

The genera *Allurus* Förster and *Asiacentistes* Belokobylskij in Taiwan (Hymenoptera: Braconidae, Euphorinae)

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The genera *Allurus* Förster and *Asiacentistes* Belokobylskij are recorded from Taiwan for the first time. A new species, *Allurus choui* sp. n. from Taiwan, is described and illustrated.

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The subfamily Euphorinae includes morphologically and biologically very diverse parasitoid wasps. The tribe Centistini is one of the specialized groups of euphorins, which has a wide and usually curved ovipositor often with various modifications of the ovipositor sheath and hypopygium. In the Palaearctic Region, this tribe includes six genera subdivided into two subtribes: Pygostolina (*Pygostolus* Haliday and *Spathicopsis* Achterberg) and Centistina (*Asiacentistes* Belokobylskij, *Centistes* Haliday, *Syrhryzus* Förster and *Allurus* Förster). Species of the tribe Centistini are solitary endoparasitoids of adults and (rarely) final instar larvae of beetles from the families Curculionidae, Chrysomelidae, Staphylinidae, Carabidae and Coccinellidae.

In this paper, two genera from subtribe Centiscina, *Allurus* Förster (with one new species) and *Asiacentistes* Belokobylskij, are recorded from Taiwan for the first time.

The terms of wing venation are used as defined by Belokobylskij and Tobias (1998). The following abbreviations are used in the text for morphological terms: POL, postocellar line; OOL, ocular-ocellar line; Od, maximum diameter of lateral ocellus; for institutions: TARI – Taiwan Agriculture Research Institute (Wufeng, Taiwan); ZISP – Zoological Institute, Russian Academy of Sciences (St.Petersburg, Russia).

Genus *Allurus* Förster, 1862

Allurus is a Holarctic genus with two hitherto known species parasitising adults of the curculionid beetles of the genus *Sitona* (Shenefelt, 1968; Tobias, 1986). The rare *A. muricatus* (Haliday) having distinct paired teeth on the third metasomal sternite was only recorded in the West

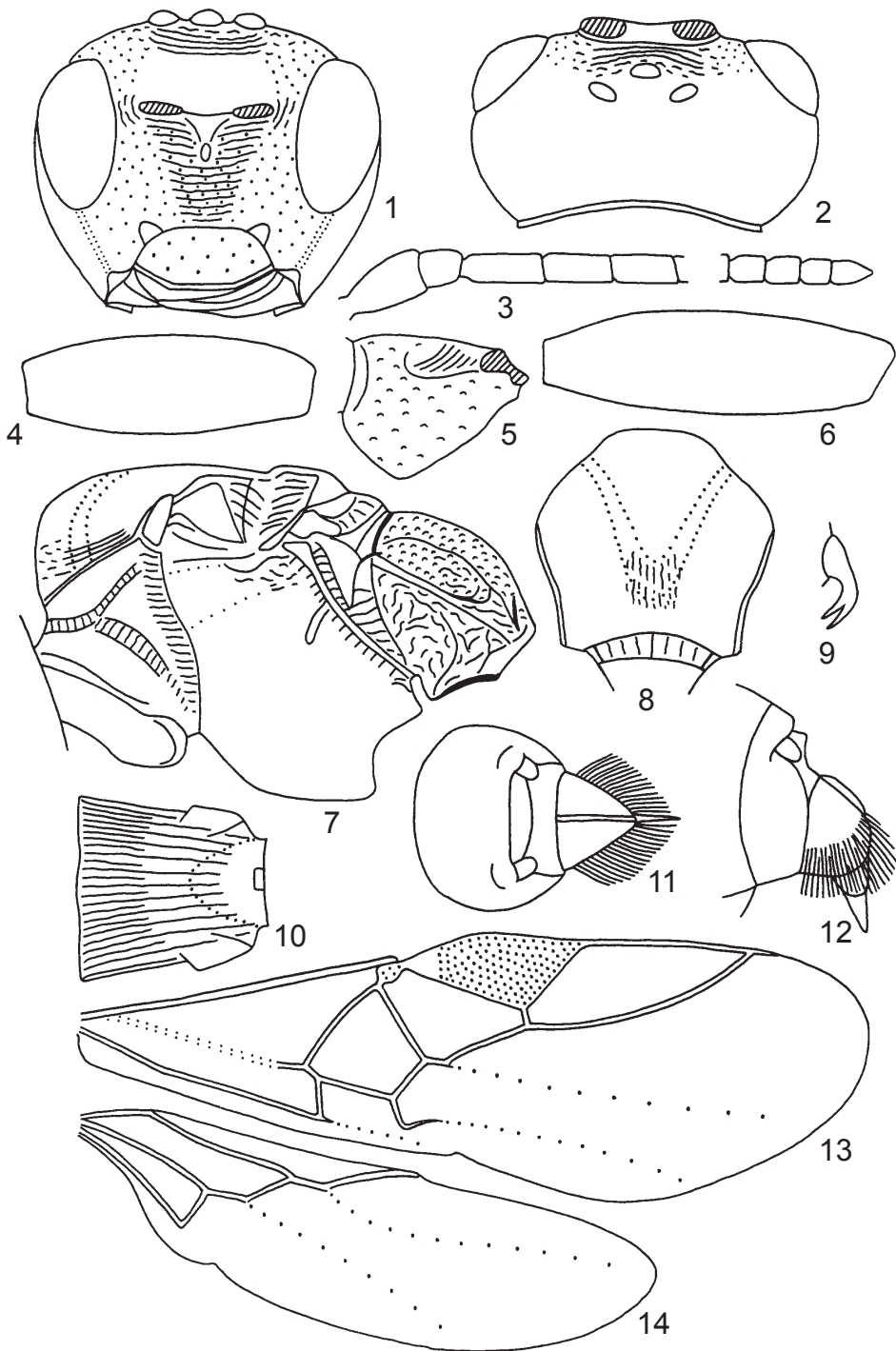
Palaearctic (Shenefelt, 1969; Tobias, 1986; Belokobylskij, 2000). The second species, *A. lituratus* (Haliday), is widely distributed throughout the Palaearctic and also recorded from North America (Shenefelt, 1969; Achterberg, 1985; Belokobylskij, 2000). In the East Palaearctic, the latter species is distributed along the southern border of Russia, but is unknown from the neighbouring countries (continental China, Mongolia, Korea, Japan). In this paper, the genus *Allurus* with a new species and *A. lituratus* is recorded for the first time from Taiwan.

Allurus choui sp. n. (Figs 1-14)

Holotype: ♀, Taiwan, "C. Taiwan: Tsuifeng, 2300 m, Nantou Hsien, V.1984, K.S. Lin & K.C. Chou, Malaise trap" (TARI).

Paratypes. 3 ♀, same label as in holotype (TARI, ZISP); 1 ♀, 4 ♂, "C. Taiwan: Meifeng, 2150 m, Nantou Hsien, 19-21.IV.1983, K.C. Chou & S. P. Huang" (TARI, ZISP).

Description. Female. Body length 3.1-4.2 mm; fore wing length 2.9-3.6 mm. Head width 1.9-2 times its median length, 1.1 times width of mesoscutum (without tegulae). Head widest at level of anterior third of temple; behind eyes, widened in anterior half, distinctly and almost linearly narrowed in posterior half (dorsal view); transverse diameter of eye 0.75-0.8 times length of temple (0.6-0.7 times, if measured on straight line). Ocelli in triangle with base 1.5-1.6 times its sides; POL 2-2.2 times Od, 0.9 times OOL. Eye glabrous, 1.7-1.8 times as high as broad. Cheek height about 0.3 times eye height, almost equal to basal width of mandible. Face width almost equal to eye height, 1.4-1.6 times height of face. Clypeus weakly convex, its width 2-2.2 times its maximum height, 0.75 times width of



Figs 1-14. *Allurus choui* sp. n. (female, holotype). 1, head, frontal view; 2, head, dorsal view; 3, basal and apical segments of antenna; 4, fore femur; 5, hind coxa; 6, hind femur; 7, mesosoma, lateral view; 8, mesoscutum, dorsal view; 9, inner claw of hind tarsus; 10, first metasomal tergite; 11, apical part of metasoma, posterior view; 12, apical part of metasoma, lateral view; 13, fore wing; 14, hind wing.

face. Distance between tentorial pits 2.3-2.5 times distance from pit to eye. Subocular suture distinct. Hypostomal flanges distinct and pointed. Mandible distinctly, but not strongly twisted.

Antennae thick, filiform, 28-30-segmented. First flagellar segment 2.3-2.5 times as long as its apical width, 1.2-1.3 times as long as second segment. Penultimate segment 1.2-1.3 times as long as wide, 0.4-0.6 times as long as first and 0.4-0.5 times as long as apical segment.

Mesosoma 1.4-1.5 times as long as high. Mesoscutum almost entirely setose, glabrous at narrow or very narrow area posteriorly. Notauli complete, but shallow (sometimes very shallow), almost smooth. Prescutellar depression deep, rather short, with 5 carinae, smooth, 0.20-0.35 times as long as scutellum. Scutellum weakly convex. Sternauli absent.

Wing. Fore wing 2.7-2.8 times as long as wide. Radial cell distinctly shortened; metacarpus (within radial cell) 0.9 times as long as pterostigma, 1.5-1.7 times as long as distance from apex of radial cell to apex of wing. Radial vein arising behind middle of pterostigma. First radial abscissa 0.08-0.10 times second abscissa; the latter weakly regularly curved. First radiomedial vein 4.8-5 times first radial abscissa, 1.7-1.8 times recurrent vein. Recurrent vein distinctly antefurcal. Discoidal cell shortly petiolate anteriorly. Distance from nervulus to basal vein 0.6-0.7 times nervulus length. In hind wing, second abscissa of medocubital vein 0.25-0.30 times first abscissa, 0.8-1.0 times basal vein.

Legs. All femora thickened. Fore femur 2.7-2.8 times as long as wide. Hind femur 3.3-3.4 times as long as wide. Hind tarsus 0.8-0.9 times as long as hind tibia; its second segment 0.45-0.5 times as long as first segment, 0.7 times as long as fifth segment (without pretarsus). Claws robust, split apically.

Metasoma. First tergite strongly widened from base to basal 1/4-1/5, then weakly and linearly widened to apex, with spiracular tubercles in basal third. Apical width of first tergite 1.1-1.3 times its width at level of spiracles; its length 0.85-1 times its apical width. Combined length of second and third tergite 1.5-1.6 times basal width of second tergite. Second suture absent. Hypopygium simple. Sternites without processes. Ovipositor sheath short, wide, thick, distinctly narrowed toward apex, rounded apically, almost entirely covered with dense, erect, white hairs; hair length 0.3-0.5 times maximum width of sheath. Length of sheath 1-1.4 times its maximum width, 0.3-0.4 times length of first tergite.

Sculpture. Vertex and temple finely punctulate; frons densely punctulate, with distinct curved striae medioposteriorly; face finely and densely striate-punctulate. Sides of pronotum smooth,

narrowly crenulate submedially and posteriorly. Mesonotum finely punctulate. Mesopleura smooth. Propodeum densely rugulose-reticulate, without carinae. Hind coxa densely and finely punctulate, shortly striate dorsally. First metasomal tergite entirely and coarsely striate. Other tergites smooth.

Colour. Body black. Antennae dark reddish brown, paler ventrally. Palpi yellow. Legs light reddish brown; all coxae black or dark brown. Wings faintly infuscate. Pterostigma brown, pale basally.

Male. Body length 2.4-2.6 mm; fore wing length 2.9 mm. Antennae weakly setiform. First metasomal tergite narrow, narrowly smooth medially; its length 1.2 times apical width. Otherwise similar to female.

Discussion. This new species is similar to *A. lituratus* (Haliday) and differs in the sculptured frons, shallow and almost smooth notauli, absence of sternauli, entirely and densely rugulose-reticulate and lacking carinae propodeum, more strongly shortened radial cell, shape of first tergite, and dark coxae.

Etymology. The new species is named in honour of the late Dr. Liang-Yih Chou, well-known Chinese braconidologist and collector of the type material of this species.

Allurus lituratus (Haliday)

Haliday, 1835: 461 [*Leiophron (Ancylus)*]; Shenefelt, 1969: 7; Achterberg, 1985: 357 [as synonym of *A. muricatus* (Hal.)]; Belokobylskij, 2000: 276.

Material. **Taiwan**: 6 ♀, 6 ♂, "C. Taiwan: Tsuifeng, 2300 m, Nantou Hsien, 12-14.IX.1984, K.S. Lin & S.C. Lin"; 1 ♂, same locality, 25-27.VI.1981 (K.S. Lin & W.S. Tang); 1 ♂, same locality, VI.1984, Malaise trap (K.S. Lin & K.C. Chou); 2 ♂, same label, but IX.1984; 8 ♂, same label, but VII.1984; 3 ♂, same locality, 1-3.IX.1982 (L.Y. Chou & K.C. Chou); 1 ♂, same locality, 2300-2500 m, 21.VI.1979 (K.S. Lin & B.H. Chen); 2 ♀, "C. Taiwan: Meifeng, 2150 m, Nantou Hsien, 7-9.V.1981, K.S. Lin & S.C. Lin"; 1 ♀, 3 ♂, same locality, 26.VIII.1980 (K.S. Lin & C.H. Wang); 6 ♂, same locality, 24-26.VI.1981 (K.S. Lin & W.S. Tang); 1 ♂, same locality, 20-22.VI.1979 (K.S. Lin & B.H. Chen); 1 ♂, same locality, 15.VII.1982 (S.C. Lin & C.N. Lin); 1 ♂, same locality, 5-9.X.1980 (C.C. Chen & C.C. Chien); 1 ♂, same locality, 2250 m, 31.VII-2.IX.1982 (L.Y. Chou & K.C. Chou); 1 ♂, "C. Taiwan: Tayuling, 2560 m, Hualien Hsien, 10-15.IX.1980, Malaise trap, K.S. Lin & C.H. Wang".

Hosts. *Sitona lineatus* L., *S. crimitus* Hbst., *S. inops* Schühn. (Curculionidae).

Distribution. Ireland, England, Belgium, France, Sweden, Germany, Finland, Lithuania, Moldova, Ukraine, Armenia, Azerbaijan, Kazakhstan, Russia (European part, S. Urals, Altai, E. Siberia, Far East), Taiwan (new record), Canada.

Key to Taiwanese species of *Allurus*

1. Sternauli absent. Notauli shallow and almost smooth. Radial cell of fore wing distinctly shortened; metacarpus 0.9 times as long as pterostigma. Propodeum without transverse carina. Frons sculptured almost entirely. Body length 2.4-4.2 mm . . . **A. choui** sp. n.
- Sternauli distinct and crenulate. Notauli deep and crenulate. Radial cell of fore wing weakly shortened; metacarpus 1.1-1.2 times as long as pterostigma. Propodeum with more or less distinct transverse carina. Frons smooth almost entirely. Body length 2.3-4.0 mm **A. lituratus** (Haliday)

Genus *Asiacentistes* Belokobylskij, 1995

Belokobylskij, 1995: 293; Chen & Achterberg, 1997: 20; Chen et al., 2001: 167.

A small East Asian genus with unknown biology. The type species, *A. alekseevi* (Belokobylskij), is rather widely distributed in the south of the Russian Far East, Korea, Japan and Central China (Belokobylskij, 2000). The recently described second species of this genus, *A. sinicus* Chen & Belokobylskij (Chen *et al.*, 2001), was recorded from China (Zhejiang Prov.) only, but the author has seen a specimen of this species from South Korea (Dr Ku collection).

***Asiacentistes alekseevi* (Belokobylskij)**

Belokobylskij, 1992: 204 (*Centistes*); 1995: 294; 2000: 249; Chen & Achterberg, 1997: 20.

Material. Taiwan: 1 ♂, “C. Taiwan: Sungkang, 2100 m, Nantou Hsien, 15-17.VIII. 1984, K.C. Chou”; 1 ♀, some locality, X.1984, Malaise trap (K.S. Lin & K.C. Chou); 1 ♀, “C. Taiwan, Tsuifeng, 2300 m, Nantou Hsien, VIII.1984, Malaise trap, K.S. Lin & K.C. Chou”; 1 ♀, “C. Taiwan: Meifeng, 2150 m, Nantou Hsien, 7-9.V.1981, T. Lin & S.C. Lin”.

Distribution. Russia (Primorsk Terr.), China (Zhejiang, Taiwan), Korea, Japan (Honshu).

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