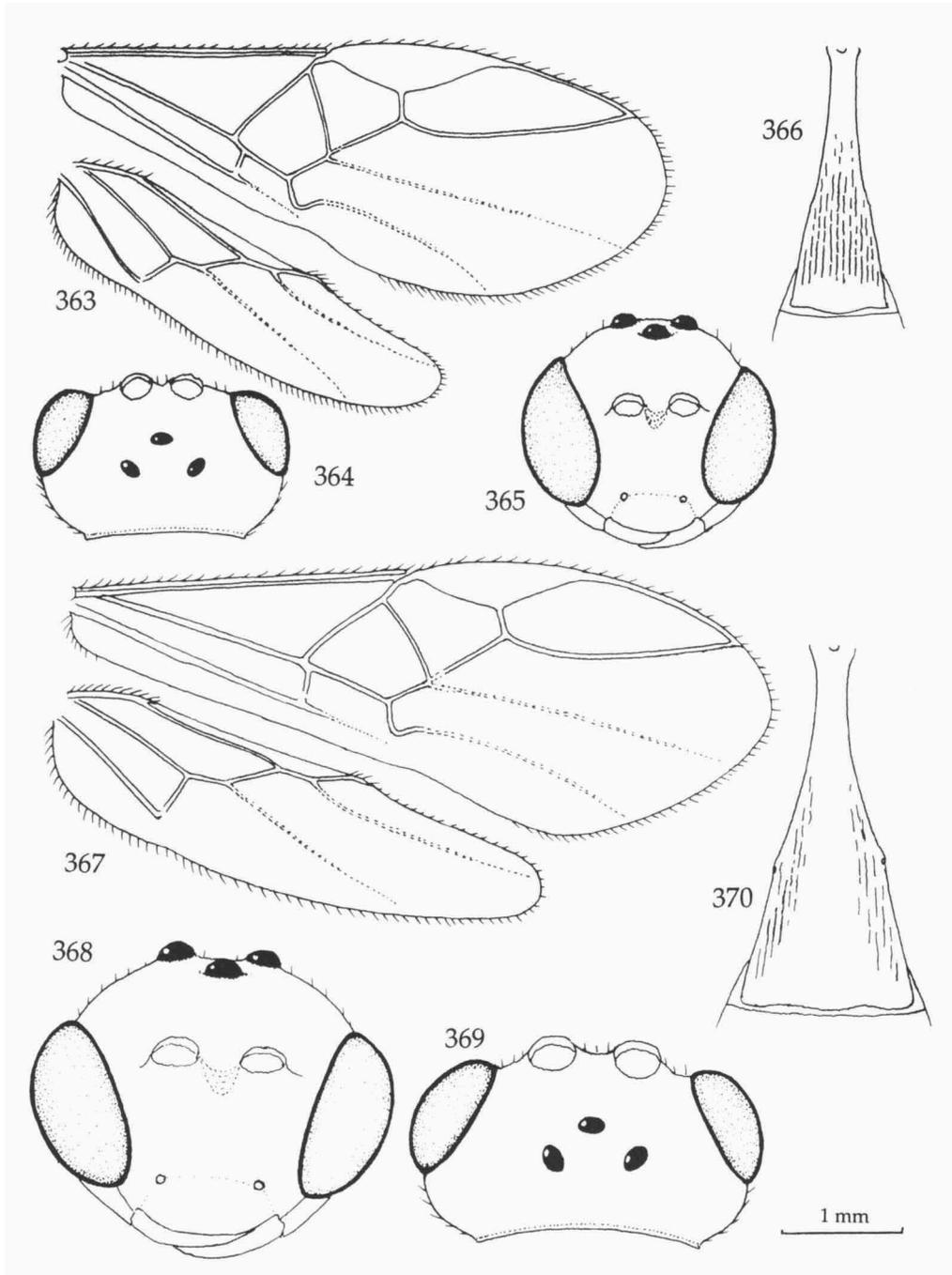
Figs 336-345, *Myiocephalus boops* (Wesmael), ♀, Austria. 336, wings; 337, hind leg, lateral aspect; 338, antenna; 339, habitus, lateral aspect; 340, head, frontal aspect; 341, first and second metasomal tergites, dorsal aspect; 342, head, dorsal aspect; 343, mesosoma, dorsal aspect; 344, apex of antenna; 345, outer hind claw. 336, 340-343: 2.5 × scale-line; 337-339: 1.8 ×; 344-345: 4.4 ×.



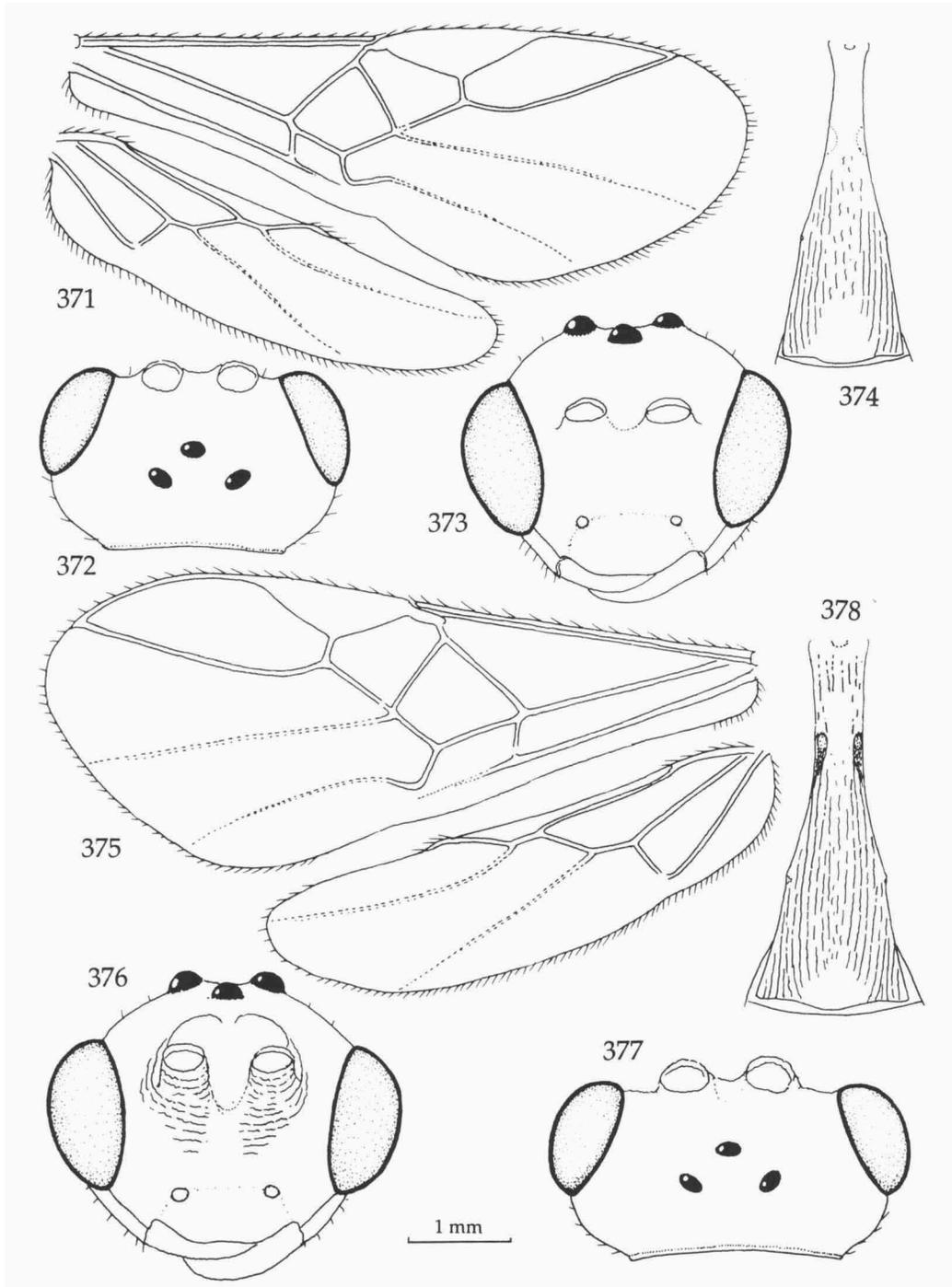
Figs 346-354, *Perilitus lateropus* spec. nov., ♀, holotype. 346, wings; 347, head, dorsal aspect; 348, head, frontal aspect; 349, hind leg, lateral aspect; 350, habitus, lateral aspect; 351, mesosoma, dorsal aspect; 352, metasoma, dorsal aspect; 353, first metasomal tergite, ventral aspect; 354, outer hind claw. 346, 349-350: 1.8 × scale-line; 347-348, 351-353: 3.2 ×; 354: 8.0 ×.



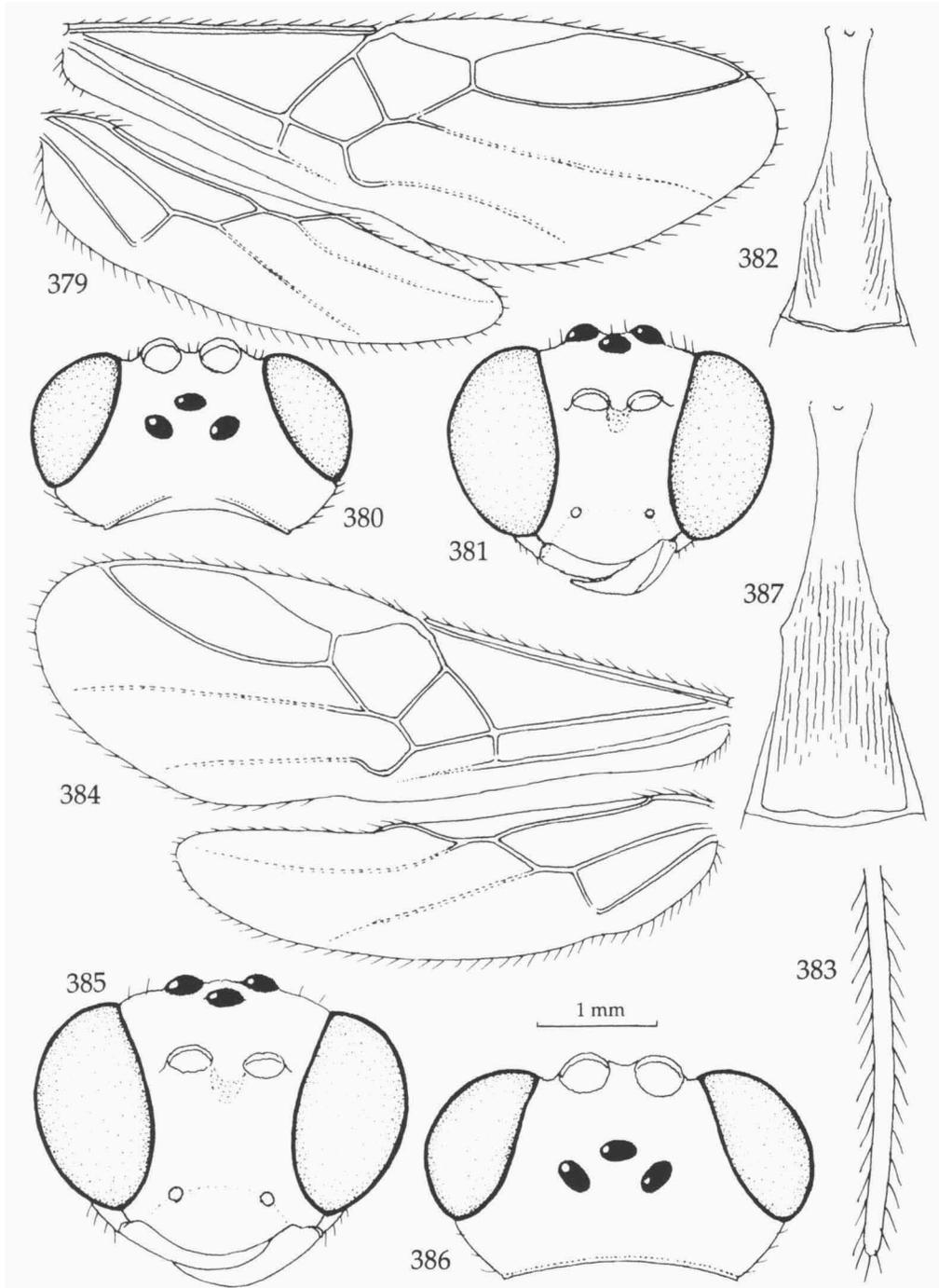
Figs 355-358, *Perilitus ruficephalus* spec. nov., ♀, holotype; figs 359-262, *P. xynus* spec. nov., ♀, holotype. 355, 359, wings; 356, 361, head, dorsal aspect; 357, 360, head, frontal aspect; 358, 362, first metasomal tergite, dorsal aspect. 355, 359: 1.8 × scale-line; 356-358, 360-362: 3.2 ×.



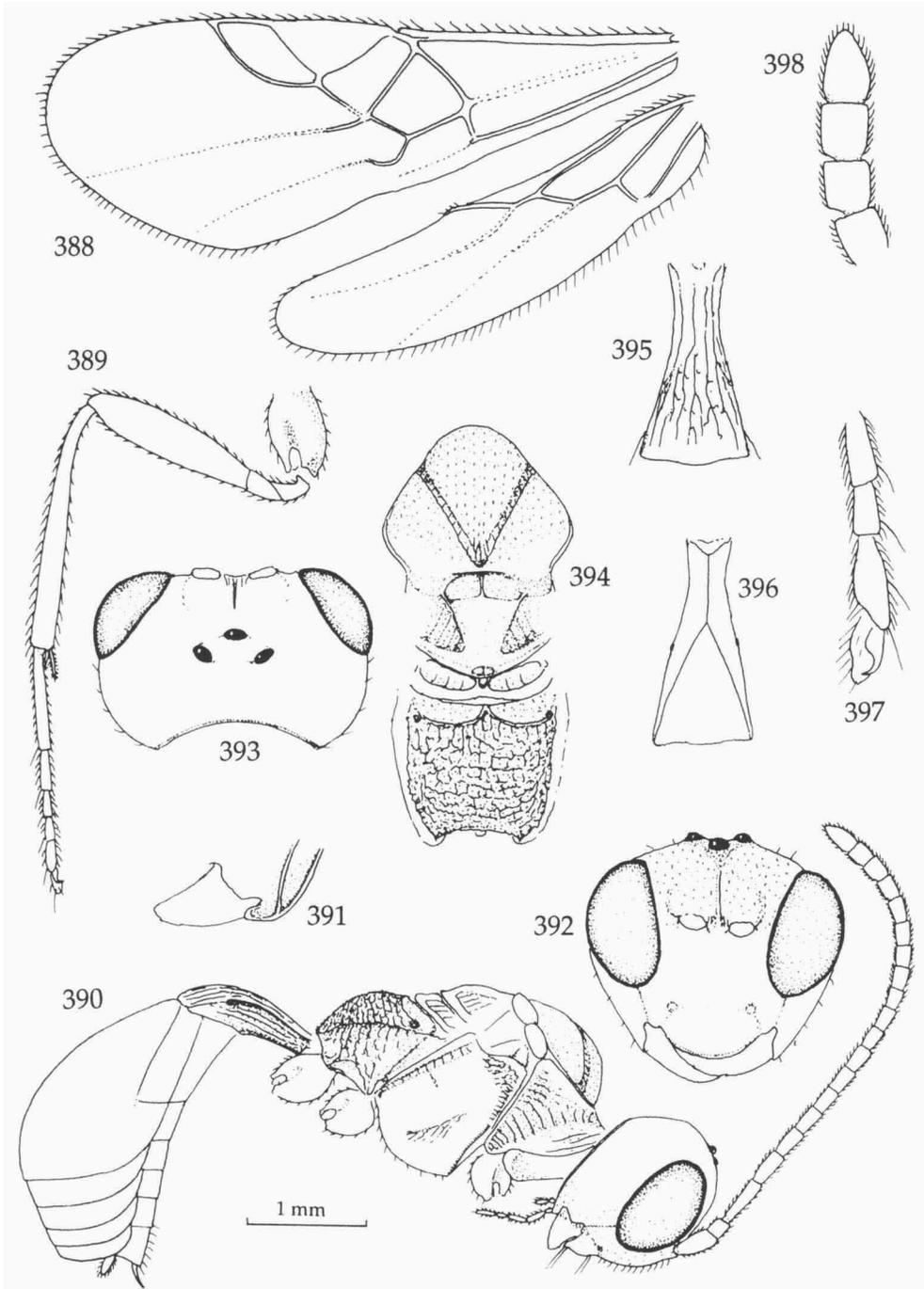
Figs 363-366, *Perilitus aequorus* spec. nov., ♀, holotype; figs 367-370, *P. oulemae* spec. nov., ♀, holotype. 363, 367, wings; 364, 369, head, dorsal aspect; 365, 368, head, frontal aspect; 366, 370, first metasomal tergite, dorsal aspect. 363, 367: 1.8 × scale-line; 364-366, 368-370: 3.2 ×.



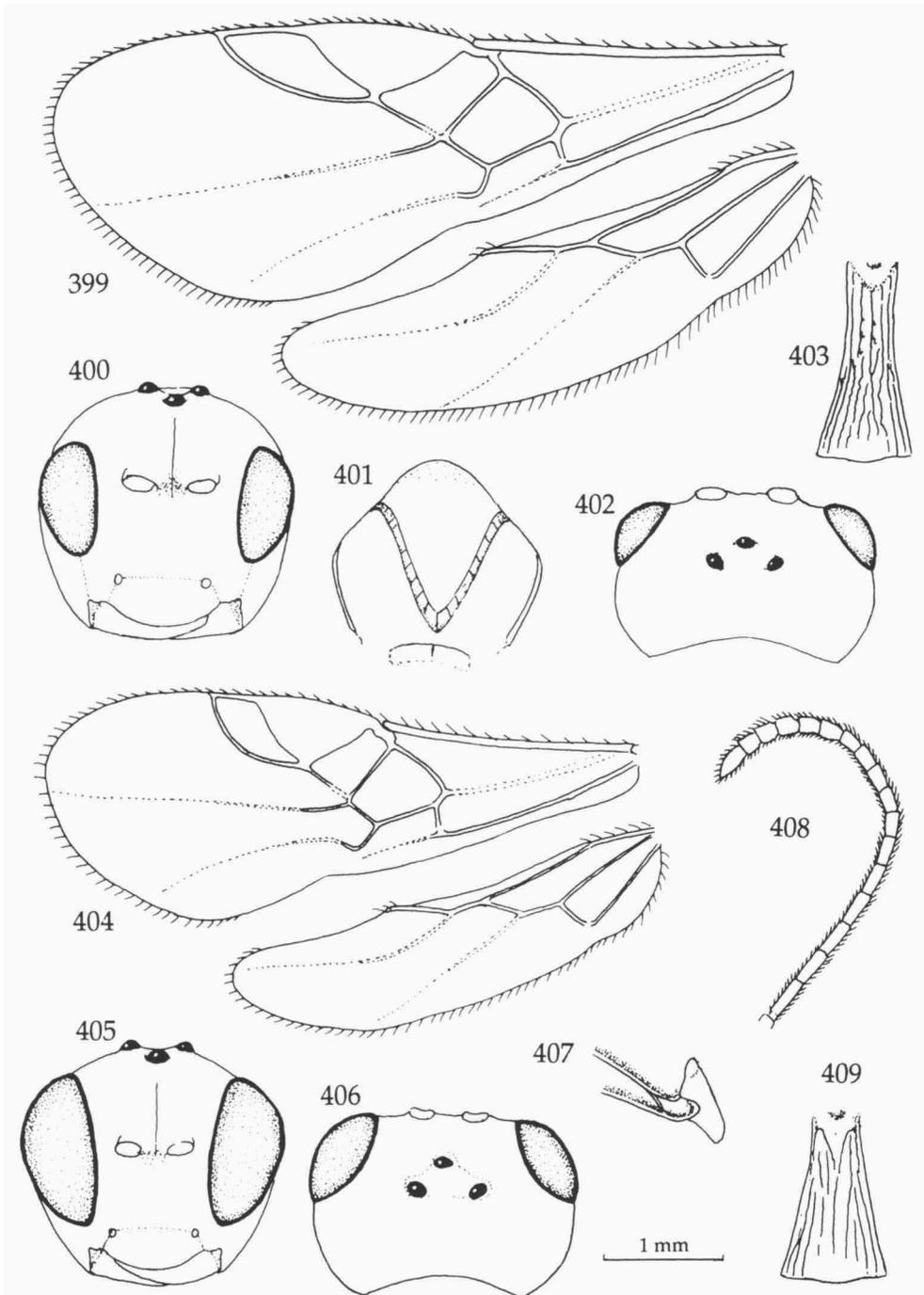
Figs 371-374, *Perilitus liui* spec. nov., ♀, holotype; figs 375-378, *P. longus* spec. nov., ♂, holotype. 371, 375, wings, 372, 377, head, dorsal aspect; 373, 376, head, frontal aspect; 374, 378, first metasomal tergite, dorsal aspect. 371, 375: 1.8 × scale-line; 372-374, 376-378: 3.2 ×.



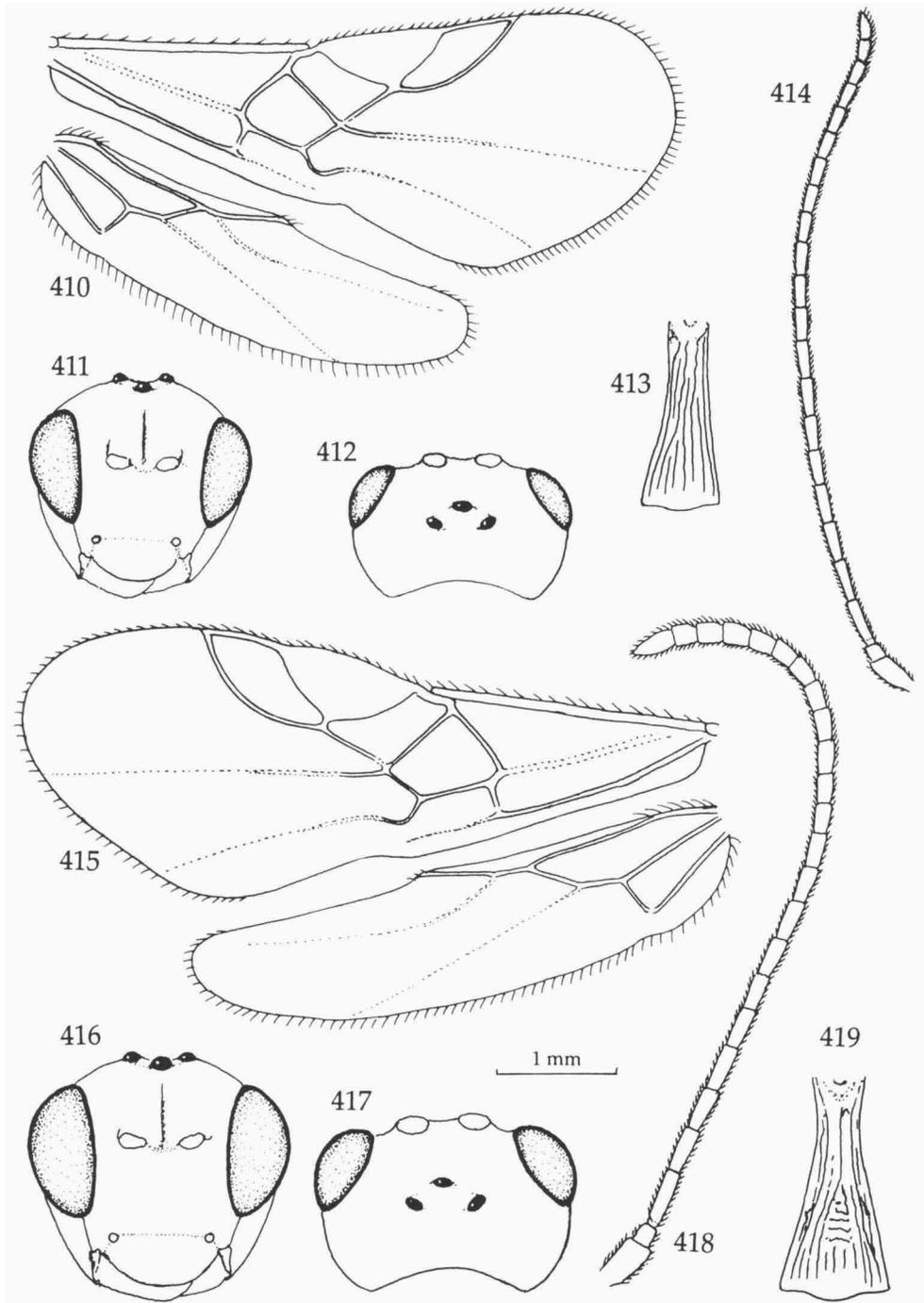
Figs 379-383, *Perilitus nigriscutum* spec. nov., ♀, holotype; figs 384-387, *P. longivenus* spec. nov., ♀, holotype. 379, 384, wings; 380, 386, head, dorsal aspect; 381, 385, head, frontal aspect; 382, 387, first metasomal tergite, dorsal aspect; 383, ovipositor sheath, lateral aspect. 379: 1.2 × scale-line; 384: 1.4 ×; 380-383: 2.1 ×; 385-387: 2.5 ×.



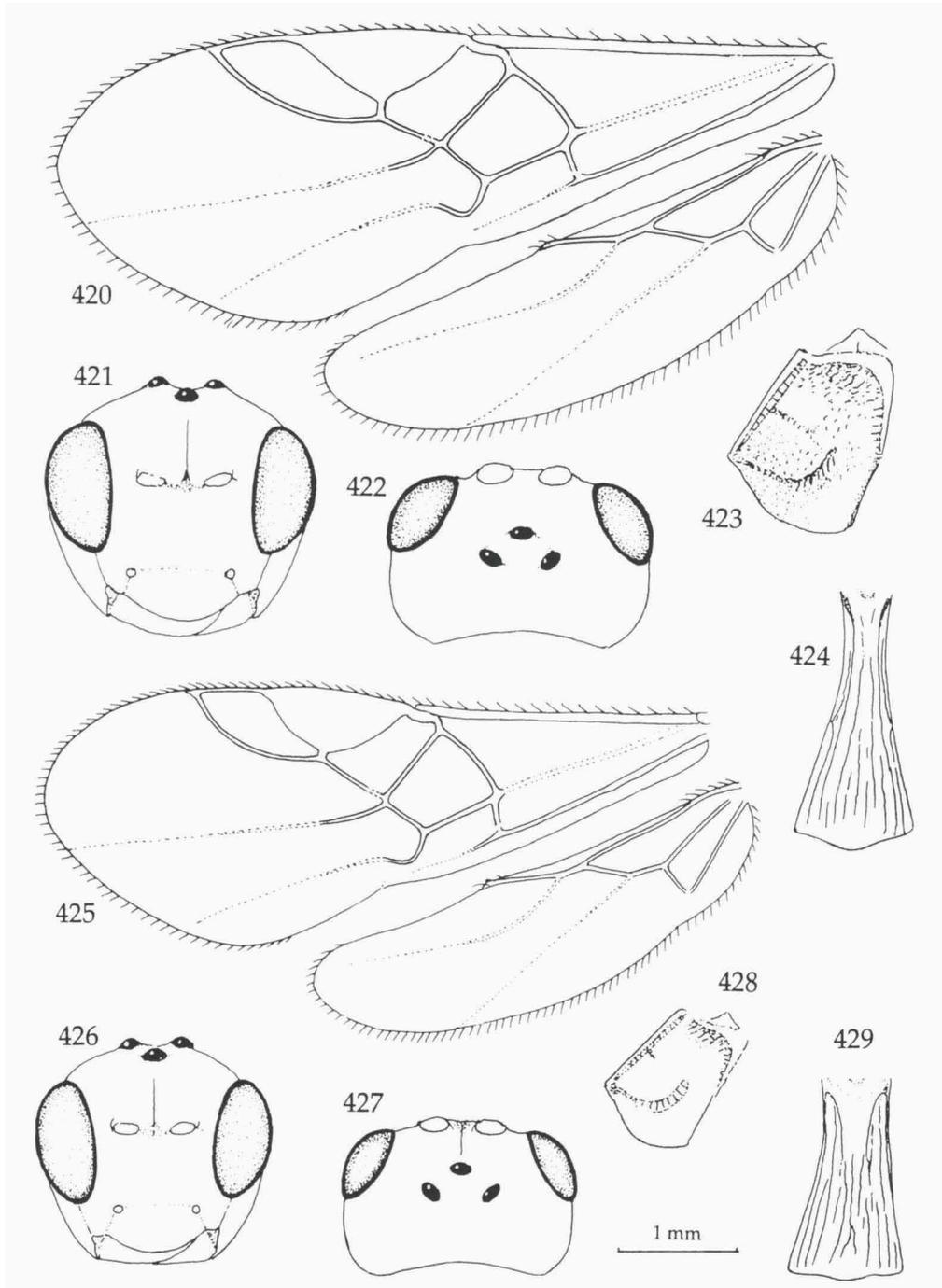
Figs 388-398, *Peristenus xanthos* spec. nov., ♀, holotype. 388, wings; 389, hind leg, lateral aspect; 390, habitus, lateral aspect; 392, head, frontal aspect; 393, head, dorsal aspect; 394, mesosoma, dorsal aspect; 395, first metasomal tergite, dorsal aspect; 396, first metasomal tergite, ventral aspect; 397, outer hind claw; 398, apex of antenna. 388, 390: 2.5 × scale-line; 389, 392-396: 3.2 ×; 391: 4.4 ×; 397-398: 6.1 ×.



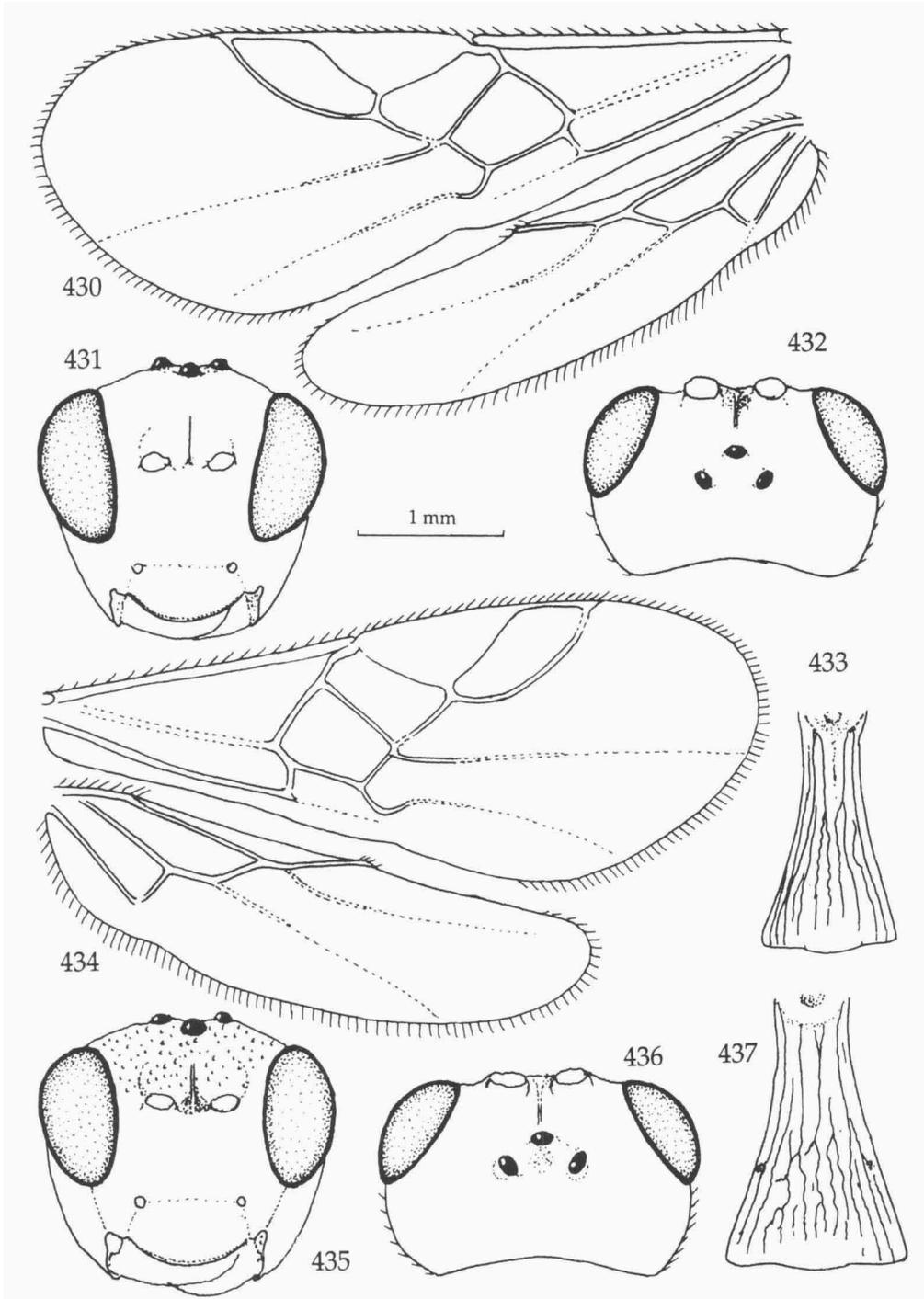
Figs 399-403, *Peristenus spretus* spec. nov., ♂, holotype; figs 404-409, *P. picipes* (Curtis), ♀. 399, 404, wings; 400, 405, head, frontal aspect; 401, mesoscutum, dorsal aspect; 402, 406, head, dorsal aspect; 403, 409, first metasomal tergite, dorsal aspect; 407, ventral part of occipital and hypostomal carinae, ventro-lateral aspect; 408, antenna. 399, 404, 408: 2.5 × scale-line; 400-403, 405-407, 409: 3.2 ×.



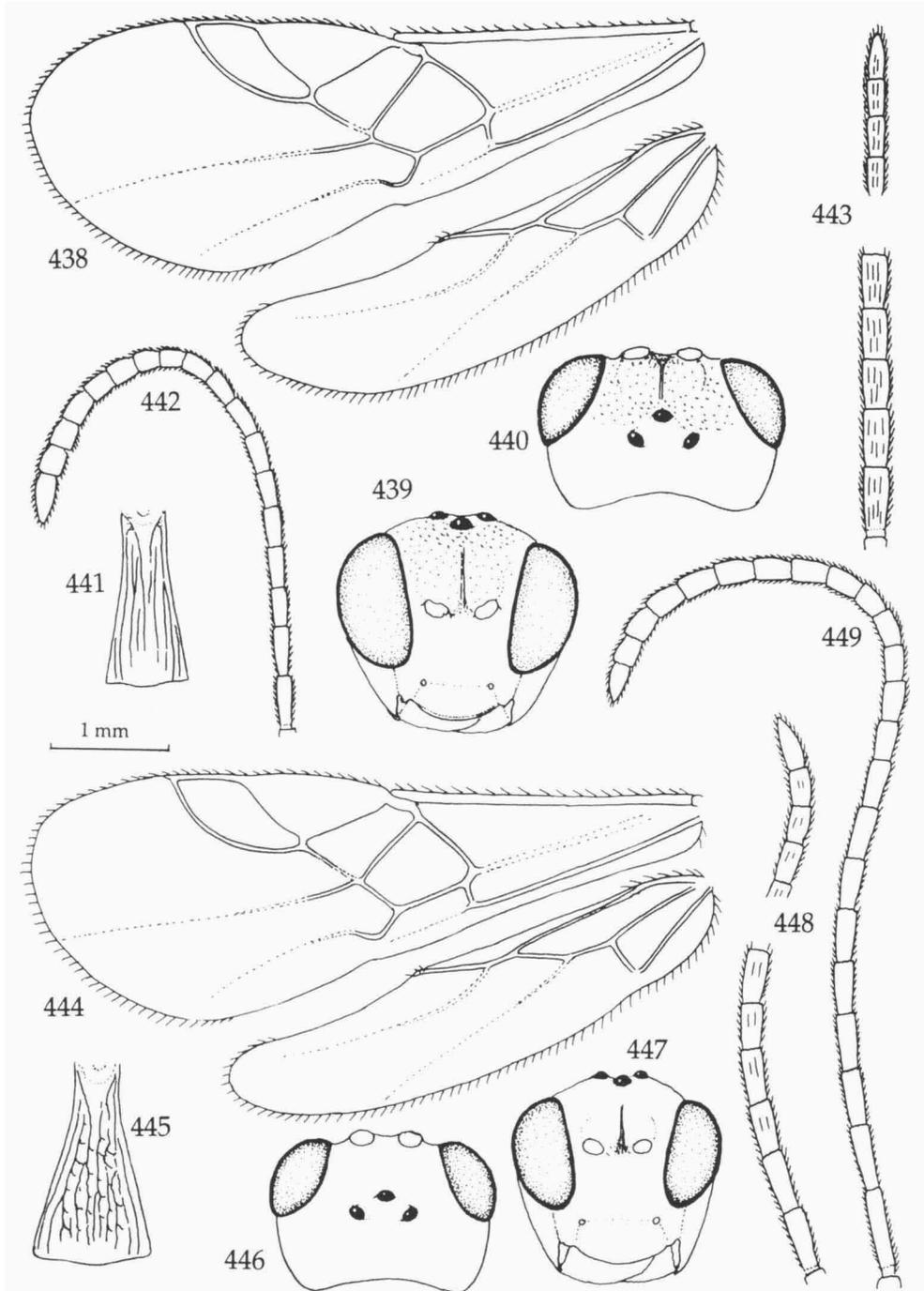
Figs 410-414, *Peristenus levigatus* spec. nov., ♀, holotype; figs 415-419, *P. furvus* spec. nov., ♀, holotype. 410, 415, wings; 411, 416, head, frontal aspect; 412, 417, head, dorsal aspect; 413, 419, first metasomal tergite, dorsal aspect; 414, 418, antenna. 410, 415: 2.1 × scale-line; 411-412, 416-417, 419: 2.9 ×; 413: 3.2 ×; 414, 418: 2.5 ×.



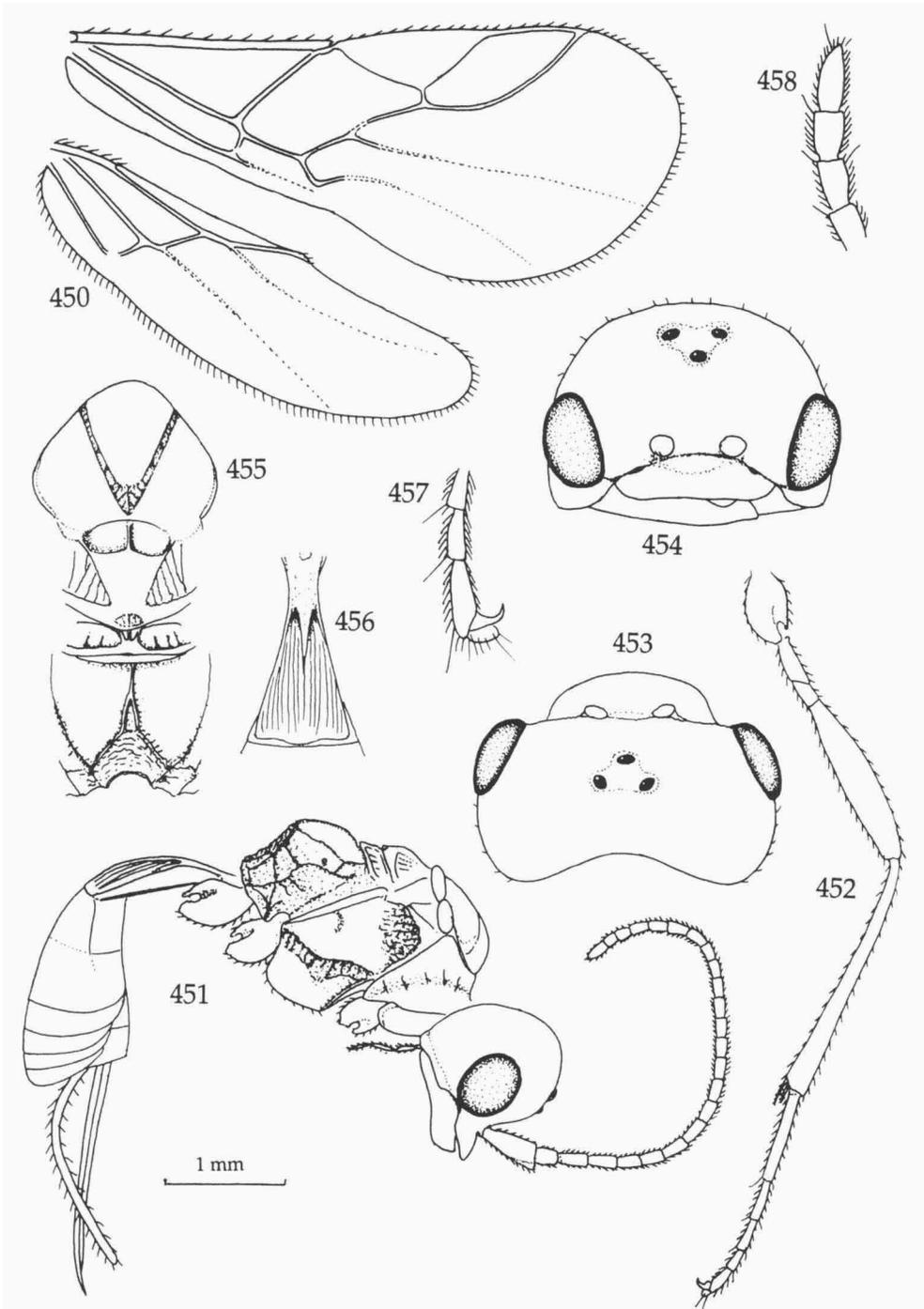
Figs 420-424, *Peristenus rugosus* spec. nov., ♂, holotype; figs 425-429, *P. procerus* spec. nov., ♂, holotype. 420, 425, wings; 421, 426, head, frontal aspect; 422, 427, head, dorsal aspect; 423, 428, mesopleuron, lateral aspect; 424, 429, first metasomal tergite, dorsal aspect. 420, 423, 425, 428: 1.8 × scale-line; 421-422, 426-427: 2.5 ×; 424, 429: 3.2 ×.



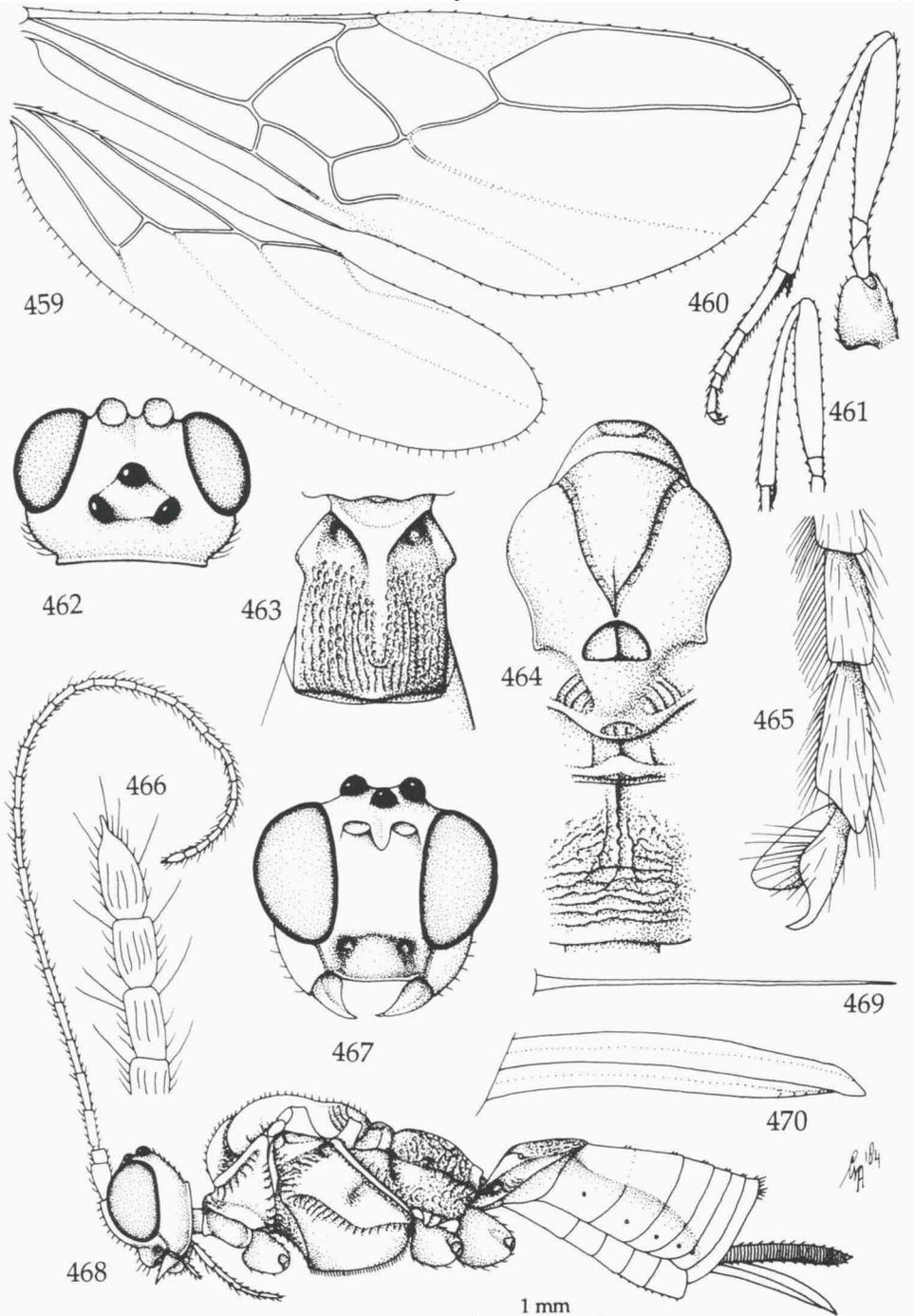
Figs 430-433, *Peristenus nitidoides* spec. nov., ♀, holotype; figs 434-437, *P. prodigiosus* spec. nov., ♂, holotype. 430, 434, wings; 431, 435, head, frontal aspect; 432, 436, head, dorsal aspect; 433, 437, first metasomal tergite, dorsal aspect. 430: 2.1 × scale-line; 431-432: 2.9 ×; 433, 437: 3.2 ×; 434: 1.8 ×; 435-436: 2.5 ×.



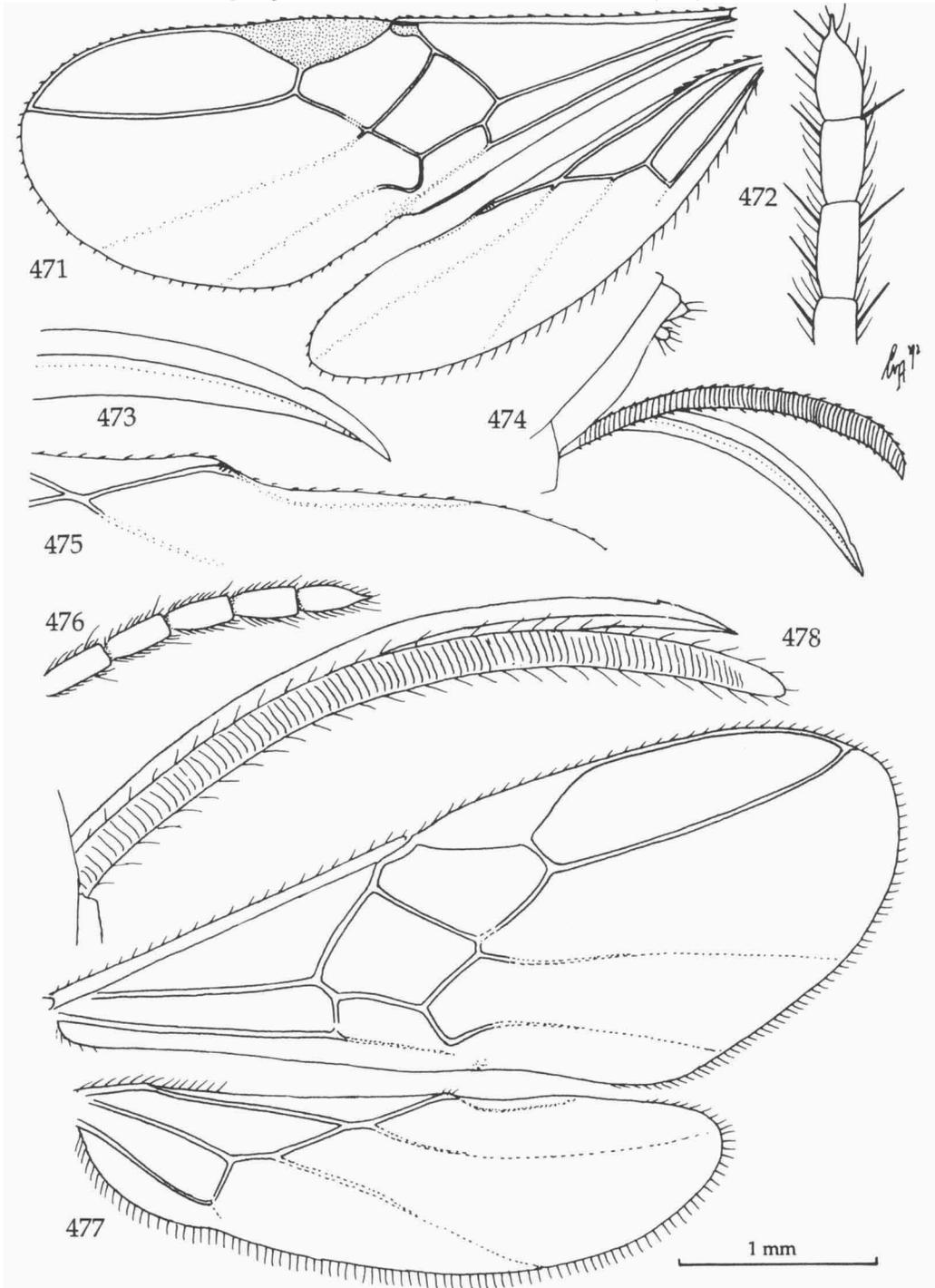
Figs 438-443, *Peristenus pallipes* (Curtis), ♀, but 443 of ♂; figs 444-449, *P. montanus* spec. nov., ♀, holotype, but 448 of ♂ paratype. 438, 444, wings; 439, 447, head, frontal aspect; 440, 446, head, dorsal aspect; 441, 445, first metasomal tergite, dorsal aspect; 442, 449, antenna of ♀; 443, 448, antenna of ♂. 438, 446-447: 2.5 × scale-line; 439-440: 2.9 ×; 441-443, 445, 448-449: 3.2 ×; 444: 2.1 ×.



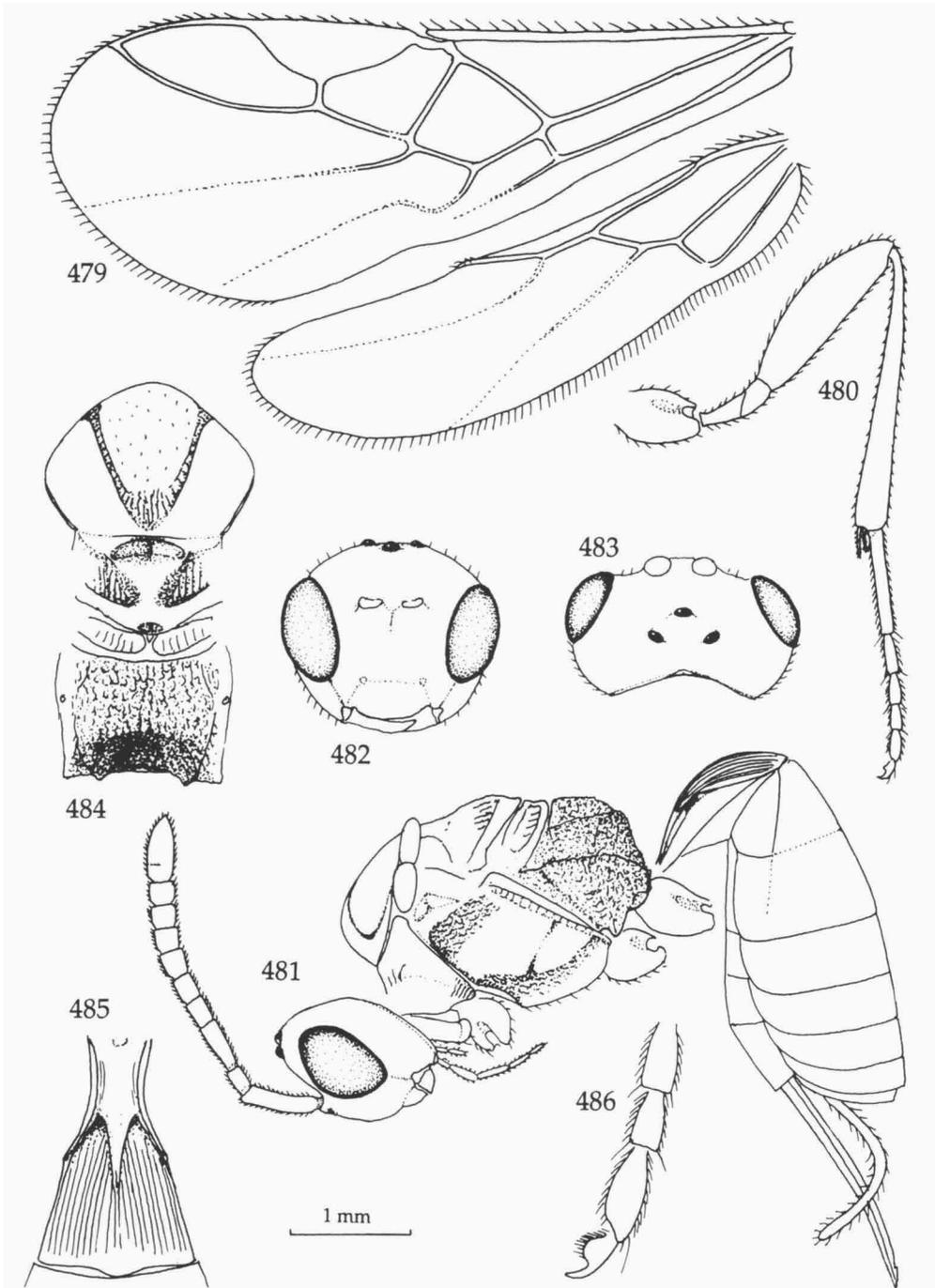
Figs 450-458, *Proclithrophorus mandibularis* Tobias & Belokobylskij, ♀, China. 450, wings; 451, habitus, lateral aspect; 452, hind leg, lateral aspect; 453, head, dorsal aspect; 454, head, frontal aspect; 455, mesosoma, dorsal aspect; 456, first metasomal tergite, dorsal aspect; 457, outer hind claw; 458, apex of antenna. 450-452: 1.8 × scale-line; 453-456: 2.5 ×; 457-458: 4.4 ×.



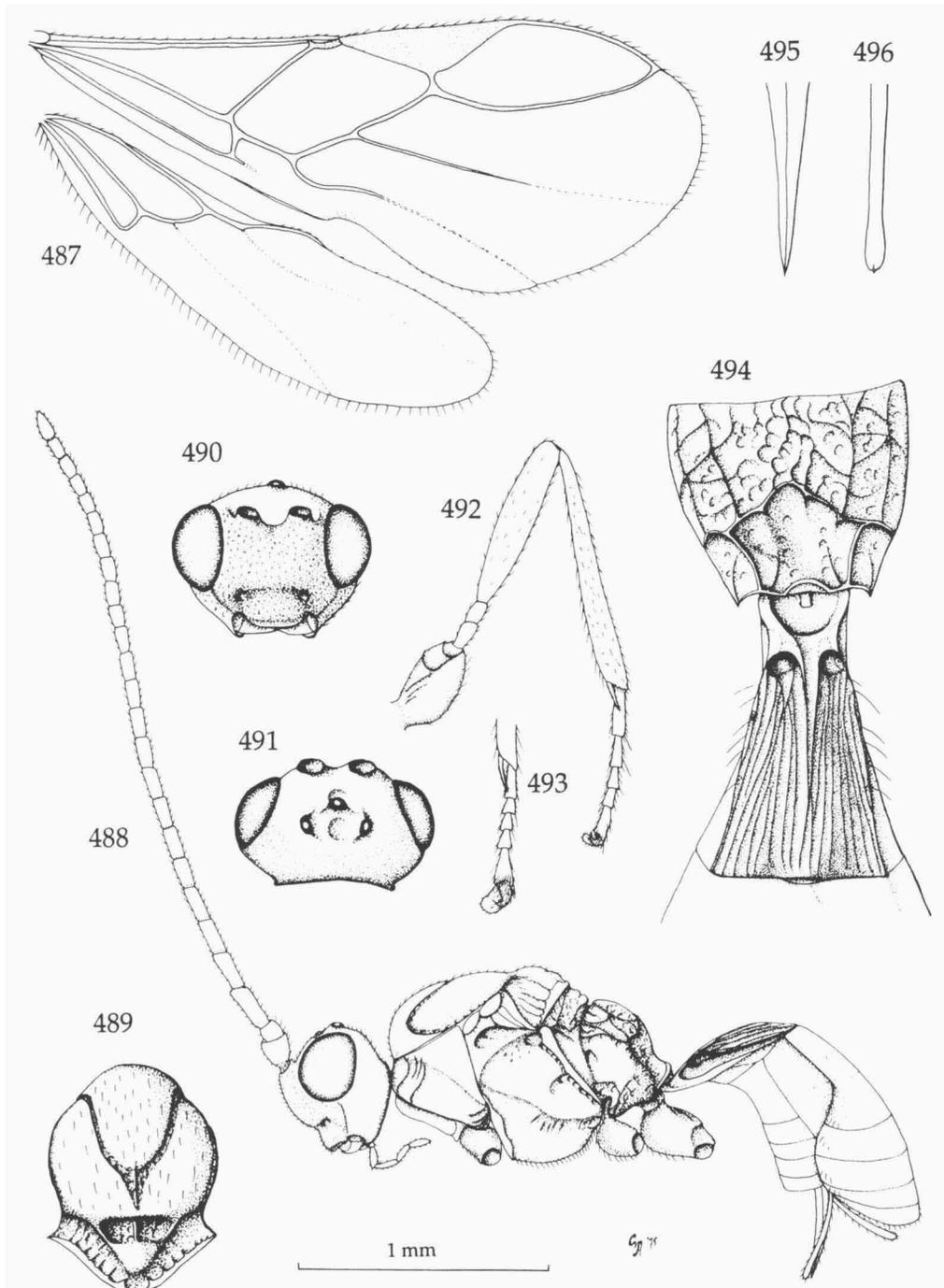
Figs 459-470, *Pygostolus sticticus* (Fabricius), ♀, neotype. 459, wings; 460, hind leg, lateral aspect; 461, fore femur and tibia; 462, head, dorsal aspect; 463, first metasomal tergite, dorsal aspect; 464, mesosoma, dorsal aspect; 465, hind claw; 466, apex of antenna; 467, head, frontal aspect; 468, habitus, lateral aspect; 469, ovipositor, dorsal aspect; 470, ovipositor, lateral aspect. 459-461, 468: 1.0 × scale-line; 462-464, 467: 2.0 ×; 465-466: 2.5 ×; 469-470: 2.7 ×.



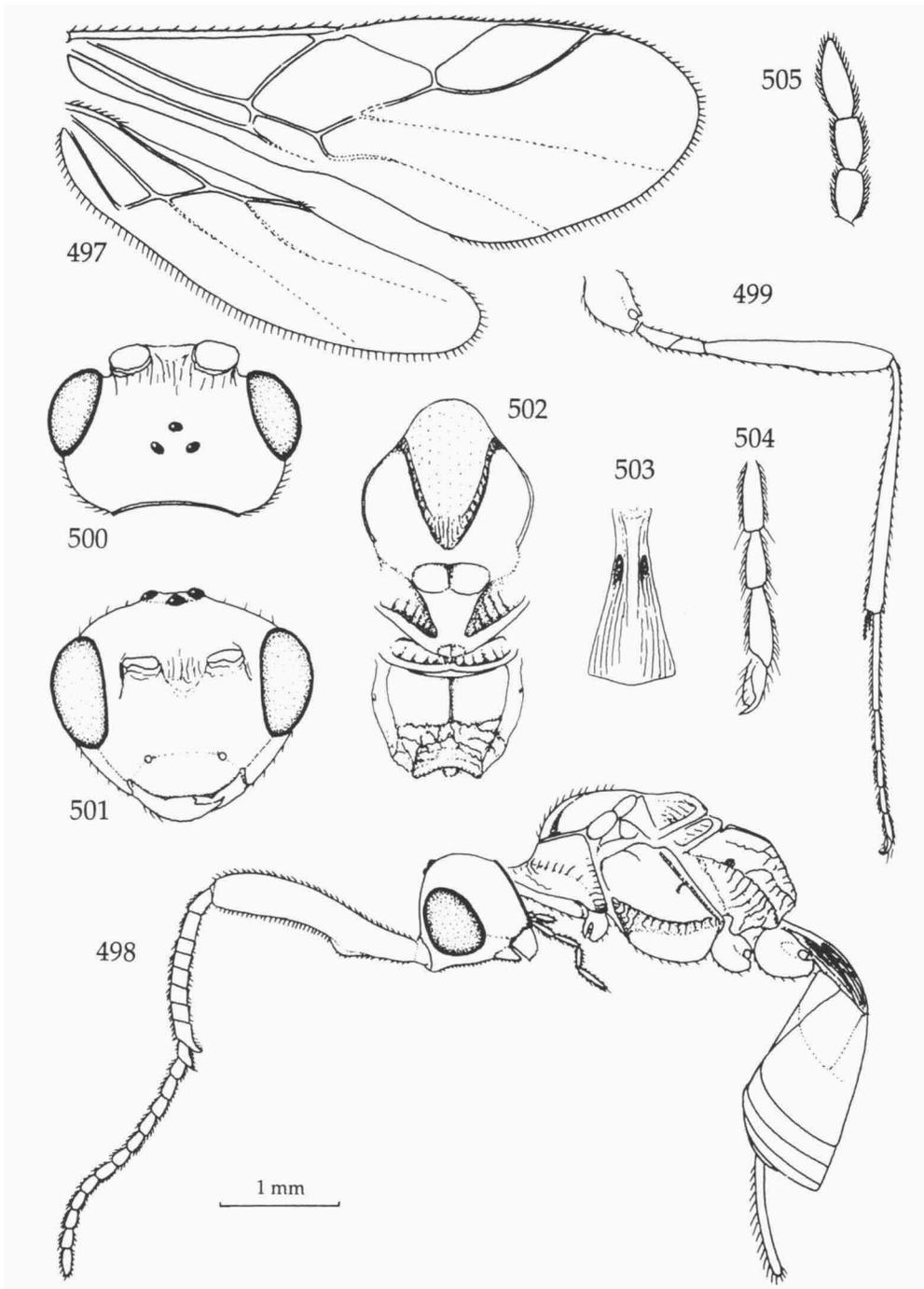
Figs 471-475, *Pygostolus falcatus* (Nees), ♀, neotype; figs 476-478, *P. tibetensis* spec. nov., ♀, holotype. 471, 477, wings; 472, 476, apex of antenna; 473, apex of ovipositor, lateral aspect; 474, 478, ovipositor and its sheath, lateral aspect. 471: 1.0 × scale-line; 472-473: 5.0 ×; 474-475: 2.0 ×; 477: 0.7 ×; 476, 478: 2.3 ×.



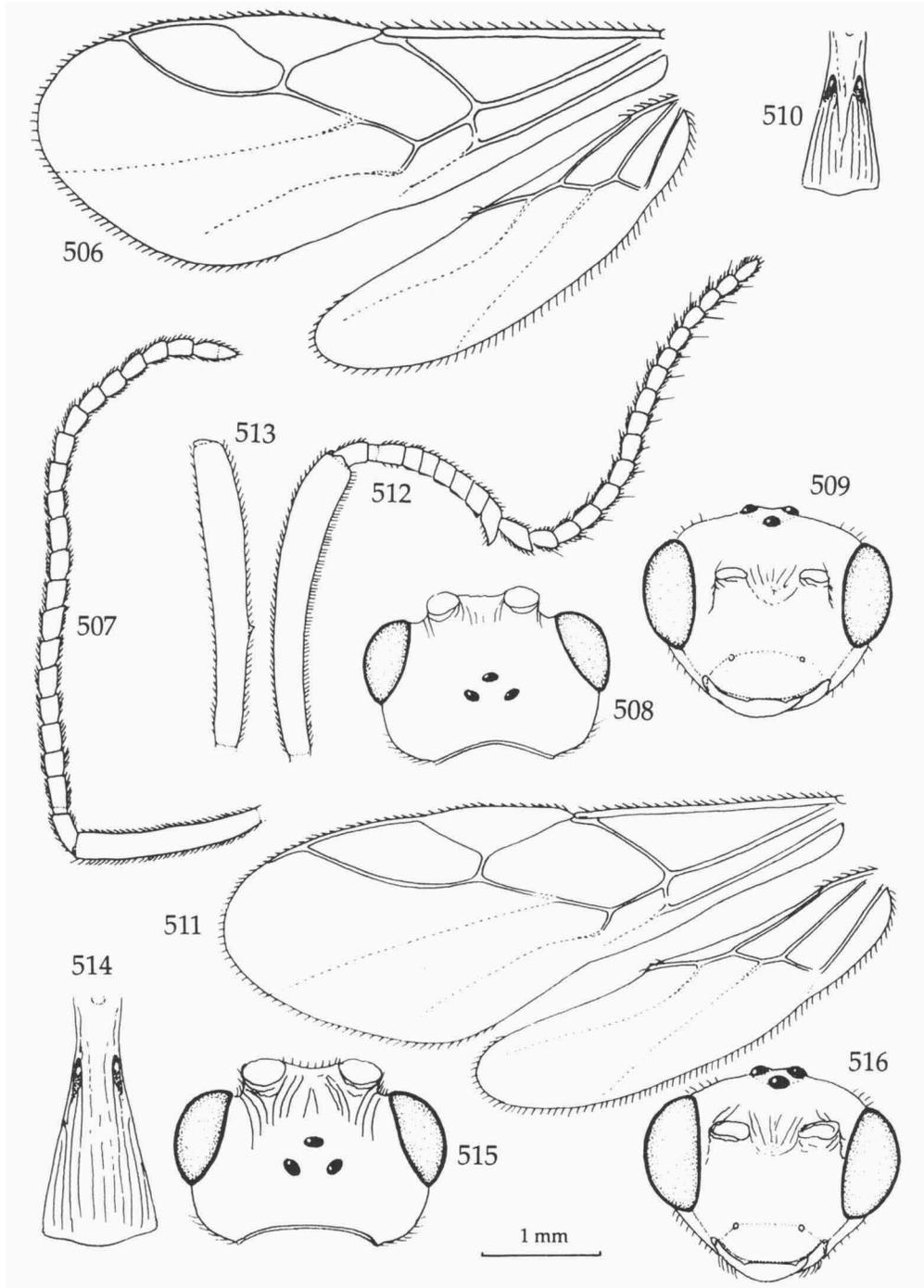
Figs 479-486, *Ropalophorus clavicornis* Wesmael, ♀, Belgium. 479, wings; 480, hind leg, lateral aspect; 481, habitus, lateral aspect; 482, head, frontal aspect; 483, head, dorsal aspect; 484, mesosoma, dorsal aspect; 485, first metasomal tergite, dorsal aspect; 486, outer hind claw. 479-481: 2.1 × scale-line; 482-485: 2.5 ×; 486: 5.2 ×.



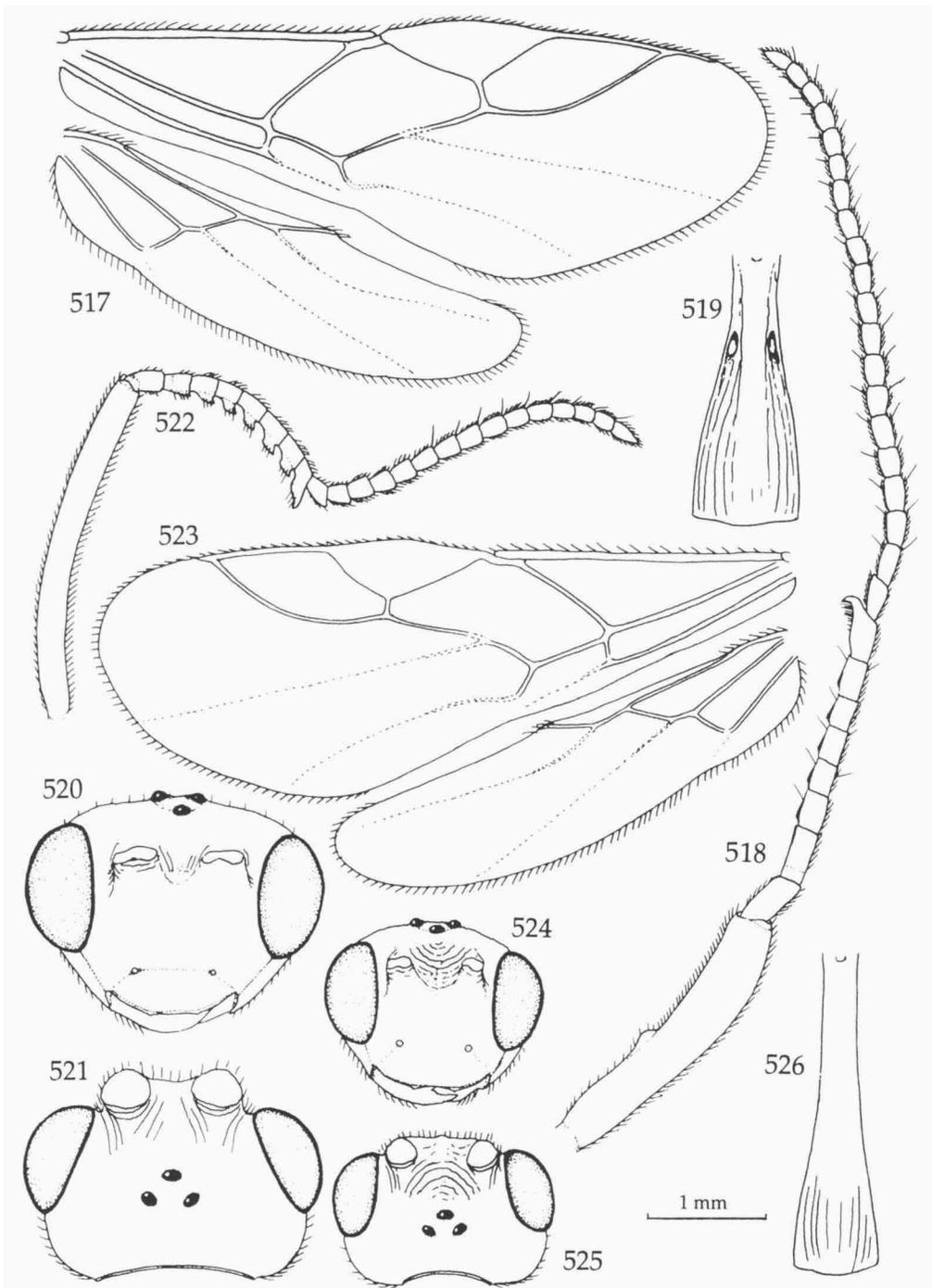
Figs 487-496, *Spathicopsis flavocephala* van Achterberg, ♀, holotype (but fig. 493 of a paratype). 487, wings; 488, habitus, lateral aspect; 489, mesonotum, dorsal aspect; 490, head, frontal aspect; 491, head, dorsal aspect; 492, hind leg, lateral aspect; 493, fore tarsus, lateral aspect; 494, propodeum and first metasomal tergite, dorsal aspect; 495, ovipositor, lateral aspect; 496, ovipositor, dorsal aspect. 487-488, 492-493: 1.0 × scale-line; 489-491: 1.25 ×; 494-496: 2.0 ×.



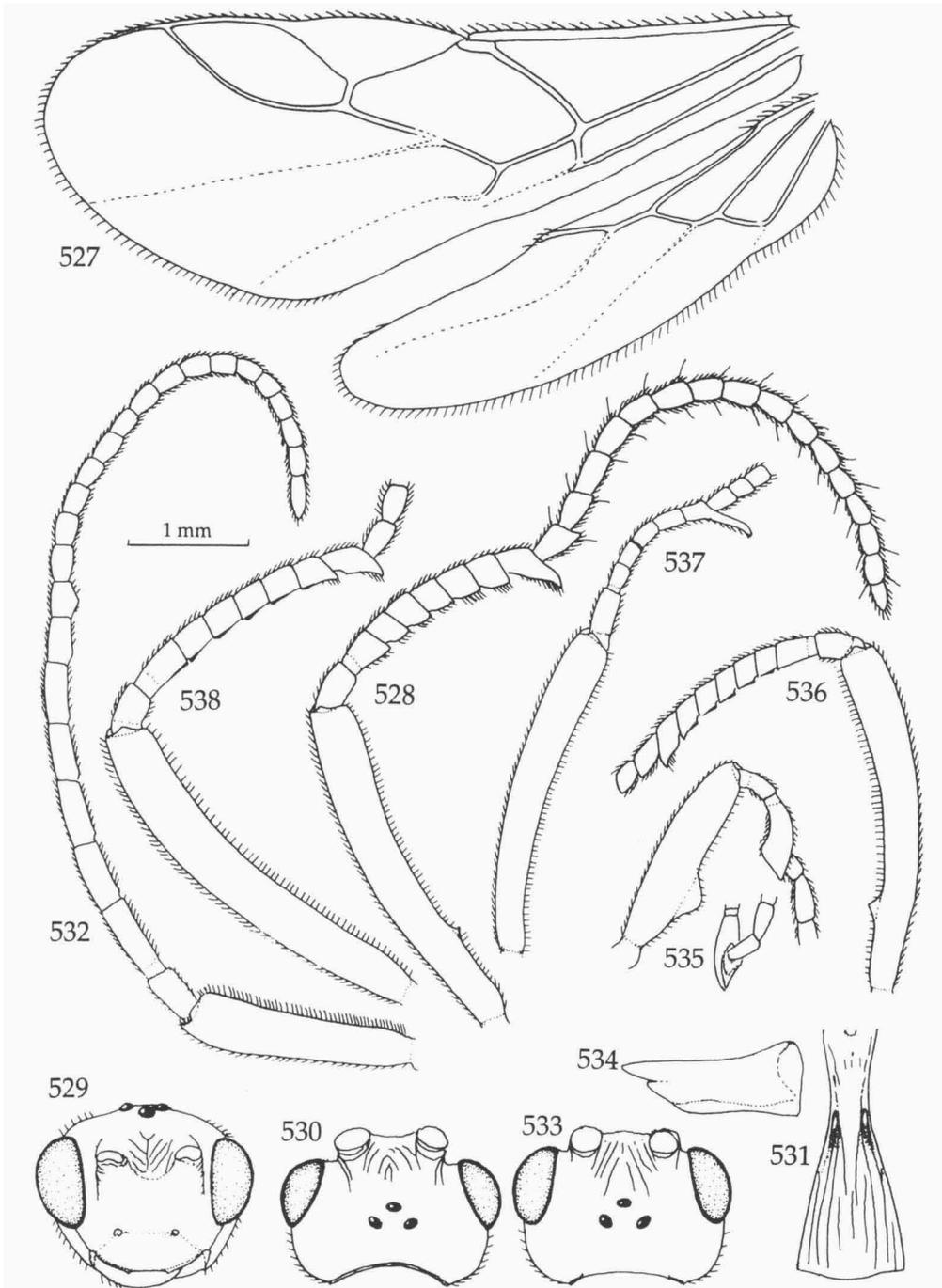
Figs 497-505, *Streblocera (Eutanycerus) obtusa* spec. nov., ♀, holotype. 497, wings; 498, habitus, lateral aspect; 499, hind leg, lateral aspect; 500, head, dorsal aspect; 501, head, frontal aspect; 502, mesosoma, dorsal aspect; 503, first metasomal tergite, dorsal aspect; 504, outer hind claw; 505, apex of antenna. 497-499: 1.8 × scale-line; 500-503: 2.5 ×; 504-505: 4.4 ×.



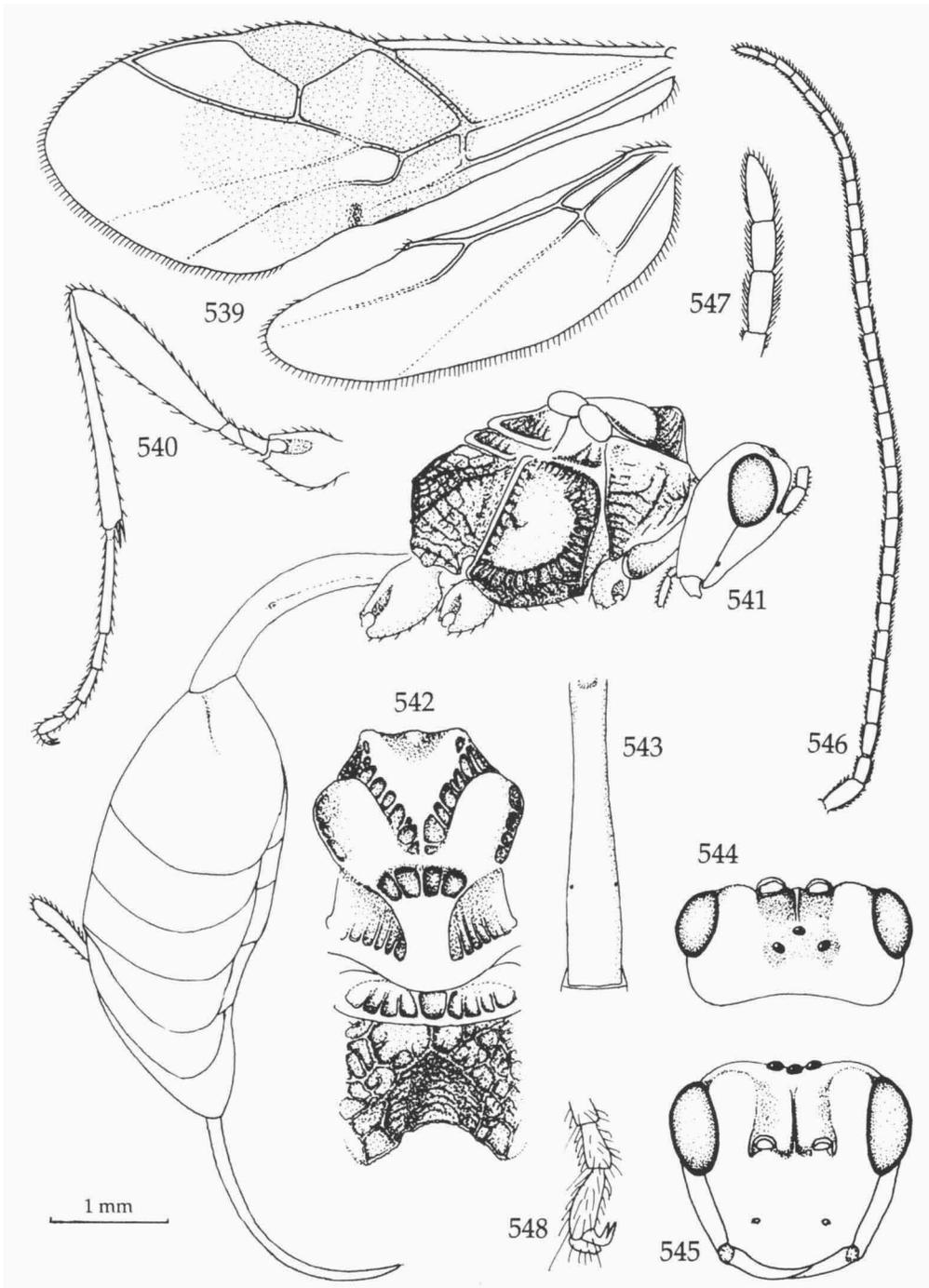
Figs 506-510, *Streblocera (Eutanycerus) linearata* spec. nov., ♀, holotype; figs 511-516, *S. (E.) janus* spec. nov., ♀, holotype. 506, 511, wings; 507, 512, antenna, lateral aspect; 508, 515, head, dorsal aspect; 509, 516, head, frontal aspect; 510, 514, first metasomal tergite, dorsal aspect; 513, scapus, dorsal aspect. 506, 512-513: 1.8 × scale-line; 507-510, 514: 2.5 ×; 511: 1.0 ×; 515-516: 2.1 ×.



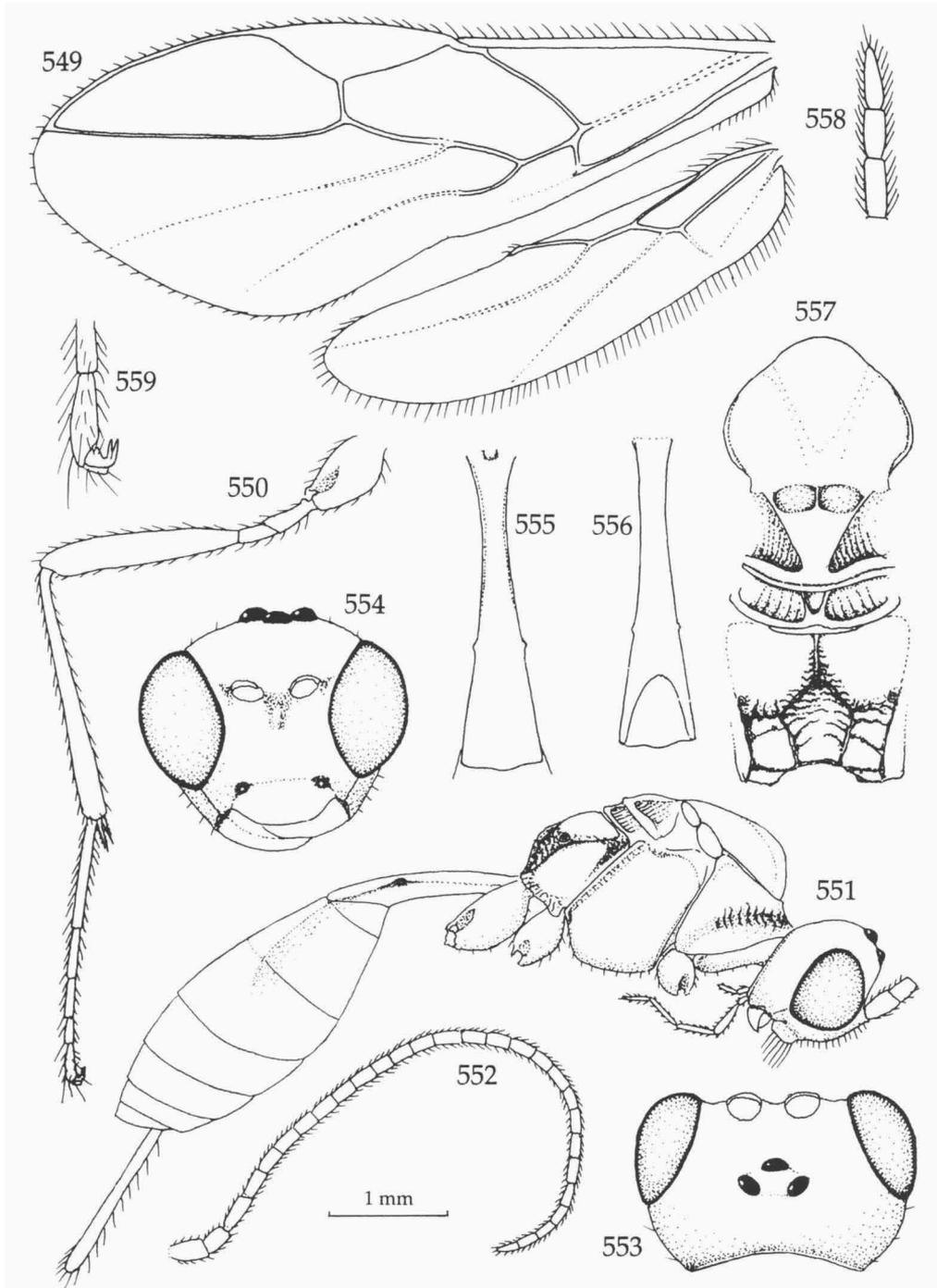
Figs 517-521, *Streblocera (Eutanycerus) gigantea* spec. nov., ♀, holotype; figs 522-526, *S. (E.) distincta* spec. nov., ♀, holotype. 517, 523, wings; 518, 522, antenna, lateral aspect; 519, 526, first metasomal tergite, dorsal aspect; 520, 524, head, frontal aspect; 521, 525, head, dorsal aspect. 517: 1.2 × scale-line; 518-522, 524-525: 1.8 ×; 523: 1.4 ×; 526: 2.5 ×.



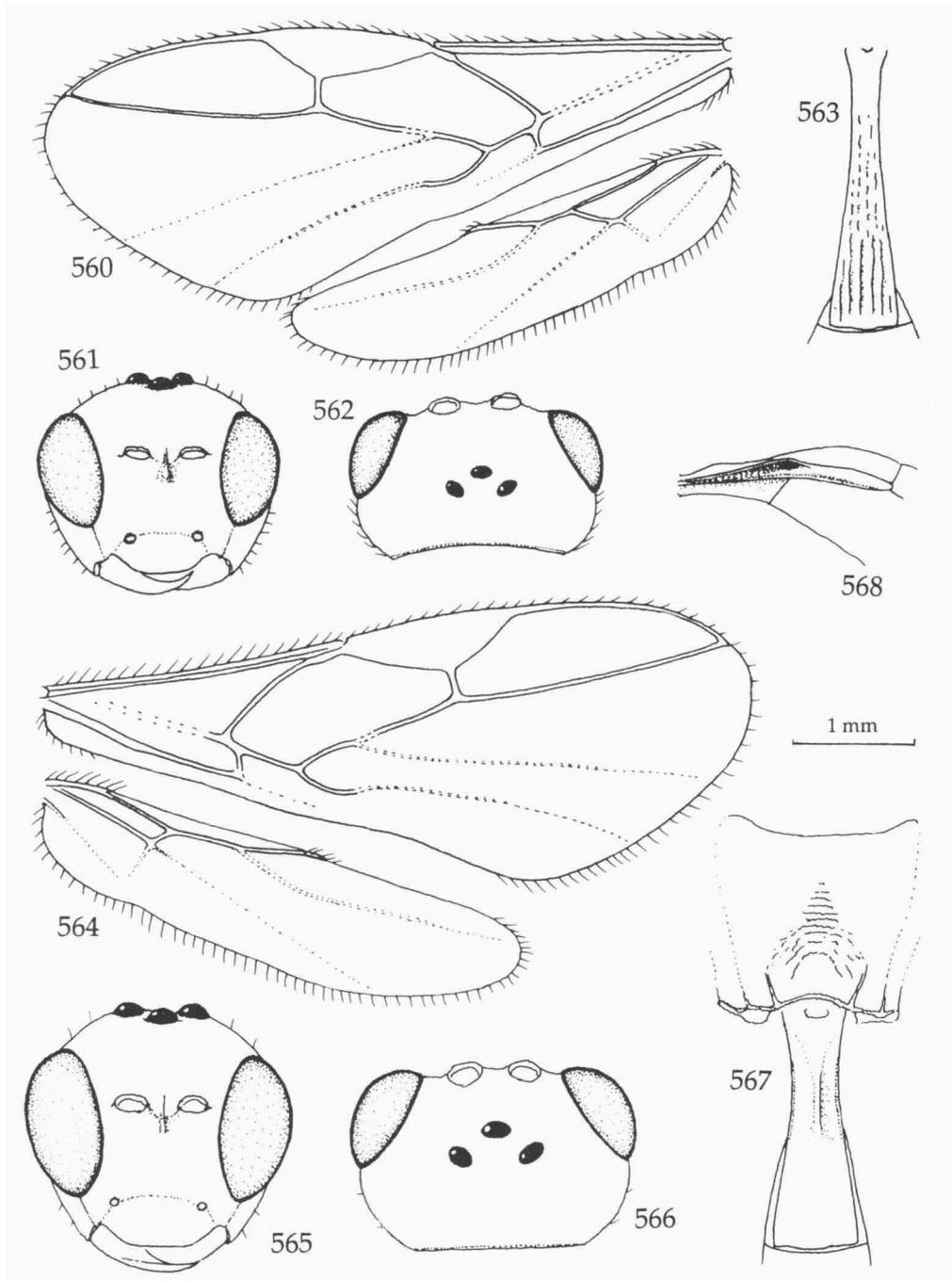
Figs 527-531, *Streblocera (Eutanycerus) cornis* spec. nov., ♀, holotype; figs 532-534, *S. (Cosmophoridia) flaviceps* Marshall, ♀; fig. 535, *S. (Streblocera) fulviceps* Westwood; fig. 536, *S. (E.) emeiensis* Wang; fig. 537, *S. (Villocera) villosa* Papp; fig. 538, *S. (E.) guangxiensis* You & Zhou. 527, wings; 528, 532, 536-538, antenna, lateral aspect; 535, base of antenna, lateral aspect, with ventral aspect of third segment; 529, head, frontal aspect; 530, 533, head, dorsal aspect; 531, first metasomal tergite, dorsal aspect; 534, mandible, frontal aspect. 527, 529-530, 533: 1.8 × scale-line; 528, 532, 536-538: 2.5 ×; 534: 3.4 ×; 535: 2.9 ×.



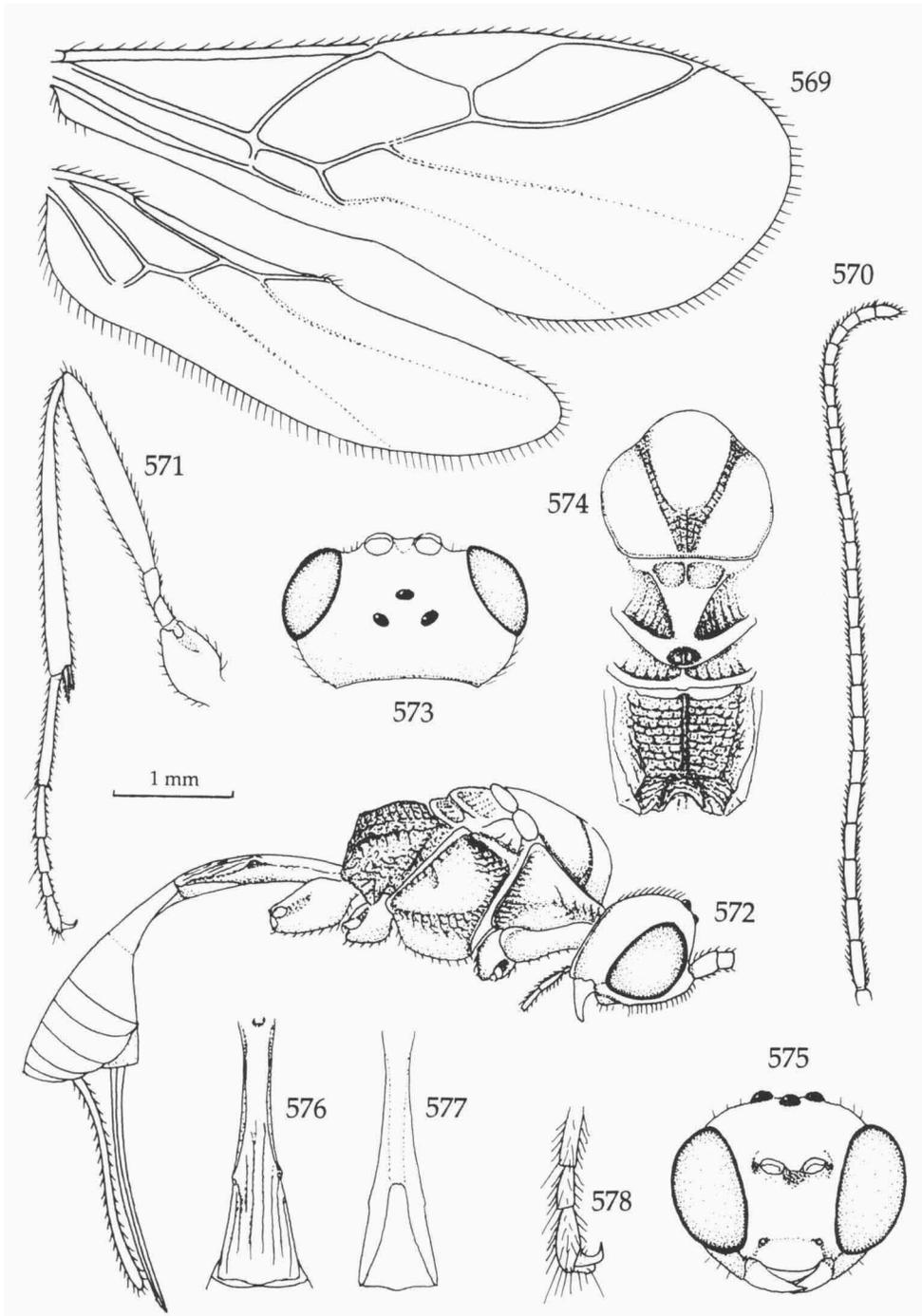
Figs 539-548, *Syntretomorpha szaboi* Papp, ♀, China. 539, wings; 540, hind leg, lateral aspect; 541, habitus, lateral aspect; 542, mesosoma, dorsal aspect; 543, first metasomal tergite, dorsal aspect; 544, head, dorsal aspect; 545, head, frontal aspect; 546, antenna; 547, apex of antenna; 548, outer hind claw. 539-541: 1.4 × scale-line; 542-545: 1.8 ×; 547: 4.4 ×; 548: 3.2 ×.



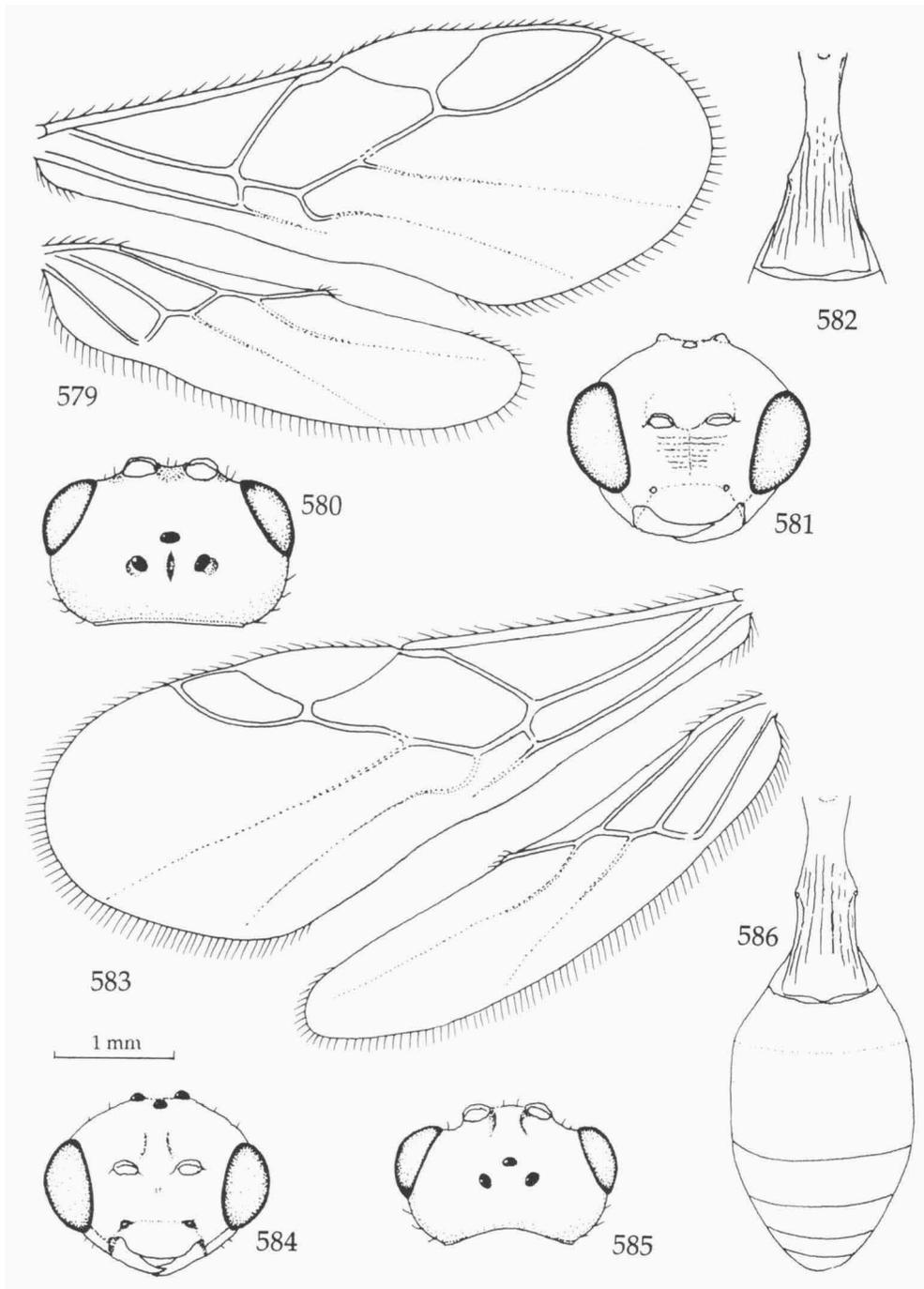
Figs 549-559, *Syntretus bulbus* spec. nov., ♀, holotype. 549, wings; 550, hind leg, lateral aspect; 551, habitus, lateral aspect; 552, antenna; 553, head, dorsal aspect; 554, head, frontal aspect; 555, first metasomal tergite, dorsal aspect; 556, first metasomal tergite, ventral aspect; 557, mesosoma, dorsal aspect; 558, apex of antenna; 559, outer hind claw. 549-552: 2.1 × scale-line; 553-557: 3.2 ×; 558: 5.2 ×; 559: 6.1 ×.



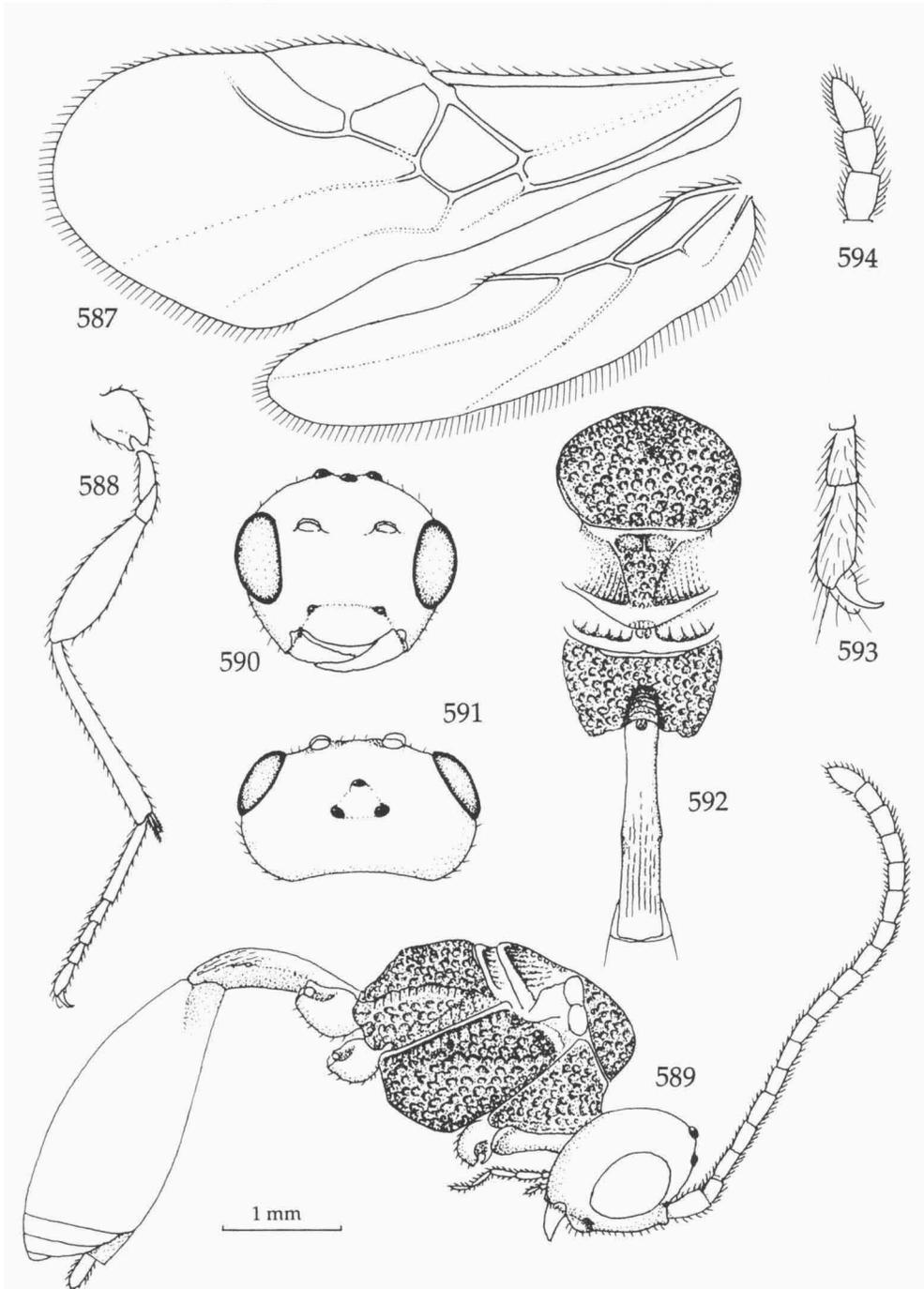
Figs 560-563, *Syntretus setosus* spec. nov., ♀, holotype; figs 564-568, *S. glaber* spec. nov., ♀, holotype. 560, 564, wings; 561, 565, head, frontal aspect; 562, 566, head, dorsal aspect; 563, first metasomal tergite, dorsal aspect; 567, propodeum and first metasomal tergite, dorsal aspect; 568, first metasomal tergite, lateral aspect. 560: 2.5 × scale-line; 561-563, 565-568: 3.2 ×; 564: 1.8 ×.



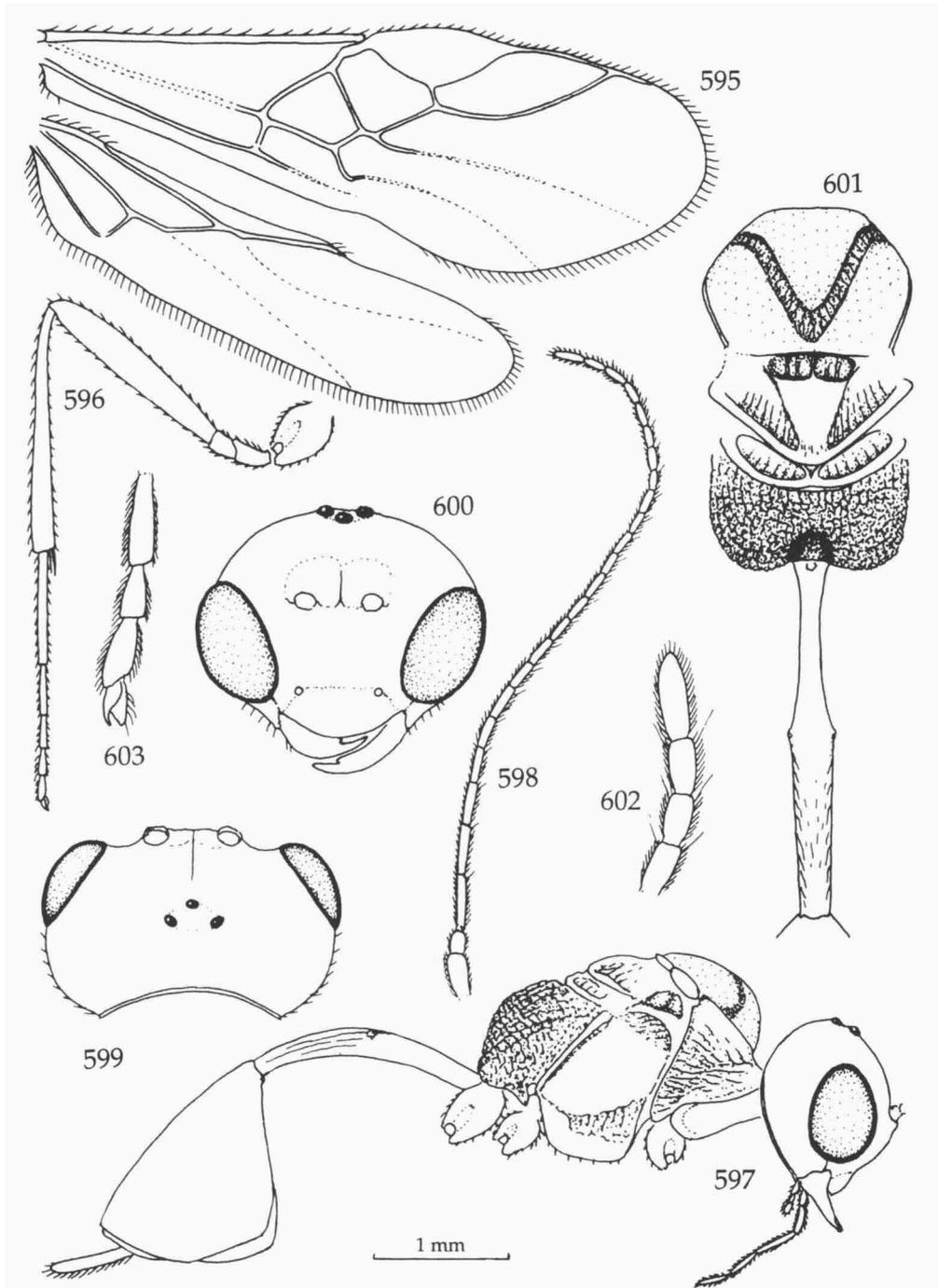
Figs 569-578, *Townesilitus pallidistigmus* spec. nov., ♀, holotype. 569, wings; 570, antenna; 571, hind leg, lateral aspect; 572, habitus, lateral aspect; 573, head, dorsal aspect; 574, mesosoma, dorsal aspect; 575, head, frontal aspect; 576, first metasomal tergite, dorsal aspect; 577, first metasomal tergite, ventral aspect; 578, outer hind claw. 569-572: 1.8 × scale-line; 573-577: 2.5 ×; 578: 3.2 ×.



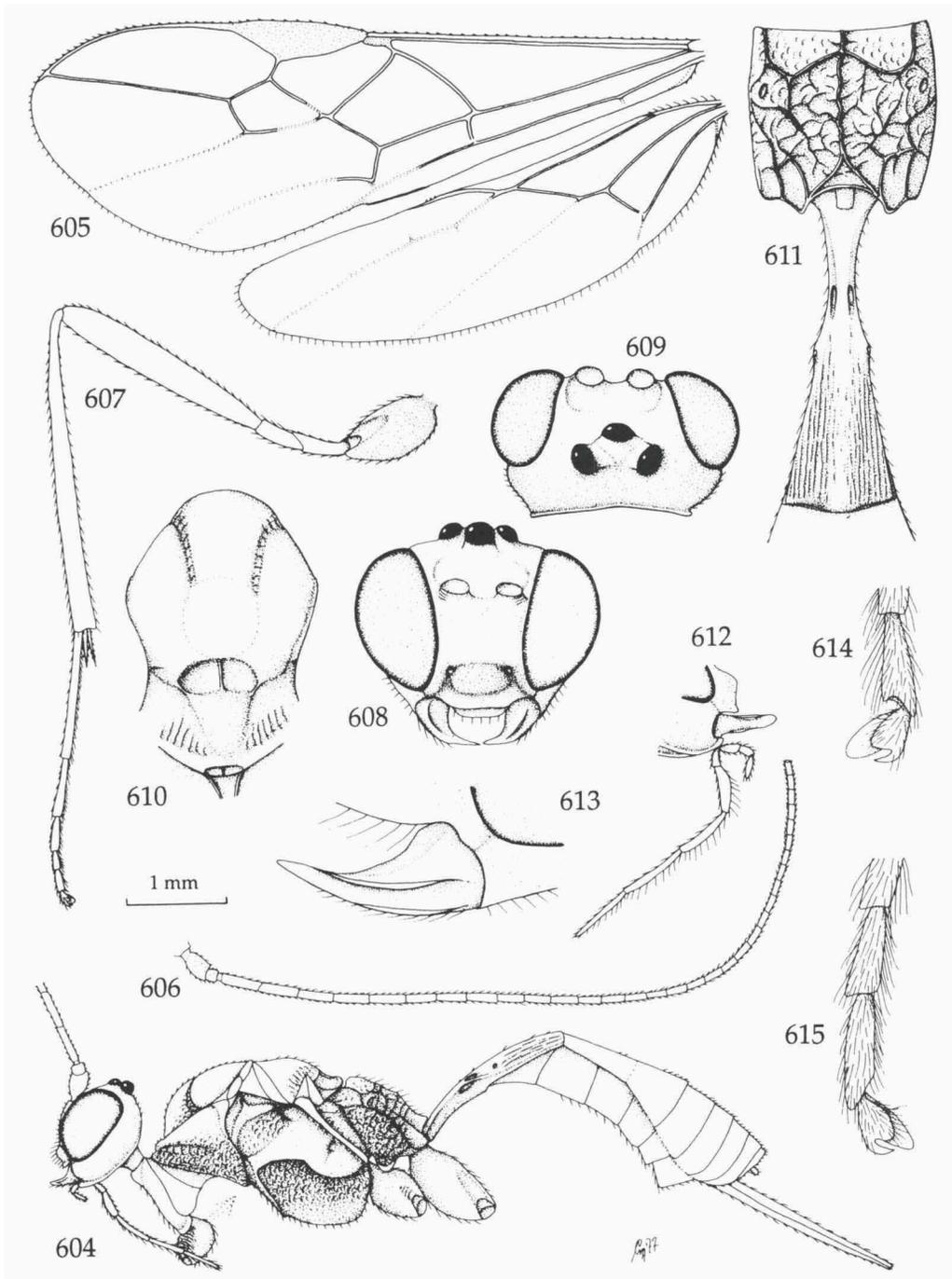
Figs 579-582, *Townesilitus deceptor* (Wesmael), ♀; figs 583-586, *T. mellinus* spec. nov., ♂, holotype. 579, 583, wings; 580, 585, head, dorsal aspect; 581, 584, head, frontal aspect; 582, first metasomal tergite, dorsal aspect; 586, metasoma, dorsal aspect. 579: 2.5 × scale-line; 580-586: 3.2 ×.



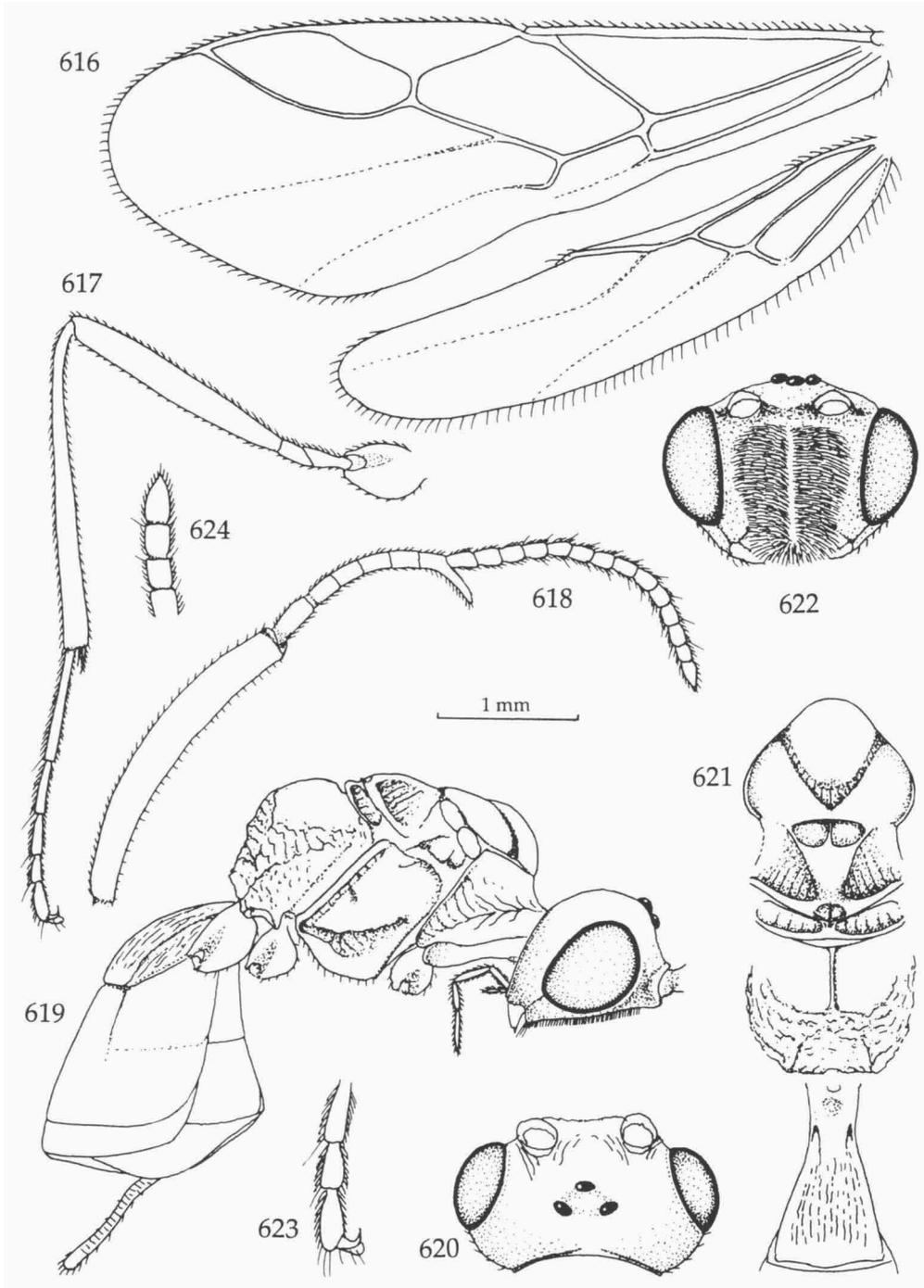
Figs 487-496, *Spathicopsis flavocephala* van Achterberg, ♀, holotype (but fig. 493 of a paratype). 487, wings; 488, habitus, lateral aspect; 489, mesonotum, dorsal aspect; 490, head, frontal aspect; 491, head, dorsal aspect; 492, hind leg, lateral aspect; 493, fore tarsus, lateral aspect; 494, propodeum and first metasomal tergite, dorsal aspect; 495, ovipositor, lateral aspect; 496, ovipositor, dorsal aspect. 487-488, 492-493: 1.0 × scale-line; 489-491: 1.25 ×; 494-496: 2.0 ×.



Figs 595-603, *Wesmaelia petiolata* (Wollaston, 1858), ♀, Bulgaria. 595, wings; 596, hind leg, lateral aspect; 597, habitus, lateral aspect; 598, antenna; 599, head, dorsal aspect; 600, head, frontal aspect; 601, mesosoma and first metasomal tergite, dorsal aspect; 602, apex of antenna; 603, outer hind claw. 595-598: 1.8 × scale-line; 599-601: 2.5 ×; 602-603: 4.4 ×.



Figs 604-615, *Zele deceptor* (Wesmael), ♀, lectotype. 604, habitus, lateral aspect; 605, wings; 606, antenna; 607, hind leg, lateral aspect; 608, head, frontal aspect; 609, head, dorsal aspect; 610, mesonotum, dorsal aspect; 611, propodeum and first metasomal tergite, dorsal aspect; 612, maxillary and labial palpi, lateral aspect; 613, mandible, latero-ventral aspect; 614, inner hind claw; 615, outer hind claw. 604-607: 1.0 × scale-line; 608-612: 2.0 ×; 613-615: 5.0 ×.



Figs 616-624, *Streblocera (Villocera) villosa* Papp, ♀, China. 616, wings; 617, hind leg; 618, antenna, lateral aspect; 619, habitus, lateral aspect; 620, head, dorsal aspect; 621, mesosoma and first metasomal tergite, dorsal aspect; 622, head, frontal aspect; 623, outer hind claw; 624, apex of antenna. 616-619: 1.8 × scale-line; 620-622: 2.1 ×; 623-624: 2.7 ×.

Index to names of Braconidae and hosts

<i>adarka</i> (<i>Centistes</i> (<i>Syrrhizus</i>))	21
<i>adusta</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	108
<i>adusta</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	108
<i>aequorus</i> spec. nov. (<i>Perilitus</i>)	76, 77
<i>aethiopoides</i> (<i>Microctonus</i>)	63, 64, 70
<i>aethiops</i> (<i>Perilitus</i>)	61
<i>agilis</i> (<i>Centistes</i> (<i>Syrrhizus</i>))	21
<i>alekseevi</i> (<i>Asiacentistes</i>)	20
<i>alekseevi</i> (<i>Centistes</i>)	20
Alleculidae	62
<i>alternecolatus</i> (<i>Aridelus</i>)	13, 14, 15, 17
<i>alternecolouratus</i> (<i>Aridelus</i>)	14
<i>amplissima</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	109
<i>amplissima</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 109
<i>Anartionyx</i> van Achterberg (subgenus of <i>Centistes</i> Haliday)	21
<i>Ancylocentrus</i> Foerster (subgenus of <i>Centistes</i> Haliday)	6, 21, 30
<i>Ancylus</i> Haliday (subgenus of <i>Leiophron</i> Nees)	21
<i>Ancyllus</i> Haldeman	21
<i>antennatus</i> (<i>Aridelus</i>)	14
Anthicidae	55
<i>apicalis</i> (<i>Leiophron</i>)	51
Apidae	125, 126
<i>Apis cerana</i>	125
Arctiidae	60
<i>arenjevi</i> (<i>Euphorus</i>)	49
<i>areolaris</i> (<i>Perilitus</i>)	78, 84, 85
<i>Arideloides</i> Papp	11
<i>Aridelus</i> Marshall	5, 10, 11, 12
<i>Asiacentistes</i> Belokobylskij	6, 20
<i>Asiastreblocera</i> Belokobylskij (subgenus of <i>Streblocera</i> Westwood)	7, 103
<i>ater</i> (<i>Ancylocentrus</i>)	31
<i>ater</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	30, 31
<i>ater</i> (<i>Leiophron</i>)	31
<i>barbiger</i> (<i>Microctonus</i>)	87
<i>basalis</i> spec. nov. (<i>Aridelus</i>)	13, 15
<i>bicolor</i> (<i>Microctonus</i>)	131
<i>bicolor</i> (<i>Townesilitus</i>)	133
<i>binarius</i> spec. nov. (<i>Marshiella</i>)	57
Biphylidae	60
Bombinae	126
<i>boops</i> (<i>Loxocephalus</i>)	74
<i>boops</i> (<i>Microctonus</i>)	74
<i>boops</i> (<i>Myiocephalus</i>)	74
<i>Bracteodes</i> De Saeger	5, 125
<i>brevicollis</i> (<i>Microctonus</i>)	69
<i>brevicornis</i> spec. nov. (<i>Microctonus</i>)	63, 64
<i>brevitarsus</i> spec. nov. (<i>Centistes</i> (<i>Ancylocentrus</i>))	31, 32
<i>bulbus</i> spec. nov. (<i>Syntretus</i>)	127
<i>bucephalus</i> (<i>Aridelus</i>)	11
<i>buonluoica</i> (<i>Euphoriella</i>)	53
<i>buonluoica</i> (<i>Leiophron</i> (<i>Leiophron</i>))	52, 53
<i>cameroni</i> (<i>Meteorus</i>)	59

Carabidae	21, 62
<i>carinata</i> spec. nov. (<i>Centistes</i> (<i>Centistes</i>))	24
<i>cembrae</i> (<i>Cosmophorus</i>)	40
<i>Centistes</i> Haliday	6, 21
<i>Centistes</i> Haliday (subgenus of <i>Leiophron</i> Nees)	21
<i>Centistes</i> (<i>Centistes</i>)	6, 23, 28
<i>Centistina</i> Enderlein	5
<i>Centistini</i> Capek	6
Cerambycidae	60, 62
<i>ceranae</i> (<i>Bracteodes</i>)	5, 125
<i>Chaetocnema cilindrica</i>	121
<i>chaetopygidium</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	31, 32
<i>chaoi</i> nom. nov. (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 109
<i>chengi</i> spec. nov. (<i>Leiophron</i> (<i>Euphoriana</i>))	51, 52
<i>chinensis</i> (<i>Saprotichus</i>)	59
<i>chiuae</i> (<i>Streblocera</i> (<i>Streblocera</i>))	121
Chrysomelidae	21, 60, 62, 75, 84, 100, 104, 106, 118, 119, 121, 132
<i>Chrysopa</i>	39
Chrysopidae	38
<i>chrysopimagineis</i> (<i>Chrysopophthorus</i>)	38
<i>Chrysopophthorus</i> Goidanich	5, 10, 38
Cisidae	60
<i>claripennis</i> (<i>Euphoridea</i>)	21
<i>clavicornis</i> (<i>Ropalophorus</i>)	102, 103
<i>coactus</i> (<i>Euphorus</i>)	94
<i>Coccinella septempunctata</i>	41
<i>coccinellae</i> (<i>Ichneumon</i>)	41
<i>coccinellae</i> (<i>Dinocampus</i>)	41
<i>coccinellae</i> (<i>Perilitus</i>)	41
Coccinellidae	21, 41, 42
Coleoptera	4, 21, 39, 60, 62, 75
<i>convexitemporalis</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	31, 33, 36
<i>confusus</i> spec. nov. (<i>Aridelus</i>)	12, 14, 15
<i>conterminus</i> (<i>Syntretus</i>)	128
<i>cornis</i> spec. nov. (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 109
<i>cornuta</i> (<i>Streblocera</i>)	104, 105
<i>cornuta</i> (<i>Streblocera</i> (<i>Asiastreblocera</i>))	105
<i>Cosmophoridia</i> Hedqvist	103, 105
<i>Cosmophoridia</i> Hedqvist (subgenus of <i>Streblocera</i> Westwood)	7, 103, 105, 106
<i>Cosmophorinus</i> Ashmead (subgenus of <i>Cosmophorus</i> Ratzeburg)	39
<i>Cosmophorini</i> Muesebeck & Walkley	5
<i>Cosmophorus</i> Ratzeburg	5, 39
<i>cretus</i> spec. nov. (<i>Microctonus</i>)	62, 65
Curculionidae	21, 32, 39, 62, 75, 100
<i>curta</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	110
<i>curta</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	106, 110
<i>cuspidatus</i> (<i>Centistes</i> (<i>Centistes</i>))	23, 27, 30
<i>cuspidatus</i> (<i>Leiophron</i> (<i>Ancylus</i>))	21
<i>dayuensis</i> (<i>Streblocera</i>)	105
<i>dayuensis</i> (<i>Streblocera</i> (<i>Asiastreblocera</i>))	105
<i>deceptor</i> (<i>Microctonus</i>)	132
<i>deceptor</i> (<i>Townesilitus</i>)	132, 134
<i>decurta</i> (<i>Wesmaelia</i>)	137
<i>deficiens</i> (<i>Leiophron</i> (<i>Euphoriana</i>))	53

<i>delusorius</i> (<i>Centistes</i> (<i>Syrrhizus</i>))	21
<i>delusorius</i> (<i>Syrrhizus</i>)	21
<i>distinguendus</i> (<i>Centistes</i> (<i>Syrrhizus</i>))	21
<i>destituta</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	110
<i>destituta</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 110
<i>destitutus</i> (<i>Aridelus</i>)	12, 17, 18
<i>diabroticae</i> (<i>Centistes</i> (<i>Syrrhizus</i>))	21
<i>dilatatus</i> (<i>Centistes</i> (<i>Centistes</i>))	23
<i>dinghuensis</i> spec. nov. (<i>Microctonus</i>)	63, 66
<i>Dinocampus</i> Foerster	5, 11, 41
<i>distincta</i> spec. nov. (<i>Streblocera</i> (<i>Eutanycerus</i>))	108, 110
<i>dmitrii</i> (<i>Centistes</i> (<i>Centistes</i>))	23
<i>dubius</i> (<i>Perilitus</i>)	86
<i>Ecclitura</i> Kokujev	50
<i>egregia</i> (<i>Helorimorpha</i>)	11
<i>ekphora</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	112
<i>ekphora</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 112
<i>elasmuchae</i> (<i>Aridelus</i>)	14, 15
<i>emarginata</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 121
<i>emeiensis</i> (<i>Aridelus</i>)	13, 16, 17, 20
<i>emeiensis</i> (<i>Streblocera</i>)	112
<i>emeiensis</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 112
<i>erratus</i> spec. nov. (<i>Meteorus</i>)	4, 60
<i>Erythrometeorus</i> Cameron	11
<i>Eutanycerus</i> Foerster (subgenus of <i>Streblocera</i> Westwood)	8, 104, 106
<i>Eutanycerus</i> Foerster	103, 106
<i>Eustalocerus</i> Foerster	102
<i>Euphoriana</i> Gahan	51
<i>Euphoriana</i> Gahan (subgenus of <i>Leiophron</i> Nees)	9, 51
<i>Euphoridea</i> Ashmead	21
<i>Euphoriella</i> Ashmead	51
<i>Euphoriella</i> Ashmead (subgenus of <i>Leiophron</i> Nees)	9, 51
<i>Euphorini</i> Foerster	9
<i>Euphorus</i> Nees	9, 42
<i>evidus</i> spec. nov. (<i>Euphorus</i>)	43
<i>excrucians</i> (<i>Ancylus</i>)	21
<i>excrucians</i> (<i>Leiophron</i> (<i>Ancylus</i>))	31
<i>excrucians</i> (<i>Ancylocentrus</i>)	31
<i>excrucians</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	31
<i>expansus</i> spec. nov. (<i>Euphorus</i>)	43, 44
<i>facialis</i> (<i>Peristernus</i>)	95
<i>falcatus</i> (<i>Leiophron</i>)	101
<i>falcatus</i> (<i>Pygostolus</i>)	101
<i>falconivibrans</i> (<i>Spilomma</i>)	74
<i>fascipennis</i> (<i>Leiophron</i> (<i>Leiophron</i>))	56
<i>flava</i> (<i>Streblocera</i>)	117
<i>flavicans</i> (<i>Aridelus</i>)	12, 16
<i>flaviceps</i> (<i>Cosmophoridia</i>)	105
<i>flaviceps</i> (<i>Cosmophorus</i>)	104, 105
<i>flaviceps</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	105
<i>flavicorpus</i> spec. nov. (<i>Leiophron</i> (<i>Leiophron</i>))	52, 53
<i>flavocephala</i> (<i>Spathicopsis</i>)	103
<i>flavus</i> spec. nov. (<i>Centistes</i> (<i>Centistes</i>))	24, 25
<i>Formica</i>	74

<i>fulviceps</i> (<i>Streblocera</i>)	103, 119, 121
<i>fulviceps</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 121
<i>furvus</i> spec. nov. (<i>Peristenus</i>)	88, 89
<i>fuscipes</i> (<i>Centistes</i> (<i>Centistes</i>))	23
<i>fuscus</i> (<i>Aridelus</i>)	13, 17
<i>galbus</i> spec. nov. (<i>Microctonus</i>)	63, 67
<i>Gamosecus</i> Provancher	61
<i>garleppi</i> (<i>Lecythodella</i>)	104
Gelechiidae	60
Geometridae	59
<i>gigantea</i> spec. nov. (<i>Streblocera</i> (<i>Eutanycerus</i>))	108, 112
<i>glaber</i> spec. nov. (<i>Syntretus</i>)	126, 128
<i>guangxiensis</i> (<i>Streblocera</i>)	113
<i>guangxiensis</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	108, 113
<i>guizhouensis</i> (<i>Aridelus</i>)	16
<i>guizhouensis</i> spec. nov. (<i>Centistes</i> (<i>Centistes</i>))	23, 26
<i>guizhouensis</i> (<i>Streblocera</i>)	124
<i>halidayanus</i> (<i>Eutanycerus</i>)	103, 106
<i>harpali</i> (<i>Microctonus</i>)	65
<i>Heia</i> gen. nov.	7, 49
<i>Helorimorpha</i> Schmiedeknecht	11
<i>helvenaca</i> (<i>Streblocera</i> (<i>Streblocera</i>))	121
Hemiptera	4, 9, 87
Hepialidae	60
<i>Holdawayella</i> Loan	5, 135
<i>hopkinsii</i> (<i>Cosmophorus</i>)	39
<i>hunanensis</i> (<i>Aridelus</i>)	18
<i>hungaricus</i> (<i>Chrysopophthorus</i>)	38
Hymenoptera	4, 126
Ichneumonidae	126
<i>immensa</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 122
<i>incertus</i> (<i>Labeo</i>)	51
<i>intermedius</i> spec. nov. (<i>Centistes</i> (<i>Centistes</i>))	23, 27
<i>janus</i> spec. nov. (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 113
<i>kenchingi</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	115
<i>kenchingi</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	108, 115
<i>klugii</i> (<i>Cosmophorus</i>)	39
<i>kokoujevi</i> (<i>Perilitus</i>)	83
<i>kurentizovi</i> (<i>Leiophron</i> (<i>Euphoriana</i>))	53
<i>kurilensis</i> (<i>Euphorus</i>)	48
<i>laeviventris</i> (<i>Peristenus</i>)	90, 91, 98
<i>lalashanensis</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 122
Lasiocampidae	60
<i>lateropus</i> spec. nov. (<i>Perilitus</i>)	75, 78
<i>latibrocha</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 122
<i>lativalvis</i> (<i>Allurus</i>)	31
<i>lativalvis</i> (<i>Ancylocenturs</i>)	31
<i>Leiophron</i> Nees	9, 51, 86
<i>Lema oryzae</i>	84
Lepidoptera	4, 59
<i>lepos</i> (<i>Wesmaelia</i>)	134
<i>levigatus</i> spec. nov. (<i>Peristenus</i>)	88, 90
<i>lienhuachihensis</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	115
<i>lienhuachihensis</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 115

<i>linearata</i> spec. nov. (<i>Streblocera</i> (<i>Eutanycerus</i>))	106, 115
<i>lini</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 122
<i>Liosigalphus</i> Ashmead	21
<i>liui</i> spec. nov. (<i>Perilitus</i>)	76, 79
<i>longicornis</i> spec. nov. (<i>Microctonus</i>)	62, 68
<i>longipes</i> (<i>Loxocephalus</i>)	74
<i>longiradialis</i> (<i>Perilitus</i>)	80
<i>longius</i> (<i>Aridelus</i>)	13, 17
<i>longivenus</i> spec. nov. (<i>Perilitus</i>)	76, 81
<i>longus</i> spec. nov. (<i>Perilitus</i>)	76, 80
Loxocephalini Shaw	8
<i>Loxocephalus</i> Eberhard	74
<i>Loxocephalus</i> Foerster	74
<i>ludius</i> (<i>Centistes</i> (<i>Syrrhizus</i>))	21, 22, 23
<i>luteus</i> (<i>Perilitus</i>)	78
<i>lyctaeae</i> (<i>Syntretus</i>)	129
Lycaenidae	60
Lygaeidae	9, 51
Lymantriidae	60
<i>maae</i> spec. nov. (<i>Microctonus</i>)	63, 69
<i>makarovi</i> (<i>Syntretus</i>)	129
<i>manchuricus</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	35
<i>mandibularis</i> (<i>Proclithrophorus</i>)	99, 100
<i>Marshiella</i> Shaw	11, 55
<i>Medythia nigrobilineata</i>	33, 34, 118
<i>medythiae</i> (<i>Centistes</i>)	33
<i>medythiae</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	30, 33, 35
<i>meifengensis</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 122
Melandyridae	60, 75
<i>melanopus</i> (<i>Microctonus</i>)	65, 72
<i>mellipes</i> (<i>Euphorus</i>)	93
<i>mellinus</i> (<i>Gamosecus</i>)	61
<i>mellinus</i> spec. nov. (<i>Townesilitus</i>)	132
<i>mesus</i> spec. nov. (<i>Microctonus</i>)	63, 70
Meteorini Cresson	4, 10
<i>Meteorus</i> Haliday	4, 10, 59, 60
<i>miccus</i> (<i>Aridelus</i>)	13, 17
<i>minutus</i> spec. nov. (<i>Centistes</i> (<i>Syrrhizus</i>))	22
<i>minutus</i> (<i>Ussuraridelus</i>)	134
<i>Microctonus</i> Wesmael	11, 61
Miridae	9, 51, 87
Momphidae	60
<i>montanus</i> spec. nov. (<i>Peristenus</i>)	88, 91
<i>multiarticulatus</i> (<i>Pygostolus</i>)	102
Myiocephalini tribe nov.	8
<i>Myiocephalus</i> Marshall	5, 8, 74
Nabidae	137
<i>nantouensis</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	116
<i>nantouensis</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 116
<i>nantouensis</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	116
<i>natalus</i> spec. nov. (<i>Euphorus</i>)	43, 45
<i>neptumus</i> spec. nov. (<i>Microctonus</i>)	63, 72
Neuroptera	4, 60
<i>niger</i> (<i>Arideloides</i>)	11

<i>nigra</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	116
<i>nigra</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	108, 116
<i>nigrator</i> (<i>Ophion</i>)	11
<i>nigricans</i> (<i>Aridelus</i>)	12, 14, 16, 17, 18, 20
<i>nigriscutum</i> spec. nov. (<i>Perilitus</i>)	76, 82
<i>nitidis</i> (<i>Peristenus</i>)	93
<i>nitidoides</i> spec. nov. (<i>Peristenus</i>)	88, 92
<i>nocturnus</i> (<i>Brachistes</i>)	93
<i>normalis</i> spec. nov. (<i>Euphorus</i>)	43, 46
Noctuidae	59
Nolidae	60
<i>Notoxus monoceros</i>	56
Nymphalidae	59
<i>obtusa</i> spec. nov. (<i>Streblocera</i> (<i>Eutanycerus</i>))	108, 116
<i>octava</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	117
<i>octava</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 117
<i>ocularis</i> spec. nov. (<i>Centistes</i> (<i>Ancylocentrus</i>))	30, 34
<i>oculatus</i> (<i>Meteorus</i>)	60
<i>okadai</i> (<i>Streblocera</i>)	117
<i>okadai</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	117
<i>okadai</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 117
<i>opima</i> (<i>Streblocera</i> (<i>Cosmophoridia</i>))	118
<i>opima</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	108, 118
<i>orientalis</i> (<i>Streblocera</i>)	117
<i>Orionis</i> Shaw	60
Orthoptera	4
<i>Oulema oryzae</i>	83, 84
<i>oulemae</i> spec. nov. (<i>Perilitus</i>)	76, 83
<i>Pachythechus</i> Cameron	59
<i>pallipes</i> (<i>Leiophron</i>)	87, 93
<i>pallipes</i> (<i>Peristenus</i>)	88, 92, 93, 96
<i>pallipes</i> (<i>Leiophron</i> (<i>Peristenus</i>))	93
<i>pallicornis</i> (<i>Euphorus</i>)	42
<i>pallidipes</i> (<i>Euphorus</i>)	93
<i>pallidistgmus</i> (<i>Euphorus</i>)	46, 47
<i>pallidistgmus</i> spec. nov. (<i>Townesilitus</i>)	132, 133
<i>panda</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 122
<i>paupella</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	37
<i>pendula</i> (<i>Wesmaelia</i>)	136, 138
<i>pendulator</i> (<i>Ichneumon</i>)	59
Pentatomidae	12
Perilitini Foerster	10
<i>Perilitus</i> Nees	4, 5, 11, 60, 75
<i>Peristenus</i> Foerster	5, 9, 86
<i>petiolus</i> (<i>Chrysopophthorus</i>)	39
<i>petiolatus</i> (<i>Euphorus</i>)	138
<i>petiolata</i> (<i>Wesmaelia</i>)	136, 137
<i>picipes</i> (<i>Leiophron</i>)	93
<i>picipes</i> (<i>Leiophron</i> (<i>Peristenus</i>))	93
<i>picipes</i> (<i>Peristenus</i>)	87, 94
<i>planifacies</i> (<i>Syntretus</i>)	131
<i>plumicornis</i> (<i>Marshiella</i>)	55
<i>politus</i> (<i>Liosigalphus</i>)	21
<i>polygraphus</i> (<i>Ropalophorus</i>)	102

<i>Polygraphus polygraphus</i>	103
<i>primotina</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	118
<i>primotina</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	106, 118
<i>procerus</i> spec. nov. (<i>Peristenus</i>)	88, 94, 97
<i>Proclithrophorus</i> Tobias & Belokobylskij	8, 99
<i>prodigosus</i> spec. nov. (<i>Peristenus</i>)	88, 95
Psocidae	41
Psocoptera	4, 9, 41, 51
<i>pulvillicornis</i> (<i>Marshiella</i>)	56
<i>pulvillicornis</i> (<i>Streblocera</i>)	55
<i>punctatus</i> spec. nov. (<i>Centistes</i> (<i>Ancylocentrus</i>))	31, 35
<i>punctatus</i> (<i>Microctonus</i>)	93
<i>punctifrontis</i> (<i>Microctonus</i>)	74
<i>Pygostolus</i> Haliday	5, 100
Pyralidae	59
<i>quinaria</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	124
<i>quinaria</i> (<i>Streblocera</i> (<i>Villocera</i>))	124
<i>raddei</i> (<i>Euphorus</i>)	45
<i>reticulata</i> (<i>Scipolabia</i>)	11
<i>reticulatus</i> (<i>Aridelus</i>)	12, 18
<i>reticulatus</i> (<i>Erythrometeorus</i>)	11
<i>Rhopalophorus</i> Blanchard	102
<i>Rhopalophorus</i> Serville	102
<i>robustipes</i> (<i>Heia</i>)	49, 50
<i>Ropalophorus</i> Curtis	5, 7, 102
<i>ruficeps</i> (<i>Meteorus</i>)	59
<i>ruficeps</i> (<i>Pachythechus</i>)	59
<i>ruficephalus</i> spec. nov. (<i>Leiophron</i> (<i>Leiophron</i>))	52, 54
<i>ruficephalus</i> spec. nov. (<i>Perilitus</i>)	76, 84
<i>rufithorax</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	36
<i>rufithorax</i> spec. nov. (<i>Euphorus</i>)	42, 47
<i>rufiventris</i> (<i>Aridelus</i>)	13, 18
<i>rufotestaceus</i> (<i>Aridelus</i>)	13, 18
<i>rufus</i> spec. nov. (<i>Centistes</i> (<i>Ancylocentrus</i>))	30, 36
<i>rufus</i> (<i>Strictometeorus</i>)	11
<i>rugitergitus</i> spec. nov. (<i>Cosmophorus</i>)	40
<i>rugosus</i> spec. nov. (<i>Peristenus</i>)	88, 96
<i>rutilipes</i> (<i>Aridelus</i>)	12, 18, 19
<i>rutilus</i> (<i>Bracon</i>)	75
<i>rutilus</i> (<i>Perilitus</i>)	77, 84
<i>Saprotichus</i> Holmgren	59
Satyridae	59
Scarabaeidae	60
<i>Scipolabia</i> Enderlein	11
<i>Scirtetes</i> Hartig	75
Scolytidae	39, 60
<i>scymni</i> (<i>Centistes</i> (<i>Centistes</i>))	23
<i>secalis</i> (<i>Microctonus</i>)	68
<i>serrata</i> Chao (<i>Streblocera</i> (<i>Cosmophorida</i>))	109
<i>serrata</i> Granger (<i>Streblocera</i>)	109
<i>semiglabrous</i> spec. nov. (<i>Centistes</i> (<i>Ancylocentrus</i>))	31, 37
<i>semiruficus</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	30, 38
<i>setosus</i> spec. nov. (<i>Syntretus</i>)	126, 129
<i>shaanxiensis</i> (<i>Streblocera</i>)	117

<i>shaowuensis</i> (<i>Streblocera</i>)	122
<i>shaowuensis</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 122
<i>sichuanensis</i> (<i>Streblocera</i>)	118
<i>sichuanensis</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	106, 118
<i>similis</i> (<i>Euphorus</i>)	49
<i>simulans</i> spec. nov. (<i>Microctonus</i>)	63, 73
<i>sinapis</i> (<i>Centistes</i> (<i>Centistes</i>))	23, 26
<i>sinensis</i> (<i>Aridelus</i>)	13, 19
<i>sinensis</i> spec. nov. (<i>Marshiella</i>)	57, 58
<i>Sitona scissifrons</i>	31
<i>Spathicopis</i> van Achterberg	10, 103
spec. (<i>Perilitus</i>)	83
<i>Spilomma</i> Morley	74
<i>spinulosus</i> (<i>Centistes</i> (<i>Centistes</i>))	23
<i>splendius</i> (<i>Centistes</i> (<i>Ancylocentrus</i>))	37
<i>spretus</i> spec. nov. (<i>Peristenus</i>)	87, 97
<i>sticticus</i> (<i>Ichneumon</i>)	100, 102
<i>Streblocera</i> Westwood	5, 7, 50, 103, 119
<i>Streblocera</i> (<i>Streblocera</i>)	8, 104, 119
<i>striatus</i> spec. nov. (<i>Centistes</i> (<i>Centistes</i>))	24, 28
<i>Strictometeorus</i> Cameron	11
<i>subtilis</i> spec. nov. (<i>Leiophron</i> (<i>Leiophron</i>))	52, 55
<i>sungkangensis</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	119
<i>sungkangensis</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	108, 119
<i>suturus</i> spec. nov. (<i>Euphorus</i>)	43, 44, 48
<i>Syntretomorpha</i> Papp	5, 6, 124
<i>Syntretini</i> Shaw	6
<i>Syntretus</i> Foerster	7, 125
<i>Syrrhizus</i> Foerster (subgenus of <i>Centistes</i> Haliday)	6, 21, 22, 28
<i>szaboi</i> (<i>Syntretomorpha</i>)	5, 124
<i>tachulaniana</i> (<i>Streblocera</i>)	123
<i>tachulaniana</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 123
<i>taiwanensis</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	119
<i>taiwanensis</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	107, 119
<i>taiwanus</i> (<i>Aridelus</i>)	13, 14, 15, 19
<i>tayulingensis</i> (<i>Streblocera</i> (<i>Streblocera</i>))	121, 123
Tenebrionidae	60, 62
<i>terminalis</i> (<i>Bracon</i>)	41
<i>testaceus</i> (<i>Bassus</i>)	101
Thaumetopeidae	59
<i>tibetensis</i> spec. nov. (<i>Pygostolus</i>)	101
Tineidae	60
<i>topali</i> (<i>Wesmaelia</i>)	137
Tortricidae	59
<i>Townesilitus</i> Haeselbarth & Loan	10, 131
<i>triquetra</i> (<i>Streblocera</i> (<i>Streblocera</i>))	120, 123
<i>tsherskii</i> (<i>Centistes</i> (<i>Centistes</i>))	23, 25, 29
<i>tsuifengensis</i> (<i>Aridelus</i>)	14, 19
<i>tsuifengensis</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	119
<i>tsuifengensis</i> (<i>Streblocera</i> (<i>Eutanycerus</i>))	108, 119
<i>tungpuensis</i> (<i>Aridelus</i>)	12, 14, 19
<i>tungpuensis</i> (<i>Streblocera</i> (<i>Streblocera</i>))	121, 123
<i>uniformis</i> (<i>Euphoriana</i>)	51
<i>Ussuraridelus</i> Tobias & Belokobylskij	8, 134

<i>ussuriensis</i> (<i>Aridelus</i>)	12, 19
<i>varinervis</i> (<i>Meteorus</i>)	60
<i>venus</i> spec. nov. (<i>Syntretus</i>)	126, 130
<i>vernalis</i> (<i>Microctonus</i>)	125
<i>Villocera</i> subgen. nov. (subgenus of <i>Streblocera</i> Westwood)	7, 104
<i>villosa</i> (<i>Streblocera</i>)	123, 124
<i>villosa</i> (<i>Streblocera</i> (<i>Cosmophorida</i>))	124
<i>villosa</i> (<i>Streblocera</i> (<i>Villocera</i>))	124
<i>Wesmaelia</i> Foerster	5, 8, 136, 137
<i>xanthos</i> spec. nov. (<i>Peristenus</i>)	88, 98
<i>xianensis</i> (<i>Streblocera</i>)	123, 124
<i>xianensis</i> (<i>Streblocera</i> (<i>Villocera</i>))	124
<i>xynus</i> spec. nov. (<i>Perilitus</i>)	75, 85
<i>yaoae</i> spec. nov. (<i>Ussuraridelus</i>)	135
<i>yunnanus</i> spec. nov. (<i>Centistes</i> (<i>Centistes</i>))	23, 29, 27
<i>Zele</i> Curtis	4, 10
<i>zhongmouensis</i> (<i>Streblocera</i>)	117
<i>ziyangensis</i> (<i>Aridelus</i>)	13, 19
Zygaenidae	60

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