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## NOTES ON BRACONIDAE V-VI

by

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### **V. The systematic position of the genera *Ecnomios* Mason and *Pselaphanus Szépligeti* (Hymenoptera: Braconidae)**

Achterberg, C. van: The systematic position of the genera *Ecnomios* Mason and *Pselaphanus Szépligeti* (Hymenoptera: Braconidae).

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Key words: Braconidae; Agathidinae; *Pselaphanini* nov.; *Ecnomiinae* nov.; *Ecnomios*; *Pselaphanus*; New Guinea; Brazil; Surinam.

The systematic position of the genera *Ecnomios* Mason from New Guinea and *Pselaphanus Szépligeti* from Brazil and Surinam is discussed; both genera are redescribed and figured. The new subfamily *Ecnomiinae* (for *Ecnomios* Mason, 1979) and the new tribe *Pselaphanini* of the subfamily *Agathidinae* (for *Pselaphanus Szépligeti*, 1902) are erected.

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## INTRODUCTION

After the publication of my essay on the phylogeny of the Braconidae (Van Achterberg, 1984) some taxa remain whose insertion into the system is problematical. Two of these taxa are treated in this paper. The genus *Pselaphanus Szépligeti* has been inserted by Szépligeti (1902) in the dust-bin subfamily *Helconinae*, where it remained ever since. The genus *Ecnomios* Mason has been considered anomalous, but according to Mason (1979: 643) it is best placed in the *Orgilini* (*Orgilinae* sensu Van Achterberg, 1984). In my opinion both taxa are misplaced and should be treated as unique entities, one as a comparatively archaic group within the *Agathidinae*, the other as separate subfamily. The biology of both taxa is unknown.

## DESCRIPTIONS

Tribe **Pselaphanini** nov.

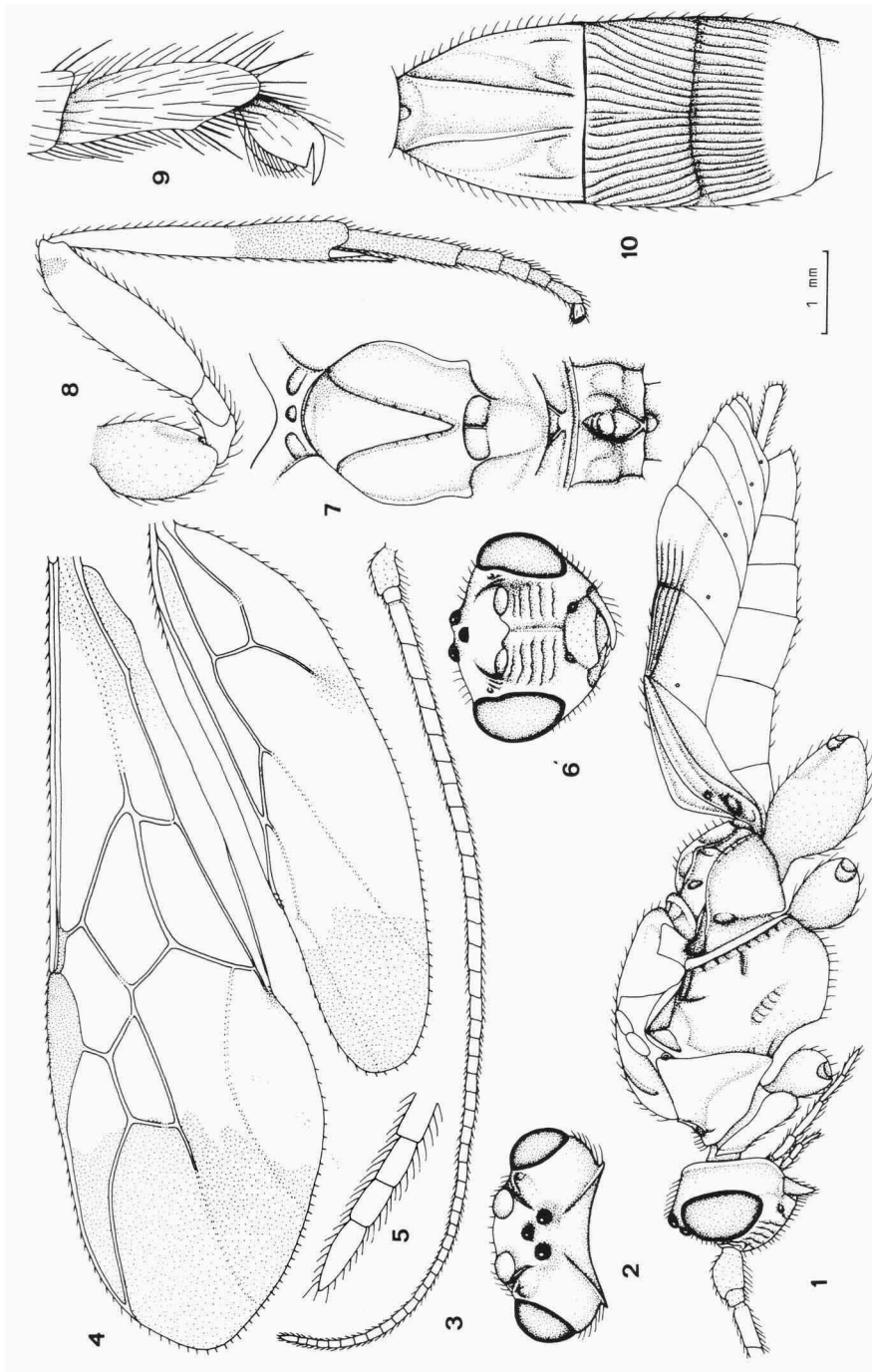
Diagnosis: Head. — Apical antennal segment without apical spine (fig. 5); maxillary and labial palpi 6- and 4-segmented, respectively; hypostomal carina distinctly joining occipital carina; occipital carina strong laterally but absent medio-dorsally, apices pointing to lateral ocelli (fig. 2); eyes glabrous and hardly emarginate (fig. 6); apical margin of clypeus slightly concave, thin and not differentiated (fig. 6); epistomal suture narrow and mostly rather shallow (fig. 1, 6); mandible strongly twisted (fig. 1).

Mesosoma. — Pronope medium-sized, deep and triangular (fig. 7); subpronope deep and large; epomia strong (figs 1, 7); antescutal depression indistinct; lateral carina of mesoscutum distinct in front of tegulae (fig. 7); pronotum concave anteriorly (fig. 7); prepectal and postpectal carina completely absent (fig. 1); posterior flange of propleuron virtually absent (fig. 1); metapleural flange medium-sized and thick (fig. 1); notauli complete (fig. 7); precoxal sulcus only submedially shallowly impressed (fig. 1); scutellar sulcus deep and wide (fig. 7); scutellum smooth medio-posteriorly; propodeum with wide medial depression, without areola, medial carina and costulae (fig. 7); propodeal spiracle large, elliptical and near anterior margin of propodeum (fig. 1).

Wings. — Fore wing: vein M + CU1 largely unsclerotized; vein 1-SR oblique (fig. 4); marginal cell medium-sized, closed and narrowed distally (fig. 4); vein m-cu antefurcal and diverging from vein 1-M posteriorly (fig. 4); 2nd submarginal cell large; vein CU1b present; vein r medium-sized and oblique (fig. 4); vein r-m present and oblique; vein 1-CU1 horizontal; parastigma medium-sized (fig. 4). Hind wing: plical lobe wide and without incision apically (fig. 4); vein SC + R1 medium-sized and straight (fig. 4); vein 1r-m rather long (fig. 4); vein 2-CU long and sclerotized, directed posteriad (fig. 4); vein cu-a long, divided in a vertical and a subhorizontal part (fig. 4).

Legs. — Hind tarsus without ventral row of setae; spurs long (fig. 8); hind coxa rather large (fig. 1); apex of hind tibia without pegs.

Metasoma. — First tergite sessile, rather flat, somewhat depressed medially and laterally, without dorsope and dorsal carinae very strong lamelliform, and complete (fig. 10); 1st spiracle in front of middle of 1st tergite in its notum (fig. 1); laterope very deep and large (fig. 1); spiracles in epipleura of 2nd-7th tergites (fig. 1); ovipositor sheath wide, short, just protruding beyond metasomal apex and densely setose (fig. 1); hypopygium of ♀ slightly protruding apically and rather large (fig. 1).



Figs. 1-10, *Pselaphanus trogoideus* Szépligeti, ♀ (compared with holotype), Surinam, Zanderij. 1, habitus, dorsal aspect; 2, head, frontal aspect; 3, antenna; 4, wings; 5, apex of antenna; 6, head, frontal aspect; 7, mesosoma, dorsal aspect; 8, hind leg; 9, outer hind claw; 10, 1st-3rd metasomal tergites, dorsal aspect. 1, 3, 4, 8: scale-line (= 1 X); 2, 6, 7, 10: 1.3 X; 5, 9: 5 X.

Contains only the genus *Pselaphanus* Szépligeti, 1902 from Brazil (type-locality) and Surinam (Zanderij).

Systematic position. — Because of the presence of subpronope and epomia (fig. 1), diverging vein m-cu of fore wing (fig. 4), largely unsclerotized vein M + CU1 of fore wing, presence of vein 2-CU of hind wing, carinae of 1st tergite lamelliform, wide ovipositor sheath, shape of scapus (fig. 3) and of hind trochanter (fig. 8), it fits best in the Agathidinae. However, it is included in a new tribe because it differs by the medium-sized marginal cell of fore wing (narrow in the Agathidinae s.s.), the normal vein 1-SR of fore wing (absent or minute in Agathidinae s.s.), posterior part of vein cu-a of hind wing subhorizontal, 2nd submarginal cell of fore wing large (fig. 4), pronope present, occipital carina present laterally and prepectal carina absent (present in most Agathidinae s.s.). The Pselaphanini resemble large Cardiochilinae but are not closely related to this subfamily because 7th metasomal spiracle is present, vein 1-SR of fore wing oblique, vein CU1b of fore wing present and 1st spiracle in notum of 1st tergite. The new tribe is of interest because it forms an archaic group within the Agathidinae; *Pselaphanus* has many plesiomorphous character-states absent in the Agathidinae s.s.: e.g., presence of veins 1-SR and CU1b of fore wing, of occipital carina and pronope, large 2nd submarginal and marginal cells of fore wing. The Agathidinae s.s. are considered to form a single tribe, the Agathidini Foerster.

### ***Pselaphanus* Szépligeti**

(figs. 1-10)

*Pselaphanus* Szépligeti, 1902: 82.

Type-species, and only known species: *Pselaphanus trogoides* Szépligeti, 1902.

Description: Head. — Antennal segments 44-47 (♀); temples directly roundly narrowed (fig. 2); ocelli medium-sized (fig. 2); frons about flat, smooth, with lamelliform carina from antennal socket halfway to posterior ocellus and lateral of it shallowly depressed (figs 2, 6); vertex rather flat, only convex near stemmaticum and smooth; face weakly convex, medially somewhat elevated (fig. 6); anterior tentorial pits deep (fig. 6); clypeus rather flat; length of malar space about equal to basal width of mandible; malar suture absent.

Mesosoma. — Length of metasoma about 1.4 times its height; pleural suture coarsely crenulate (fig. 1); episternal scrobe narrow and rather deep (fig. 1); metapleuron smooth; mesoscutum largely smooth; metanotum

without medial carina (fig. 7); propodeum largely smooth (fig. 7).

Wings. — Fore wing: SR1 about 2.8 times as long as 3-SR, and about 4 times 2-SR (fig. 4); 2-R1 and 2A absent. Hind wing: cu-a long (fig. 4); M + CU about as long as 1-M; 2r-m absent; 2-M straight; marginal cell slightly constricted subbasally and parallel-sided posteriorly (fig. 4).

Legs. — Claws robust, with wide, rather acute lamella ventrally, longer than arolium and long setose only (fig. 9); length of inner tibial spur about 0.6 times hind basitarsus.

Metasoma. — Length of 1st tergite about equal to its apical width (fig. 10); 2nd tergite (and 3rd anteriorly) coarsely costate (fig. 10); 2nd suture rather deep and crenulate; metasoma somewhat compressed apically; setae mainly laterally, spread, and dorsally largely glabrous; length of ovipositor sheath about 0.1 times fore wing. Length of fore wing and of body about 10 mm.

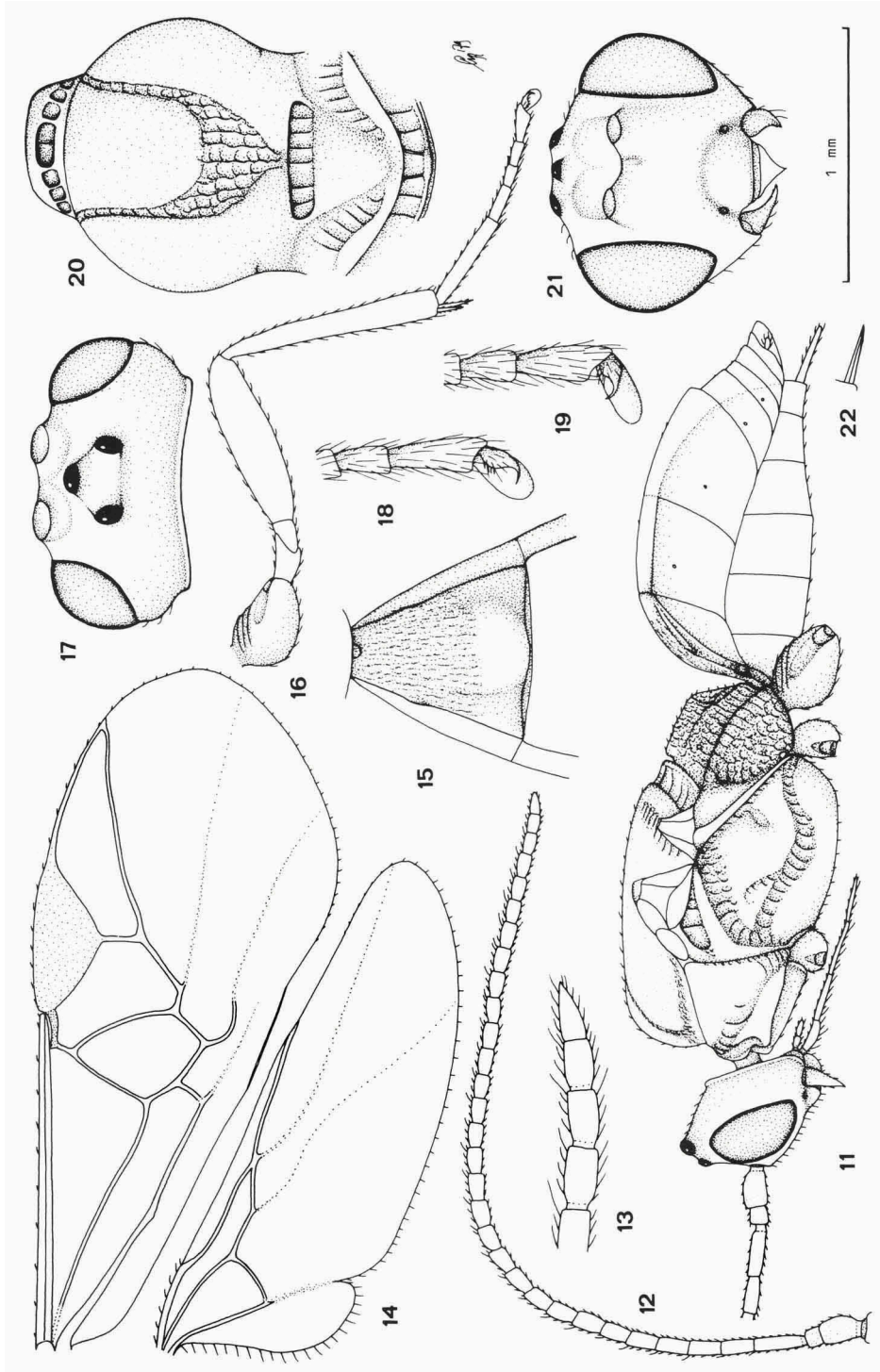
#### Subfamily **Ecnomiinae** nov.

Diagnosis: Head. — Apical antennal segment without apical spine (fig. 13); maxillary and labial palp 5- and 3-segmented, respectively; hypostomal carina distinctly joining occipital carina; occipital carina complete and lamelliform (figs 11, 17); eyes glabrous and not emarginate (fig. 21); apical margin of clypeus straight, thin and differentiated (fig. 21); epistomal suture rather shallow medio-dorsally (figs 11, 21); mandible strongly twisted.

Mesosoma. — Pronope large, deep and transverse (fig. 20); subpronope absent (fig. 11); lateral carina of mesoscutum absent in front of tegulae (fig. 11); pronotal sides angularly protruding antero-ventrally (fig. 11); prepectal carina complete (fig. 11); postpectal carina absent; propleuron with narrow posterior flange (fig. 11); metapleural flange small and thick; notauli and precoxal sulcus complete; scutellar sulcus deep and wide (fig. 20); scutellum smooth medio-posteriorly; propodeum with a very wide pentagonal areola and costulae complete; propodeal spiracle small, round and in front of middle of propodeum (fig. 11).

Wings. — Fore wing: vein M + CU1 sclerotized; vein 1-SR subvertical (fig. 14); marginal cell short, closed and robust (fig. 14); vein m-cu antefurcal and slightly converging to vein 1-M posteriorly; vein CU1b absent; vein r long and vertical; vein r-m absent; vein 1-CU1 oblique; parastigma medium-sized (fig. 14). Hind wing: plical lobe large, convex posteriorly and separated by a deep incision apically (fig. 14); vein SC + R1 very long and straight (fig. 14); vein 1r-m medium-sized (fig. 14).

Legs. — Hind tarsus with wide ventral row of setae; spurs moderately long



Figs. 11-22, *Ectromios papuensis* Mason, ♀, paratype. 11, habitus, lateral aspect; 12, antenna; 13, apex of antenna; 14, wings; 15, 1st metasomal

(fig. 16); hind coxa medium-sized (fig. 11).

Metasoma. — First tergite sessile, convex, without dorsope, and dorsal carinae absent or nearly so (fig. 15); 1st spiracle submedially in notum of 1st tergite (fig. 11); laterope deep and medium-sized (fig. 11); spiracles in epipleura of 2nd-7th tergites; ovipositor gradually narrowed and without notch (fig. 22); ovipositor sheath slender, short, hardly protruding beyond metasoma and sparsely setose (fig. 11); hypopygium of ♀ truncate apically and rather small (fig. 11).

Contains only the genus *Ecnomios* Mason, 1979 from New Guinea.

Systematic position. — Because of the absence of the posterior transverse scutellar depression, presence of occipital and prepectal carinae, rather shallow epistomal suture, robust and short marginal cell of fore wing, subvertical vein 1-SR of fore wing and absence of vein CU1b of fore wing, it comes somewhere between the Microgastrinae and Cheloninae (group IVa in Van Achterberg, 1984). Inclusion in the Orgilinae (as proposed by Mason) is inappropriate because the Orgilinae lack vein 1-SR of fore wing, have marginal cell of fore wing long and rather narrow, presence of vein CU1b of fore wing, convex face, large hind coxae and small plical lobe of hind wing. The best place for *Ecnomios* seems to be as a new subfamily halfway between the Cheloninae and Neoneurinae (fig. 17 in Van Achterberg, 1984). The most important differences with the last-mentioned sub-families are the presence of the 7th metasomal spiracle (lost in other subfamilies in fig. 17) and the autapomorphies: (1) vein r of fore wing long and vertical (fig. 14), and (2) pronotal sides protruding antero-ventrally (fig. 11). The loss of the 7th metasomal spiracle in the Cheloninae, and in the group of the Neoneurinae, Cardiochilinae, Khoikhoiinae and Microgastrinae is obviously a parallelism.

### ***Ecnomios* Mason**

(figs. 11-12)

*Ecnomios* Mason, 1979: 640-644, figs. 1-6.

Type-species, and only known species: *Ecnomios papuensis* Mason, 1979.

Description: Head. — Antennal segments 31-32 (♀); temples directly roundly narrowed behind eyes (fig. 17); ocelli medium-sized (fig. 17); frons smooth and shallowly concave; vertex convex and smooth; face rather flat; anterior tentorial pits deep (fig. 21); clypeus convex; length of malar space about 1.4 times basal width of mandible; malar suture absent.

Mesosoma. — Length of mesosoma about 1.8 times its height; pleural

suture distinctly crenulate (fig. 11); episternal scrobe wide and deep (fig. 11); metapleuron reticulate (except anteriorly, fig. 11); mesoscutum densely punctulate; metanotum without medial carina (fig. 20); propodeum open reticulate.

Wings. — Fore wing: SR1 about 3.5 times as long as 2-SR (fig. 14); 2-R1 and 2A absent. Hind wing: cu-a long (fig. 14); M + CU longer than 1-M; 2r-m absent; 2-M sinuate (fig. 14); marginal cell narrowed apically.

Legs. — Claws slender, basally widened, without lobe and shorter than arolium (figs 18, 19); length of inner tibial spur about 0.5 times hind basitarsus.

Metasoma. — Length of 1st tergite about equal to its apical width (fig. 15); 2nd tergite smooth; 2nd suture obsolescent and smooth; metasoma rather compressed apically; setae sparse, mainly in one row per tergite; length of ovipositor sheath about 0.1 times fore wing; length of fore wing and of body about 3 mm.

#### ACKNOWLEDGEMENTS

I wish to thank the late Dr. D.C. Geijskes (Oegstgeest), Dr. W.R.M. Mason (Ottawa), and Dr. J. Papp (Budapest) for providing types and additional material.

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Szépligeti, G., 1902. Tropische Cenocoelioniden und Braconiden aus der Sammlung des Ungarischen National-Museums. — Termész. Füz. 25: 39-84.

#### VI. The genera and subgenera of Centistini, with the description of two new taxa from the Nearctic region (Hymenoptera: Braconidae: Euphorinae)

Achterberg C. van: The genera and subgenera of Centistini, with the description of two new taxa from the Nearctic region (Hymenoptera: Braconidae: Euphorinae).

Zool. Med. Leiden 59 (27), 31-xii-1985: 348-362, figs. 1-49. — ISSN 0024-0672.

Key words: Braconidae; Euphorinae; Centistini; generic key; Nearctic region; *Litostolus* gen. nov.; *Anartionyx* subgen. nov.; *Centistes*.

*Litostolus* gen. nov. (type-species: *Litostolus brevitarsis* spec. nov.) and *Centistes* subgen.



*Anartionyx* nov. (type-species: *Centistes xanthosceles* spec. nov.) from the Nearctic region are figured and described. The new taxa belong to the tribe Centistini of which the genera and subgenera are keyed. *Leiophron lituratus* Haliday, 1835 is synonymized with *Allurus muricatus* (Haliday, 1833) syn. nov., and *Leiophron ater* Nees, 1834 with *Centistes (Ancylocentrus) excrucians* (Haliday, 1835) syn. nov.

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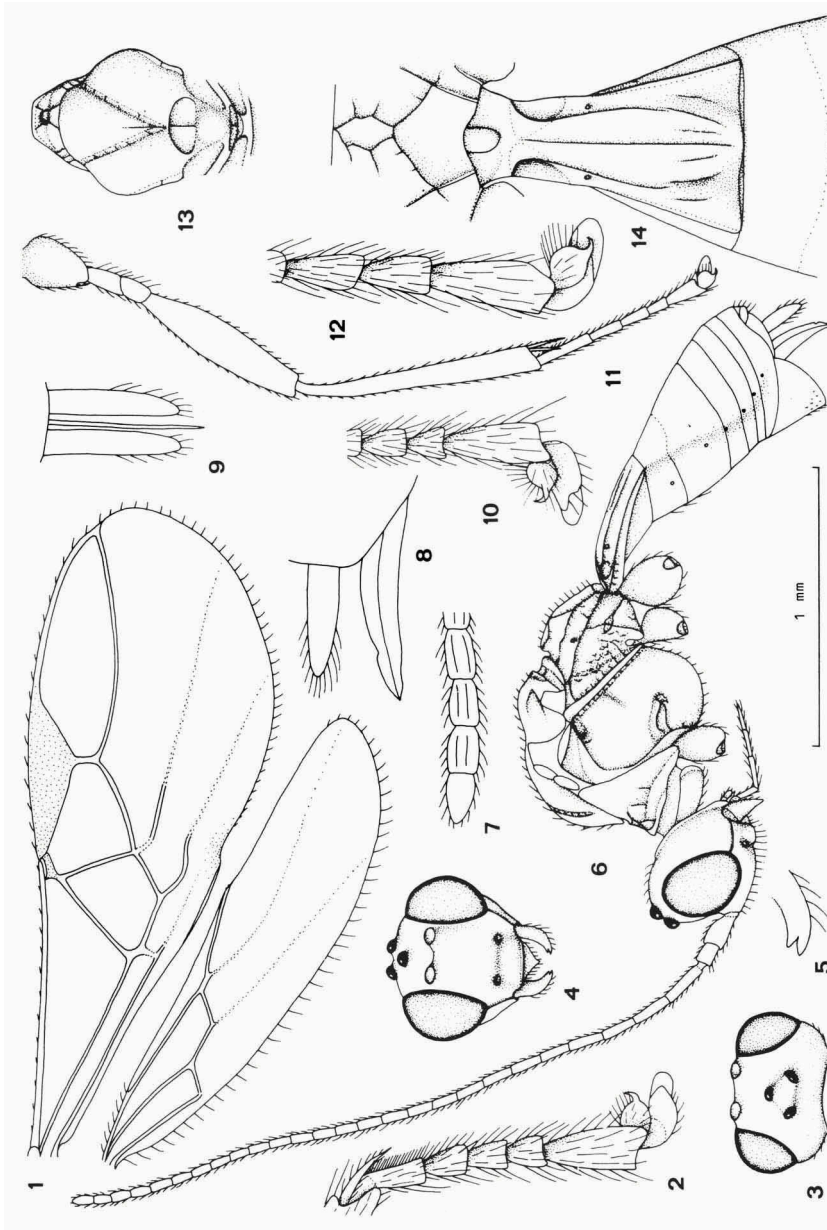
## INTRODUCTION

During my stay in the U.S.A. in 1976 I received generous hospitality from Henry and Marjorie Townes at Ann Arbor, Michigan. Among the Hymenoptera collected in this period I found two taxa of the Centistini, which seemed to be new species and did not fit into a known species-group. Dr. Scott R. Shaw (Cambridge, Mass.) kindly checked my conclusion and he agreed that both taxa were undescribed. The new genus *Litostolus* is closely related to *Spathicopsis* Van Achterberg, 1977. However, *Litostolus* has the lower valve of the ovipositor strongly compressed, vein 1-SR + M of fore wing present, the laterope absent and the precoxal sulcus reduced. The new subgenus *Anartionyx* subgen. nov. of the genus *Centistes* Haliday, 1835 differs from the other subgenera by the enlarged inner hind claw compared with the outer hind claw (especially of ♀: cf. figs. 20, 25).

## SYSTEMATIC PART

### Tribe **Centistini** Čapek

**Diagnosis.** — Antenna more or less situated between eyes (figs. 6, 16), no protuberance; scapus truncate apically and (rather) robust (fig. 16); maxillary palp with 6 segments, but both basal segments may be largely amalgamated (*Litostolus* gen. nov.); labial palp with 3 segments; occipital carina low dorsally, usually at the level of antennal sockets (fig. 6, but higher in subgen. *Anartionyx* nov., fig. 16); antennal sockets closer to eyes than to each other (fig. 4, 18); eyes glabrous; base of mandible normal, not V-shaped (figs. 6, 16); prepectal carina present; postpectal carina absent; pleural suture finely crenulate; propodeum with wide areola posteriorly (figs. 14, 27) or rugose only; propodeal spiracle small, round, and in front of middle of propodeum; vein CU1b of fore wing absent, marginal cell of fore wing wide, and long to rather short (figs. 1, 15); vein r more or less behind middle of pterostigma



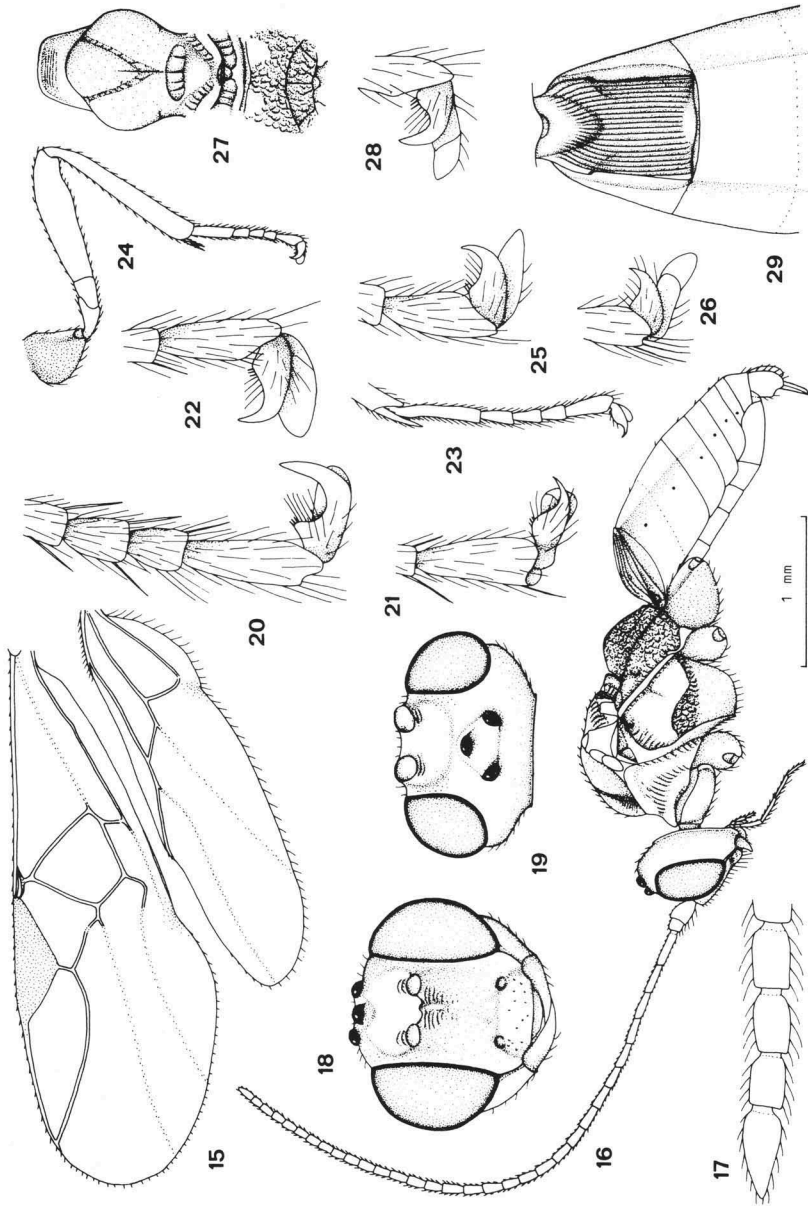
Figs. 1-14, *Litostolus brevitarsis* gen. et spec. nov., ♀, holotype. 1, wings; 2, fore tarsus; 3, head, dorsal aspect; 4, head, frontal aspect; 5, mandible, dorsal aspect; 6, habitus, lateral aspect; 7, apex of antenna; 8, ovipositor and its sheath, lateral aspect; 9, id., dorsal aspect; 10, middle claw; 11, hind leg; 12, outer hind claw; 13, thorax, dorsal aspect; 14, propodeum; 1st and 2nd metasomal tergites, dorsal aspect. 1, 3, 4, 6, 11, 13: scale-line (= 1 ×); 2, 5, 7-10, 12: 2.5 ×; 14: 1.5 ×.

(figs. 1, 15); parastigma medium-sized to small (figs. 1, 15, 30); plical lobe of hind wing narrow (fig. 1) or medium-sized (figs. 15, 30); vein cu-a of hind wing present and medium-sized or short (figs. 1, 30, 41); vein M + CU of hind wing much longer than 1-M; hind tarsus without distinct ventral row of setae; spiracle of 1st metasomal tergite submedial or in front of middle of tergite (figs. 33, 38); metasoma sparsely setose, mainly in rows; ovipositor sheath frequently widened (figs. 16, 32, 49).

Biology. — Parasites of final instar larvae and of adults of Curculionidae.

#### KEY TO THE GENERA AND SUBGENERA OF THE TRIBE CENTISTINI

1. Dorsope large (figs. 14, 33); length of ovipositor sheath at least 3 times its maximum width or more (figs. 6, 32, 44); vein M + Cu1 of fore wing completely sclerotized (figs. 1, 30)..... 2
  - Dorsope absent (figs. 29, 38); length of ovipositor sheath less than 3 times its maximum width (fig. 49); vein M + CU1 of fore wing largely reduced, unsclerotized, and only vaguely pigmented (fig. 44)..... 4
2. Mesosternum of ♀ very densely felty setose and flattened (fig. 32); tarsal claws normal and with medium-sized apical tooth (fig. 36); 1st tergite slightly or not dilated apically (fig. 33); tarsi densely covered with long setae ventrally (fig. 36); fore tarsal segments slender (fig. 40); ovipositor strongly compressed (like the blade of a knife, figs. 34, 35); vein 1-SR + M of fore wing present (fig. 30); apex of antenna with spine (fig. 31) ....
  - ..... *Pygostolus* Haliday
  - Mesosternum normally setose (not felty) and convex (fig. 6); tarsal claws robust and with short apical tooth (fig. 12, 42); 1st metasomal tergite distinctly dilated apically (figs. 14, 47); tarsi normally setose ventrally (fig. 12); fore tarsal segments stout (figs. 2, 42); ovipositor and vein 1-SR + M of fore wing variable; apex of antenna obtuse, without spine (fig. 7)...
    - ..... 3
3. Vein 1-SR + M of fore wing present (fig. 1); lower valve of ovipositor strongly compressed (figs. 8, 9); laterope absent (fig. 6); precoxal sulcus absent posteriorly (fig. 6) ..... *Litostolus* gen. nov.
  - Vein 1-SR + M of fore wing absent (fig. 41); lower valve of ovipositor somewhat depressed (figs. 45, 46); laterope present (fig. 44); precoxal sulcus present posteriorly (fig. 44) ..... *Spathicopsis* Van Achterberg
4. Hind coxa with a ventro-lateral tooth apically (fig. 49); tarsal claws bifurcate (fig. 37); 4th metasomal sternite of ♀ with pair of teeth (fig. 49); laterope comparatively small, usually hardly visible ... *Allurus* Foerster



Figs. 15-29. *Centistes* (subgen. *Anartionyx* nov.) *xanthosceles* spec. nov., ♀, holotype, but 22, 26, and 28 of ♂ paratype. 15, wings; 16, habitus, lateral aspect; 17, apex of antenna; 18, head, frontal aspect; 19, head, dorsal aspect; 20, inner hind claw of ♀; 21, inner fore claw of ♀; 22, outer hind claw of ♂; 23, fore tarsus; 24, hind leg; 25, outer hind claw of ♂; 26, inner fore claw of ♂; 27, metasoma, dorsal aspect; 28, inner hind claw of ♂; 29, 1st and 2nd metasomal tergites, dorsal aspect. 15, 16, 24: scale-line (= 1 ×); 17, 20-22, 25, 26, 28: 5 ×; 18, 19, 23, 29: 2 ×; 27: 1.1 ×.

- Hind coxa without tooth (fig. 16); tarsal claws with single apical tooth (fig. 25); ♀ without teeth on 4th sternite, only in some species a pair of teeth on 5th sternite; laterope large, easily visible (fig. 16); (*Centistes* Haliday s.l.) ..... 5
- 5. Vein 1-SR + M of fore wing (fig. 48) absent; notauli, and precoxal sulcus absent; metasoma without ventral teeth ... subgenus *Syrrhizus* Foerster
  - Vein 1-SR + M of fore wing present (fig. 15); notauli and precoxal sulcus often (partly) developed (fig. 16); metasoma sometimes with ventral teeth ..... 6
- 6. Precoxal sulcus not impressed; mesoscutum without trace of notauli anteriorly ..... subgenus *Centistes* Haliday
  - Precoxal sulcus (partly) impressed (fig. 16); notauli present anteriorly at mesoscutum, at least as faint trace (fig. 27) ..... 7
- 7. Inner hind claw much larger than fore claw (especially of ♀), hooked and larger than outer claw (cf. figs. 20, 25); vein 1-M of hind wing shorter than vein 1r-m (fig. 15); ovipositor sheath widened submedially (fig. 16) ..... subgenus *Anartionyx* nov.
  - Inner hind claw slightly larger than fore claw; inner hind claw of ♀ equal to its inner claw; vein 1-M of hind wing (sub)equal to vein 1r-m (cf. fig. 48); ovipositor sheath (sub)parallel-sided ..... subgenus *Ancylocentrus* Foerster

### **Pygostolus** Haliday

(figs. 30-36)

*Pygostolus* Haliday, 1833: 263; Van Achterberg, 1982: 137-138 (neotype designation of type-species).

Type-species: *Cryptus sticticus* Fabricius, 1798 (by monotypy).

Small, mainly Holarctic genus, but I have seen a specimen from the Neotropical region (Surinam). Unfortunately, the type of *Pygostolus sonorensis* Cameron, 1887 from Mexico could not be found in the British Museum (Natural History) and its status remains doubtful. Parasites of larvae and adults of Curculionidae. Haeselbarth (1971: 4-6) gives a key to the three described Palearctic species. The ♀♀ of this genus are at once recognizable by the felty setose and flattened mesosternum.

**Litostolus** gen. nov.

(figs. 1-14)

Type-species: *Litostolus brevitarsis* spec. nov.

Diagnosis. — Maxillary palp with 5 segments (but basal segment obviously composed of two amalgamated segments), labial palp with 3 segments, short (fig. 6); apex of antenna obtuse, without spine (fig. 7); occipital carina complete (except a narrow medio-dorsal interruption), joining hypostomal carina above base of mandible; occipital flange medium-sized (fig. 6); epistomal suture only medially present (fig. 4); malar suture deep (figs. 4, 6); prepectal carina complete and regular (fig. 6); mesosternum convex and normally setose (fig. 6); precoxal sulcus absent posteriorly (fig. 6); metapleural flange rather large and blunt (fig. 6); notauli complete (fig. 13); vein 1-SR + M of fore wing present (fig. 1); vein M + CU1 of fore wing sclerotized; plical lobe of hind wing narrow (fig. 1); vein 1-M of hind wing longer than vein 1r-m (fig. 1); tarsal claws robust and with short apical tooth (figs. 2, 10, 12); fore and middle tarsi short and their segments robust (figs. 2, 10); tarsi normally setose ventrally (fig. 12); dorsal surface of propodeum somewhat shorter than its posterior surface (fig. 6) and with areola anteriorly (fig. 14); 1st metasomal tergite dilated apically (fig. 14), its length about 1.4 times its apical width; dorsope large and deep (fig. 14); laterope absent (fig. 6); 2nd tergite smooth, hypopygium of ♀ large, truncate and punctate apically (fig. 6); ovipositor strongly compressed, nearby straight and with subapical notch (figs. 6, 8, 9); ovipositor sheath 3.7 times its maximum width, narrowed apically, parallel-sided (except apically) and its length about 0.1 times fore wing (fig. 6).

Etymology. — From “litos” (Greek for “plain, simple”) and “stolis” (Greek for “robe”) because of the simple garment of the mesosoma, compared with the genus *Pygostolus*. Gender: masculine.

**Litostolus brevitarsis** spec. nov.

(figs. 1-14)

Material. — Holotype, ♀: “U.S.A., Mich., Ann Arbor, 23-30. VIII. 1976, Malaise-traps, C. van Achterberg”. Deposited in the Rijksmuseum van Natuurlijke Historie, Leiden. Paratypes, 2 ♀: “Naushon Is., Elizabeth Is., Mass., VII.10.(19)71, C.T. Parsons”; 1 ♂: “Nashawena Is., Elizabeth Is., Mass., VIII.24.(19)71. Deposited in the Museum of Comparative Zoology at Cambridge (Mass.).

Description of holotype. — Length of body and fore wing 2.3 mm.

Head. — Antennal segments 28, length of 3rd segment 1.3 times 4th segment, length of 3rd, 4th and penultimate segments 4.7, 3.7 and 1.4 times their width, respectively (figs. 6, 7); length of maxillary palp 0.8 times height of head; length of eye in dorsal view 2.3 times temple (fig. 3); frons flat, smooth and glabrous; vertex smooth and glabrous, except a row of setae near eye; face smooth; clypeus smooth and convex; ventral margin of clypeus thin, differentiated and straight medially (fig. 4); length of malar space 1.4 times basal width of mandible.

Metasoma. — Length of metasoma 1.2 times its height; antescutal depression present as a horizontal cleft (fig. 6); side of pronotum smooth, except some rugae (fig. 6); anterior subalar depression rather shallow and smooth (fig. 6); pronope medium-sized and deep (fig. 13); only anterior half of precoxal sulcus developed and with few rugae (fig. 6); remainder of mesopleuron and scutellum smooth; mesoscutal lobes densely setose (except lateral lobes medially) and smooth; notauli finely and sparsely crenulate; propodeum with elliptical areola anteriorly, a very wide pentagonal areola posteriorly and rest smooth (fig. 14).

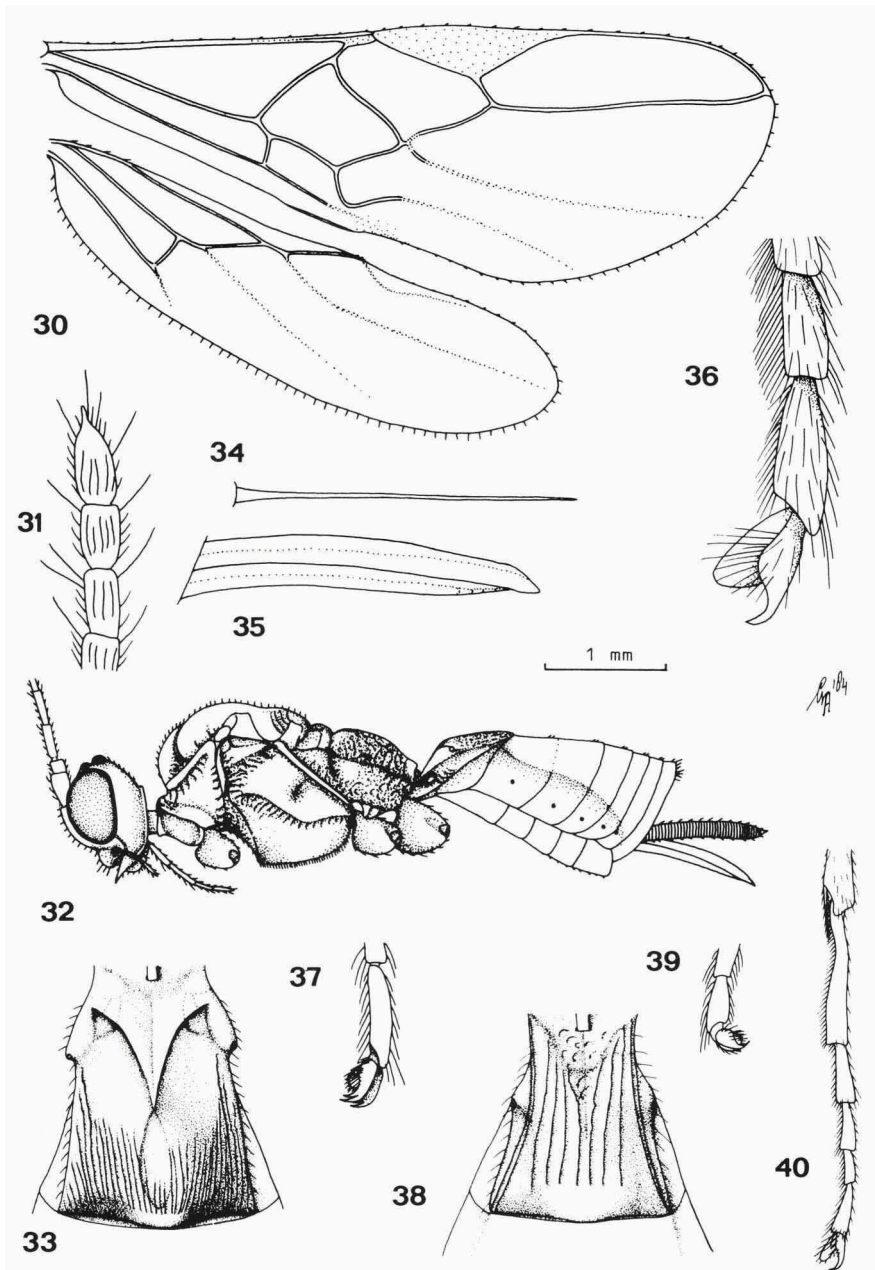
Wings. — Fore wing: 1-R1 (metacarp) ends rather close to wing apex (fig. 1); SR1 evenly curved; r wider than SR1 (fig. 1); 1-CU1 widened; 1-CU1:2-CU1 = 1:6; r:3-SR + SR1:2-SR = 5:51:23; 2-SR slightly bent (fig. 1); m-cu interstitial and converging to 1-m posteriorly (fig. 1).

Legs. — Hind coxa smooth; length of femur, tibia and basitarsus of hind leg 4.3, 9.2 and 5 times their width, respectively; length of hind tibial spurs 0.5 and 0.6 times hind basitarsus; inner apex of hind tibia with whitish comb.

Metasoma. — Length of 1st tergite 1.4 times its apical width, its surface largely smooth, with complete medial carina and dorsal carinae developed in basal 0.7 of tergite (fig. 14); medial length of 3rd tergite 1.3 times 2nd tergite; 2nd suture shallow and distinctly curved; length of ovipositor sheath 0.08 times fore wing.

Colour. — Brownish-yellow; antenna (but three basal segments yellowish), and stemmaticum, dark brown; tegulae, palpi and coxae, pale yellowish; pterostigma and most veins brown; wing membrane subhyaline.

Paratypes. — Females have antennae incomplete, length of fore wing 2.1-2.2 mm, length of ovipositor sheath 0.07-0.08 times fore wing, vein m-cu of fore wing subinterstitial or distinctly postfurcal, 3rd antennal segment largely dark brown or yellowish brown, and metasoma yellowish or infuscated apically. Male paratype has 24 antennal segments, length of fore wing 2 mm, hypopygium without punctation, and has 3rd and following tergites dark brown.



Figs. 30-32, 34-36, *Pygostolus sticticus* (Fabricius), ♀, neotype, Netherlands, Heerde. Fig. 40, id., but ♀ from Drijber. Fig. 33, *Pygostolus falcator* (Nees), ♀, Netherlands, Kemperberg. Fig. 37, *Allurus muricatus* (Haliday), ♀, Netherlands, Meijendel. Figs. 38, 39, *Centistes (Syrrhizus) delusorius* (Foerster), ♀, Netherlands, Lienden. 30, wings; 31, apex of antenna; 32, habitus, lateral aspect; 33, 38, 1st metasomal tergite, dorsal aspect; 34, ovipositor, dorsal aspect; 35, ovipositor, lateral aspect; 36, 37, 39, hind claw; 40, fore tarsus; 30, 32: scale-line (= 1 ×); 31: 5 ×; 33, 38: 3 ×; 34, 35: 2.7 ×; 36: 6.7 ×; 37, 39: 3.8 ×; 38: 4.7 ×; 40: 2 ×.



Etymology. — Named “brevitarsis” because of the short fore and middle tarsal segments.

**Spathicopsis** Van Achterberg  
(figs. 41-47)

*Spathicopsis* Van Achterberg, 1977: 27-31, figs. 1-9.

Type-species: *Spathicopsis flavocephala* Van Achterberg, 1977 (by monotypy).

The type-species is the only known species, and the biology is unknown. *S. flavocephala* is known from the Holarctic region (The Netherlands, Alaska, Michigan) and I have specimens from Zaïre which are probably conspecific.

**Allurus** Foerster  
(figs. 37, 49)

*Allurus* Foerster, 1862: 254.

Type-species: *Ancylus muricatus* Haliday, 1833 (= *Leiophron lituratus* Haliday, 1835, syn. nov.), by monotypy.

The type-species is the only known species, and has a Holarctic distribution. Parasites of adult Curculionidae.

**Centistes** Haliday

Subgenus **Syrrhizus** Foerster  
(figs. 38, 39, 48)

*Syrrhizus* Foerster, 1862: 254.

Type-species: *Syrrhizus delusorius* Foerster, 1862 (by monotypy).

Small subgenus with two species each in the Palaearctic and Nearctic regions. Parasites of adult Curculionidae.

Subgenus **Centistes** Haliday

*Centistes* Haliday, 1835: 462.

Type-species: *Ancylus cuspidatus* Haliday, 1833 (by monotypy).

Small subgenus, known from the Holarctic and Afrotropical regions (including Malagasy). Parasites of adult Curculionidae. Syn.: *Ancylus* Haliday, 1833 (nec Müller, 1774); *Liosigalphus* Ashmead, 1900; *L(e)iophron* auct. p.p.

Subgenus **Ancylocentrus** Foerster

*Ancylocentrus* Foerster, 1862: 254.

Type-species: *Ancylus excrucians* Haliday, 1835 (= *Leiophron ater* Nees, 1834, syn. nov.), by monotypy.

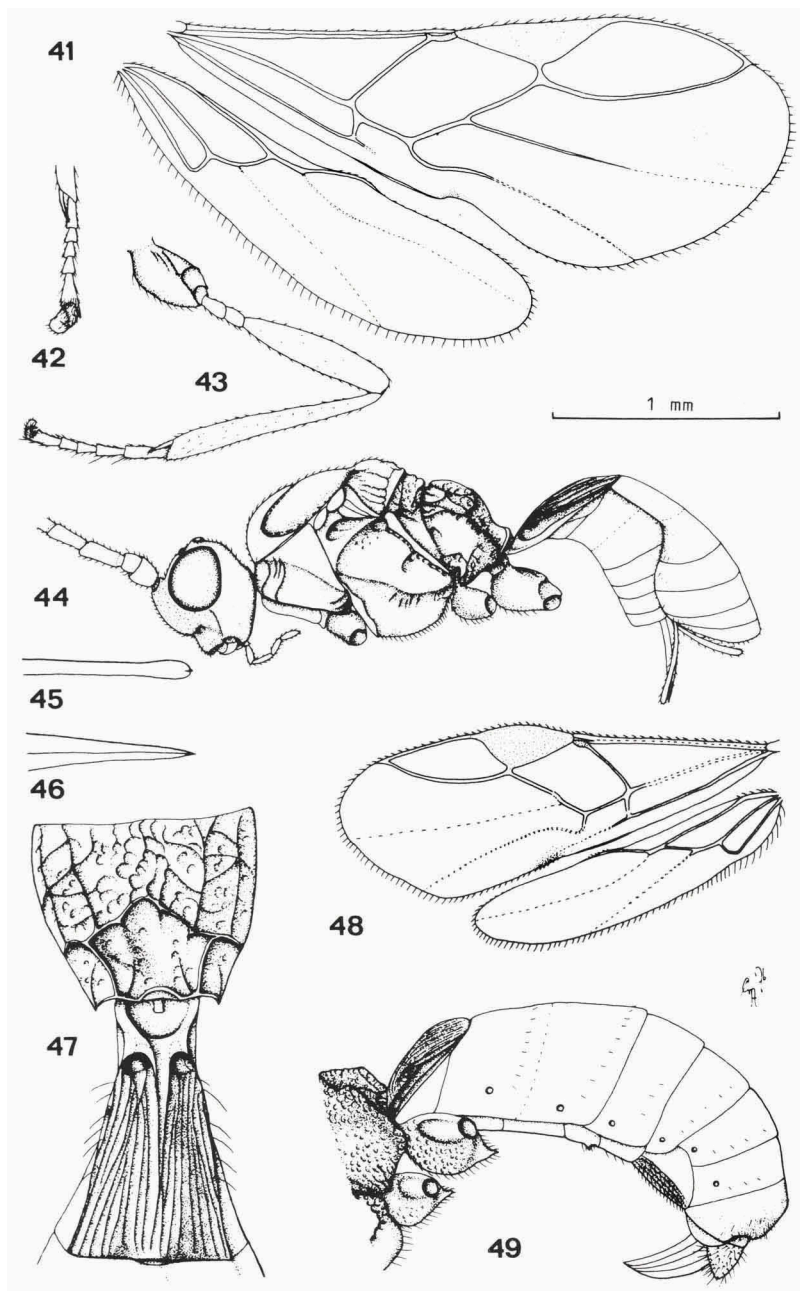
Small subgenus, known from the Holarctic, Neotropical and Afrotropical regions. Parasites of (adult) Curculionidae. Syn.: *Euphoridea* Ashmead, 1900.

Subgenus **Anartionyx** nov.

(figs. 15-29)

Type-species: *Centistes xanthosceles* spec. nov.

Diagnosis. — Maxillary palp with 6 segments, labial palp with 3 segments (fig. 16); apex of antenna without spine, obtuse (fig. 17); occipital carina complete, joining hypostomal carina above base of mandible; occipital flange present, rather small (fig. 16); epistomal suture shallow (fig. 18); malar suture deep (fig. 18); prepectal carina complete, rather weak and regular (fig. 16); mesosternum convex and normally setose; precoxal sulcus complete and rugose (fig. 16); metapleural flange thick and large (fig. 16); notauli complete (fig. 27); vein 1-SR+M of fore wing present; vein M+CU1 of fore wing unsclerotized (fig. 15); plical lobe of hind wing medium-sized (fig. 15); vein 1-M of hind wing shorter than vein 1r-m (fig. 15); tarsal claws slender, with single apical tooth (figs. 20, 22); inner hind claw much larger than fore claw (especially of ♀: figs. 20, 21, less in ♂: figs. 26, 28); inner hind claw (especially of ♀: fig. 20) hooked and larger than outer claw (fig. 25); hind coxa without ventral tooth (fig. 24); tarsi normally setose (fig. 20); fore tarsus slender (fig. 23), middle tarsus less slender than fore tarsus and hind tarsus rather robust



Figs. 41, 43-47, *Spathicopsis flavocephala* Van Achterberg, ♀, holotype, U.S.A., Alaska, King Salmon. Fig. 42, id., ♀, paratype, Netherlands, Wijster. Fig. 48, *Centistes (Syrrhizus) delusorius* (Foerster), ♀, Netherlands, Lienden. Fig. 49, *Allurus muricatus* (Haliday), ♀, Netherlands, Meijendel. 41, 48, wings; 42, fore tarsus; 43, hind leg; 44, habitus, lateral aspect; 45, ovipositor, dorsal aspect; 46, ovipositor, lateral aspect; 47, propodeum and 1st metasomal tergite, dorsal aspect; 49, metasoma, lateral aspect. 41-44, 49: scale-line (= 1 ×); 45-47: 2 ×; 48: 0.8 ×.

(figs. 20, 24); propodeum with weak medial carina, usually posteriorly only (fig. 27); dorsal surface of propodeum about as long as posterior surface medially (fig. 27); 1st metasomal tergite parallel-sided (fig. 29), its length about 1.5 times its apical width; dorsope absent; laterope deep (fig. 16); 2nd tergite smooth; metasoma without ventral teeth; hypopygium large, truncate and smooth apically (fig. 16); ovipositor compressed, somewhat widened, and without distinct notch (fig. 16); ovipositor sheath widened submedially, its length about 1.2 times its maximum width and rounded truncate apically (fig. 16); length of ovipositor sheath about 0.05 times fore wing.

Etymology. — From “anartios” (Greek for “uneven”) and “onyx” (Greek for “claw”), because of the unequal hind claws. Gender: masculine.

**Centistes (Anartionyx) xanthosceles** spec. nov.  
(figs. 15-29)

Material. — Holotype, ♀: “U.S.A., Mich., Ann Arbor, 23-30. VIII. 1976, Malaise-traps, C. van Achterberg”. Additionally two male paratypes, topotypic. Specimens deposited in the Rijksmuseum van Natuurlijke Historie, Leiden.

Description of holotype. — Length of body, and of fore wing 3.6 mm.

Head. — Antennal segments 33, length of 3rd segment 1.1 times 4th segment, length of 3rd, 4th and penultimate segments 3.5, 3.3, and 1.6 times their width, respectively (figs. 16, 17); maxillary palp as long as height of head; length of eye in dorsal view 2 times temple (fig. 19); frons shallowly concave, smooth but with some rugae near toruli and laterally setose and punctulate (fig. 19); vertex nearly flat and smooth; face punctulate and dorsally rugulose (fig. 18); clypeus flat and with some punctures (fig. 18); ventral margin of clypeus thin, not differentiated, and straight medially, length of malar space 0.8 times basal width of mandible.

Metasoma. — Length of metasoma 1.3 times its height; antescutal depression absent (fig. 16); side of pronotum medially and posteriorly rugose (fig. 16); anterior subalar depression with carina (fig. 16); pronope absent (fig. 27); precoxal sulcus completely rugose (fig. 16); mesopleuron above precoxal sulcus largely smooth, below it punctulate and long setose; scutellum rather convex and smooth; mesoscutal lobes setose and punctulate; notauli finely crenulate (fig. 17); propodeum largely densely rugulose, but antero-laterally largely smooth (fig. 27); posterior surface of propodeum with wide areola and rather weak costulae (fig. 27).

Wings. — Fore wing: 1-R1 ends distinctly before wing apex (fig. 15); SR1

evenly curved; r and 1-SR of normal width (fig. 15); 1-CU1 oblique and slender (fig. 15); 1-CU1:2-CU = 7:24; r:3-SR + SR1:2-SR = 6:79:25; 2-SR nearly straight; m-cu antefurcal and parallel to 1-M (fig. 15).

Legs. — Outer face of hind coxa finely densely punctate; length of femur, tibia and basitarsus of hind leg 3.7, 8.8, and 3.8 times their width, respectively; length of hind tibial spurs both 0.6 times hind basitarsus.

Metasoma. — Length of 1st tergite 1.4 times its apical width, its surface longitudinally striate (fig. 29) and without dorsal carinae; 2nd suture nearly absent; length of ovipositor 0.06 times fore wing.

Colour. — Dark brown or blackish; palpi, tegulae, legs (with middle and hind coxae darkened basally), scapus and pedicellus ventrally, vein C + SC + R of fore wing, veins of hind wing, and epipleuron of 1st metasomal tergite, yellowish; scapus and pedicellus brown dorsally; remainder of antenna (dark) brown; wing membrane hyaline; pterostigma and remainder of veins of fore wing dark brown.

Males. — Both paratypes are very similar to the holotype but the inner hind claw is less enlarged (fig. 28); one ♂ has complete antenna with 32 segments; inner hind claw with longer apical tooth than outer claw (cf. figs. 22, 28); propodeum with weak medial carina anteriorly in one paratype, in the other paratype costulae and medial carina obsolescent; length of 1st tergite 1.5-1.6 times its apical width; length of fore wing 2.7-3.1 mm; pronotal sides, mesopleuron near middle coxa, and metasoma (except 1st tergite) may be largely (dark) brown.

Etiology. — From “xanthos” (Greek for “yellow”) and “scelos” (Greek for “leg”), because of the yellowish legs.

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