

The Cephenniini (Coleoptera, Scydmaenidae) of Vietnam

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Abstract The paper presents the first record of the occurrence of the Cephenniini (Coleoptera, Scydmaenidae, Scydmaeninae) in Vietnam. Twenty six new species of *Cephennodes* Reitter are described, and a new subgenus of *Cephennodes*, *Aculeodes* subgen. nov., is established. The species described are: *C. (Aculeodes) atuin* sp. nov. (designated as the type species of *Aculeodes*), *C. (Cephennodes) antennatus* sp. nov., *C. (C.) apicalis* sp. nov., *C. (C.) bos* sp. nov., *C. (C.) bubalus* sp. nov., *C. (C.) buceros* sp. nov., *C. (C.) depressifrons* sp. nov., *C. (C.) langbiananus* sp. nov., *C. (C.) longulus* sp. nov., *C. (C.) lustricollis* sp. nov., *C. (C.) minusculus* sp. nov., *C. (C.) mustacifrons* sp. nov., *C. (C.) nasalis* sp. nov., *C. (C.) obesus* sp. nov., *C. (C.) patellatus* sp. nov., *C. (C.) pseudopatellatus* sp. nov., *C. (C.) punctifrons* sp. nov., *C. (C.) saetosus* sp. nov., *C. (C.) sulcatifrons* sp. nov., *C. (C.) tanvienus* sp. nov., *C. (C.) trisaonus* sp. nov., *C. (Fusionodes) elongatus* sp. nov., *C. (F.) lateralis* sp. nov., *C. (F.) nanos* sp. nov., *C. (F.) pseudolateralis* sp. nov., and *C. (F.) tamdaonus* sp. nov. Diagnostic characters of all new taxa are given and discussed, and illustrations of the habitus, aedeagi and other selected features are presented. Female terminalia in *Cephennodes* are described and illustrated for the first time, and a novel morphological structure (provisionally named a median sclerite), previously not known in the genus, is described.

Key words: Coleoptera, Scydmaenidae, Scydmaeninae, Cephenniini, *Cephennodes* Reitter, new species, Oriental Region, Vietnam.

Introduction

Beetles belonging to the staphylinoid family Scydmaenidae inhabiting vast areas of SE Asia remain relatively poorly studied. One of the tribes, the Cephenniini, has been nearly completely neglected by most authors interested in this region in the past. Vietnam can be given as an example of a country potentially very rich in species, where proper faunistic surveys focused on the Scydmaenidae have never taken place. As a result, less than 30 species in five genera representing three tribes (Cyrtyoscydmini, Scydmaenini and Clidicini) have been recorded from Vietnam. Despite an abundance of the Cephenniini in all subtropical moist forests throughout SE Asia, no members of this interesting tribe have been known to occur in Vietnam. This paper provides

a record of the cephenniine species collected during faunistic surveys carried out in 1995, 1997, 1999, 2002, and 2003 by the second author, mostly in the northern part of Vietnam (provinces Lao Cai, Ha Tai, Ninh Binh, Vinh Phu, Lai Chau, Hoa Binh, and Cao Bang), with additional sampling in one central (Thua Thien-Hue) and one southern (Lam Dong) provinces. Slightly more than 200 specimens of the Cephenniini were collected, belonging to merely two genera, *Cephennodes* Reitter and *Cephennomicrus* Reitter (= *Neseuthia* Scott). Unfortunately, highly interested representatives of the latter genus, generally rare in SE Asia, turned out to be females. In this genus species are very difficult to identify on the basis of external characters, and only examination of the aedeagus ensures certain determination. Therefore, the female specimens

collected must remain undescribed. Among the relatively abundant and diverse materials representing the genus *Cephennodes*, males belonging to 26 distinct morphospecies were found, and examination of the aedeagi (used in this genus as primary diagnostic structures) confirmed their status as separate taxa and new species different from all remaining congeners known from other areas. These species are described below. A highly unusual modification of the female terminal abdominal segments (i.e., the ovipositor) was found in one species, which prompted an analysis of the female terminalia within the genus, and resulted in establishing a new subgenus of *Cephennodes*.

All specimens listed in the descriptive part of this paper were provided with red and yellow printed labels with species names, names of the describers, dated 2007, and printed respectively "HOLOTYPE" or "PARATYPE" depending on the status of the specimen. All holotypes will be in future deposited in the Institute of Ecology and Biological Resources, Hanoi, Vietnam (IEBR). The National Museum of Nature and Science, Tokyo (NSMT) remains a temporary repository at the time of publication. Paratypes are preserved in IEBR, NSMT and the private collection of the first author (PCPJ). The nomenclature related to body parts, classification of the aedeagi, and conventions adopted for measurements follow that from Jałoszyński (2007a).

Taxonomy

Genus *Cephennodes* Reitter

Cephennodes Reitter, 1883: 420, type species: *Cephennodes simonis* Reitter, 1883 (monotypy).

Chelonoidum Strand, 1935: 285 (replacement name for *Chelonoides* Croissandeau); synonymized with *Cephennodes* s. str. by Jałoszyński (2007a).

Chelonoides Croissandeau, 1894: 418 (as subgenus of *Cephennium*; preoccupied, not Hitchcock), type species: *Cephennium turgidum* Reitter, 1877 (monotypy).

Coatesia Lea, 1915: 230; type species: *Coatesia lata* Lea, 1915: 230 (monotypy); synonymized with *Cephennodes* s. str. by Jałoszyński (2008).

Diagnostic characters of this genus were given and thoroughly discussed in a previous paper (Jałoszyński, 2007a). Briefly, species belonging to *Cephennodes* can be recognized by the oval body with typically a semicircular pronotum with sides confluent or nearly confluent with sides of the elytra; mandibles with a broad basal part with the cutting edge and a separated, very slender and curved apical part specialized in piercing; the maxillary palpomere IV short and subconical; compact antennae thickening toward apices, with variously developed but usually indistinctly delimited club; pair of lateral ante-basal pits on the pronotum; procoxae separated by a narrow but very long prosternal process with its apex curved posteriorly; distinct subhumeral lines on the basis of the elytra; and six visible abdominal sternites. The body size ranges from slightly below 1 mm up to ca. 2.3 mm, with the majority of species falling within 1–1.5 mm. The pigmentation is brown, ranging from light to very dark shades, and in some cases reaching nearly black, especially on the head and pronotum. The body is covered with not very dense, but sometimes very long setae; species with extremely short vestiture like that found in some *Cephennomicrus* are not known. Eyes are large, coarsely faceted and strongly convex in most of species, but in a few cases they tend to be somehow reduced (but anophthalmous species have not been found so far). Recently a wide variety of male secondary sexual characters was reported to occur in this otherwise morphologically uniform genus (Jałoszyński, 2007a; b). Such modifications are most often located on the frons and vertex, where various carinae, tubercles or impressions can be found. Modified antennae, elytra (especially apices), legs, metaventriles and abdominal sternites are also known, making *Cephennodes* morphologically the most diverse genus within the tribe. Species with such modifications also occur in Vietnam and they are described below.

Cephennodes currently includes only the nominotypical subgenus and subgen. *Fusionodes* Jałoszyński (Jałoszyński, 2007a, c). Due to very

uniform external morphology, only structures of the aedeagi have been used to divide *Cephennodes* into subgenera, and female diagnostic subgeneric characters are not known (Jałoszyński, 2007a). Subgenus *Cephennodes* has always free parameres inserted at an orifice located near base of the median lobe; subgenus *Fusionodes* has the parameres largely, or even completely fused to the walls of the median lobe, so that typically only short apical parts are recognizable. Moreover, the dorsal orifice in this subgenus is located near middle of the median lobe, never at the base. Species belonging to both subgenera occur in Vietnam; subgenus *Cephennodes* is more common and includes more species than subgenus *Fusionodes*, which is a similar phenomenon as that found in China (Jałoszyński, 2007a, b) and in other regions of SE Asia (Jałoszyński, unpublished observations).

A single species with an unusual female terminalia was found among the studied specimens. The ovipositor contains a novel structure not known in any other studied species of the Cephenniini, and it is so different from homologous organs found (but never described) so far in *Cephennodes*, that this species must be separated from the congeners and placed in a new subgenus (*Aculeodes* subg. nov.).

Subgenus *Aculeodes* subg. nov.

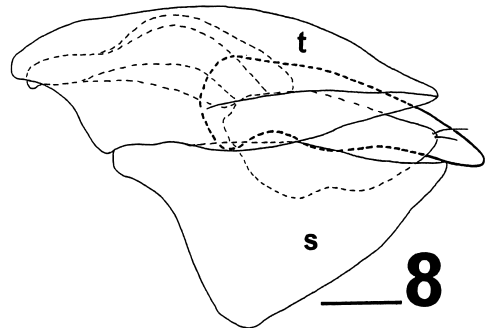
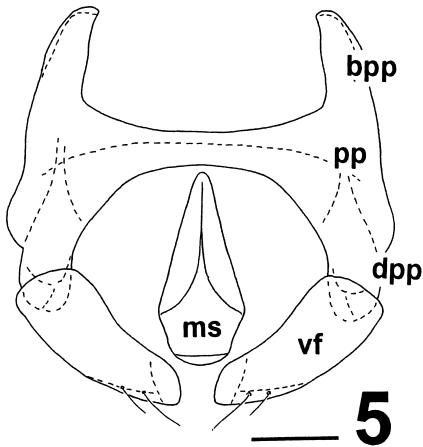
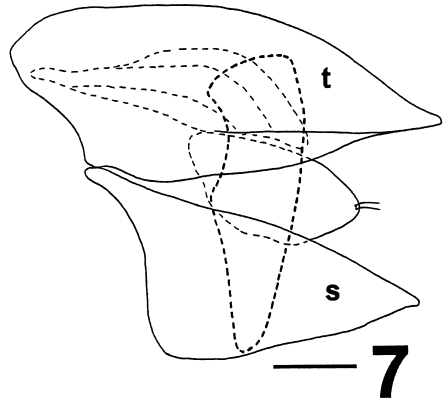
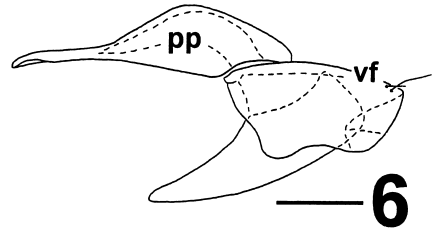
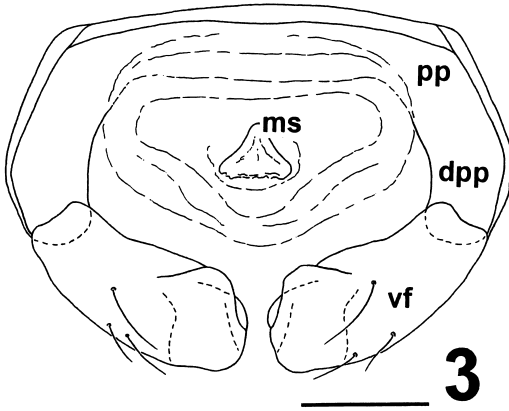
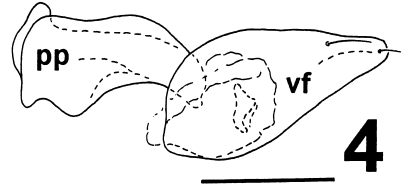
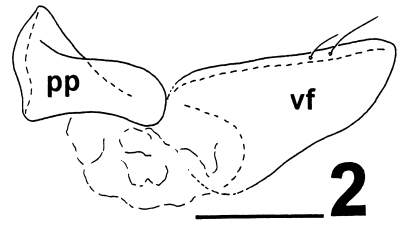
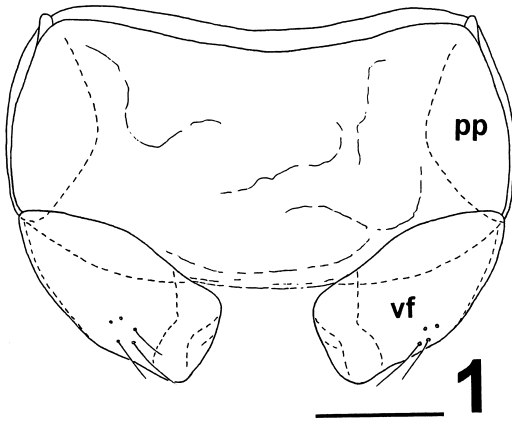
Type species. Cephennodes atuin sp. nov.

Etymology. After the Latin *aculeus*, meaning “a sting”; the name refers to the internal sclerite found in the ovipositor of the type species of the genus. Gender: masculine.

Diagnosis. Ovipositor with each paraproct bearing long basal and shorter distal process, and with funnel-like median sclerite with its slant, broad end directed posteriorly, and opening on dorsal side. All other characters agree with those of subgenus *Cephennodes*.

Remarks. The ovipositor of the type species of this subgenus seems to be strongly derived, with modified paraprocts (each with a very long basal

process and a shorter distal one) and a funnel-like, dark median structure of uncertain homology. The ovipositor is unique and alone justifies a separate placement of *C. atuin* in a new subgenus. In most species of *Cephennodes* studied so far, the ovipositor is similar to that shown in Figs. 1–2 (here referred to as the trisaonus-type, after the name of the species selected as an example), with fused, broad paraprocts and large valvifers. It seems to entirely lack the coxites, which may be completely reduced or fused with valvifers (coxites are small but well distinguishable in the *Cyrtoscydmini*), and the proctiger is indistinguishable. However, a lightly sclerotized, membranous median structure can be seen, which in another studied species, *C. sulcatifrons*, bears in middle a triangular, darker and well delimited plate (Figs. 3–4; the *sulcatifrons*-type). Interestingly, in this case valvifers articulate to distal projections of paraprocts, a condition similar to that found in *Aculeodes* (Figs. 5–6; the *atuin*-type). The ovipositor of the latter species with its large median sclerite and long projections of paraprocts may be a derived form of the *sulcatifrons*-type. The median sclerite (Fig. 14) is a unique structure, it is a darkly sclerotized funnel located in middle of the ovipositor, with its closed, pointed tip directed anteriorly in a resting position inside the abdomen (Fig. 6). The broader, proximal end is slant and open, directed dorsally (Fig. 6), and its dorsal surface bears a longitudinal suture (Fig. 5). The sides of the broad end are gradually thinned and fused to membranes (Fig. 14). During preparation, several females were found with the median sclerite flipped to various extent, up to 180°, so that the pointed tip, moving downwards and posteriorly, reached the genital opening and protruded from the tip of the abdomen (Figs. 7–8). It is not a proof for such a process occurring in living beetles, but this observation suggests that such a flipping movement is at least possible. Following this line of reasoning, it can be speculated that the hard and pointed tip of the funnel can be used during oviposition to prepare a suitable pit or a chamber in a hard substrate to accommodate an egg. Only observa-



tions of female behavior can provide firm data to verify this hypothesis. The peculiar paraprocts with long projections (which seem to increase a mobility of valvifers) may indeed represent a structural adaptation for laying eggs in a substrate different than other species of the genus.

Other characters of *Aculeodes* are similar to those found in the remaining subgenera, including the diagnostic features of the genus as the prosternal process narrow but long and curved posteriorly (Figs. 10–11, compare with Fig. 49 showing *C. patellatus* sp. nov.), moderately broad mesoventral process (Fig. 10), and similarly narrow metaventral process (Fig. 10); mandibles with its basal part specialized for cutting and the apical part used for piercing (Fig. 12), and the elytron with a single basal pit filled with setae, provided with the subhumeral line, and the humeral denticle (Fig. 13). The maxillary palps (Fig. 18) are unusually slender in the type species of *Aculeodes*, especially the palpomere IV is longer than that found in most members of subgenus *Cephennodes* and *Fusionodes*, but it is still subconical and relatively small compared to the palpomere III.

***Cephennodes (Aculeodes) atuin* sp. nov.**

(Figs. 5–18, 37)

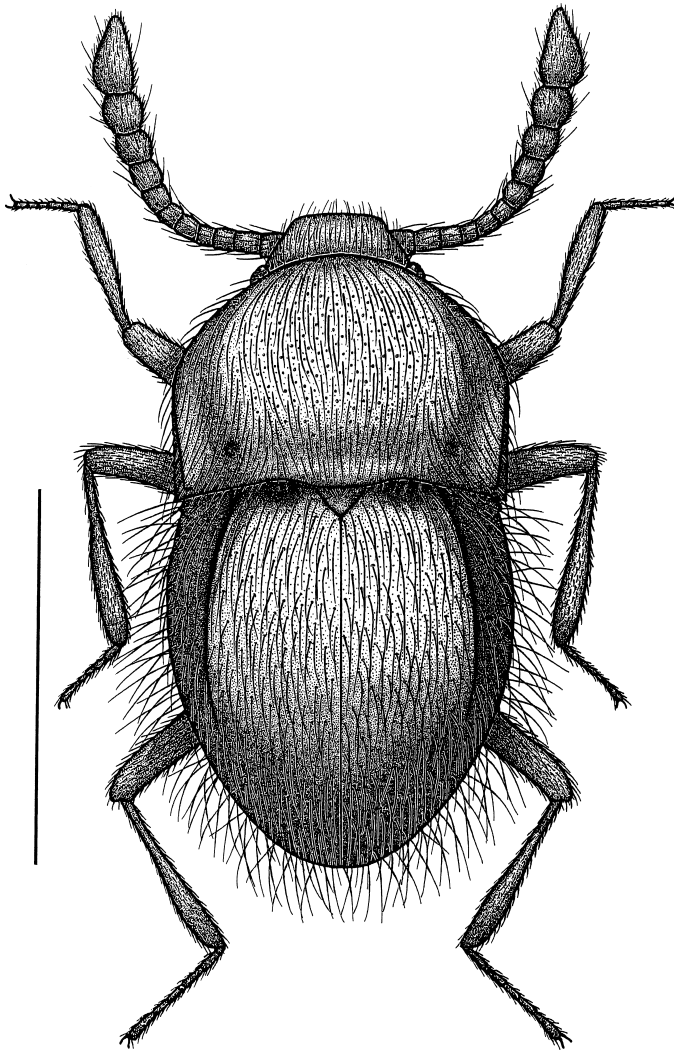
Diagnosis. Very slender maxillary palps with palpomere IV about twice as long as broad at base; unique, asymmetrical apical structures of aedeagus; and ovipositor with unique darkly sclerotized, conical median structure and paraprocts each with long basal and distal process are key characters of this species.

Description. Male (Figs. 9, 37). Body large, elongate, strongly convex, dark brown with light brown setation, length 1.82–2.02 mm (mean 1.91 mm). Head (Fig. 12) moderately large, length 0.25–0.27 mm (mean 0.255 mm), width 0.45–

0.47 mm (mean 0.455 mm); vertex and frons regularly convex, vertex with pair of extremely small tubercles; supraantennal tubercles distinct, but with diffused margins; eyes large, strongly convex. Vertex and supraantennal tubercles covered with large, deep and sharply marked punctures distributed unevenly, separated one from another by spaces from slightly shorter to slightly longer than puncture diameters, punctures on anterior part of frons and clypeus are slightly denser, relatively large median area in holotype is impunctate, in other males this region is variable in size and in some cases bears a few punctures, but is always well distinguishable from surrounding, densely punctate areas. Setation moderately long and dense, suberect. Mouthparts with particularly long and slender maxillary palps (Fig. 18), which bear very long terminal palpomere. Antennae moderately long, compact, with five terminal antennomeres covered with coarse microgranulation, length 0.82–0.90 mm (mean 0.88 mm); antennomere I about 1.5x as long as broad, II minimally narrower but longer than I, about 1.7x as long as broad; III only slightly narrower than II but much shorter, distinctly shorter than broad; IV–VI barely noticeably increasing in width, each about as long as broad; VII slightly broader than VI, about as long as broad; VIII slightly broader and longer than VII, slightly longer than broad; IX slightly broader and longer than VIII, about as long as broad; X slightly larger than IX; XI as broad as X, as long as IX–X together.

Pronotum nearly semicircular, broadest at base or equally broad from middle to hind angles, length 0.57–0.62 mm (mean 0.59 mm), width 0.85–0.90 mm (mean 0.87 mm). Anterior margin broadly rounded; lateral margins rounded in anterior half, from about middle nearly straight or slightly convergent posteriorly, distinctly serrate, in some cases with indistinct constriction just an-

Figs. 1–8. Female terminalia in *Cephennodes*. 1–2. Ovipositor of *Cephennodes trisaonus* sp. nov. in dorsal (1) and lateral (2) views. 3–4. Ovipositor of *C. sulcatifrons* sp. nov. in dorsal (3) and lateral (4) views. 5–8. Ovipositor of *C. atuin* sp. nov. in dorsal (5) and lateral (6–8) views, with median sclerite in natural position (5–6) and partly (7) or entirely (8) flipped. Scale: 0.05 mm; bpp—basal projection of paraproct; dpp—distal projection of paraproct; ms—median sclerite; pp—paraproct; s—sternite; t—tergite; vf—valvifer.

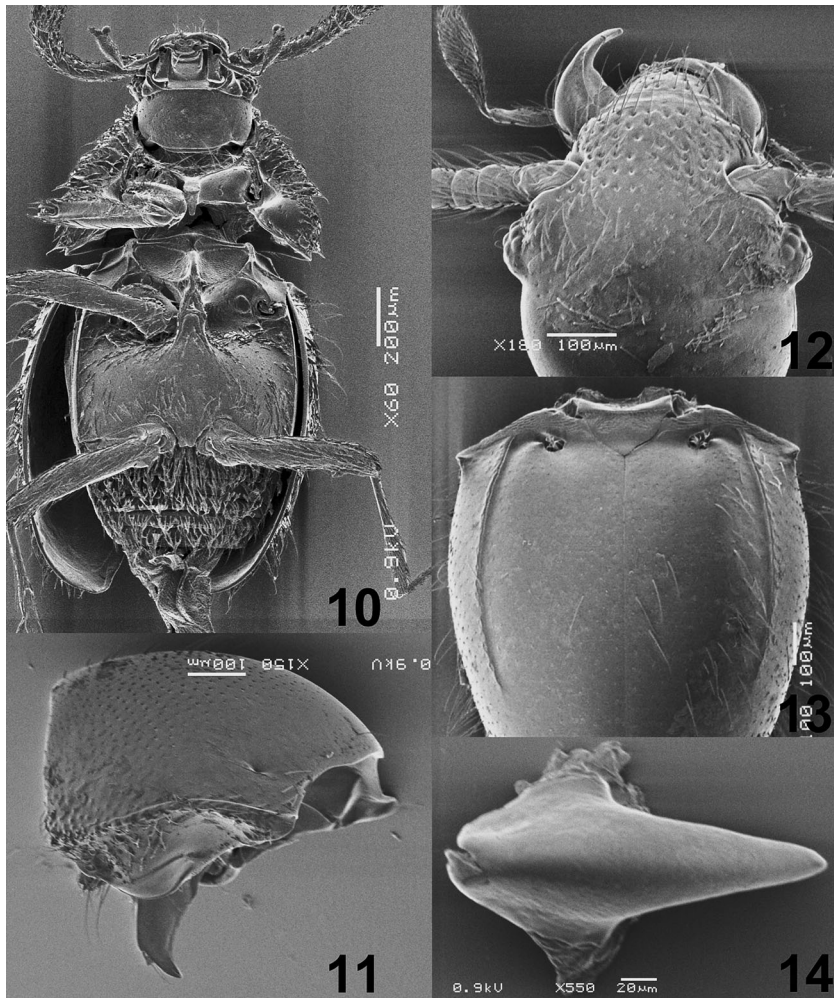


Figs. 9. Dorsal habitus of *Cephennodes atuin* sp. nov. Scale: 1 mm.

terior to hind angles, which are sharp; posterior margin deeply biemarginate; lateral ante-basal pits shallow, much closer to posterior than to lateral margins; lateral carinae not separated from lateral margins, broad at hind angles, distinctly narrowing toward middle, running further anteriorly as very narrow thickenings of lateral margins. Punctuation in central part of pronotum composed of small and relatively shallow but well delimited punctures separated one from another by spaces equal to or slightly longer than puncture diameters, punctures are distinctly smaller and shallower toward base of pronotum and relatively

broad median area along posterior margin appears impunctate, punctures near each front angle much larger and denser than those in middle. Setation moderately long and dense, suberect.

Elytra oval, as convex as pronotum, broadest distinctly anterior to middle, length 1.00–1.12 mm (mean 1.06 mm), width 0.85–0.95 mm (mean 0.89 mm), EI (i.e., elytral index; length divided by combined width) 1.18. Subhumeral lines (Fig. 13) as long as 0.6x length of elytra, very distinctly carinate; apices of elytra separately rounded. Punctuation slightly sparser than that



Figs. 10–14. *Cephennodes atuin* sp. nov. Habitus of male in ventral aspect (10); prothorax in left lateral view (11); head in dorsal view (12); base of elytra in dorsal view (13); median sclerite of ovipositor in ventral view (14).

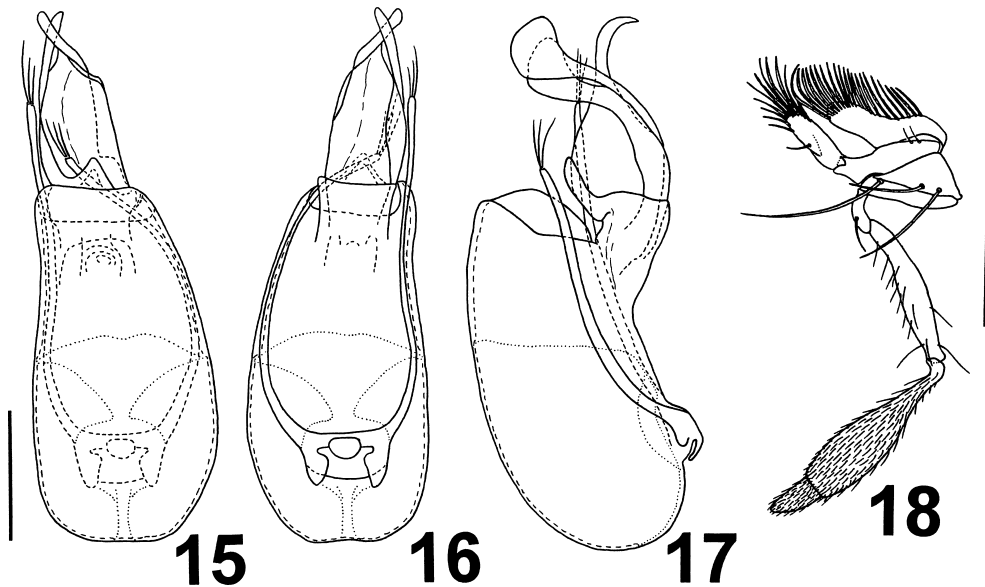
on pronotum and composed of much smaller, but relatively sharply marked punctures becoming less distinct toward apex and sides of elytra; setation similar to that on pronotum but slightly longer and more erect. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Aedeagus (Figs. 15–17) very large, 0.82 mm in length, highly modified *latus*-type, with slightly asymmetrical median lobe and long, strongly asymmetrical apical complex of projections, in lateral view composed of curved dorsally apical

hook and curved ventrally flattened sclerite broadened and rounded at apex. Parameres very slender, only slightly asymmetrical, each with three apical setae, and with bases provided with pair of subtriangular projections.

Female. Externally indistinguishable from males; body length 1.82–2.00 mm (mean 1.89 mm), length of head 0.25–0.27 mm (mean 0.25 mm), width of head 0.45–0.47 mm (mean 0.45 mm), length of antennae 0.82–0.87 mm (mean 0.85 mm), length of pronotum 0.60–0.67 mm (mean 0.62 mm), width of pronotum 0.82–0.87 mm (mean 0.85 mm), length of elytra 0.97–1.05



Figs. 15–18. *Cephennodes atuin* sp. nov. Aedeagus in ventral (15), dorsal (16) and lateral (17) views; right maxilla in ventral view (18). Scale: 0.2 mm.

mm (mean 1.01 mm), width of elytra 0.85–0.87 mm (mean 0.86 mm), EI 1.15–1.20.

Ovipositor (Figs. 5–8, 14) composed of fused pair of paraprocts, each bearing long basal and shorter distal process; valvifers relatively slender, each with two subapical setae; and funnel-like median structure with its slant, broad end directed posteriorly and opening on dorsal side.

Distribution. Central Vietnam, Thua Thien-Hue Prov.

Material. Holotype male, white printed label “Mt. Bach Ma (1,300 m), T. T. Hue Prov., [C-VIETNAM], 8. v. 2003, S. Nomura leg. Paratypes: 10 males, 9 females, same data as holotype; 3 males, 5 females, same data except for 6. v. 2003; 2 males, 3 females, same data except for 9. v. 2003; 4 males, 6 females, same date except for 10. vi. 2002; 3 males, 7 females, same data except for 11. vi. 2002.

Etymology. “A’Tuin” is a name of a giant turtle supporting the world on its back in the Terry Pratchett’s *Discworld* novel series; the name refers to the large body of the new species and a generally “turtle-like” appearance typical for the entire genus.

Subgenus *Cephennodes*

This subgenus consists of six distinct species groups established for Chinese and Japanese species: *impressifrons*-, *inflatipes*-, *taurus*-, *longipes*-, *excavatus*-, and *pullatus*-groups (Jałoszyński, 2007, b). However, most known species do not show characters unique enough to include them into any of these groups; this classification is preliminary and its purpose is to highlight several possible evolutionary tendencies or lineages that can be seen at this (very early) stage of the study on *Cephennodes*, when still the number of recorded and described species represents only a minor fraction of the actual diversity.

Members of the *impressifrons*-, *inflatipes*-, and *longipes*-groups were found in Vietnam. Three new species show unique male dimorphic characters, and a new species group is established herein to accommodate them.

The *bos*-group

Three remarkable species of *Cephennodes* with a strongly modified antennomere III were

discovered in Vietnam during the present study. Together with another undescribed species from China mentioned by Jałoszyński (2007a), they all match characters given by Makhan (2006) for his "*Cephegnodes aschnae*". Unfortunately, most species described by this author are impossible to identify due to very brief descriptions typically lacking proper diagnoses and sometimes containing misleading characters. The problem concerning the Chinese species "*C. aschnae*" was discussed in details in a previous paper (Jałoszyński, 2007a), where this name was treated as *nomen dubium*. The Vietnamese species described below share very similar external characters, and their aedeagi are also very similar one to another, but minor differences are stable and distinct enough to distinguish them (and to discriminate from the above-mentioned Chinese species that remains undescribed). Moreover, they have been collected in different provinces, each on a mountain peak, at altitudes from 950 to 1450 meters. Females are known for two of these species; they are wingless, suggesting rather limited dispersal capabilities of local populations. The Chinese species studied by the first author is more different from all three Vietnamese members of this group than the latter differ one from another. It seems highly improbable that any of the Vietnamese species is conspecific with *C. aschnae*. The group shows some extraordinary characters that may be important for reconstructing phylogeny of the genus, and they should not be left unrecorded, regardless of whether *C. aschnae* will ever be properly redescribed and diagnosed or this name will eventually be suppressed. As *C. aschnae* is maintained as *nomen dubium*, the species group takes its name after *C. bos* newly described below.

The set of unique characters defining this interesting lineage is as follows: the antennomere III of males strongly modified, with a very long, subtriangular dorsal projection, the surface of the projection proximal to the base of antenna is convex, whereas the opposite, distal surface is concave; the antennal club is very indistinctly delimited, so that antennae appear to be rather gradual-

ly thickened toward apex; frons of males modified, expanded anteriorly; vertex bears median longitudinal line composed of fine and dense punctures; body large; and the aedeagus of the *simonis*-type, but with two groups of short setae in subapical area of the dorsal wall of the median lobe.

***Cephegnodes (Cephegnodes) bos* sp. nov.**

(Figs. 19, 20, 25–30, 38)

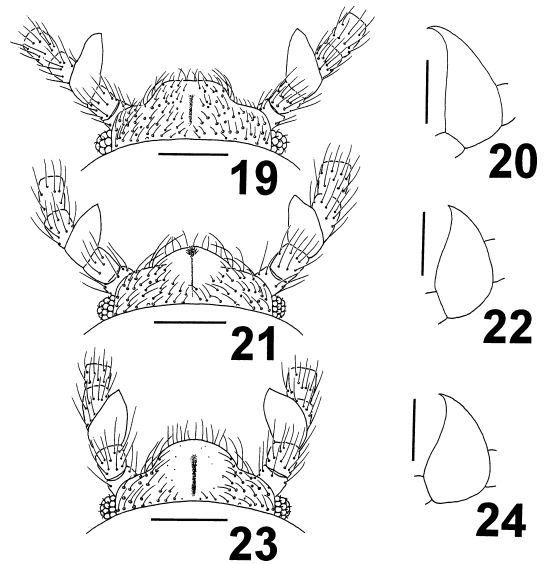
Diagnosis. Males of this species can be distinguished from the remaining members of the group by very long antennomere VII, which is about twice as long as broad; subtrapezoidal shape of frontal expansion, which in dorsal view has nearly straight anterior margin; frons and vertex densely punctate except for narrow area along each side of broad median longitudinal line composed of fine punctures; and projection of antennomere III very long, in lateral view its apical part is particularly narrow and strongly curved. Females can be identified by direct comparison with males, preferably when collected together.

Description. Male (Fig. 38). Body large, very convex, stout but with distinct constriction between pronotum and elytra, dark brown with light brown setation, body length 2.09–2.22 mm (mean 2.17 mm). Head (Fig. 19) very large, length 0.27–0.30 mm (mean 0.29 mm), width 0.52–0.55 mm (mean 0.54 mm); vertex convex, with pair of tiny tubercles, frons in posterior part slightly impressed, in anterior part expanded anteriorly, in dorsal view expansion is broadly subtrapezoidal, with nearly straight anterior margin; supraantennal tubercles small, moderately raised; eyes moderately large, strongly convex. Punctuation and setation of head as in Fig. 19. Antennae long and relatively slender but compact, length 1.12–1.15 mm (mean 1.13 mm); five terminal antennomeres are covered with fine, mat microsculpture and form very indistinctly delimited, slender club; antennomere I about 1.2x as long as broad; II slightly narrower and distinctly shorter than I, about as long as broad; III strongly modi-

fied, slightly longer than II, with very long, subtriangular dorsal projection as in Fig. 20; IV–VI subequal in length and width, each about 1.2x as long as broad; VII only minimally broader than VI but much longer, about twice as long as broad; VIII broader but shorter than VII, about 1.2x as long as broad; IX broader and longer than VIII, about 1.2x as long as broad; X yet larger, about 1.2x as long as broad; XI minimally broader than X and much shorter than IX–X together.

Pronotum broad, very convex in middle and steeply sloping toward slightly flattened sides and strongly flattened hind angles, broadest near middle, length 0.70–0.75 mm (mean 0.72 mm), width 0.97–1.00 mm (mean 0.99 mm). Anterior margin broadly rounded, lateral margins rounded in anterior half and nearly straight in posterior half, barely noticeable convergent toward nearly straight hind angles, finely serrate; posterior margin relatively shallowly biemarginate; lateral ante-basal pits very small compared to large pronotum, located much closer to posterior than to lateral margins (distance from pit to lateral margin is about twice as long as that to posterior margin); lateral carinae barely recognizable, not separated from lateral margins. Punctuation on central part of pronotum relatively dense but composed of small and shallow, but sharply marked punctures separated one from another by variable spaces, mostly slightly to distinctly longer than puncture diameters, punctures in posterior part of disc becoming gradually finer and shallower, moderately broad area along posterior margin remains impunctate, large area adjacent to each front angle bears very dense, rough but shallow punctures only slightly larger than those in middle; setation moderately dense, relatively short, suberect.

Elytra broadly oval, distinctly less convex than central part of pronotum, broadest between middle and anterior third, length 1.12–1.17 mm (mean 1.16 mm), width 1.00–1.05 mm (mean 1.00 mm), EI 1.11–1.12. Subhumeral lines as long as ca. 0.4x length of elytra, distinctly carinate, slightly curved; apices of elytra separately rounded. Punctuation in median part of anterior



Figs. 19–24. Head in dorsal view (19, 21, 23) and right antennomere III in lateral view (20, 22, 24) of *Cephennodes bos* sp. nov. (19–20), *C. bubalus* sp. nov. (21–22), and *C. buceros* sp. nov. (23–24). Scale: 19, 21, 23–0.2 mm; 20, 22, 24–0.1 mm.

half of elytra very fine, slightly sparser than that on central part of pronotum, punctures very small but relatively sharply marked, punctuation becoming gradually less distinct toward sides and apex of elytra; setation similar to that on pronotum but distinctly longer and more erect. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Metaventricle with very indistinct, small post-coxal impressions, remaining surface covered with very fine punctures.

Aedeagus (Figs. 25–30) 0.37 mm in length, *simonis*-type with setae on dorsal wall, in ventral view median lobe drop-shaped with well marked subtriangular apex, apical complex of projections relatively large, parameres slender, each with three setae. Fully erected position of internal sclerites is shown in Figs. 28–30.

Female. Externally very similar to male, but antennomere III without projection, head with neither frontal expansion nor median longitudinal line and impunctate median area, and wings en-

tirely reduced. Body length 1.99–2.17 mm (mean 2.09 mm), length of head 0.30 mm, width of head 0.55 mm, length of antennae 1.05–1.12 mm (mean 1.08 mm), length of pronotum 0.67–0.75 mm (mean 0.72 mm), width of pronotum 1.00–1.02 mm (mean 1.01 mm), length of elytra 1.02–1.12 mm (mean 1.07 mm), width of elytra 0.95–1.00 mm (mean 0.98 mm), EI 1.07–1.12.

Distribution. Northern Vietnam, Vinh Phu Prov.

Material. Holotype male, two white printed labels “[N-VIETNAM], 26. ix. 1995, S. Nomura leg.” and “Mt. Tam Dao, alt., 950 m, Vinh Phu Prov.” Paratypes: 1 female, same data as for holotype except for 25. ix. 1995 and full Vietnamese name of the locality, Tam Dao Hai; 5 females, same data as for holotype except for 26. ix. 1995; 1 male, 1 female, single printed label “Mt. Tam Dao, Vinh Phu Prov., [N-VIETNAM], 17. vi. 1997, S. Nomura leg.”; 1 male, same data but 2. vii. 1997.

Etymology. After Latin “*bos*” (a bull), the name refers to horn-like projections on the antennae and the large body.

Remarks. See remarks for *C. buceros*.

***Cephennodes (Cephennodes) bubalus* sp. nov.**

(Figs. 21–22, 31–33)

Diagnosis. Males of this species can be identified on the basis of rounded frontal expansion, which bears median brush of short setae; broad median area along each side of very narrow median longitudinal line on frons and vertex impunctate; and projection of antennomere III relatively short and stout, in lateral view its apical part is not particularly narrow and only slightly curved. Females and their diagnostic characters remain unknown.

Description. Male. This species is very similar to *C. bos*, only differences are given below. Body length 2.02 mm; head (Fig. 21) with rounded frontal expansion bearing in middle brush of short setae; median longitudinal line on frons and vertex very narrow, impunctate area at each side of line very broad, length of head 0.35 mm, width

0.52 mm. Antennae with antennomere III bearing moderately long, relatively stout projection, in lateral view (Fig. 22) moderately curved; antennomere VII only slightly longer than VI, about 1.2x as long as broad; antennomere XI nearly as long as IX–X together, length of antennae 1.05 mm.

Pronotum with hind angles slightly more projected laterally and posteriorly, sharp, length 0.52 mm, width 0.97 mm.

Length of elytra 1.15 mm, width 1.00 mm, EI 1.15; hind wings well developed.

Aedeagus (Figs. 31–33) 0.32 mm in length, *simonis*-type with setae on dorsal wall, subtriangular apex of median lobe well marked in ventral view; apical complex of projections relatively large, parameres slender, each with three setae.

Female. Unknown.

Distribution. Northern Vietnam, Cao Bang Prov.

Material. Holotype male, two white printed labels “Deo Kolea (LT: 1,250 m), Mt. Pia Oac, Cao Bang Prov.” and “[N-VIETNAM], 23. v. 1999, S. Nomura leg.”.

Etymology. The name, meaning “a buffalo” in Latin, refers to the large body and “horned” antennae of this species.

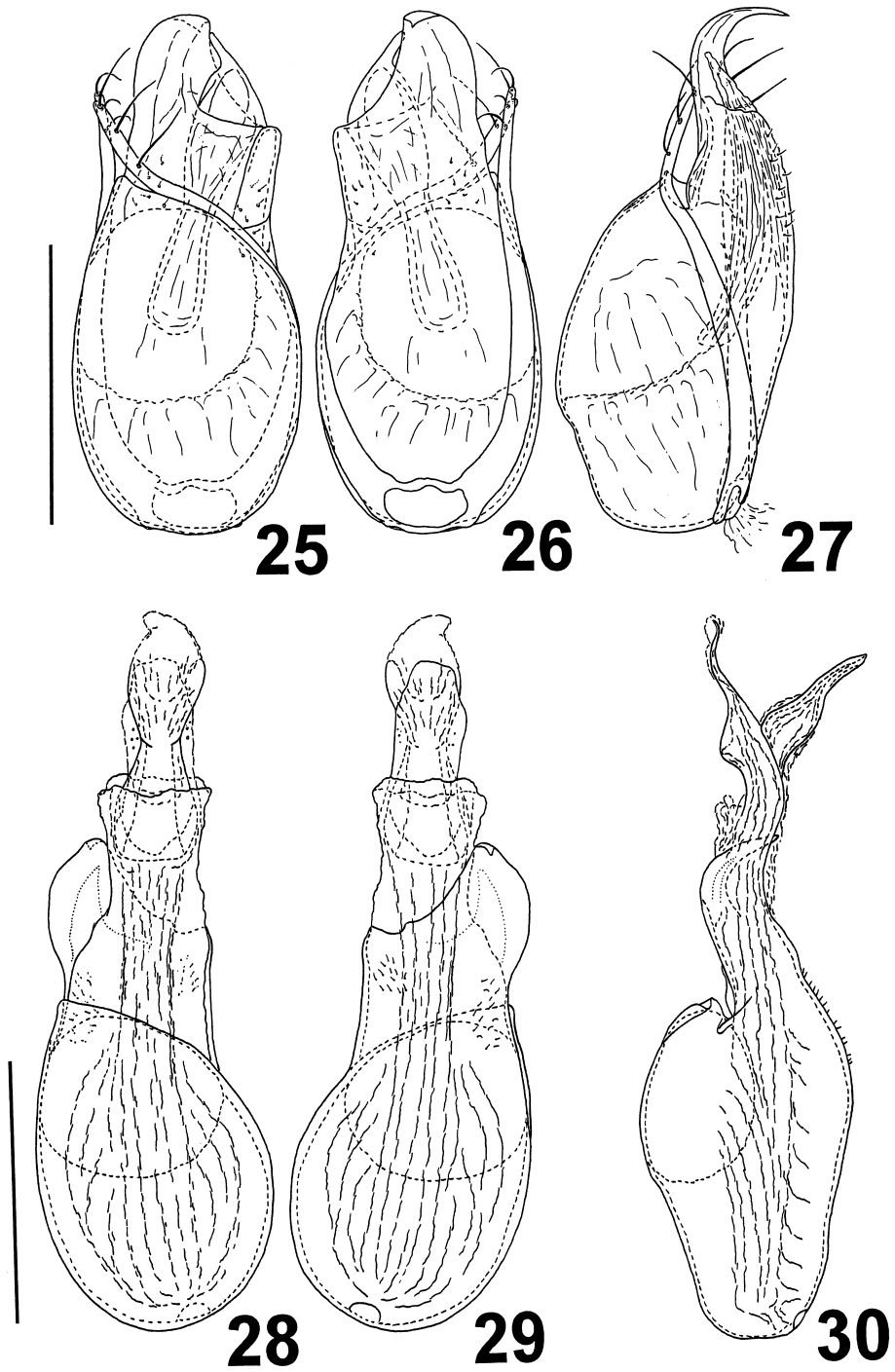
Remarks. See remarks for *C. buceros*.

***Cephennodes (Cephennodes) buceros* sp. nov.**

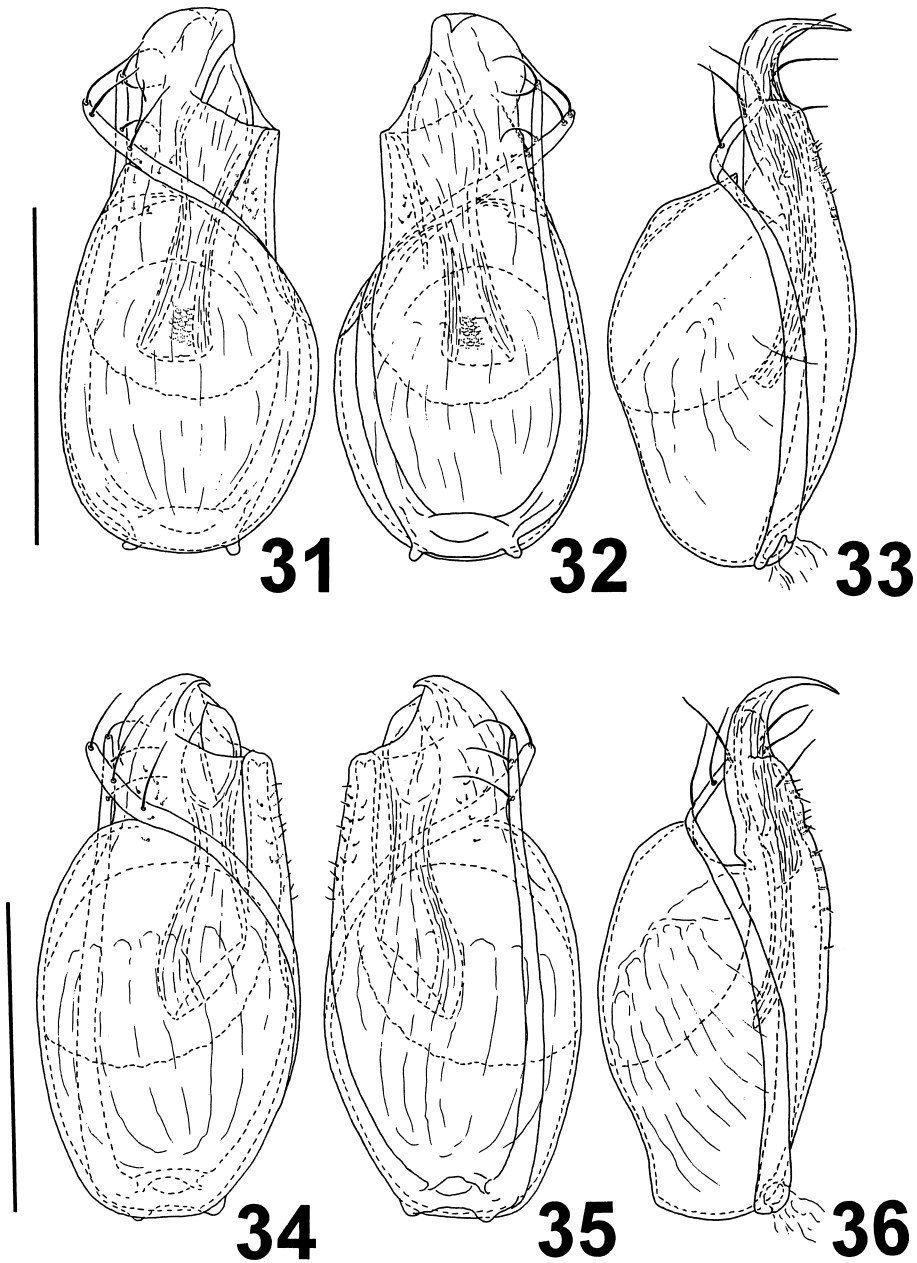
(Figs. 23–24, 34–36)

Diagnosis. Males of this species can be identified on the basis of rounded frontal expansion without median brush of setae; broad impunctate median area along each side of broad median longitudinal line on frons and vertex; and projection of antennomere III, which is relatively short and stout, in lateral view its apical part strongly curved. Female characters unknown.

Description. Male. This species is very similar to *C. bubalus*, only differences are given below. Body length 1.94–1.96 mm (mean 1.95 mm); head (Fig. 23) with rounded frontal expansion, without median brush of setae; median longitudinal line on frons broad, length of head 0.27 mm,



Figs. 25–30. Aedeagus of *Cephennodes bos* in natural (25–27) and fully erected condition (parameres omitted) (28–30) in ventral (25, 28), dorsal (26, 29) and lateral (27, 30) views. Scale: 0.2 mm.



Figs. 31–36. Aedeagus of *Cephennodes bubalus* (31–33) and *C. buceros* (34–36) in ventral (31, 34), dorsal (32, 35) and lateral (33, 36) views. Scale: 0.2 mm.

width 0.50 mm. Antennae with antennomere III bearing moderately long and stout projection, in lateral view (Fig. 24) strongly curved; antennomere VII distinctly longer than VI, but only about 1.5x as long as broad; antennomere XI slightly shorter than IX–X together; length of an-

tennae 1.05 mm.

Pronotum covered with smaller punctures, on central part of disc separated one from another by spaces slightly longer than puncture diameters, length of pronotum 0.65–0.67 mm (mean 0.66 mm), width 0.87–0.90 mm (mean 0.88 mm).

Length of elytra 1.02 mm, width 0.90–0.92 mm (mean 0.91 mm), EI 1.11–1.13; hind wings well developed.

Aedeagus (Figs. 34–36) 0.35 mm in length, *simonis*-type with setae on dorsal wall, apex of median lobe in ventral view indistinctly marked and broadly rounded; apical complex of projections relatively large, parameres slender, each with three setae.

Female. Unknown.

Distribution. Northern Vietnam, Lao Cai Prov.

Material. Holotype male, two white printed labels “Ban Khoang, 1,450 m, nr. Sa Pa, Lao Cai Prov.” and “[N-VIETNAM, 3. x. 1995, S. Nomura leg.]. Paratypes: 1 male, 2 females, same data as for holotype.

Etymology. The Latin word “buceros” means “horned”, and it was chosen to reflect the modified antennae of the new species.

Remarks. The three Vietnamese species belonging to this group are very similar one to another, including their aedeagi. However, males can be easily distinguished on the basis of the modification of the head. In dorsal view *C. bos* has the frontal expansion subtrapezoidal, broad, with nearly straight anterior margin, with no additional setae in median part, the median longitudinal line running from the frons to the posterior part of the vertex broad, surrounded at each side by a narrow impunctate area. The frontal expansion in *C. bubalus* and *C. buceros* is rounded; the former species bears an additional brush of short setae in its median part (lacking in *C. bos* and *C. buceros*), and has the longitudinal line on the frons and vertex very narrow (broad in *C. bos* and *C. buceros*). The impunctate area at each side of the median line in *C. bubalus* and *C. buceros* is very broad, nearly three times broader than that in *C. bos*. Additionally, *C. buceros* is distinctly smaller and more slender than the two remaining species, and has slightly finer and shallower punctuation on the pronotum; and *C. bos* has the projection on the antennomere III distinctly longer and more curved. Proportions of the antennomeres are also clearly different in the three species. *Cephennodes bos* has the antennae

most elongate, with the antennomere VII about twice as long as broad, and the antennomeres IX–X so long that the antennomere XI is much shorter than their combined length. In *C. bubalus* and *C. buceros* the antennomere VII is utmost 1.5x as long as broad; the antennomere XI in *C. bubalus* is nearly equal in length to IX–X together, in *C. buceros* it is slightly shorter. Although the aedeagi of the three species are very similar, they can be distinguished: the ventral wall of the median lobe in *C. bos* and *C. bubalus* has distinctly projected, roundly triangular apex, whereas that in *C. buceros* is rounded, not subtriangular. The apex of the extricable internal piece (which can be extruded from a pocket in apical sclerites integrated with the dorsal wall of the aedeagus, as illustrated for *C. bos* in Figs. 28–30) is distinctly different in *C. bos* and *C. bubalus*; the lateral lobes at each side of the base of parameres in *C. bubalus* are much larger and more projected than those in *C. bos*; and the apical hook in lateral view is more strongly curved in *C. buceros* than in the two remaining species.

The *impressifrons*-group

Members of this group (proposed by Jałoszyński, 2007a) have a very large aedeagus, which represents a strongly modified variant of the *simonis* type. The median lobe is only slightly asymmetrical, not drop-shaped but oval and very elongate, with a small ventral membranous area concealed by the ventral wall; the apical projections are very short compared to the median lobe and they have a large dorsal hook; and the subapical area of the dorsal wall bears tiny setae. The parameres are asymmetrical but in ventral view only short apical part of the right paramere is located in front of the dorsal wall. Males have modified frons and/or vertex, with variously shaped carinae and impressions. Aedeagi in this group are very similar one to another and unique modifications of the head in males are more reliable characters to identify species.

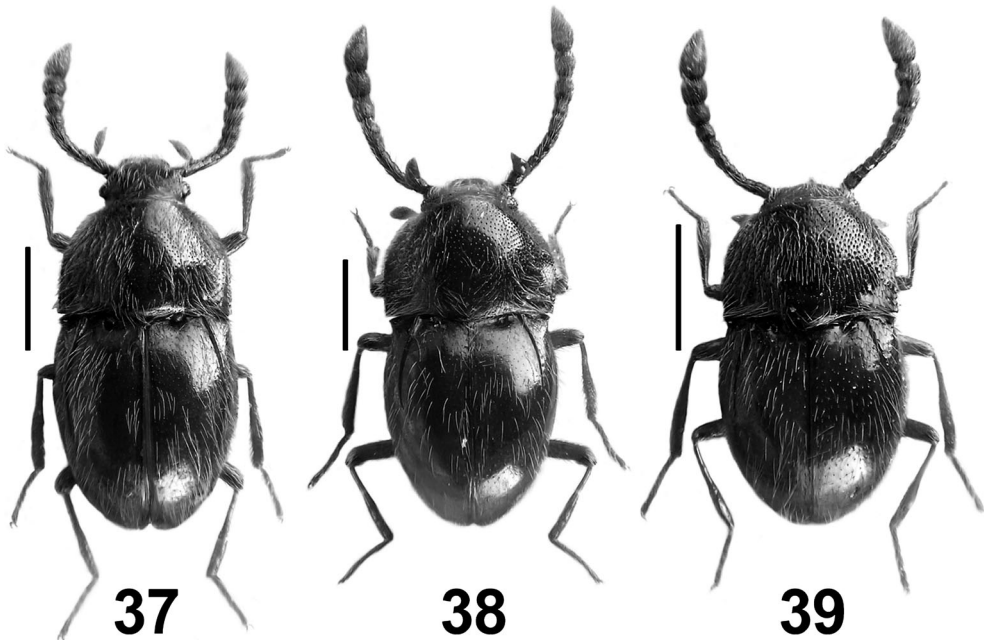
Cephenodes (Cephenodes) nasalis sp. nov.

(Figs. 39–40, 42–44)

Diagnosis. Males of *Cephenodes nasalis* differ from all other congeners in having small, but very distinct median tubercle on frons, with brush of short setae directed anteriorly. Females are unremarkable, their identification is possible by direct comparison with males, advisably when both sexes have been collected together.

Description. Male (Fig. 39). Body moderately small, very convex and stout, with sides of pronotum and elytra nearly confluent, dark brown, with light brown setation, body length 1.49–1.55 mm (mean 1.51 mm). Head (Fig. 40) relatively large, length 0.17–0.20 mm (mean 0.18 mm), width 0.37–0.40 mm (mean 0.38 mm); vertex and frons regularly convex, except for anterior part of frons which bears small, but strongly raised median tubercle surrounded by narrow groove; supraantennal tubercles small, only slightly raised and relatively indistinct; eyes large and strongly convex. Punctuation of frons and vertex in holotype composed of two types of punc-

tures: large, deep and sharply marked ones separated one from another by spaces equal to or slightly longer than puncture diameters, and very minute, but sharply marked punctures distributed unevenly and relatively densely between large ones; in paratype male small punctures are indistinct. Setation of head is relatively sparse, moderately long, suberect, median frontal tubercle bearing dense brush of short setae directed anteriorly. Antennae moderately long and slender, relatively compact, length 0.75–0.80 mm (mean 0.77 mm); five terminal antennomeres form indistinctly delimited, relatively slender club; antennomere I slightly longer than broad; II slightly narrower and minimally shorter than I, only slightly longer than broad; III–V subequal in width and length, each slightly narrower and much shorter than II, about as long as broad; VI as broad as V but slightly longer than broad; VII slightly broader and longer than VI, about 1.2x as long as broad; VIII broader than VII but about equal in length, slightly longer than broad; IX broader and longer than VIII, about as long as broad; X yet larger, about as long as broad; XI



Figs. 37–39. Dorsal habitus of *Cephenodes atuin* sp. nov. (37), *C. bos* sp. nov. (38) and *C. nasalis* sp. nov. (39). Scale: 0.5 mm.

minimally broader than X, about as long as IX–X together.

Pronotum broad, nearly subrectangular in shape, broadest slightly posterior to middle or equally broad near middle and at hind angles, length 0.47–0.50 mm (mean 0.48 mm), width 0.67–0.79 mm (mean 0.68 mm). Anterior margin broadly rounded; lateral margins finely serrate, rounded in anterior half, in posterior third minimally constricted, so that sharp hind angles are slightly projected laterally and posteriorly; posterior margin relatively shallowly biemarginate; lateral ante-basal pits small, located much closer to posterior than to lateral margins; lateral carinae very narrow, not separated from lateral margins. Punctuation on central part of pronotum dense, composed of moderately small punctures separated one from another by variable spaces, on average much shorter than puncture diameters, relatively broad area along posterior margin remains impunctate, punctures on large area adjacent to each front angle and along anterior half of lateral margins is covered with coarse, very dense punctures about as large as those in middle. Setation moderately dense and long, moderately suberect.

Elytra oval, as convex as pronotum, broadest between middle and anterior third, length 0.85 mm, width 0.70 mm, EI 1.21. Subhumeral lines as long as 0.4x length of elytra, distinctly carinate; apices of elytra separately rounded. Punctuation distinctly sparser and finer than that on

pronotum, in anterior half of elytra composed of small, but deep and distinctly marked punctures, punctuation on sides and posterior half of elytra becoming gradually shallower and less distinct; setation similar to that on pronotum, but distinctly longer and more erect. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

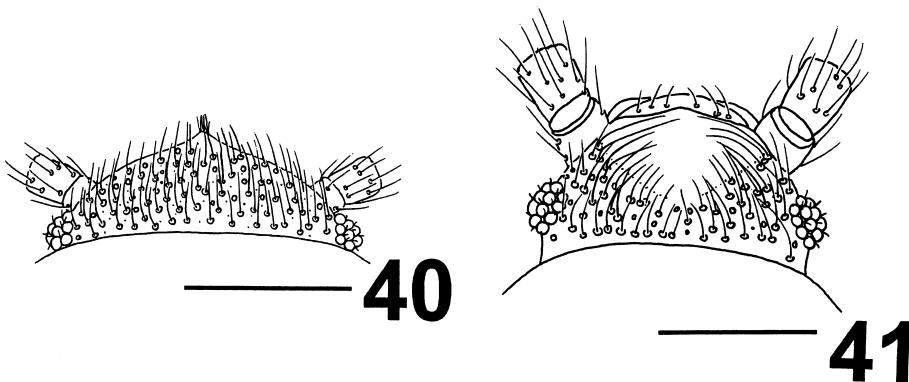
Metaventricle with very fine punctures.

Aedeagus (Figs. 42–44) 0.65 mm in length, modified *simonis*-type, with very long and slender, slightly asymmetrical median lobe, and very short apical complex of projections. Parameres very long and slender, each with three setae, in lateral view the less curved paramere (left one in ventra view) strongly broadened near apex.

Female. Externally similar to male, except for frons without median tubercle and setal brush; all female paratypes have frons and vertex with only large punctures and are wingless. Body length 1.49–1.52 mm (mean 1.51 mm), length of head 0.17 mm, width of head 0.37 mm, length of antennae 0.75–0.80 mm (mean 0.77 mm), length of pronotum 0.50 mm, width of pronotum 0.70–0.72 mm (mean 0.71 mm), length of elytra 0.82–0.85 mm (mean 0.84 mm), width of elytra 0.70–0.72 mm (mean 0.71 mm). EI 1.17–1.18.

Distribution. Northern Vietnam, Lao Cai and Vinh Phu Prov.

Material. Holotype male, two white printed labels “Ban Khoang, 1,450 m, nr. Sa Pa, Lao Cai



Figs. 40–41. Head in dorsal view of male of *Cephennodes nasalis* sp. nov. (40) and male of *C. depressifrons* sp. nov. (41). Scale: 0.2 mm.

Prov.” and “[N-VIETNAM], 3. x. 1995, S. Nomura leg.”. Paratypes: 3 females, same data as for holotype; 1 male, two white printed labels “Mt. Tam Dao, (-Tam Dao Hai), Vinh Phu Prov.” and “[N-VIETNAM], 23. ix. 1995, S. Nomura leg.”; 1 male, white printed label “Mt. Tam Dao (950 m), Vinh Phu Prov., [N-VIETNAM], 23. v. 2003, S. Nomura leg.”.

Etymology. The name refers to the median frontal tubercle, a unique male secondary character of this new species.

Remarks. The modification of the head in males of this species is unique among congeners in the *impressifrons* species complex. All other representatives of this group (four species from China and the new one described below) have variously developed transverse carinae on the frons, whereas males of *C. nasalis* bear only a tubercle provided with a bunch of setae.

Cephenodes (Cephenodes) depressifrons
sp. nov.

(Figs. 41, 45–47, 57)

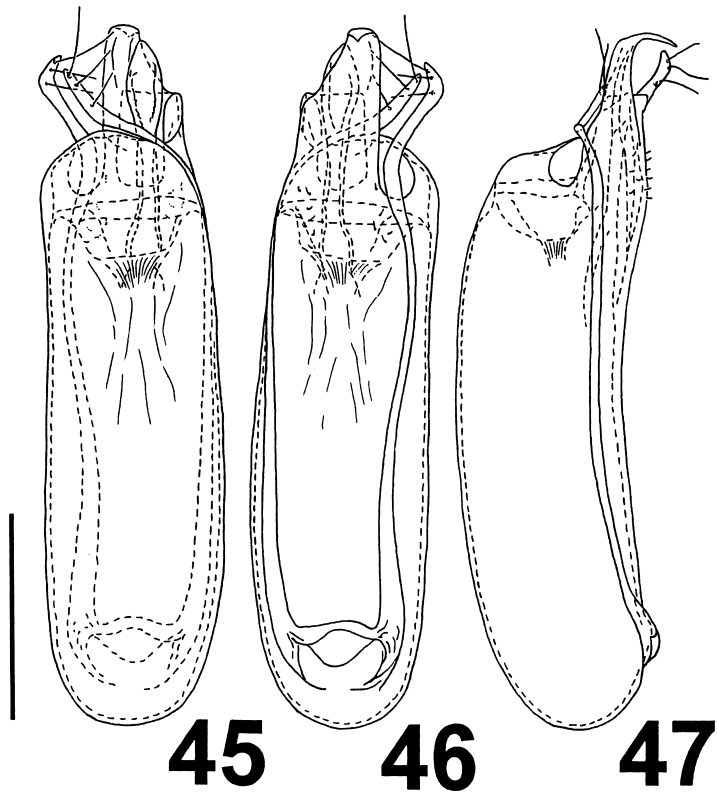
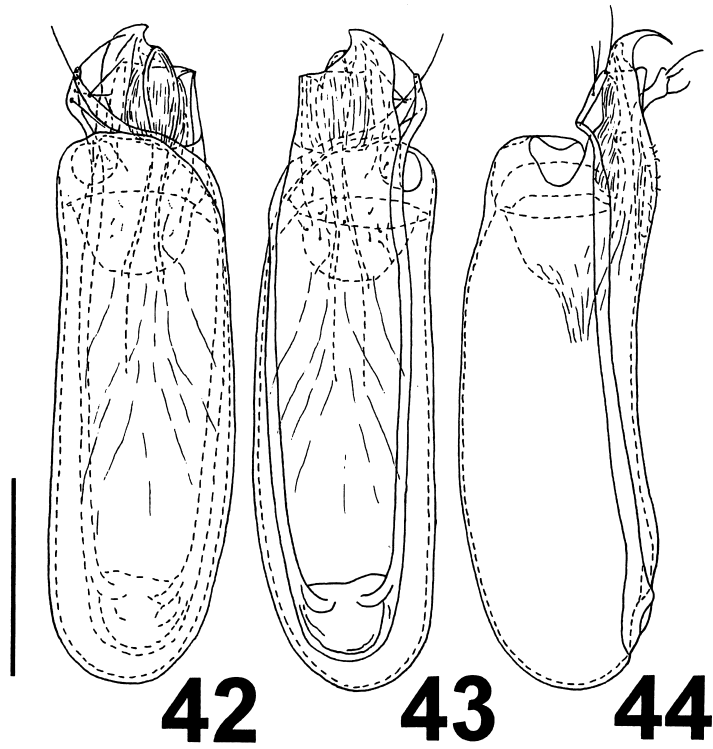
Diagnosis. The most striking character of this species distinguishing it from all congeners is very broad, impunctate impression on frons and vertex of males; impression has pentagonal shape and is delimited anteriorly by roundly trapezoidal carina, median part of it is slightly expanded anteriorly (best visible in dorsal view). Female characters remain unknown.

Description. Male (Fig. 57). Body moderately large, strongly convex, oval and moderately elongate, with sides of pronotum and elytra nearly confluent, pigmentation dark brown, setation light brown, body length 1.59 mm. Head (Fig. 41) moderately large, length 0.22 mm, width 0.37 mm; posterior part of vertex convex, anterior part and frons with large, very broad, moderately deep pentagonal impression, anteriorly delimited by broadly trapezoidal (i.e., composed of transverse part bent at both ends laterally and posteriorly) carina, which in dorsal view has slightly expanded anteriorly median part; supraantennal tubercles indistinct; eyes large and strongly convex.

Punctuation and setation relatively dense, as shown in Fig. 41. Antennae moderately long but relatively slender, with compact proximal part and relatively loose, indistinctly delimited and slender club composed of five terminal antennomeres, length 0.80 mm; antennomere I about 1.2x as long as broad; II slightly narrower and longer than I, nearly 1.5x as long as broad; III slightly narrower than II, about as long as broad; IV–VI subequal in length and width, each as broad as III but slightly longer than broad; VII broader and much longer than VI, about 1.7x as long as broad; VII slightly broader but distinctly shorter than VII, only slightly longer than broad; IX distinctly broader and longer than VIII, slightly longer than broad; X yet larger, also slightly broader than long; XI slightly broader than X and minimally shorter than IX–X together.

Pronotum nearly semicircular in shape, broadest at sharp hind angles protruded laterally and posteriorly, length 0.50 mm, width 0.67 mm. Anterior margin broadly rounded; lateral margins rounded in anterior half, then slightly constricted up to hind angles and finely serrate; posterior margin shallowly biemarginate; lateral ante-basal pits small but very distinct, located much closer to posterior than to lateral margins; lateral carinae very narrow and not separated from lateral margins. Punctuation on central part of disc dense, composed of small, but deep and sharply marked punctures separated one from another by variable spaces, from about equal to puncture diameters up to nearly twice as long, punctures in posterior part of pronotum are gradually smaller and shallower, and narrow area along posterior margin remains impunctate, area adjacent to each front angle bearing very dense, coarse punctures about as small as those in middle. Setation moderately long and dense, suberect.

Elytra oval, as convex as pronotum, broadest near anterior third, length 0.87 mm, width 0.75 mm, EI 1.16. Subhumeral lines as long as ca. 0.4x length of elytra, distinctly carinate; apices of elytra separately rounded. Punctuation slightly sparser than that on central part of pronotum, composed of much smaller and shallower, but



relatively sharply marked punctures, which become smaller and less distinct towards lateral margins and apices; setation similar to that on pronotum but distinctly longer and more erect. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Aedeagus (Figs. 45–47) 0.67 mm in length, modified *simonis*-type, with very long and slender, slightly asymmetrical median lobe, and very short apical complex of projections. Parameres very long and slender, each with three setae, in lateral view none of them is broadened near apex.

Female. Unknown.

Distribution. Northern Vietnam, Hoa Binh Prov.

Material. Holotype male, white printed label “Ban Xa Lenh (890 m), (Truong Yen), Xa Pa Co, H. Mai Chau, Hoa Binh P., [N-VIETNAM], 21. vi. 1997, S. Nomura leg.”.

Etymology. The epithet “*depressifrons*” refers to the modified frons and vertex of males of this species.

Remarks. This species mostly resembles two Chinese members of the same group: *C. triangulifrons* Jałoszyński and *C. carinifrons* Jałoszyński. As all other species in the *impressifrons* species group, they also have very similar aedeagi, differing only in minor details. The most distinct diagnostic characters, beside the body shape and proportions, are peculiar, unique modifications of the frons and vertex in males. The new species from Vietnam can be easily distinguished from the two Chinese allies by different proportions of body parts, with much smaller, and especially narrower pronotum (extremely broad, nearly subrectangular in *C. triangulifrons* and *C. carinifrons*) compared to the elytra; much smaller and sparser punctures covering the pronotal disc; and broader impression on the frons, which is pentagonal in shape and delimited anteriorly by roundly trapezoidal carina (the cari-

na in the two Chinese species is much narrower, U- or V-shaped).

The *inflatipes*-group

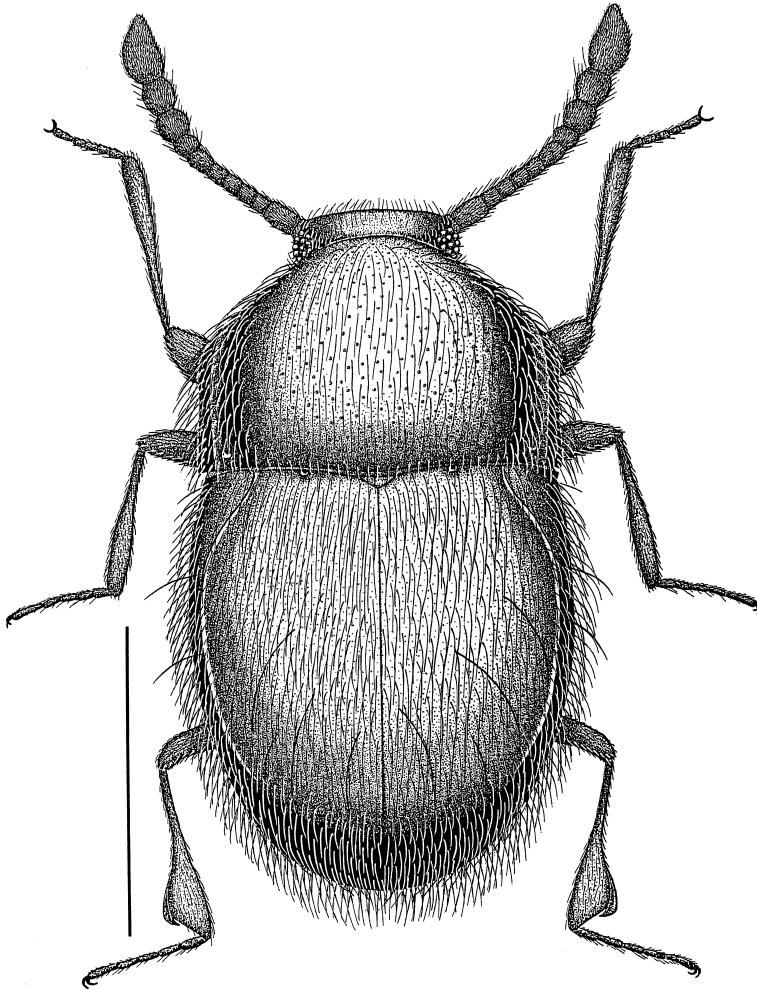
This group is defined by an extremely small aedeagus (only ca. 1/10 of the body length) representing the *simonis*-type, which has a very broad apical projection, with its apex pointing toward the apex of the median lobe. Another character shared by all species is a broadening of the metatibiae in males. In some species also abdominal sternites (usually II and III) bear transverse carinae, which in lateral view look like ventrally projected teeth. However, the latter character does not occur in the two new species described below.

Cephennodes (Cephennodes) patellatus sp. nov.

(Figs. 48–53, 58, 60)

Diagnosis. Unique diagnostic character of this small species is triangular broadening of metatibia in males, which bears subtriangular, distinctly angulate projection on its external margin. Diagnostic characters of females remain unknown (see remarks).

Description. Male (Figs. 48, 58). Body small and stout, with confluent pronotum and elytra, reddish-brown with light brown setation, length 1.17–1.25 mm (mean 1.21 mm). Head moderately large, length 0.15 mm, width 0.30 mm; vertex and frons regularly convex, covered with small but sharply marked and dense punctures; supraantennal tubercles prominent, impunctate; eyes large, strongly convex. Setation of vertex and frons relatively short, moderately dense, suberect. Antennae relatively short, moderately slender but compact, with five terminal antennomeres covered with fine, coarse microsculpture and forming relatively narrow and very indistinctly delimited club, length 0.55–0.57 mm (mean 0.55 mm); antennomere I about 1.3x as

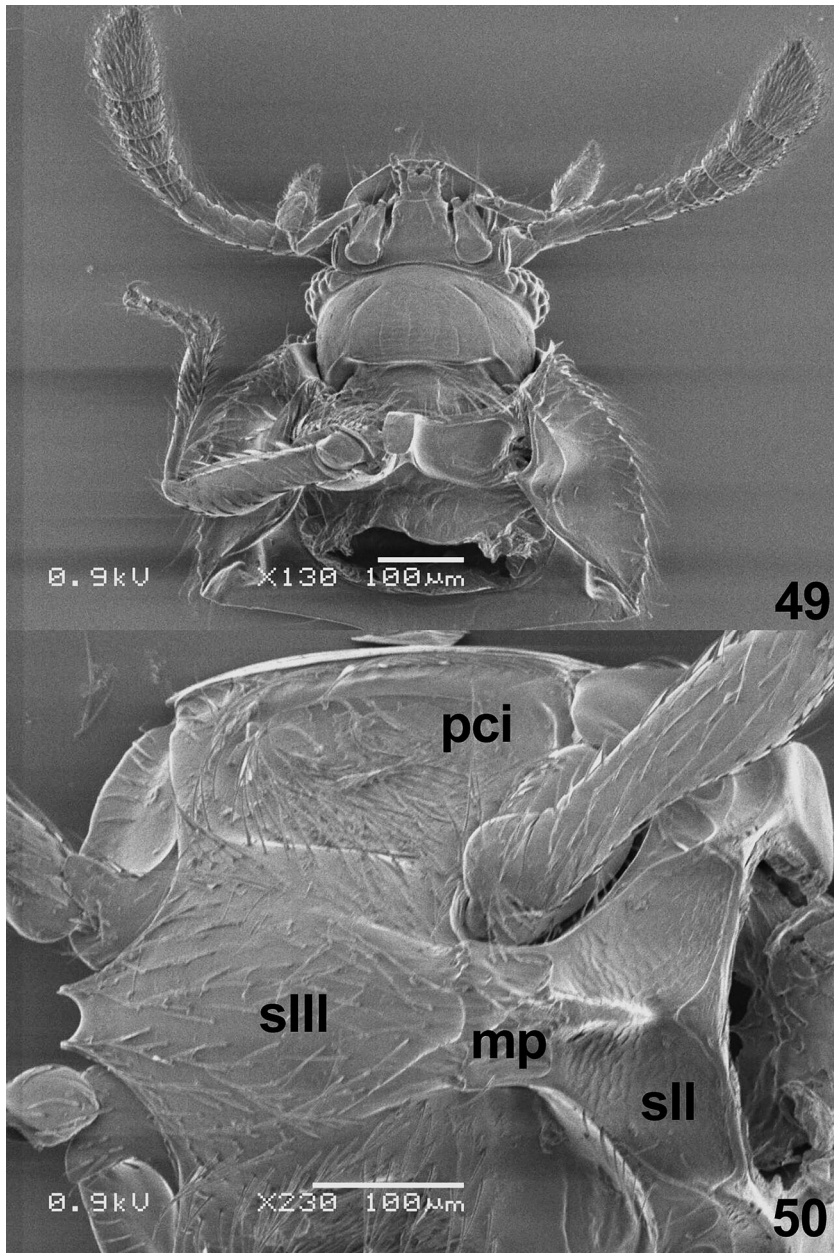


Figs. 48. Dorsal habitus of male of *Cephennodes patellatus* sp. nov. Scale: 0.5 mm.

long as broad; II distinctly narrower and slightly longer than I, nearly twice as long as broad; III–VI subequal in length and width, each slightly narrower than II and about as long as broad or only slightly longer than broad; VII barely noticeably larger than VI, minimally longer than broad; VIII slightly broader than VII but similar in length, about as long as broad; IX broader and slightly longer than VIII, slightly broader than long; X slightly larger than IX, slightly broader than long; XI yet broader, about as long as IX–X together.

Pronotum nearly semicircular in shape, broadest near middle or equally broad from middle to base, length 0.37–0.40 mm (mean 0.39 mm),

width 0.55–0.60 mm (mean 0.57 mm). Anterior margin broadly rounded; lateral margins rounded in anterior half, in posterior half nearly straight and parallel, distinctly serrate; hind angles nearly straight; posterior margin very shallowly biemarginate (nearly rounded); lateral ante-basal pits distinct, equally distant from posterior and lateral margins or located minimally closer to lateral margins; lateral carinae narrow but very distinct, narrowly separated from lateral margins, which are slightly thickened, so that sides of pronotum appear bicarinate. Punctuation in central part of pronotum dense but composed of very small, shallow but distinct and sharply marked punctures separated one from another by spaces equal



Figs. 49–50. Male of *Cephennodes patellatus* sp. nov.; head and prothorax in ventral view (49); meso- and metathoraces in ventral view (50); mp—mesoventral process; pci—postcoxal impression; v2 and v3—mesoventrite and metaventrite.

to 1.5–2 puncture diameters, punctures in posterior part of pronotum becoming gradually smaller and shallower and narrow area along posterior margin remains impunctate, relatively large area adjacent to each front angle covered with very

dense and relatively large, coarse punctures. Setation moderately long and dense, only slightly suberect.

Elytra oval, as convex as pronotum, broadest distinctly anterior to middle, length 0.65–0.70

mm (mean 0.67 mm), width 0.60–0.62 mm (mean 0.60 mm), EI 1.10–1.13. Subhumeral lines long and very strongly curved, slightly longer than 0.7x length of elytra, distinctly carinate; apices of elytra separately rounded. Punctuation about as dense as that on central part of pronotum, but punctures are very fine and slightly diffused, indistinct; setation distinctly longer and more erect than that on pronotum, moderately dense. Hind wings well developed.

Legs moderately long and slender, metatibiae (Fig. 60) strongly modified, with broad, subtriangular broadening in distal half, concave in its broadest place and bearing triangular projection in external margin.

Metaventrite (Fig. 50) with deep and large postcoxal impressions and convex central part, covered with very fine punctures.

Aedeagus (Figs. 51–53) 0.15 mm in length, *simonis*-type, very broad and short, with apex of median lobe in ventral view broadly rounded and distinctly bilobate; apical projection extremely large, very broad, with emarginate apex pointing toward apex of median lobe. Parameres slender, each with most likely three setae inserted very close to apex (in the figured specimen only two setae can be seen in one of the parameres, the third one has been likely broken off).

Female. Unidentifiable or unknown (see remarks).

Distribution. Central Vietnam, Thua Thien-Hue Prov.

Material. Holotype male, white printed label “Mt. Bach Ma (1,250–1,350 m), T. T. Hue Prov., [C-VIETNAM], 8. vi. 2002, S. Nomura leg.”. Paratypes: 1 male, same data as for holotype; 5 males, same data except for 1,300 m and 9. v. 2003; 1 male, same data except for 1,300 m and 10. vi. 2002; 3 males, same data except for 1,300 m and 11. vi. 2002.

Etymology. The specific epithet refers to broadened metatibiae of males, after Latin “*patella*” (“pan, plate”).

Remarks. This species is externally very similar to *C. pseudopatellatus*, which differs in modification of the hind tibiae in male and very clear-

ly in the shape of the aedeagus. The two species have been collected in the same locality. Twenty two females have been collected together with males, all of them are wingless, and they cannot be unambiguously associated with any of the two new species. Therefore, diagnostic characters for females are treated here as unknown, and the females cannot be included into the type series.

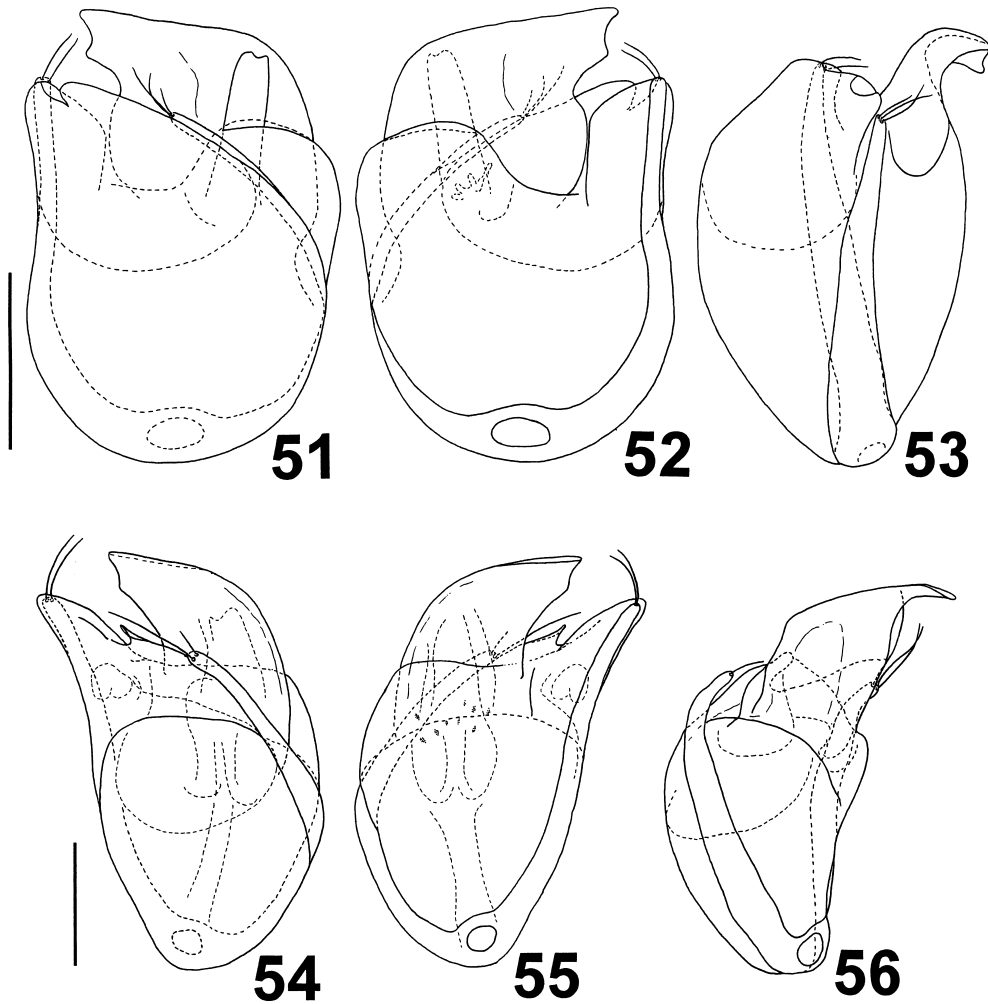
This group of species represents a good example of variability in the lateral carinae on the pronotum. *Cephennodes inflatipes* Jałoszyński (from Southern China) and *C. patellatus* share a similar body shape, modifications of metatibiae and extremely small aedeagi, which have also a very similar shape, with a very broad apical projection pointing to the same direction. Morphological similarities suggest close relationships between these species and provide a basis for including them into one species group. However, the pronotum of *C. inflatipes* bears very narrow lateral carinae, which are not separated from lateral margins, whereas *C. patellatus* has distinctly bicarinate sides of the pronotum. This finding again confirms exclusion of lateral carinae from the set of diagnostic characters of *Cephennodes* proposed in a previous paper (Jałoszyński, 2007a).

Cephennodes (Cephennodes) pseudopatellatus
sp. nov.

(Figs. 54–56, 59, 61)

Diagnosis. This species is externally identical with *C. patellatus*, except for triangular broadening of metatibiae, which do not bear triangular projection; unique aedeagus offers most unambiguous key characters.

Description. Male (Fig. 59). This species is externally almost identical with *C. patellatus*; only differences are given below. Length of head 0.17–0.20 mm (mean 0.18 mm), width of head 0.32 mm, length of antennae 0.60–0.62 mm (mean 0.61 mm), length of pronotum 0.40 mm, width of pronotum 0.55–0.57 mm (mean 0.56 mm), length of elytra 0.65–0.67 mm (mean 0.66 mm), width of elytra 0.57–0.60 mm (mean 0.58



Figs. 51–56. Aedeagus of *Cephennodes patellatus* sp. nov. (51–53) and *C. pseudopatellatus* sp. nov. (54–56) in ventral (51, 54), dorsal (52, 55) and lateral (53, 56) views. Scale: 0.05 mm.

mm), EI 1.10–1.17.

Metatibiae (Fig. 61) with subtriangular broadening in distal half, slightly impressed dorsally in broadest place, with external margin with indistinctly marked angle, broadly rounded.

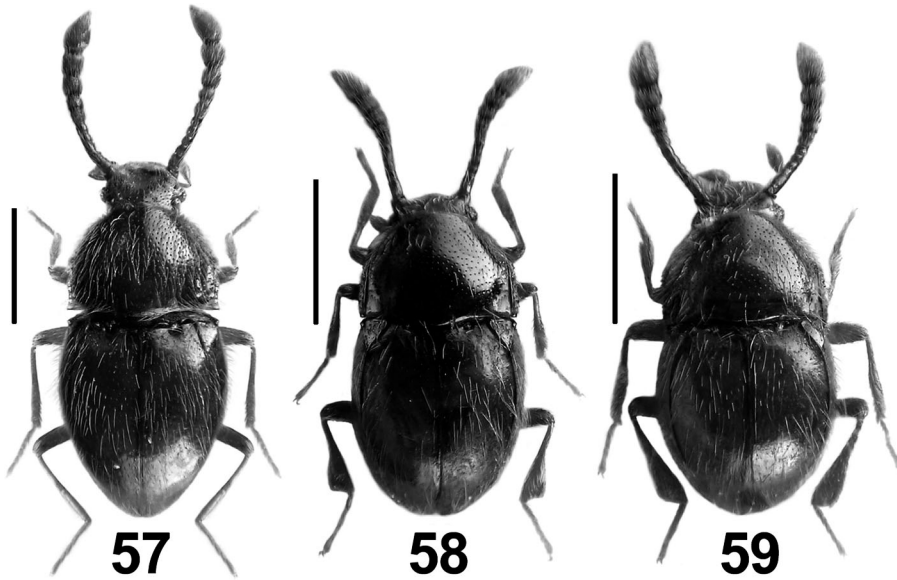
Aedeagus (Figs. 54–56) 0.17 mm in length, *simonis*-type, relatively slender, with apex of median lobe in ventral view narrow, subtriangular, and with deep notch separating small and slender lobe in its subapical region; apical projection moderately broad, with emarginate apex pointing toward apex of median lobe. Parameres slender, each with most likely three setae inserted very

close to apex (in the figured specimen only two setae can be seen in one of the parameres, possibly the third one has been broken off).

Female. Unidentifiable or unknown (see remarks for *C. patellatus*).

Distribution. Central Vietnam, Thua Thien-Hue Prov.

Material. Holotype male, white printed label “Mt. Bach Ma (1,250–1,350 m), T. T. Hue Prov., [C-VIETNAM], 8. vi. 2002, S. Nomura leg.”. Paratypes: 1 male, same data as for holotype; 1 male, same data except for 1,300 m and 11. vi. 2002.



Figs. 57–59. Dorsal habitus of *Cephennodes depressifrons* sp. nov. (37), *C. patellatus* sp. nov. (38) and *C. pseudopatellatus* sp. nov. (39). Scale: 0.5 mm.

Etymology. *Cephennodes pseudopatellatus* is very similar to *C. patellatus*, and the specific name was chosen to reflect this resemblance.

Remarks. See remarks for *C. patellatus*.

The *longipes*-group

Members of the *longipes* species group have a very stout and convex body, with the pronotum narrower than the elytra. The antennae and legs are very long and slender, and the head and pronotum are densely punctate. The aedeagus is similar to the *latus*-type; it is broadest at base and narrowing toward apex, its ventral membranous area is small and concealed by the ventral wall of the median lobe, and the apical projections are asymmetrical and generally subtriangular in shape.

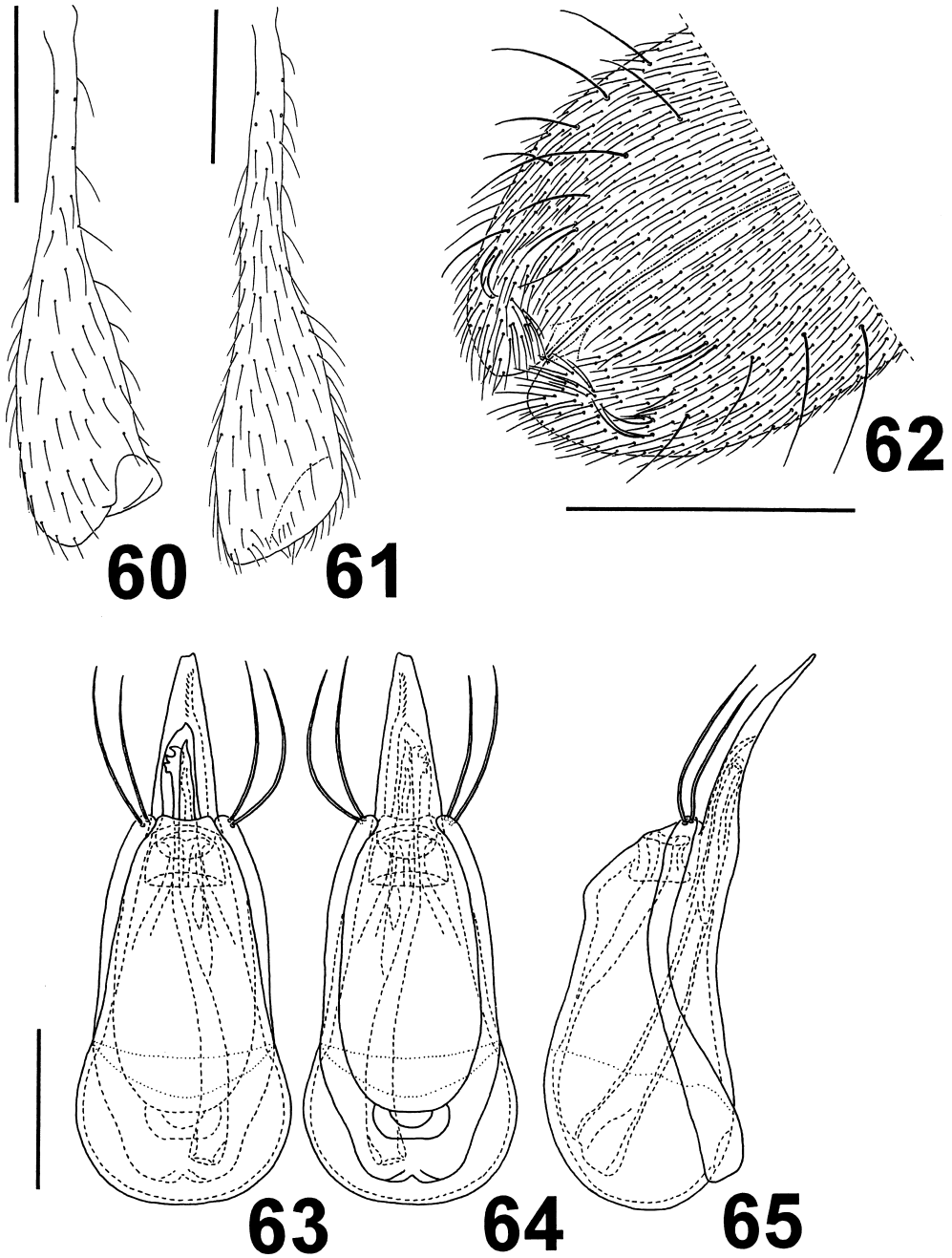
Cephennodes (Cephennodes) apicalis sp. nov.

(Figs. 62–65, 73)

Diagnosis. This species has unique male secondary sexual characters located on the apical part of elytra: subapical area on each elytron is

slightly impressed and covered with peculiar setae. Females and their diagnostic characters remain unknown.

Description. Male (Fig. 73). Body moderately large, very convex, stout but relatively elongate and with distinct constriction between pronotum and elytra, dark brown, with light brown setation, length 1.57 mm. Head relatively large, length 0.25 mm, width 0.40 mm; vertex and frons regularly convex; supraantennal tubercles only slightly raised, relatively indistinct; eyes moderately large, strongly convex; punctation very dense, composed of small, but relatively deep and sharply marked punctures separated one from another by spaces about as long as half diameter of punctures; setation on vertex and frons moderately dense, short and erect; on clypeal area setae are much longer and suberect. Antennae very long and slender, with five terminal antennomeres covered with coarse microsculpture and forming indistinctly delimited club, length 1.00 mm; antennomere I about 1.3x as long as broad; II distinctly narrower and longer than I, about twice as long as broad; III–VI gradually but only slightly increasing in length, from about twice as



Figs. 60–65. Right metatibia of male of *Cephennodes patellatus* sp. nov. in dorsal view (60); right metatibia of male of *C. pseudopatellatus* sp. nov. in dorsal view (61); posterior part of elytra of male of *C. apicalis* sp. nov. in dorsal and slightly lateral view (62); aedeagus of *C. apicalis* sp. nov. in ventral (63), dorsal (64) and lateral (65) views. Scale: 60, 61, 63–65–0.1 mm; 62–0.5 mm.

long as broad to about 2.2x as long as broad, each slightly narrower than II; VII slightly broader and much longer than VI, nearly 3x as long as broad; VIII slightly broader but distinctly shorter than VII, slightly less than twice as long as broad; IX broader and longer than VIII, about 1.6x as long as broad; X broader and longer than IX, about 1.5x as long as broad; XI yet broader, about as long as IX–X together.

Pronotum very convex, subquadrate with broadly rounded anterior and lateral margins, broadest anterior to middle, length 0.50 mm, width 0.62 mm. Lateral margins finely serrate, in posterior half distinctly convergent toward obtuse hind angles; posterior margin very shallowly biemarginate; lateral ante-basal pits small and shallow, located slightly closer to lateral margins than to posterior one; lateral carinae narrow, not separated from lateral margins. Punctuation in central part of pronotum very dense, composed of small, deep and sharply marked punctures separated one from another by spaces distinctly shorter than puncture diameters, punctures slightly reducing in diameters and depth toward base, area adjacent to each front angle covered with very dense, coarse punctures; setation moderately dense, relatively short, suberect, additionally each lateral margin bears pair of long setae strongly erect laterally, one located near middle, the other seta inserted just anteriorly to hind angle, another pair of very long and strongly erect setae inserted on posterior margin, separated from each other by distance equal to that between basal fovea on elytra.

Elytra very convex, oval, broadest distinctly anterior to middle, length 0.82 mm, width 0.72 mm, EI 1.14. Subhumeral lines nearly as long as half length of elytra, distinctly carinate; subapical area on each elytron with oval, shallow impression with peculiar setation (as in Fig. 62). Punctuation much finer and slightly sparser than that on central part of pronotum; basic setation relatively short, moderately dense, suberect, additionally each elytron bears numerous long and strongly erect setae, especially on sides. Hind wings well developed, very long, more than twice as long as

elytra.

Legs strikingly long and slender, with densely, coarsely punctate femora and relatively short, thick tarsi.

Metaventricle covered with fine, but sharply marked and densely distributed punctures, posterior part in middle slightly raised and covered with moderately long, suberect setae forming loose brush.

Aedeagus (Figs. 63–65) 0.35 mm in length, modified *latus*-type, with symmetrical median lobe and only minimally asymmetrical apical projections, which are very long and subtriangular; parameres as long as median lobe, relatively massive, each with thick and long apical setae.

Female. Unknown.

Distribution. Northern Vietnam, Lao Cai Prov.

Material. Holotype male, two white printed labels “Deo Tram Ton, alt. 1,850 m, Lao Cai Prov.” and “[N-VIETNAM], 5. x. 1995, S. Nomura leg.”.

Etymology. The specific name refers to apical modifications of the elytra in males of this species.

Remarks. This is the first member of the *longipes* group known from Vietnam. This odd group so far included three described species from various parts of China (Jałoszyński, 2007a; 2007b). They all share a very unusual and unique body shape, similar punctuation, similar type of male secondary sexual characters, very elongate and slender antennae, and structures of the aedeagus. This lineage may in future be separated from the nominotypical subgenus or even from *Cephennodes*. However, more intensive work on the Far Eastern and Oriental faunas is necessary to propose more adequate division of the *Cephennodes*-like cephenniines, which are very diverse and abundant in these regions, but remain extremely poorly studied.

Species of subgenus *Cephennodes* that cannot be placed in any species group

Cephennodes (Cephennodes) trisaonus sp. nov.

(Figs. 1–2, 66–68, 74)

Diagnosis. This species is relatively unremarkable, and identification on the basis of external characters may be uncertain. Besides moderate body length, very short antennae, dense and large punctures on frons and vertex contrasting with fine punctation of pronotum and elytra, and very long subhumeral lines, the most certain character is apical part of aedeagus, which is extremely short compared to large median lobe. Females can be identified only by direct comparison to males, preferably when collected together.

Description. Male (Fig. 74). Body moderately large and convex, oval, moderately dark brown, with yellowish vestiture, length 1.57 mm. Head moderately large, length 0.20 mm, width 0.37 mm; vertex and frons regularly convex; supra-antennal tubercles only slightly raised and indistinctly delimited; eyes large, strongly convex; punctation on frons and vertex composed of distinct, deep and relatively sharply marked punctures separated one from another by spaces about equal to puncture diameters; setation moderately long and dense, suberect. Antennae moderately long, compact, length 0.62 mm; antennomere I only slightly longer than broad; II nearly as broad as I, 1.3x as long as broad; III and IV subequal in size, distinctly narrower than II, each distinctly shorter than long; V–VI subequal, as broad as III–IV but each about as long as broad; VII slightly longer and broader than VI; VIII–X gradually increasing in width and length, each about as long as broad; XI slightly broader than X, as long as IX–X together.

Pronotum nearly semicircular in dorsal view, broadest near middle, length 0.47 mm, width 0.70 mm, anterior margin broadly rounded, lateral margins in anterior half rounded, from widest place nearly straight and distinctly narrowing posteriorly, just before hind angles minimally constricted, so that hind angles are sharp and slightly protruded latero-posteriorly; posterior margin deeply biemarginate; lateral ante-basal pits shallow, each located closer to posterior than to lateral margin; lateral carinae narrow and not separated from lateral margins. Punctation in central part of pronotum composed of very

small, but sharply marked and relatively dense punctures distinctly reducing in diameter and depth posteriorly, so that broad median area along posterior margin appears impunctate, punctures near each front angle much larger and denser than those in middle; setation moderately long and dense, suberect.

Elytra oval, about as convex as pronotum, broadest slightly anterior to middle, length 0.90 mm, width 0.77 mm, EI 1.16. Subhumeral lines carinate, as long as 0.7x length of elytra; apices of elytra separately rounded. Punctation sparser than that on central part of pronotum, composed of similarly small, but less sharply marked punctures; setation moderately dense, distinctly longer and more erect than that on pronotum. Hind wings well developed.

Legs moderately long and slender, without particular characters.

Metaventricle with convex median posterior part covered with very fine and sparse punctures, and moderately large postcoxal impressions surrounded by setae directed toward middle of each impression.

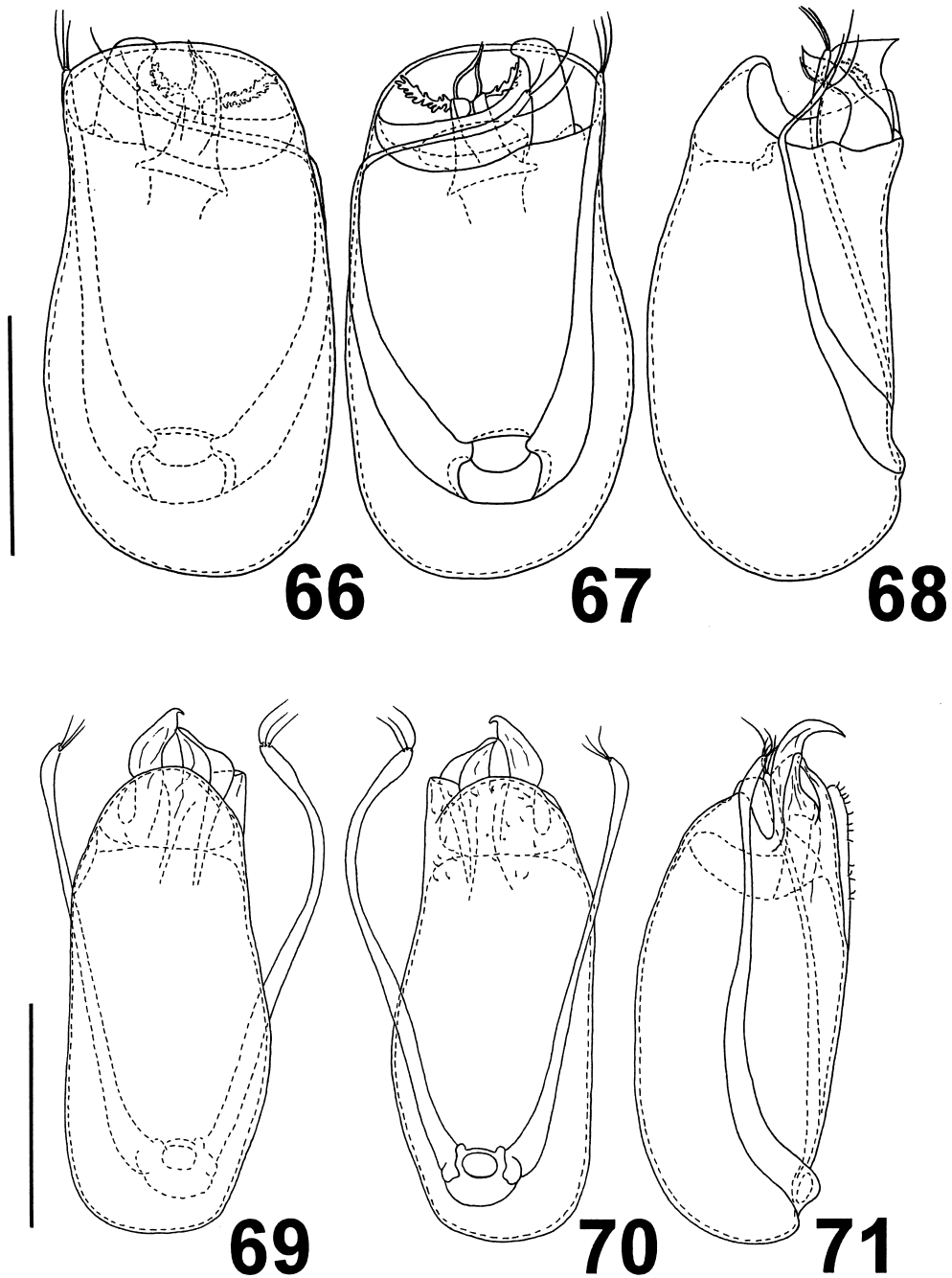
Aedeagus (Figs. 66–68) 0.45 mm in length, highly modified *simonis*-type, with stout, slightly asymmetrical median lobe and extremely short apical complex of projections, which in ventral view are nearly entirely concealed by ventral wall; parameres strongly asymmetrical, slender, each with three setae.

Female. Externally indistinguishable from male, wingless; body length 1.42 mm, length of head 0.17 mm, width of head 0.35 mm, length of antennae 0.62 mm, length of pronotum 0.50 mm, width of pronotum 0.70 mm, length of elytra 0.82 mm, width of elytra 0.75 mm, EI 1.10. Ovipositor as in Figs. 1, 2.

Distribution. Central Vietnam, Thua Thien-Hue Prov.

Material. Holotype male, white printed label “Tri Sao (400 m), nr. Bach Ma, T. T. Hue Prov., [C-VIETNAM], 9. vi. 2002, S. Nomura leg.”. Paratype: female, same data as holotype.

Etymology. Locotypical, after the type locality Tri Sao.



Figs. 66–71. Aedeagus of *Cephennodes trisaonus* sp. nov. (66–68) and *C. sulcatifrons* sp. nov. (69–71) in ventral (66, 69), dorsal (67, 70) and lateral (68, 71) views. Scale: 0.2 mm.

Cephennodes (Cephennodes) sulcatifrons
sp. nov.

(Figs. 3–4, 69–72, 75)

Diagnosis. Diagnostic characters of this species are finely punctate body, flattened central part of metaventricle with very shallow median posterior impression and modified head in males,

which has frons bearing small median tubercle and is separated from clypeus by deep transverse groove delimited posteriorly by carina. Females can be identified on the basis of flattened and slightly impressed metasternum, which is similar to that in males, but certain determination is possible only by direct comparison to males, preferably when collected together.

Description. Male (Fig. 75). Body moderately small, very broad and stout, strongly convex, dark brown with light brown setation, length

1.42–1.52 mm (mean 1.49 mm). Head moderately large, length 0.20–0.22 mm (mean 0.22 mm), width 0.37–0.40 mm (mean 0.38 mm); vertex regularly convex, frons modified as in Fig. 72; supraantennal tubercles only slightly raised, very indistinct; eyes relatively small, but strongly convex; punctation barely noticeable under magnification 40x, very fine; setation moderately long and sparse, suberect. Antennae moderately long and compact, with five terminal antennomeres covered with mat, fine microgranulation; length 0.77–0.80 mm (mean 0.79 mm), antennomere I about as long as broad or slightly shorter than broad; II as broad as I but distinctly longer, about 1.2x as long as broad; III–VI equal in width, each distinctly narrower than II; III subquadrate; IV–VI subequal in length, each slightly longer than broad; VII slightly broader and longer than VI, slightly longer than broad; VIII as long as VII but slightly broader, about as long as broad; IX longer and broader than VIII, slightly longer than broad; X longer and broader than IX, slightly longer than broad; XI slightly broader than X, minimally shorter than IX–X together.

Pronotum very broad and convex, nearly semi-circular in shape, broadest in middle or slightly

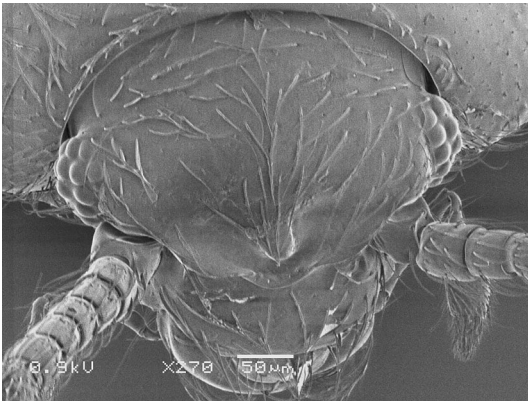
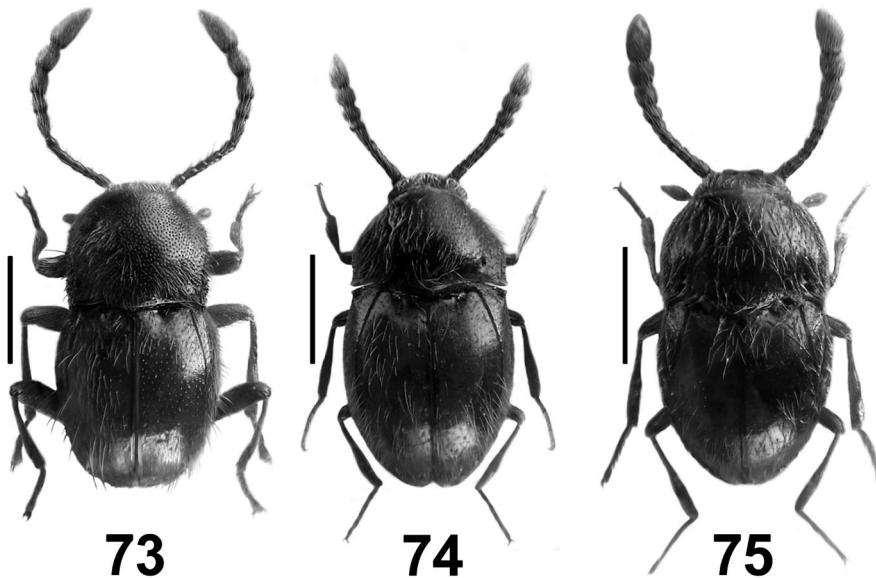


Fig. 72. Head of male of *Cephennodes sulcatifrons* sp. nov. in anterior view.



Figs. 73–75. Dorsal habitus of *Cephennodes apicalis* sp. nov. (73), *C. trisaonus* sp. nov. (74) and *C. sulcatifrons* sp. nov. (75). Scale: 0.5 mm.

anterior to middle, length 0.47–0.50 mm (mean 0.49 mm), width 0.67–0.72 mm (mean 0.70 mm). Anterior margin broadly rounded; lateral margins rounded, in posterior third nearly straight, from widest place slightly convergent toward sharp hind angles; posterior margin deeply biemarginate; lateral ante-basal pits shallow, located minimally closer to posterior than to lateral margins; lateral carinae narrow, not separated from lateral margins. Punctuation in central part of disc very fine, barely noticeable under magnification 40x, front angles are covered with slightly more distinct punctures, but still very fine; setation moderately long and dense, suberect.

Elytra stout, slightly less convex than pronotum, broadest in anterior third and strongly narrowing from widest place toward separately rounded apices; length 0.75–0.80 mm (mean 0.78 mm), width 0.67–0.75 mm (mean 0.71 mm), EI 1.06–1.10. Subhumeral lines as long as 0.45x length of elytra, distinctly carinate. Punctuation more distinct than that on pronotum, composed of small and moderately dense, sharply marked punctures; setation similar to that on pronotum but slightly longer and more erect. Hind wings entirely missing.

Legs moderately long and slender, without peculiar characters.

Metaventrite very finely punctate, with central part broadly flattened and bearing very shallow median impression in its posterior half.

Aedeagus (Figs. 69–71) 0.47 mm in length, highly modified *simonis*-type, median lobe only slightly asymmetrical, with minute setae on its dorsal wall; apical projections very short; parameres slender, asymmetrical, each slightly broadened near apex and provided with three apical setae.

Female. Externally differs from male in non-modified frons; body length 1.47–1.52 mm (mean 1.50 mm), length of head 0.22 mm, width of head 0.37 mm, length of antennae 0.70–0.75 mm (mean 0.73 mm), length of pronotum 0.47–0.50 mm (mean 0.49 mm), width of pronotum 0.67–0.72 mm (mean 0.71 mm), length of elytra 0.77–0.80 mm (mean 0.79 mm), width of

elytra 0.75 mm, EI 1.03–1.07. Ovipositor as in Figs. 3, 4.

Distribution. Southern Vietnam, Lam Dong Prov.

Material. Holotype male, white printed label “Mt. Lang Biang (ca. 1,900 m), nr. Da Lat, Lam Dong Prov., [S-VIETNAM], 2. vi. 2002, S. Nomura leg.”. Paratypes: 2 females, same data as for holotype; 1 male, 1 female, same data except for 1. v. 2003; 3 males, 1 female, same data except for 1,800 m and 30. iv. 2003.

Etymology. The specific epithet refers to one of the structures found on the head in males.

Remarks. The modification found in the head of males of *C. sulcatifrons* is very similar to that in *C. tuberculifrons* Jałoszyński. The latter species has been described from Southern China (provinces Fujian and Jiangxi) (Jałoszyński, 2007a), and despite similar sexual dimorphic characters and the shape of the aedeagus it has strikingly different morphology than *C. sulcatifrons*—it is much smaller, more slender, with shorter subhumeral lines on the elytra and large, dense punctures covering the pronotum, whereas in the Vietnamese species the pronotum is extremely finely punctate, appearing almost impunctate. Moreover, the median tubercle on the head in males of *C. tuberculifrons* is somewhat larger than that in *C. sulcatifrons*, and the former species has lateral carinae on the pronotum well separated from the lateral margins, whereas *C. sulcatifrons* has carinae not separated from the margins. Despite a similar modification of the head, the two species have too different morphology to be placed in the same species group.

Cephennodes (Cephennodes) mustacifrons

sp. nov.

(Figs. 76–79, 89)

Diagnosis. Males of this species can be distinguished from all other congeners by unique modifications of the head: vertex with pair of relatively short, curved bristles thickened toward apices; anterior part of vertex and frons divided by longitudinal median groove, which is distinctly and

rapidly broadened in its posterior part; frons between supraantennal tubercles raised and bearing pair of peculiar bristles inserted in middle, at the end of median groove, and directed laterally, to opposite sides. Females can be identified by direct comparison with males, on the basis of identical body shape and punctation pattern; the latter composed of dense, moderately large punctures covering pronotum and slightly sparser, much finer punctation on elytra, usually with punctures around suture in anterior half slightly larger than those on remaining surface.

Description. Male (Fig. 89). Body moderately large and convex, stout, dark brown, with light brown vestiture, length 1.52–1.62 mm (mean 1.58 mm). Head (Fig. 76) relatively large, length 0.22–0.25 mm (mean 0.23 mm), width 0.42–0.45 mm (mean 0.43 mm); vertex convex, with pair of minute tubercles and pair of moderately long, curved and slightly thickened bristles; frons between supraantennal tubercles bulging, with pair of curved bristles directed laterally and inserted in middle, at anterior end of longitudinal median groove, which is rapidly broadened in its posterior end; supraantennal tubercles relatively small but distinctly raised; eyes large and strongly convex; punctation and setation as in Fig. 76. Antennae relatively long, compact, with five terminal antennomeres forming indistinct club, length 0.75 mm; antennomere I about as long as broad; II slightly narrower and slightly longer than I, 1.2x as long as broad; III–IV subequal in length and width, each distinctly narrower than II and as long as broad; V–VI subequal in length and width, each as broad as IV but minimally longer; VII broader and longer than VI, slightly longer than broad; VIII broader than VII but not longer, about as long as broad; IX longer and broader than VIII, about as long as broad; X only slightly broader and longer than VIII, about as long as broad; XI slightly broader than X and minimally shorter than IX–X together.

Pronotum broad, nearly semicircular in shape, broadest anterior to middle, length 0.47–0.50 mm (mean 0.49 mm), width 0.75–0.80 mm (mean 0.76 mm). Anterior margin broadly rounded; lat-

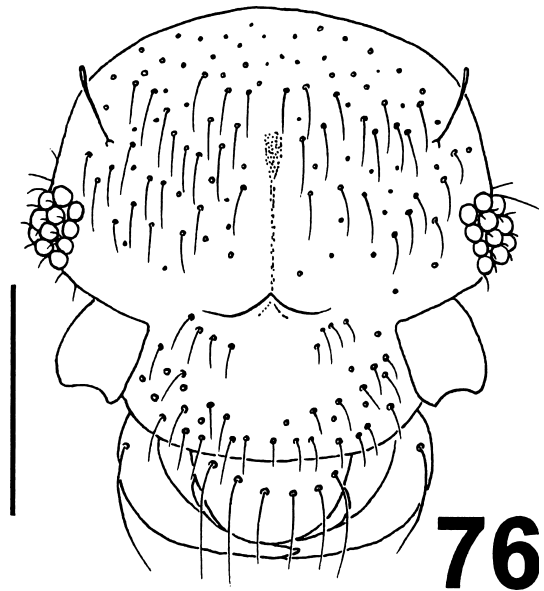
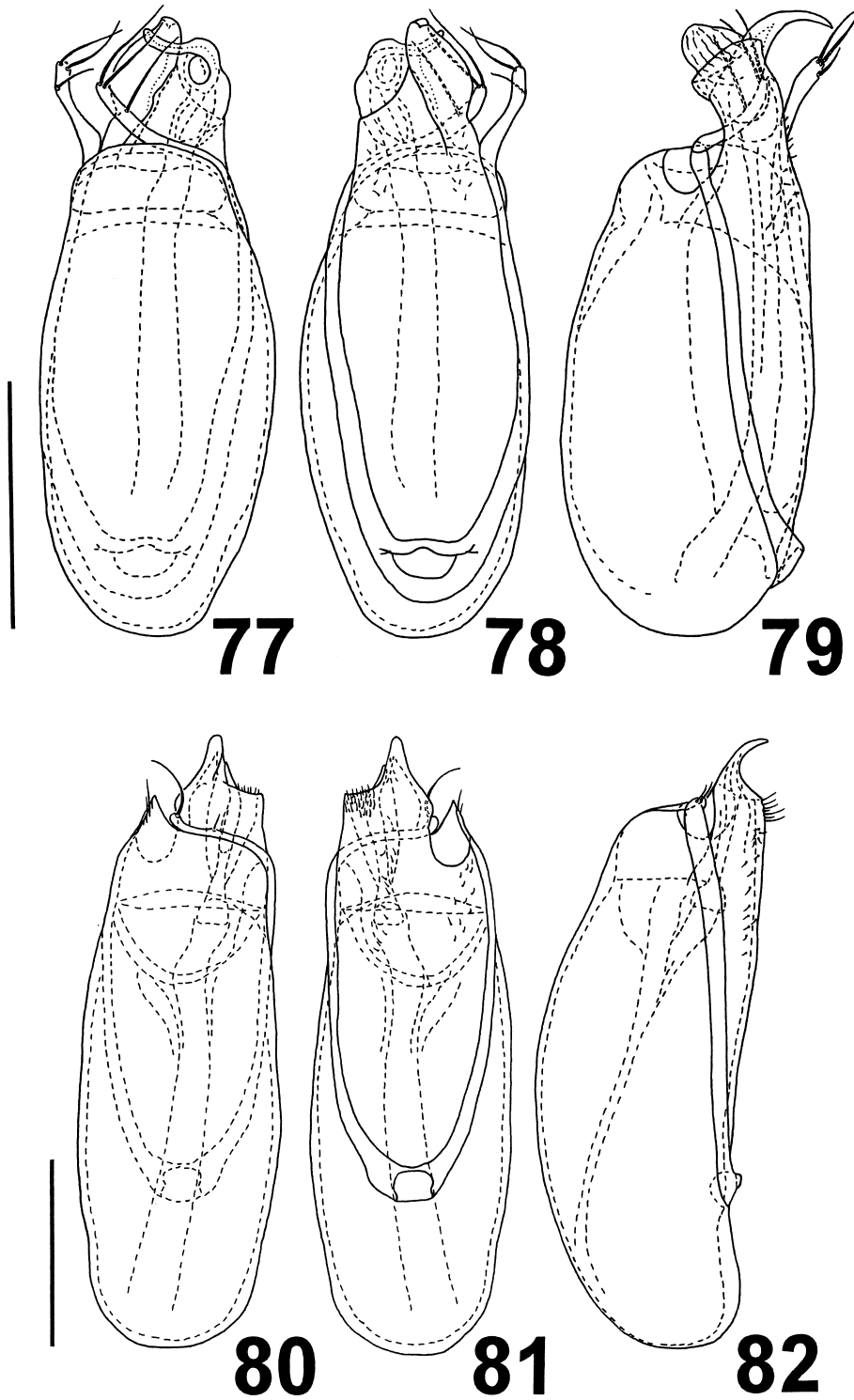


Fig. 76. Head of male of *Cephennodes mustacifrons* sp. nov. in anterior view. Scale: 0.2 mm.

eral margins rounded in anterior half and nearly straight posteriorly, finely serrate, distinctly convergent towards nearly straight hind angles; posterior margin deeply biemarginate; lateral ante-basal pits shallow, located closer to posterior than to lateral margins; lateral carinae very narrow, not separated from lateral margins. Punctation in central part dense, composed of moderately large, but deep and sharply marked punctures separated one from another by spaces shorter than puncture diameters, narrow area along posterior margin remains impunctate, punctures covering area adjacent to each front angle equal in diameters or smaller than those in middle; setation moderately long and dense, only slightly suberect.

Elytra as convex as pronotum, broadest near anterior third, strongly narrowing from widest place toward apices, length 0.80–0.90 mm (mean 0.86 mm), width 0.75–0.80 mm (mean 0.77 mm), EI 1.07–1.12. Subhumeral lines as short as 1/4 of elytra, carinate but with somewhat rounded edge; apices of elytra rounded together. Punctation slightly sparser and much finer than that on



Figs. 77–82. Aedeagus of *Cephennodes mustacifrons* sp. nov. (77–79) and *C. tanvienus* sp. nov. (80–82) in ventral (77, 80), dorsal (78, 81) and lateral (79, 82) views. Scale: 0.2 mm.

pronotum, punctures around suture in anterior half are more distinct than those on sides and in posterior half; setation moderately dense, much longer than that on pronotum and strongly erect. Hind wings reduced, about one third longer than elytra and very narrow.

Legs moderately long and slender, without peculiar characters.

Metasternum with dense, distinct but small punctures in median part, anterior part and sides covered with punctures reducing in diameter and depth, sparser than those in middle.

Aedeagus (Figs. 77–79) 0.50 mm, highly modified *simonis*-type, median lobe only slightly asymmetrical, with minute setae on its dorsal wall; apical projections moderately short; parameres slender, asymmetrical, each with three setae.

Female. Externally very similar to male except for head with neither bristles nor median longitudinal groove, and with frons regularly convex, not bulging, vertex with pair of minute tubercles; wingless. Body length 1.52–1.59 mm (mean 1.55 mm), length of head 0.22 mm, width of head 0.42 mm, length of antennae 0.75 mm, length of pronotum 0.50–0.52 mm (mean 0.51 mm), width of pronotum 0.75–0.80 mm (mean 0.77 mm), length of elytra 0.80–0.85 mm (mean 0.82 mm), width of elytra 0.75–0.77 mm (mean 0.76 mm), EI 1.07–1.10.

Distribution. Northern Vietnam, Lao Cai Prov.

Material. Holotype male, two white printed labels “Deo Tram Ton, alt. 1,950 m, Lao Cai Prov.” and “[N-VIETNAM], 4. x. 1995, S. Nomura leg.”. Paratypes: 2 males, 3 females, white printed label “Sa Pa (LT: 1,500 m), Lao Cai Prov., [N-VIETNAM], 14. v. 2003, S. Nomura leg.”.

Etymology. The specific name refers to the pair of setae or bristles inserted in the middle of frons and directed laterally, to opposite sides; after Greek “*mustax/mystax*” meaning a mustache or an upper lip.

Remarks. This species shares with the *taurus*-group the pair of odd lateral bristles located on the vertex; they are curved dorsally and thickened toward apices. That species group, com-

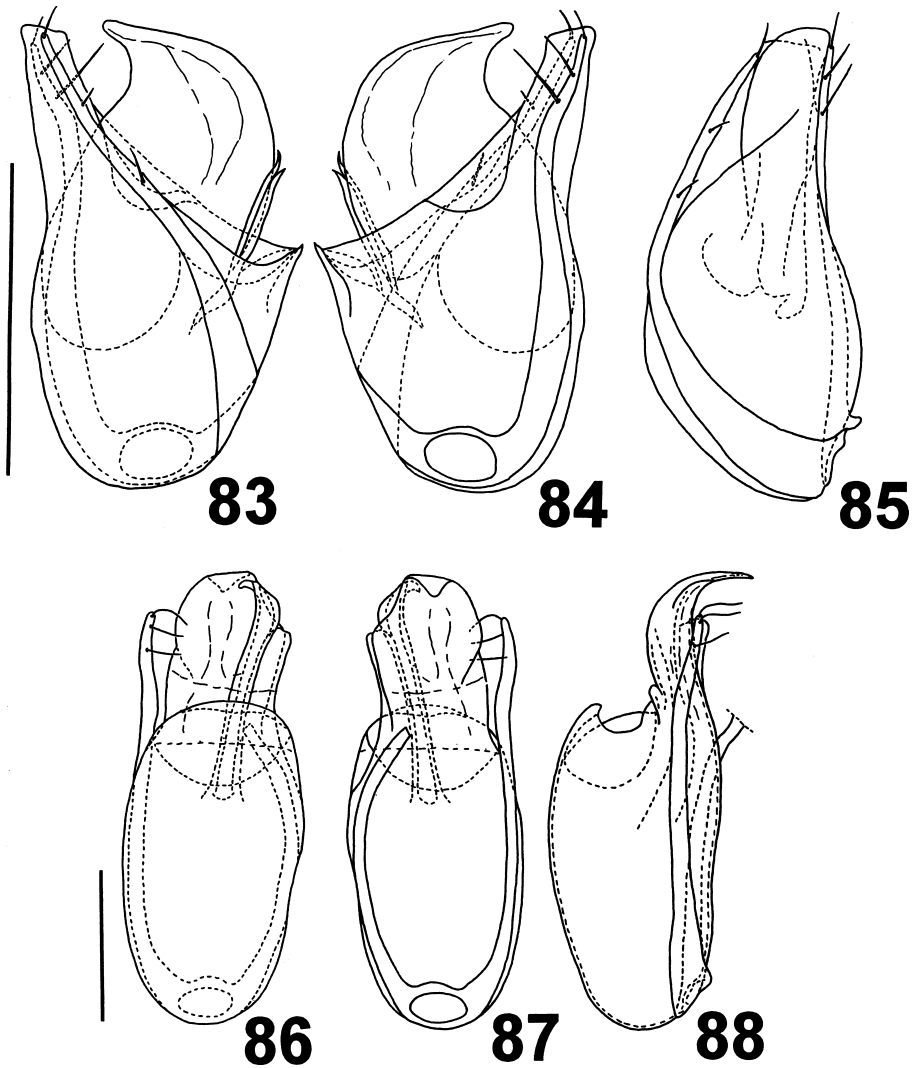
posed of Chinese *C. taurus* Jałoszyński and *C. tauroides* Jałoszyński, is characterized not only by these peculiarly modified setae in males, but also by additional modifications on the frons and vertex (impressions accompanied by carinae), and the shape of the aedeagus. The latter is similar to the copulatory organ of the type species of *Cephennodes* (i.e., *C. simonis* Reitter), except for bearing minute setae on the subapical region of the dorsal wall. *Cephennodes mustacifrons*, though sharing with *C. taurus* a similar body shape, punctuation of the pronotum and elytra, indistinctly delimited, five-segmented antennal club, and relatively short subhumeral lines on the elytra, cannot be included into the same group of species. It has distinctly different aedeagus, with the median lobe nearly symmetrical, broadly rounded at apex and only a short apical part of the parameres is asymmetrical; also the head in males does not bear any impressions, instead of that the frons is projected anteriorly and bears additional pair of modified setae.

Cephennodes (Cephennodes) tanvienus sp. nov.

(Figs. 80–82, 90)

Diagnosis. This new species is relatively unremarkable; certain identification is possible on the basis of the following, unique combination of characters: body moderately small, very stout and convex but with distinct constriction between pronotum and elytra; subhumeral lines short, nearly straight; head and elytra with dense and distinct punctuation, but punctures are relatively small, pronotum covered with larger, even denser punctures separated by spaces shorter than puncture diameters; aedeagus with expanded apex of ventral wall of median lobe, located asymmetrically and forming pointed, triangular projection. Females can be identified by direct comparison with males, preferably when collected together.

Description. Male (Fig. 90). Body moderately small, very convex, relatively stout but with distinct constriction between pronotum and elytra, dark brown with light brown setation, length 1.45 mm. Head moderately large, length 0.17 mm,



Figs. 83–88. Aedeagus of *Cephennodes lustricollis* sp. nov. (83–85) and *C. punctifrons* sp. nov. (86–88) in ventral (83, 86), dorsal (84, 87) and lateral (85, 88) views. Scale: 0.1 mm.

width 0.37 mm; vertex convex, with pair of tiny tubercles; frons convex; supraantennal tubercles weakly raised, relatively indistinct; eyes moderately large, very convex. Punctuation on frons and vertex and partly on supraantennal tubercles dense, composed of large, deep and sharply marked punctures separated one from another by spaces shorter than or equal to puncture diameters, punctures in middle slightly sparser than those on sides, anterior parts of supraantennal tubercles impunctate; setation short and sparse,

suberect. Antennae moderately long, relatively compact, with five terminal antennomeres covered with fine microgranulation and forming indistinctly delimited club, length 0.70 mm; antennomere I about as long as broad; II slightly narrower and longer than I, 1.4x as long as broad; III–VI each distinctly narrower than II, gradually increasing in length from III, which is minimally shorter than long to slightly longer than broad antennomere VI; VII broader and longer than VI, slightly longer than broad; VIII broader but only

slightly longer than VII, about as long as broad; IX broader and longer than VIII, about as long as broad; X yet broader but minimally broader than long; XI slightly broader than X, slightly shorter than IX–X together.

Pronotum broad and very convex, transversally semielliptical, broadest between middle and anterior third, length 0.47 mm, width 0.67 mm. Anterior margin broadly rounded; lateral margins rounded in major part, only posterior third nearly straight, sides from widest place strongly narrowing toward hind angles, very short part of lateral margin adjacent to each hind angle is expanded laterally, so that hind angles are sharp and protruded laterally and posteriorly, lateral margins finely serrate; posterior margin deeply biemarginate; lateral ante-basal pits shallow, located closer to posterior than to lateral margins; lateral carinae narrow, not separated from margins. Punctuation on central part of pronotum dense, composed of moderately large, deep and sharply marked punctures separated one from another by spaces distinctly shorter than puncture diameters, narrow area along posterior margin remains impunctate, area adjacent to each front angle bearing very dense punctures, slightly smaller and less distinct than those in middle; setation moderately long and dense, only slightly suberect.

Elytra oval, as convex as pronotum, broadest near anterior third, length 0.80 mm, width 0.65 mm, EI 1.23. Subhumeral lines short and straight, as long as 1/3 of elytra, distinctly carinate; apices of elytra separately rounded. Punctuation on large adsutural area in anterior half is composed of punctures smaller, shallower and slightly sparser than those on central part of pronotum, but punctuation is very distinct and sharply marked, punctures on sides and apical half are gradually smaller and less distinct than those in anterior half; setation similar to that on pronotum, only slightly longer and more erect. Hind wings entirely reduced.

Legs moderately long and slender, without peculiar characters.

Metaventrite with moderately large postcoxal impressions and convex central part covered with

very fine punctation.

Aedeagus (Figs. 80–82) 0.67 mm, modified *simonis*-type, median lobe very long, nearly symmetrical except for its apex shifted to one side and forming short subtriangular projection, dorsal wall with minute setae; apical projections short; parameres slender, asymmetrical, each with 2–3 setae.

Female. Externally indistinguishable from male; body length 1.39–1.42 mm (mean 1.41 mm), length of head 0.17 mm, width of head 0.35–0.37 mm (mean 0.36 mm), length of antennae 0.62 mm, length of pronotum 0.47–0.50 mm (mean 0.49 mm), width of pronotum 0.67–0.62 mm (mean 0.69 mm), length of elytra 0.75 mm, width of elytra 0.70–0.72 mm (mean 0.71 mm), EI 1.04–1.07.

Distribution. Northern Vietnam, Ha Tai Prov.

Material. Holotype male, two white printed labels “Mt. Tan Vien, alt. 950 m, Ha Tai Prov.” and “[N-VIETNAM], 15. x. 1995, S. Nomura leg.”. Paratypes: 1 female, same data as for holotype; 1 female, same data except for 16. x. 1995.

Etymology. Locotypical, after the type locality Mt. Tan Vien.

Remarks. The aedeagus of this species represents an interesting combination of symmetrical and asymmetrical structures, the former being typical for the type referred to as the *latus*-type, the latter typical for the *simonis*-type, as discussed in a previous paper (Jałoszyński, 2007a). While parameres and dorsal apical processes of the median lobe are strongly asymmetrical and their shapes and arrangement is shared by all species formerly treated as *Cephegnodes* (i.e., those with aedeagi similar to that of *C. simonis* Reitter), the major part of the median lobe is symmetrical. It is also very large compared to apical structures, and is much more similar to the median lobe known in *C. latus*, the type laying on the opposite end of the morphocline suggested previously (Jałoszyński, 2007a). However, in *C. tanvienus*, the apical part of the median lobe is asymmetrical, forming a triangular, pointed tip.

Cephennodes (Cephennodes) lustricollis

sp. nov.

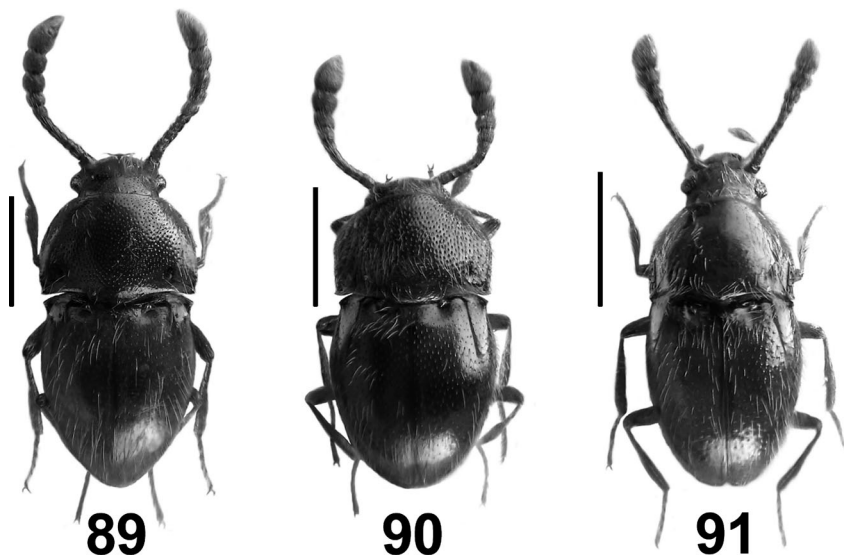
(Figs. 83–85, 91)

Diagnosis. This species has relatively unremarkable, very small body; its unique diagnostic characters are as follows: shiny, extremely finely punctate pronotum; lateral carinae on pronotum separated from margins; very short subhumeral lines on elytra; very shallow but uneven, slightly coarse and diffused punctation on elytra; and uniquely shaped aedeagus, which has strongly elongate, slender and tapered apical part of median lobe.

Description. Male (Fig. 91). Body very small, elongate, with confluent pronotum and elytra, moderately convex, brown, with yellowish vestiture, length 1.22 mm. Head moderately large, length 0.15 mm, width 0.30 mm; vertex regularly convex with pair of minute, but very distinct tubercles; frons convex; supraantennal tubercles distinct but relatively weakly raised; eyes large and strongly convex. Punctuation very fine and sparse; setation moderately long, relatively sparse, suberect. Antennae moderately long, relatively slender but compact, with four terminal antennomeres forming broad, but very indistinctly

delimited club, length 0.55 mm; antennomere I about 1.5x as long as broad; II distinctly narrower and slightly longer than I, twice as long as broad; III–VI subequal in length and width, each distinctly narrower than II and about as long as broad or minimally longer; VII as narrow as VI and only slightly longer, about 1.2x as long as broad; VIII about as long as VII but slightly broader, minimally longer than broad; IX distinctly broader and longer than VIII, slightly longer than broad; X broader, but not longer than IX, slightly broader than long; XI distinctly broader than X, slightly shorter than IX–X together.

Pronotum nearly semicircular in shape, broadest at base, length 0.37 mm, width 0.52 mm. Anterior margin broadly rounded; lateral margins rounded in anterior third, in posterior third nearly straight, very short part of each lateral margin adjacent to hind angles is slightly expanded laterally, so hind angles are sharp and slightly produced laterally and posteriorly, lateral margins in posterior half are finely serrate; posterior margin moderately deeply biemarginate; lateral antebasal pits small and located slightly closer to posterior than to lateral margins; lateral carinae narrow but distinct and narrowly separated from



Figs. 89–91. Dorsal habitus of *Cephennodes mustacifrons* sp. nov. (89), *C. tanvienus* sp. nov. (90) and *C. lustricollis* sp. nov. (91). Scale: 0.5 mm.

lateral margins, which are slightly thickened, so that sides of pronotum appear bicarinate. Punctuation on central part of disc extremely fine, barely noticeable under magnification 40x, cuticle glossy, only small area adjacent to each front angle being covered with more distinct and dense punctuation, but punctures are diffused and very shallow. Setation moderately long and dense, only slightly suberect.

Elytra oval, as convex as pronotum, broadest between middle and anterior third, with distinctly raised suture in anterior half, length 0.70 mm, width 0.57 mm, IE 1.23. Subhumeral lines short, only as long as 1/3 of elytra, carinate but with relatively blunt edges; apices of elytra separately rounded. Punctuation much more distinct than that on pronotum, but composed of very small punctures, strongly raised margins of punctures form diffused granules, so that surface of elytra appears coarse; setation similar to that on pronotum but slightly longer and more erect. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Metaventricle covered with dense, fine punctures.

Aedeagus (Figs. 83–85) 0.15 mm in length, *simonis*-type, with strongly projected and tapered apex of median lobe; apical projection broad, its curved subtriangular apex is directed toward apex of median lobe; parameres slender, each with three setae.

Female. Unknown.

Distribution. Northern Vietnam, Ninh Binh Prov.

Material. Holotype male, white printed label “Cuc Phuong (LT: 150 m), Ninh Binh Prov., [N-VIETNAM], 13. vi. 2002, S. Nomura leg.”.

Etymology. The specific epithet refers to a glossy luster of the pronotum.

Remarks. The aedeagus of this species is somewhat similar to that known in the *inflatipes*-group, with a very broad apical projection curved toward the apex of the median lobe. However, males of *C. lustricollis* do not bear any modifications on the metatibiae, and the general morphol-

ogy of this species is distinctly different from members of the *inflatipes*-group.

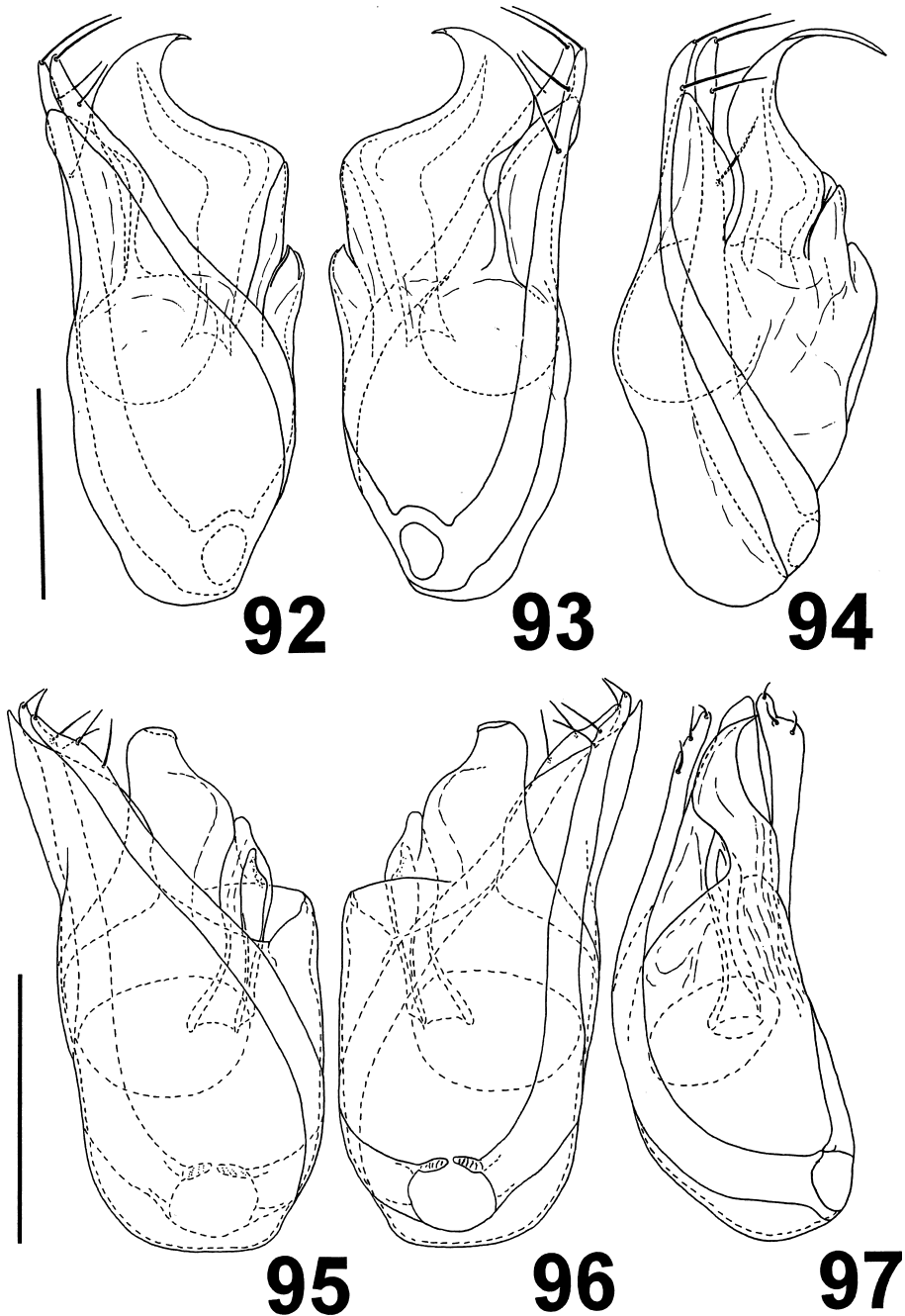
Cephennodes (Cephennodes) punctifrons

sp. nov.

(Figs. 86–88, 98)

Diagnosis. This species has unremarkable external morphology with very few unique characters, with the key feature being unevenly distributed large punctures on vertex and frons; unique aedeagus must be examined to confirm identification. Females can be identified by direct comparison with males, preferably when collected together.

Description. Male (Fig. 98). Body moderately large, very convex, relatively elongate but with sides of pronotum and elytra nearly confluent, dark brown with light brown setation, length 1.52 mm. Head moderately large, length 0.20 mm, width 0.37 mm; vertex convex; frons convex and more steeply lowering anteriorly than vertex; supraantennal tubercles very weakly raised and relatively indistinct; eyes large and strongly convex. Punctuation composed of two kinds of punctures: very small and sparse ones and distinctly larger punctures, which are very unevenly distributed, most of them are very close one to another and located near middle of frons, a few large punctures are also distributed in other parts of frons and vertex. Setation relatively sparse and short, suberect. Antennae moderately long, relatively thick, compact, with five terminal antennomeres covered with fine, coarse microsculpture and forming indistinctly delimited club, length 0.75 mm; antennomere I about as long as broad; II slightly longer and narrower than I, about 1.5x as long as broad; III slightly narrower and much shorter than II, distinctly shorter than broad; IV–VI subequal in length and width, each as broad as III but slightly longer, about as long as broad; VII slightly broader and distinctly longer than VI, but only slightly longer than broad; VIII broader but shorter than VII, minimally broader than long; IX broader and longer than VIII, slightly broader than long; X yet larger, slightly



Figs. 92–97. Aedeagus of *Cephennodes obesus* sp. nov. (92–94) and *C. longulus* sp. nov. (95–97) in ventral (92, 95), dorsal (93, 96) and lateral (94, 97) views. Scale: 0.1 mm.

broader than long; XI slightly broader than X, about as long as IX–X together.

Pronotum nearly semiellipsoidal in shape, broadest between middle and anterior third,

length 0.50 mm, width 0.65 mm. Anterior margin broadly rounded; lateral margins rounded in anterior third, from widest place distinctly convergent toward nearly straight hind angles, distinctly ser-

rate and slightly constricted in posterior third; posterior margin moderately deeply biemarginate; lateral ante-basal pits small but relatively deep and sharply marked, equally distant from posterior and lateral margins; lateral carinae narrow, not separated from lateral margins. Punctuation on central part of disc dense, but composed of small, sharply marked punctures separated one from another by spaces of various lengths, from shorter than puncture diameters up to 3x as long, punctures in posterior part of pronotum gradually become smaller and less distinct, and relatively broad area along posterior margin remains impunctate, area adjacent to each front angle covered with dense and coarse punctures, which are about as large as those in middle. Setation relatively short, moderately dense, only slightly suberect.

Elytra oval, as convex as pronotum, broadest anterior to middle, length 0.82 mm, width 0.70 mm, EI 1.17. Subhumeral lines as long as 0.4x length of elytra, distinctly carinate; apices of elytra separately rounded. Punctuation much finer and slightly sparser than that on central part of pronotum, composed of very small, but sharply marked punctures; setation longer and more erect than that on pronotum, moderately dense. Hind wings entirely reduced.

Legs moderately long and slender, without peculiar characters.

Metaventricle with fine punctuation.

Aedeagus (Figs. 86–88) 0.30 mm, modified *simonis*-type, median lobe only slightly asymmetrical; apical projections long; parameres slender, asymmetrical, with three setae.

Female. Externally indistinguishable from male; the only known female has vertex and frons covered with similar punctures as male, but large punctures are not particularly grouped near middle. Body length 1.52 mm, length of head 0.20 mm, width of head 0.37 mm, length of antennae 0.75 mm, length of pronotum 0.50 mm, width of pronotum 0.70 mm, length of elytra 0.82 mm, width of elytra 0.75 mm, EI 1.10.

Distribution. Northern Vietnam, Vinh Phu Prov.

Material. Holotype male, white printed label “Mt. Tam Dao, Vinh Phu Prov., [N-VIETNAM], 17. vi. 1997, S. Nomura leg.”. Paratype: 1 female, same data as for holotype.

Etymology. The specific epithet refers to odd punctuation of the head.

Remarks. The aedeagus of this species has only slightly asymmetrical median lobe, while the apical projections and parameres are asymmetrical like those in the *impressifrons* group of species. Interestingly, in *C. punctifrons* the asymmetry of the median lobe is inverted, in ventral view the right side is slightly more expanded, whereas typically asymmetrical aedeagi found within *Cephennodes* have the left side expanded to various extent.

***Cephennodes (Cephennodes) obesus* sp. nov.**

(Figs. 92–94, 99)

Diagnosis. Both sexes of *C. obesus* are unique in having very broad, stout body with relatively small pronotum compared to elytra; very large postcoxal impressions of metaventricle, reaching nearly to its posterior margin, and asymmetrical antennae, slightly bent dorso-ventrally at antennomere VII.

Description. Male (Fig. 99). Body extremely broad, stout, oval, dark brown with light brown setation, length 1.65 mm. Head relatively small, length 0.25 mm, width 0.40 mm; vertex weakly convex, with pair of tiny tubercles; frons nearly flat, much more steeply lowering anteriorly than vertex; supraantennal tubercles large and strongly raised; eyes large, very convex. Punctuation diversified, vertex with very fine punctures, appearing almost impunctate under magnification 40x, frons with dense, distinct, deep and relatively large punctures separated one from another by spaces about equal to puncture diameters; setation moderately dense, relatively short, on posterior part of vertex nearly recumbent and directed posteriorly and toward midline, setae on anterior part of vertex and frons are sparser and suberect. Antennae relatively short and thick, compact, with five terminal antennomeres covered with

fine, slightly coarse microsculpture and forming broad, but indistinctly delimited club, antennae slightly bent at antennomere VII, length of antennae 0.75 mm; antennomere I slightly longer than broad; II barely narrower but distinctly longer than I, about 1.2x as long as broad; III–V subequal in width and length, each slightly narrower than II and distinctly broader than long; VI as broad as V but slightly longer, about as long as broad; VII distinctly broader and longer than VI, slightly shorter than broad, dorsally longer than ventrally, so that antennae at this place are slightly curved dorsally; antennomere VIII slightly longer and distinctly broader than VII, slightly broader than long; IX–X gradually increasing in length and width, each slightly broader than long; XI yet broader, slightly longer than IX–X together.

Pronotum very broad, nearly semicircular in shape, broadest at base, length 0.50 mm, width 0.72 mm. Anterior margin broadly rounded, lateral margins rounded up to sharp, slightly expanded laterally and posteriorly hind angles, distinctly serrate; posterior margin shallowly biemarginate; lateral ante-basal pits very distinct, located closer to posterior than to lateral margins; lateral carinae narrow, not separated from lateral margins. Punctuation on central part of disc very fine but relatively dense, only punctures near front angles and along anterior half of lateral margins slightly larger and denser, distinctly coarse but diffused; setation relatively short, dense, only slightly suberect.

Elytra oval, very broad (strikingly broader than pronotum) and short, with slightly raised suture in anterior half, broadest between middle and anterior third, length 0.90 mm, width 0.87 mm, EI 1.03. Subhumeral lines reaching middle of elytra, distinctly carinate, narrow and strongly curved; apices of elytra separately rounded. Punctuation slightly more distinct but minimally sparser than that on pronotum; setation moderately dense, much longer and more erect than that on pronotum. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Metaventricle with extremely large, sharply delimited but relatively shallow postcoxal impressions reaching nearly to posterior margin of sternum, convex central part extremely finely punctate.

Aedeagus (Figs. 92–94) 0.27 mm in length, *simonis*-type, with very long, recurved apex of median lobe and very broad apical projection with S-shaped apical margin; parameres slender, with 2–3 setae.

Female. Externally indistinguishable from male; body length 1.70 mm, length of head 0.25 mm, width of head 0.42 mm, length of antennae 0.75 mm, length of pronotum 0.55 mm, width of pronotum 0.82 mm, length of elytra 0.90 mm, width of elytra 0.87 mm, EI 1.03.

Distribution. Southern Vietnam, Lam Dong Prov.

Material. Holotype male, white printed label “Dam B’Ri (ca. 800 m), Lam Dong Prov., [S-VIETNAM], 3. v. 2003, S. Nomura leg.”. Paratype: 1 females, same data as for holotype.

Etymology. The specific name reflects the unusually “obese”, broad and stout body shape of this species.

Remarks. Asymmetrical middle antennomeres are very rare within the tribe; a similar condition as found in *C. obesus* has been very recently reported in Chinese *C. bicolor* (Jałoszyński, 2007a). However, the latter species (very different in general body shape and structures of the aedeagus) has the antennae bent at asymmetrical antennomere VI, whereas *C. obesus* has asymmetrical antennomere VII. This modification expands known spectrum of diversity in the cephenniines, and further morphological oddities can be expected when the group is more extensively studied. Other species showing a similar body shape occur in other parts of the Oriental Region (Jałoszyński, unpublished observations). It is interesting that this remarkable species has the aedeagus similar to those found in *C. longulus*, *C. saetosus*, and *C. langbianganus* (all described in further parts of this paper), whereas the external morphology of each of these species is clearly different.

Cephenodes (Cephenodes) longulus sp. nov.

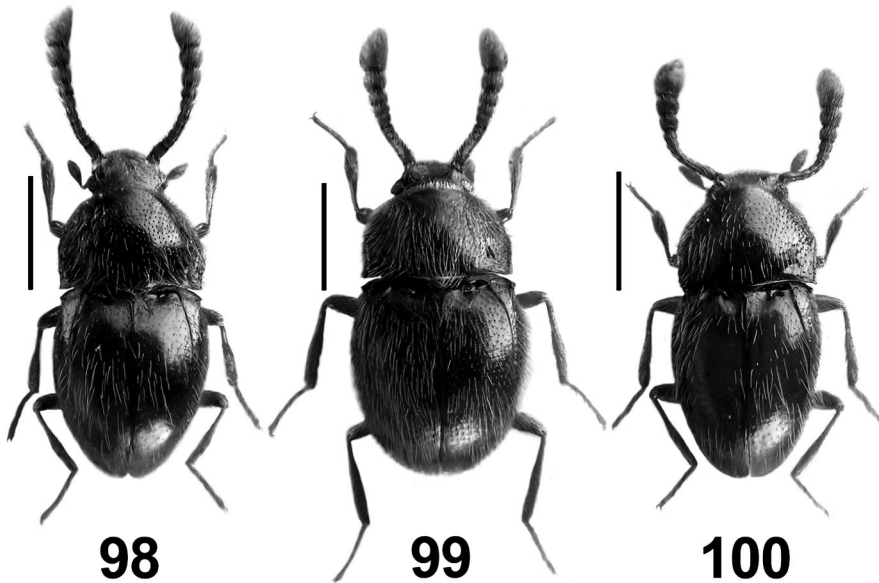
(Figs. 95–97, 100)

Diagnosis. This species can be distinguished from all congeners on the basis of its very elongate body, with elytra clearly twice as long as pronotum, and unique aedeagus. Females should be identified only by direct comparison with males, preferably when collected together.

Description. Male (Fig. 100). Body elongate, moderately convex, with distinct but shallow constriction between pronotum and elytra, light to dark brown, with light brown setation, length 1.32–1.37 mm (mean 1.34 mm). Head moderately large, length 0.17–0.20 mm (mean 0.18 mm), width 0.30–0.32 mm (mean 0.31 mm); vertex and frons only slightly convex, anterior part of frons nearly flat; supraantennal tubercles very distinct, large; eyes large and strongly convex. Punctuation of frons distinct, composed of moderately sharply marked, relatively large punctures separated one from another by spaces about equal to puncture diameters, punctures on posterior part of frons and on vertex are gradually smaller and shallower, supraantennal tubercles impunctate; setation moderately long and dense, suberect.

Antennae relatively short and compact, with five terminal antennomeres forming indistinctly delimited club, length 0.55–0.62 mm (mean 0.58 mm); antennomere I about as long as broad; II distinctly longer and slightly narrower than I, ca. 1.8x as long as broad; III–VI subequal in length and width, each much narrower than II and only slightly longer than broad; VII slightly broader and longer than VI, slightly longer than broad; VIII slightly broader than VII but similar in length, about as long as broad; IX broader and much longer than VIII, about as long as broad; X broader and slightly longer than IX, slightly broader than long; XI much broader than X, slightly longer than IX–X together.

Pronotum nearly semicircular or subtrapezoidal in shape, broadest near middle, length 0.40–0.42 mm (mean 0.41 mm), width 0.52–0.55 mm (mean 0.54 mm). Anterior margin relatively weakly rounded; lateral margins distinctly serrate, in anterior half rounded, in posterior half nearly straight and minimally convergent toward sharp hind angles, which are slightly projected laterally; posterior margin shallowly biemarginate; ante-basal pits shallow, equally distant from posterior and lateral margins; lateral carinae



Figs. 98–100. Dorsal habitus of *Cephennodes punctifrons* sp. nov. (98), *C. obesus* sp. nov. (99) and *C. longulus* sp. nov. (100). Scale: 0.5 mm.

barely recognizable, not separated from lateral margins. Punctuation on central part of disc composed of punctures smaller than those on frons, relatively deep and sharply marked, separated by spaces equal to puncture diameters, punctures becoming gradually smaller and shallower toward posterior and anterior margins of pronotum, and narrow area along posterior margin remains impunctate, punctures covering area adjacent to each anterior angle very dense and coarse. Setation moderately dense and long, suberect.

Elytra oval, very long and moderately convex, broadest near anterior fourth or third, length 0.75 mm, width 0.55 mm, EI 1.36. Subhumeral lines distinctly carinate, slightly longer than half of elytra; apices of elytra separately rounded. Punctuation slightly sparser than that on central part of pronotum but composed of much smaller, moderately distinct punctures; setation much longer than that on pronotum, moderately dense, erect. Hind wings well developed.

Legs relatively long and slender, without peculiar characters.

Metaventricle with large and deep postcoxal impressions sharply delimited from sides of sternum, convex central part covered with fine and sparse, but distinct punctures.

Aedeagus (Figs. 95–97) 0.20 mm in length, *simonis*-type, with very long, subtriangular and recurved apex of median lobe and moderately large apical projections; parameres long, relatively broad, in lateral view less asymmetrical paramere is broadened near apex and narrowed rapidly, so that apical part is separated from subapical region.

Female. Externally indistinguishable from male, wingless; body length 1.25–1.31 mm (mean 1.27 mm), length of head 0.15–0.17 mm (mean 0.16 mm), width of head 0.3 mm, length of antennae 0.52–0.57 mm (mean 0.55 mm), length of pronotum 0.40–0.42 mm (mean 0.41 mm), width of pronotum 0.55 mm, length of elytra 0.70–0.72 mm (mean 0.71 mm), width of elytra 0.57 mm, EI 1.23–1.26.

Distribution. Central Vietnam, Thua Thien-Hue Prov.

Material. Holotype male, white printed label “Tri Sao (400 m), Mt. Bach Ma, T. T. Hue Prov., [C-VIETNAM], 7. v. 2003, S. Nomura leg.”. Paratypes: 1 male, 1 female, white printed label “Mt. Bach Ma (1,300 m), T. T. Hue Prov., [C-VIETNAM], 10. vi. 2002, S. Nomura leg.”; 1 male, 2 females, same data except for 8. v. 2003; 1 male, same data except for 9. v. 2003.

Etymology. The name refers to the unusually elongate body of this species.

Remarks. The aedeagus of this species is very similar to that found in *C. saetosus*. Besides other minor differences, the apical projections are clearly different in these two species. *Cephennodes longulus* has a different body shape from *C. saetosus*; it has distinctly longer body, with the elytral index 1.36 (only 1.17 in *C. saetosus*), and its pronotum is broadest near middle (at base in *C. saetosus*). Moreover, *C. longulus* bears much more distinct punctures on the frons than *C. saetosus*. A similar aedeagus can also be seen in *C. obesus* (which very remotely resembles any other described *Cephennodes* due to extremely stout body with the pronotum clearly narrower than the elytra, and asymmetrical antennomere VII), and in *C. langbiananus* (which, in turn, is distinctly larger than *C. longulus*, but with more stout elytra, EI 1.16, and extremely long subhumeral lines reaching nearly to the apices of elytra).

Cephennodes (Cephennodes) minusculus

sp. nov.

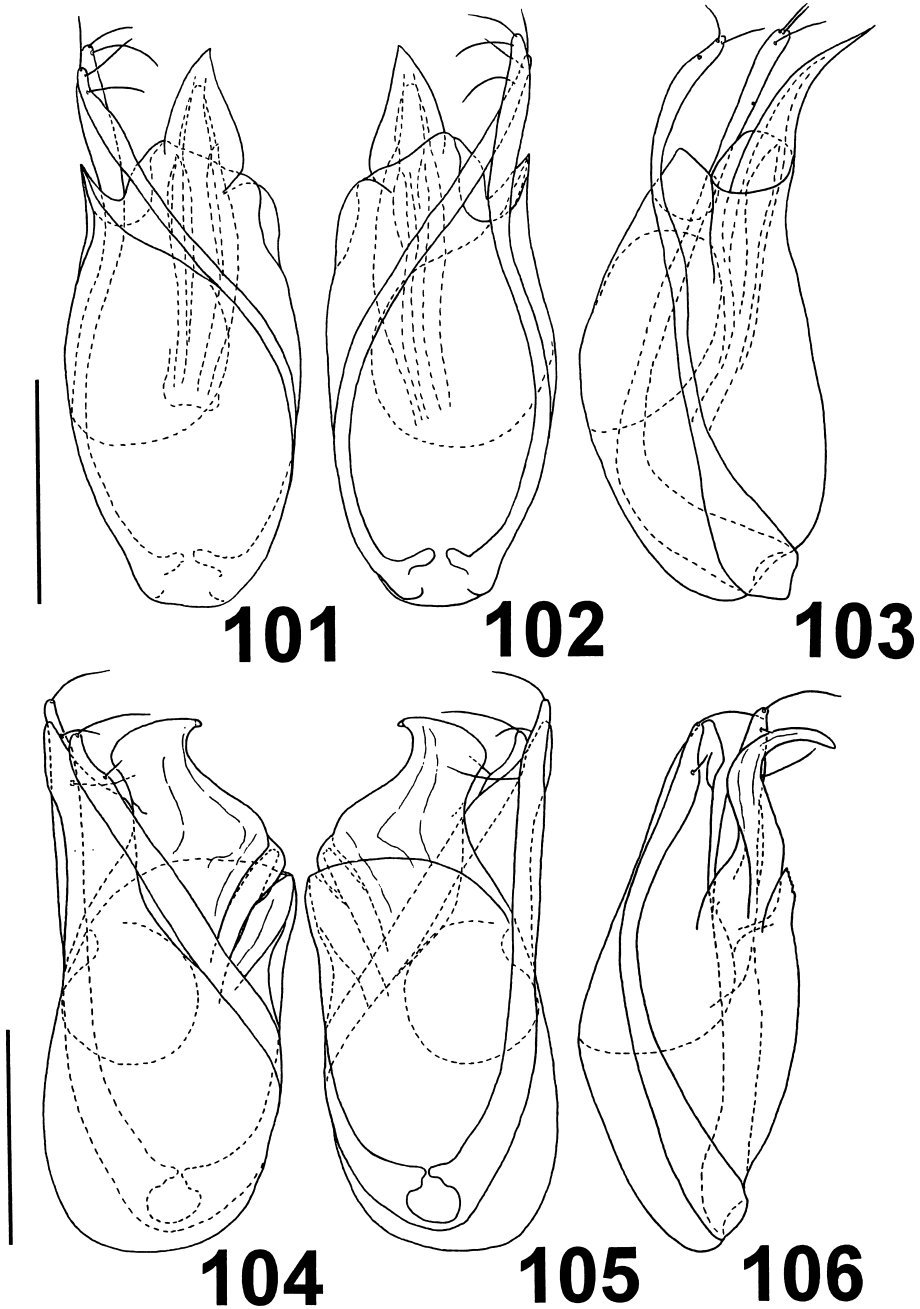
(Figs. 101–103, 115)

Diagnosis. *Cephennodes minusculus* is a small, elongate and generally unremarkable species, with most important diagnostic characters located on the aedeagus: strongly asymmetrical median lobe has very slender, sharply pointed apex, and apical projection is subtriangular, somewhat leaf-shaped, with pointed apex only slightly curved. Female characters remain unknown.

Description. Male (Fig. 115). Body very small, elongate, moderately convex, sides of

pronotum and elytra nearly confluent, pigmentation dark brown, setation yellowish, length 1.12 mm. Head moderately large, length 0.15 mm, width 0.27 mm; vertex and frons regularly convex; supraantennal tubercles distinctly raised;

eyes moderately large, strongly convex. Punctuation moderately dense, composed of small, but distinct and sharply marked punctures, in median part of frons separated one from another by spaces about equal to puncture diameters, punc-



Figs. 101–106. Aedeagus of *Cephennodes minusculus* sp. nov. (101–103) and *C. langbianganus* sp. nov. (104–106) in ventral (101, 104), dorsal (102, 105) and lateral (103, 106) views. Scale: 0.1 mm.

tures on anterior part of frons and on vertex are gradually smaller and less distinct; setation relatively short, moderately dense, suberect. Antennae moderately long, relatively slender with broad, moderately distinctly delimited club composed of five terminal antennomeres (club appears 4-segmented due to very minor difference between antennomeres VI and VII), length 0.57 mm, antennomere I about 1.5x as long as broad; II slightly narrower and longer than I, nearly twice as long as broad; III–VI subequal in length and width, each slightly narrower and much shorter than II, about as long as broad; VII only slightly broader and longer than VI, slightly longer than broad; VIII broader than VII but about equal in length, about as long as broad; IX distinctly broader and longer than VIII, minimally broader than long; X broader and longer than IX, slightly broader than long; XI slightly broader than X, minimally shorter than IX–X together.

Pronotum subrectangular in shape, broadest near anterior third, length 0.35 mm, width 0.47 mm. Anterior margin broadly rounded; lateral margins rounded up to nearly straight hind angles, very finely serrate; posterior margin deeply biemarginate; lateral ante-basal pits small and shallow, located slightly closer to posterior than lateral margins; lateral carinae narrow, not separated from margins. Punctuation on central part of pronotum relatively dense, composed of small, shallow but sharply marked punctures separated one from another by spaces equal to or slightly longer than puncture diameters, punctures in posterior part of pronotum are gradually smaller and sparser and very narrow area along posterior margin remains impunctate, area adjacent to each front angle bearing very dense and slightly coarse punctures, but not larger than those in middle. Setation moderately dense, short, nearly recumbent.

Elytra oval, as convex as pronotum, broadest near anterior third, length 0.62 mm, width 0.52 mm, EI 1.19. Subhumeral lines only as long as 1/4 of elytra, nearly straight, indistinctly carinate; apices of elytra separately rounded. Punctuation very indistinct, composed of small, very shallow

and diffused punctures; setation very similar to that on pronotum, neither longer nor more erect. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Metaventricle with very large postcoxal impressions, its convex central part covered with very fine punctures.

Aedeagus (Figs. 101–103) 0.25 mm in length, *simonis*-type, with thin and pointed apex of median lobe and subtriangular, leaf-shaped apical projection constricted at base; parameres very long, slender, with 2–3 setae.

Female. Unknown.

Distribution. Northern Vietnam, Lao Cai Prov.

Material. Holotype male, white printed label “Deo Tram Ton, Lao Cai Prov., [N-VIETNAM], 27. vi. 1997, S. Nomura leg.”.

Etymology. The name refers to the minute body of this species.

Cephennodes (Cephennodes) langbianganus
sp. nov.

(Figs. 104–106, 116)

Diagnosis. This species has uniquely developed subhumeral carinae on the elytra: they are extremely long, nearly reaching apices of elytra, lines are also strongly curved and their posterior parts are shifted laterally, so that in strictly dorsal view apices of carinae are barely visible. Moreover, body is very convex, with pronotum much narrower than elytra, and aedeagus has extremely long, subtriangular apex of asymmetrical median lobe, as well as large, S-shaped apical projection. Female characters remain unknown.

Description. Male (Fig. 116). Body oval, stout and very convex, with sides of pronotum and elytra nearly confluent, body length 1.49 mm, pigmentation very brown, setation light brown. Head moderately large, length 0.17 mm, width 0.32 mm; vertex rounded; frons only slightly convex; supraantennal tubercles strongly raised, large; eyes large and strongly convex. Punctuation very fine and sparse; setation relatively sparse, moderately long, suberect. Antennae moderately

long and slender, gradually thickened from antennomere VI, so that five-segmented club is very indistinctly delimited, length 0.75 mm; antennomere I only slightly longer than broad; II slightly narrower and much longer than I, nearly twice as long as broad; III–VI each distinctly narrower and shorter than II, gradually increasing in length from III, which is minimally broader than long, to VI, which is about 1.2x as long as broad; VII slightly longer than VI but barely noticeably broader, about 1.3x as long as broad; VIII broader than VII but minimally shorter, about as broad as long; IX broader and longer than VIII, about as broad as long; X yet larger, about as broad as long; XI distinctly broader than X, minimally longer than IX–X together.

Pronotum subtrapezoidal in shape, broadest at base, length 0.45 mm, width 0.65 mm. Anterior margin broadly rounded; lateral margins distinctly serrate, rounded and divergent up to sharp hind angles; posterior margin relatively shallowly biemarginate; lateral ante-basal pits relatively deep and distinct, equally distant from posterior and lateral margins; lateral carinae narrow, not separated from lateral margins. Punctuation on anterior central part of disc relatively dense but composed of small, shallow, moderately sharply marked punctures, which posteriorly become gradually smaller and shallower, leaving broad area along posterior margin impunctate, punctures covering area adjacent to each front angle are much denser than those in middle, but similarly small. Setation moderately dense, relatively short, suberect.

Elytra oval, very convex, broadest near anterior third and strongly narrowing posteriorly from widest place, length 0.87 mm, width 0.75 mm, EI 1.16. Subhumeral lines extremely long and strongly curved reaching nearly to apices of elytra, distinctly carinate; narrow adsutural area in anterior half of each elytron is slightly but distinctly impressed, so that suture is raised; apices of elytra separately rounded. Punctuation slightly sparser than that on central part of pronotum but much less distinct, punctures being very small and diffused; setation similar to that on pronotum

but slightly longer and more erect. Hind wings well developed.

Legs relatively long and slender, without peculiar characters.

Metaventricle with very large, sharply delimited but shallow postcoxal impressions and convex central part covered with very fine punctures.

Aedeagus (Figs. 104–106) 0.25 mm in length, *simonis*-type, with very long and recurved apex of median lobe and broad, also recurved apical projection; parameres very long, relatively broad, with 2–3 setae.

Female. Unknown.

Distribution. Southern Vietnam, Lam Dong Prov.

Material. Holotype male, white printed label “Mt. Lang Biang (ca. 1,900 m), nr. Da Lat, Lam Dong Prov., [S-VIETNAM], 1. v. 2003, S. Nomura leg.”.

Etymology. Locotypical, after the type locality, Mt. Lang Biang.

Remarks. The aedeagus of this species is most similar to copulatory organs found in several other, morphologically different species, all of which have much shorter subhumeral lines on the elytra (see remarks at *C. longulus*).

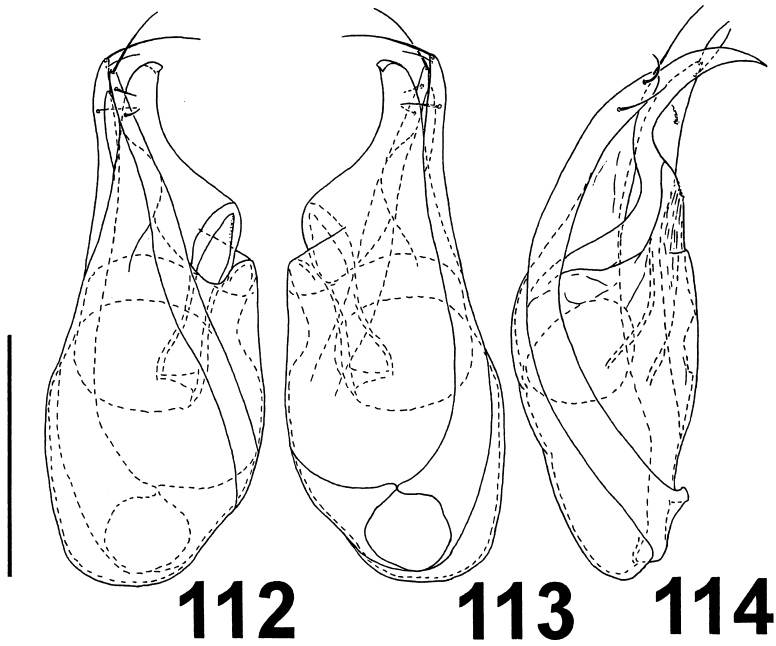
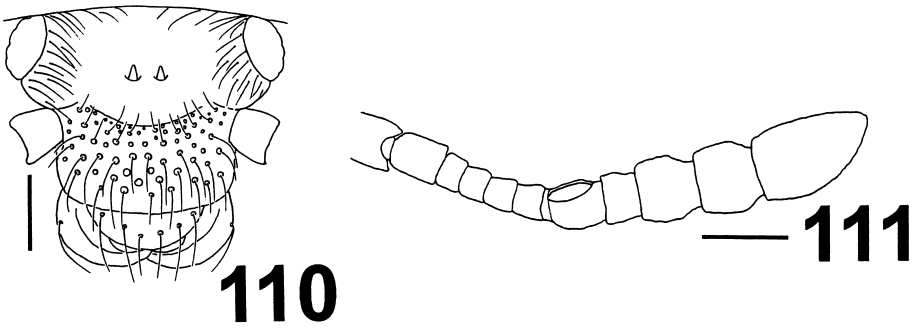
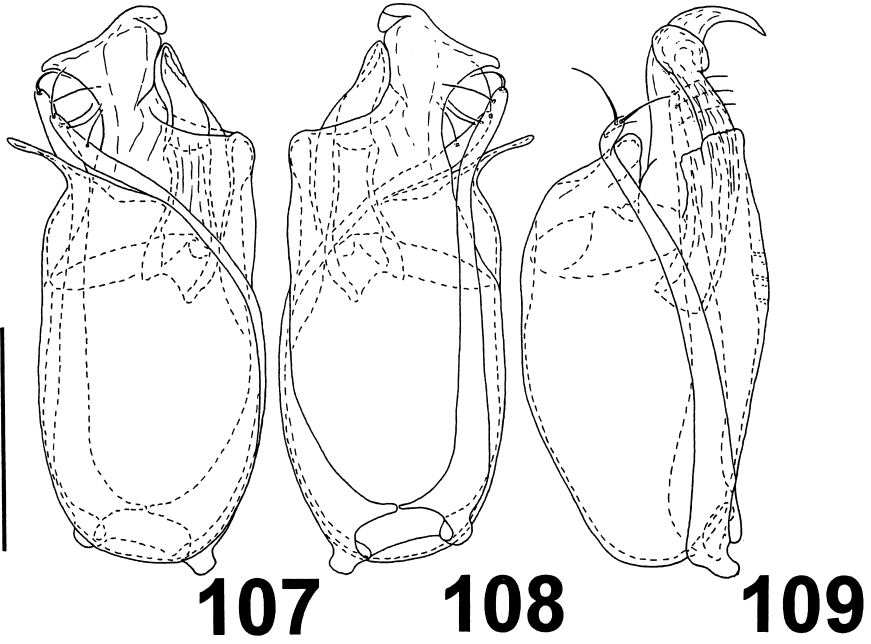
Cephennodes (Cephennodes) antennatus

sp. nov.

(Figs. 107–111, 117)

Diagnosis. Unique modifications of antennae and head in males are unambiguous diagnostic characters for this species. Antennomere VII strongly enlarged and bears on its internal and dorsal surface nearly circular excavation well delimited from surrounding cuticle; vertex strongly concave and provided in middle with pair of small but sharp horns, anterior margin of vertex separated from frontoclypeal area by distinct transverse carina. Females and their characters remain unknown.

Description. Male (Fig. 117). Body oval, stout, but with distinct constriction between pronotum and elytra, moderately convex, moderately dark brown, covered with light brown setation, length



1.40–1.49 mm (mean 1.44 mm). Head (Fig. 110) moderately large, length 0.20–0.22 mm (mean 0.21 mm), width 0.35–0.37 mm (mean 0.36 mm); vertex concave, with a pair of small but sharp horn-like tubercles in middle, separated from frons by transverse carina; supraantennal tubercles indistinct, large; eyes large and strongly convex; punctation and setation as in Fig. 110. Antennae as in Fig. 111, length 0.65–0.67 mm (mean 0.66 mm).

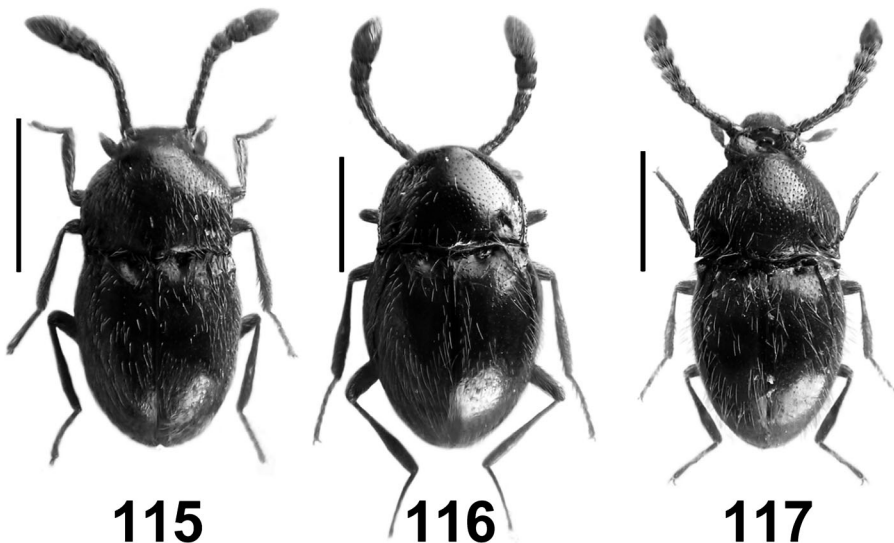
Pronotum nearly semicircular in shape, broadest near middle, length 0.45 mm, width 0.60–0.62 mm (mean 0.61 mm). Anterior margin broadly rounded; lateral margins distinctly serrate, rounded to the widest place, in posterior half slightly convergent and nearly straight, hind angles sharp and slightly protruding posteriorly and laterally; posterior margin moderately deeply biemarginate; lateral ante-basal pits small but distinct, located slightly closer to posterior than to lateral margins; lateral carinae narrow, not separated from lateral margins. Central part of disc covered with small, deep and sharply marked

punctures separated by spaces 1.5–2x as long as puncture diameters, punctures becoming gradually smaller and shallower toward lateral and posterior margins, leaving relatively broad area in middle along posterior margin impunctate, punctures covering large area adjacent to each front angle are much denser and distinctly larger than those in middle. Setation moderately dense and long, suberect.

Elytra oval, more convex than pronotum, broadest near anterior third, length 0.75–0.82 mm (mean 0.78 mm), width 0.67 mm, EI 1.12–1.22. Subhumeral lines distinctly carinate, as long as 0.6x length of elytra; apices of elytra rounded together. Punctation very fine and indistinct; setation much longer than that on pronotum, moderately dense, strongly erect. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Metaventricle covered with very fine punctures; setae on sides are distinctly longer than those in middle.



Figs. 115–117. Dorsal habitus of *Cephennodes minusculus* sp. nov. (115), *C. langbianganus* sp. nov. (116) and *C. antennatus* sp. nov. (117). Scale: 0.5 mm.

Figs. 107–114. Aedeagus of *Cephennodes antennatus* sp. nov. in ventral (107), dorsal (108) and lateral (109) views; head of male of *C. antennatus* sp. nov. in anterior view (110); right antenna of male of *C. antennatus* sp. nov. in dorsal view (111); aedeagus of *C. saetosus* sp. nov. in ventral (112), dorsal (113) and lateral (114) views. Scale: 0.1 mm.

Aedeagus (Figs. 107–109) 0.25 mm in length, *simonis*-type, with very slender, separated apex of median lobe and large, complicated apical projections; parameres slender, each with three setae.

Female. Unknown.

Distribution. Central Vietnam, Thua Thien-Hue Prov.

Holotype male, white printed label “Mt. Bach Ma (1,300 m), T. T. Hue Prov., [C-VIETNAM], 9. v. 2003, S. Nomura leg.”. Paratype: 1 ♂, same data as for holotype.

Etymology. The name reflects an unusual modification of the antennae in males.

Remarks. This is another unusual example of asymmetry in the shape of the middle antennomeres. However, from the two remaining species, which are Chinese *C. bicolor* and described in this paper *C. obesus*, none resembles *C. antennatus* in the shape of the antennae (*C. bicolor* has bent antennomere VI, and *C. obesus* bent antennomere VII).

***Cephennodes (Cephennodes) saetosus* sp. nov.**

(Figs. 112–114, 124)

Diagnosis. This species has a field of anteriorly directed setae in middle of anterior part of pronotum, sharply contrasting with posteriorly directed vestiture covering remaining parts of pronotal disc. Examination of unique, very slender aedeagus may be necessary to confirm identification. Females and their diagnostic characters remain unknown.

Description. Male (Fig. 124). Body elongate, very convex, with indistinct constriction between pronotum and elytra, dark brown, covered with light brown setation, length 1.22 mm. Head moderately large, length 0.12 mm, width 0.27 mm; vertex nearly flat, with pair of small but very distinct tubercles; frons relatively narrow, only slightly convex; supraantennal tubercles large and very distinctly raised; eyes large and strongly convex. Punctures on vertex and frons fine and sparse; setation sparse, moderately long, suberect. Antennae short and very compact, with

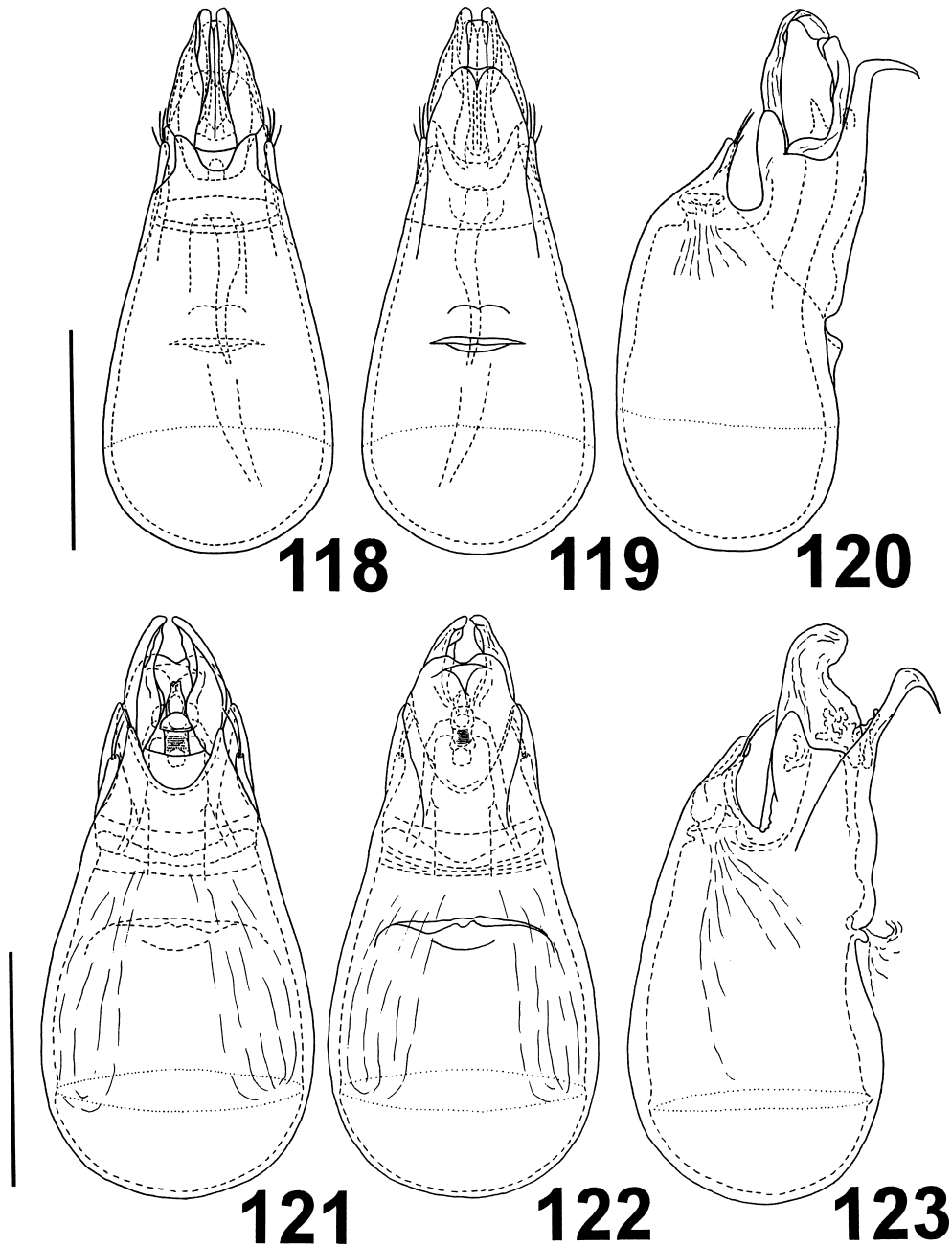
very indistinctly delimited 5-segmented club, length 0.65 mm. Antennomere I slightly longer than broad; II about as long as I but slightly narrower, slightly longer than broad; III–VI subequal in length and width, each distinctly narrower than II and much broader than long; VII about as long as VI but slightly broader, much broader than long; VIII as long as VII but slightly broader; IX distinctly longer and broader than VIII, much broader than long; X slightly broader and ca. 1.7x as long as IX, only slightly broader than long; XI broader than X, distinctly longer than IX–X together.

Pronotum nearly semicircular in shape, broadest at base, length 0.40 mm, width 0.55 mm. Anterior and lateral margins broadly rounded; lateral margins distinctly serrate, hind angles sharp; posterior margin shallowly biemarginate; antebasal pits relatively deep, equally distant from posterior and lateral margins; lateral carinae narrow, not separated from lateral margins. Punctuation on pronotum composed of very small, but sharply marked punctures separated by spaces equal to 2–3 puncture diameters; punctures along lateral margins distinctly denser and larger than those in middle. Setation moderately dense and long, suberect, generally directed posteriorly except for well defined area in middle adjacent to anterior margin of pronotum, where setae are directed anteriorly.

Elytra oval, moderately convex, broadest between anterior fourth and third, length 0.70 mm, width 0.60 mm, EI 1.17. Subhumeral lines distinctly carinate, as long as about 0.6x length of elytra; apices of elytra separately rounded. Punctuation similarly dense as that on central part of pronotum but composed of punctures with raised margins, so that surface of elytra appears slightly coarse; setation much longer than that on pronotum, and more erect, moderately dense. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Metaventricle with large and deep postcoxal impressions sharply delimited from sides of sternum, convex central part is covered with fine and



Figs. 118–123. Aedeagus of *Cephennodes lateralis* sp. nov. (118–120) and *C. pseudolateralis* sp. nov. (121–123) in ventral (118, 121), dorsal (119, 122) and lateral (120, 123) views. Scale: 0.2 mm.

sparse, but distinct punctures.

Aedeagus (Figs. 112–114) 0.22 mm in length, *simonis*-type, slender, with very long, recurved and pointed apical projection of median lobe and large apical sclerite; parameres very long and rel-

atively broad, each bearing three setae.

Female. Unknown.

Distribution. Southern Vietnam, Lam Dong Prov.

Material. Holotype male, white printed label

“Dam B’Ri (ca. 800 m), Lam Dong Prov., [S-VIETNAM], 2. v. 2003, S. Nomura leg.”.

Etymology. The name refers to the patch of anteriorly-directed setae on the pronotum, contrasting with surrounding, posteriorly-directed vestiture.

Remarks. The aedeagus of this species is most similar to copulatory organs found in several other, morphologically different species, all of which are distinctly larger (see remarks at *C. longulus*).

Subgenus *Fusionodes* Jałoszyński

The *lateralis*-group

This newly established group contains two species of *Fusionodes* sharing unusual modifications of the elytra: each elytron bears a lateral expansion with a broad raised area bordered anteriorly and dorsally by moderately deep, elongate impression.

Cephennodes (Fusionodes) lateralis sp. nov.

(Figs. 118–120, 125)

Diagnosis. Males of this species of *Fusionodes* are unique in having elytra expanded laterally near middle, with broad, strongly laterally raised area bordered anteriorly and dorsally by moderately deep, elongate impression; also structures of aedeagus are unique. Female characters remain unknown.

Description. Male (Fig. 125). Body moderately large, relatively broad and stout, dark brown with light brown setation, length 1.50 mm. Head large, length 0.22 mm, width 0.40 mm; vertex and frons uniformly convex; vertex with pair of extremely small, barely noticeable tubercles; supraantennal tubercles moderately raised; eyes large and strongly convex. Punctuation on frons dense and distinct, punctures moderately deep but sharply marked, separated one from another by spaces about equal to puncture diameters, punctures becoming smaller posteriorly and those on posterior part of vertex are very fine,

but about as dense as punctures on frons; setation short and dense, strongly erect, especially that on frons and anterior part of vertex. Antennae moderately long and compact, but rather thick, club not delimited, length 0.85 mm; antennomere I only slightly longer than broad, slightly flattened dorso-ventrally; II nearly as broad as I but distinctly longer, about 1.2x as long as broad; III–VI subequal in width and length, each barely narrower than II but distinctly shorter, only slightly longer than broad; VII slightly broader and longer than VI, slightly longer than broad; VIII slightly broader than VII but not longer, about as long as broad; IX slightly broader and longer than VIII, minimally broader than long; X slightly larger than IX, minimally shorter than long; XI broader than X, about as long as IX–X together.

Pronotum broad and very convex, nearly semi-circular in shape, broadest slightly anterior to middle, length 0.50 mm, width 0.70 mm. Anterior margin broadly rounded; lateral margins rounded in about anterior third, then nearly straight and very slightly convergent towards nearly straight (minimally sharp) hind angles and finely serrate; posterior margin deeply biemarginate; lateral ante-basal pits shallow, equally distant from posterior and lateral margins; lateral carinae very narrow, not separated from lateral margins. Punctuation in central part of disc dense, composed of relatively small, but deep and sharply marked punctures separated one from another by spaces equal to or slightly longer than puncture diameters, punctures distinctly reducing in diameter and depth toward anterior and posterior margins of pronotum and narrow median basal area remains impunctate, area adjacent to each front angle covered with punctures denser, but not larger than those in middle; setation moderately long and dense, only slightly suberect.

Elytra as convex as pronotum, broad and very stout, peculiar in shape due to lateral expansions, broadest distinctly anterior to middle, length 0.77 mm, width 0.75 mm, EI 1.03. Subhumeral lines as long as 0.4x length of elytra, distinctly carinate but very narrow; each elytron bears lateral expansion with broad raised area bordered anteriorly

only and dorsally by moderately deep, elongate impression; apices of elytra separately rounded. Punctuation slightly sparser and much finer than that on pronotum, punctures very small but relatively sharply marked; setation much longer than that on pronotum and strongly erect, setae surrounding lateral expansion in its posterior half are directed posteriorly and obliquely toward long axis of modification. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Metaventricle very finely punctate.

Aedeagus (Figs. 118–119) 0.50 mm in length, broadest near base and gradually narrowing toward apex, median lobe in ventral view with subtrapezoidal emargination of apical margin surrounded at each side by large, subtriangular projection; apical complex of projections symmetrical, in lateral view with ventral hook bent at straight angle; parameres nearly entirely fused to median lobe, only short apical parts recognizable, each with three setae.

Female. Unknown.

Distribution. Northern Vietnam, Lai Chau Prov.

Material. Holotype male, white printed label “Mt. Phang Si Pang (moss: 2,000 m), Lai Chau Prov. [N-VIETNAM], 19. v. 2003, S. Nomura leg.”.

Etymology. The name refers to unusual lateral modifications located on the elytra of males in this species.

Remarks. This and the next species are first known members of the subgenus *Fusionodes* with modified elytra in males (females of both species are unknown, but it seems reasonable to regard this character as an example of male sexual dimorphism). Similar modification is known in Chinese *C. (C.) elytratus* Jałoszyński; lateral or more subapical modifications of the elytra can be seen also in two other species from Southern China: *C. (C.) hamatus* Jałoszyński, and *C. (C.) superlatus* Jałoszyński. *Cephennodes elytratus* has the lateral modifications most similar to those in *C. lateralis* and *C. pseudolateralis*, but

its aedeagus is definitely not the *Fusionodes*-type, and that species seems to be rather remotely related to its two Vietnamese congeners.

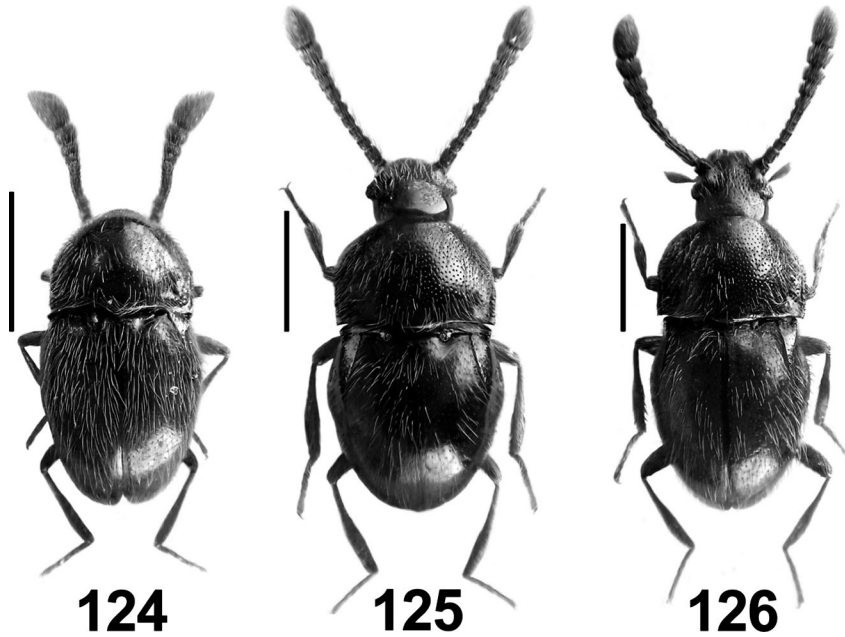
Cephennodes (Fusionodes) pseudolateralis

sp. nov.

(Figs. 121–123, 126)

Diagnosis. Males of this species have unique modifications of elytra: each elytron is slightly expanded laterally near middle, with small raised area bordered anteriorly and dorsally by relatively shallow, elongate impression; also structures of aedeagus are unique. Female characters remain unknown.

Description. Male (Fig. 126). Body moderately large, relatively broad and stout, moderately dark brown, covered with light brown setation, length 1.56 mm. Head large, length 0.22 mm, width 0.37 mm; vertex and frons regularly convex; vertex with pair of small but distinct tubercles; supraantennal tubercles moderately raised but broad and very distinct; eyes large and strongly convex. Punctuation on frons dense and distinct, punctures large, deep and sharply marked, separated one from another by variable spaces, on average shorter than half of puncture diameters, punctures are gradually smaller but not distinctly sparser posteriorly, and major part of vertex is covered with very fine punctures; setation short and dense, suberect. Antennae moderately long and compact, but relatively thick, club not delimited, length 0.75 mm; antennomere I only slightly longer than broad, slightly flattened dorso-ventrally; II slightly longer and narrower than I, about 1.3x as long as broad; III–VI subequal in width and length, each distinctly narrower and much shorter than II, only slightly longer than broad; VII slightly broader and longer than VI, slightly longer than broad; VIII slightly broader than VII but about equal in length, minimally broader than long; IX broader and longer than VIII, distinctly broader than long; X slightly larger than IX, slightly broader than long; XI slightly broader than X, about as long as IX–X together.



Figs. 124–126. Dorsal habitus of *Cephemodes saetosus* sp. nov. (124), *C. lateralis* sp. nov. (125) and *C. pseudolateralis* sp. nov. (126). Scale: 0.5 mm.

Pronotum broad and very convex, generally subtrapezoidal in shape, broadest near middle, length 0.47 mm, width 0.67 mm. Anterior margin broadly rounded; lateral margins rounded in about anterior third, then nearly straight and minimally convergent towards nearly straight hind angles, very finely serrate; posterior margin deeply biemarginate; lateral ante-basal pits shallow but large, located distinctly closer to lateral than to posterior margins; lateral carinae very narrow, not separated from lateral margins. Punctuation in central part of disc dense, composed of relatively small, but deep and sharply marked punctures separated one from another by variable spaces, from slightly shorter to slightly longer than puncture diameters, punctures gradually becoming smaller and shallower toward anterior and posterior margins of pronotum, and narrow median basal area remains impunctate, area adjacent to each front angle and along lateral margins up to basal pits is covered with punctures denser, but not larger than those in middle; setation moderately long and dense, only slightly suberect.

Elytra as convex as pronotum, broad, odd in

shape due to lateral expansions, broadest distinctly anterior to middle, length 0.87 mm, width 0.75 mm, EI 1.16. Subhumeral lines short, reaching only anterior third of elytra, distinctly carinate but very narrow; each elytron bears lateral expansion with moderately large and not particularly strongly raised elongate area bordered anteriorly and dorsally by moderately deep, elongate impression; apices of elytra separately rounded. Punctuation similarly dense but much finer than that on pronotum, punctures very small and shallow, but with slightly raised anterior margins, so that surface of elytra appears coarse; setation distinctly longer than that on pronotum and slightly more erect, setae surrounding lateral expansion in its posterior half are directed posteriorly and toward long axis of modification. Hind wings well developed.

Legs moderately long and slender, without peculiar characters.

Metaventrite very finely punctate.

Aedeagus (Figs. 121–123) 0.50 mm in length, broadest near base and gradually narrowing toward apex, median lobe in ventral view with ar-

uate emargination of apical margin surrounded at each side by large and narrow, subtriangular projection; apical complex of projections nearly symmetrical, in lateral view with dorsal hook bent at sharp angle; parameres nearly entirely fused to median lobe, only short apical parts recognizable, each bears two setae.

Female. Unknown.

Distribution. Northern Vietnam, Lao Cai Prov.

Material. Holotype male, white printed label "Catcat (1,200 m), nr. Sa Pa, Lao Cai Prov., [N-VIETNAM], 16. v. 2003, S. Nomura leg."

Etymology. The name *pseudolateralis* was chosen to underline the similarity in morphology between this species and *C. lateralis*.

Remarks. This species, although similar to *C. lateralis*, can be easily distinguished on the basis of the lateral ante-basal pits clearly more distant from the posterior margin of the pronotum than from the lateral ones (about equally distant in *C. lateralis*); distinctly less raised lateral expansions on the elytra; denser punctation of frons and vertex; denser and more distinctly marked punctures on the elytra; and different aedeagus.

Species of *Cephenodes* (*Fusionodes*) that cannot be placed in any species group

Cephenodes (*Fusionodes*) *tamdaonus* sp. nov.

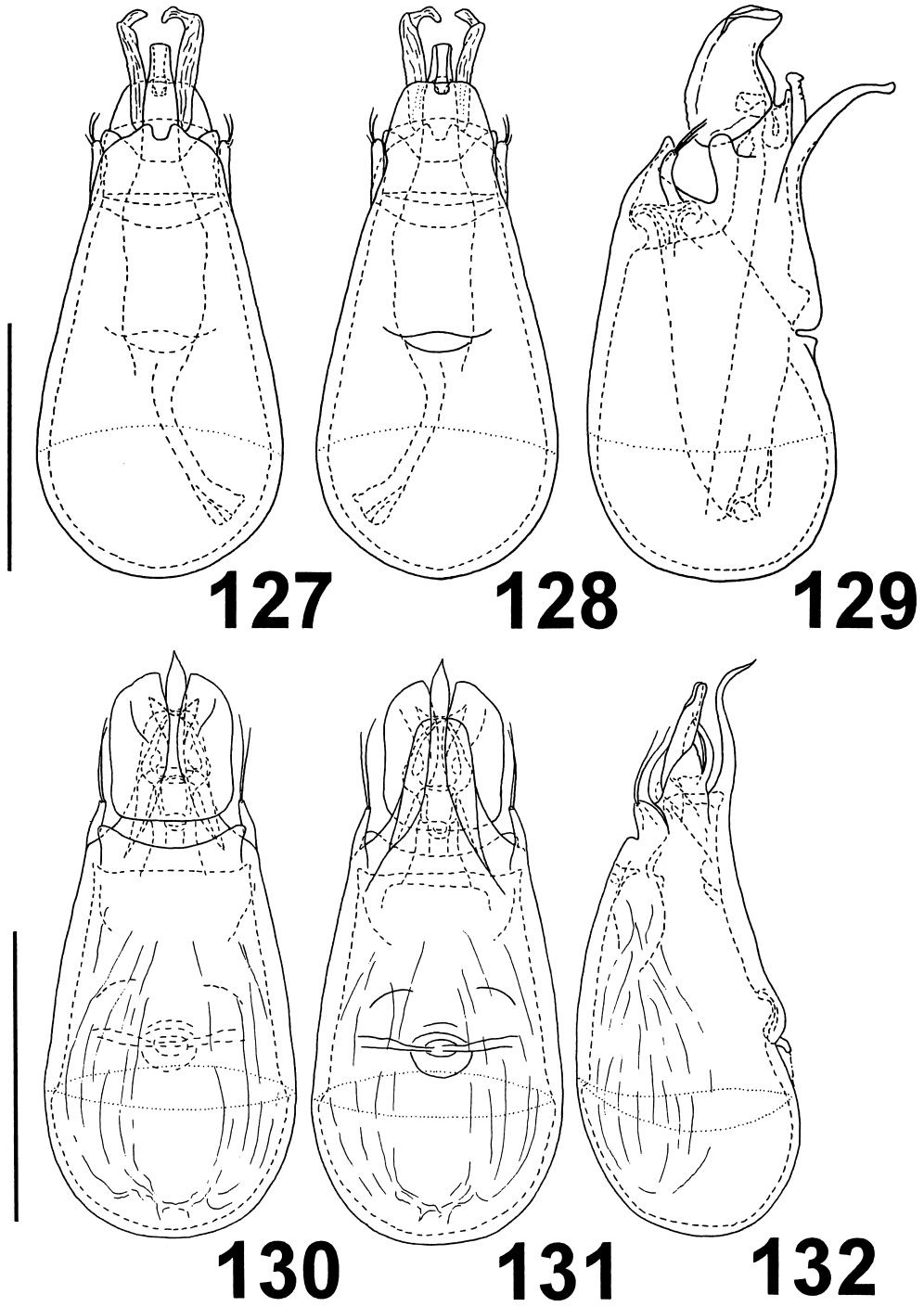
(Figs. 127–129, 133)

Diagnosis. This species differs from all other members of *Fusionodes* in having moderately small, remarkably elongate and strongly convex body; sides of pronotum and elytra broadly rounded with constriction between these two body parts deeper than in most other species; head and pronotum covered with very dense punctures, contrasting with fine punctation of elytra; and definitive key character is uniquely shaped aedeagus. Females can be certainly identified only by direct comparison with males, preferably when collected together.

Description. Male (Fig. 133). Body moderately small, elongate, very convex, reddish-brown, with light brown setation, length 1.47–1.55 mm (mean 1.51 mm). Head moderately large, length

0.22 mm, width 0.35–0.37 mm (mean 0.36 mm); vertex convex, with pair of minute tubercles; frons convex, slightly more steeply lowering anteriorly than to vertex; supraantennal tubercles prominent; eyes large and strongly convex. Punctuation on frons composed of large, deep and sharply marked punctures separated one from another by spaces nearly as short as half puncture diameters, punctures becoming smaller and shallower posteriorly, but more rapidly reducing in diameter and depth in middle of vertex than on sides, supraantennal tubercles impunctate. Setation moderately long and dense, suberect. Antennae moderately long but relatively slender, not particularly compact, with five terminal segments covered with fine microgranulation and forming very indistinctly delimited club, length 0.70–0.75 mm (mean 0.72 mm); antennomere I about 1.2x as long as broad, flattened dorso-ventrally; II distinctly narrower but nearly as long as I, 1.5x as long as broad; III–VI subequal in length and width, each distinctly narrower than II and 1.1–1.2x as long as broad; VII slightly broader and distinctly longer than VI, about 1.2x as long as broad; VIII slightly broader than VII but shorter, slightly shorter than broad; IX broader and longer than VIII, about as long as broad; X yet larger, about as long as broad; XI distinctly broader than X, as long as IX–X together.

Pronotum nearly semicircular in shape, broadest near middle, length 0.45 mm, width 0.60–0.62 mm (mean 0.61 mm). Anterior margin broadly rounded; lateral margins strongly rounded in anterior half, from widest place nearly straight and strongly convergent posteriorly, very finely serrate; hind angles nearly straight; posterior margin deeply biemarginate; lateral ante-basal pits shallow and located closer to lateral margins than to posterior one; lateral carinae very narrow and not separated from margins. Punctuation on central part of disc dense, composed of moderately large, deep and sharply marked punctures separated one from another by spaces equal to or slightly longer than half puncture diameters, narrow area along posterior margin of pronotum remains impunctate, areas adja-



Figs. 127–132. Aedeagus of *Cephennodes tamdaonus* sp. nov. (127–129) and *C. nanos* sp. nov. (130–132) in ventral (127, 130), dorsal (128, 131) and lateral (129, 132) views. Scale: 0.2 mm.

cent to front angles bear punctures denser, but not larger than those in middle. Setation moderately dense and long, only slightly suberect.

Elytra regularly oval, elongate, as convex as pronotum, broadest distinctly anterior to middle, sides relatively strongly divergent from humeral denticles toward widest place, so that sides of elytra are less confluent with lateral margins of pronotum as typically found in the genus, length 0.80–0.87 mm (mean 0.84 mm), width 0.65–0.67 mm (mean 0.66 mm), EI 1.23–1.30. Subhumeral lines short, only slightly longer than 1/3 of elytra, strongly carinate, apices of elytra separately rounded. Punctuation nearly as dense as that on pronotum but composed of incomparably finer punctures, most distinct in adsutural area in anterior half of elytra, reducing in depth and diameter toward sides and apices; setation similar to that on pronotum but slightly longer and distinctly more erect. Hind wings slightly reduced, broad but only 1.5x as long as elytra.

Legs moderately long and slender, without particular characters.

Metaventricle with moderately large postcoxal impressions and convex median part covered with very fine punctuation.

Aedeagus (Figs. 127–129) 0.45 mm in length, broadest near base and gradually narrowing toward apex, median lobe in ventral view with small, subquadrate emargination of apical margin surrounded at each side by small, rounded subtriangular projection; apical complex of projections nearly symmetrical, in lateral view with dorsal hook regularly arcuate; parameres nearly entirely fused to median lobe, only short apical parts recognizable, each with three setae.

Female. Externally indistinguishable from male; body length 1.42 mm, length of head 0.20 mm, width of head 0.32 mm, length of antennae 0.70 mm, length of pronotum 0.47 mm, width of pronotum 0.62 mm, length of elytra 0.75 mm, width of elytra 0.62 mm, EI 1.20.

Distribution. Northern Vietnam, Vinh Phu Prov.

Material. Holotype male, two white printed labels “Mt. Tam Dao, alt. 950 m, Vinh Phu Prov.”

and “[N-VIETNAM], 22. ix. 1995, S. Nomura leg.”. Paratypes: 1 male, white printed label “Mt. Tam Dao (950 m), Vinh Phu Prov., [N-Vietnam], 23. v. 2003, S. Nomura leg.”; 1 female, same data except for 21. v. 2003.

Etymology. Locotypical, after the type locality Mt. Tam Dao.

***Cephehnodes (Fusionodes) nanos* sp. nov.**

(Figs. 130–132, 134)

Diagnosis. Very small, elongate body with dorsum densely covered with distinct punctures, sharply delimited 3-segmented antennal club, extremely short subhumeral lines, dense punctures along posterior margin of metasternum and unique aedeagus are diagnostic characters of this species.

Description. Male (Fig. 134). Body small, elongate, moderately convex, light brown with yellowish vestiture, length 1.11–1.22 mm (mean 1.18 mm). Head moderately large, length 0.12–0.15 mm (mean 0.14 mm), width 0.27 mm, vertex and frons regularly convex, covered with large, deep and sharply marked punctures separated one from another by spaces equal to or slightly shorter than puncture diameters; supraantennal tubercles distinctly raised, impunctate; eyes large and strongly convex. Setation of head moderately long, relatively sparse, suberect. Antennae short, with slender proximal part and large, relatively well separated 3-segmented club, length 0.50 mm; antennomere I about as long as broad; II slightly narrower and much longer than I, nearly twice as long as broad; III–VI subequal in width and length, each distinctly narrower than II and subquadrate or minimally longer than broad; VII only minimally broader than VI slightly longer than broad; VIII as broad as VII but slightly shorter, minimally shorter than broad; IX much broader and slightly longer than VIII, much broader than long; X slightly broader and distinctly longer than IX, broader than long; XI yet broader, about as long as IX–X together.

Pronotum nearly semicircular in shape, broadest near middle, length 0.37–0.40 mm (mean 0.39

mm), width 0.55–0.57 mm (mean 0.56 mm). Anterior margin broadly rounded; lateral margins rounded, from widest place distinctly convergent toward sharp hind angles and finely serrate; posterior margin moderately deeply biemarginate; lateral ante-basal pits relatively deep, located closer to posterior than to lateral margins; lateral carinae narrow, not separated from lateral margins. Punctuation on central part of disc composed of deep, sharply marked, moderately large punctures separated one from another by spaces equal to or slightly shorter than puncture diameters, narrow median area along posterior margin impunctate, punctures covering areas adjacent to front angles are denser, but not larger than those in middle; setation moderately long and dense, suberect.

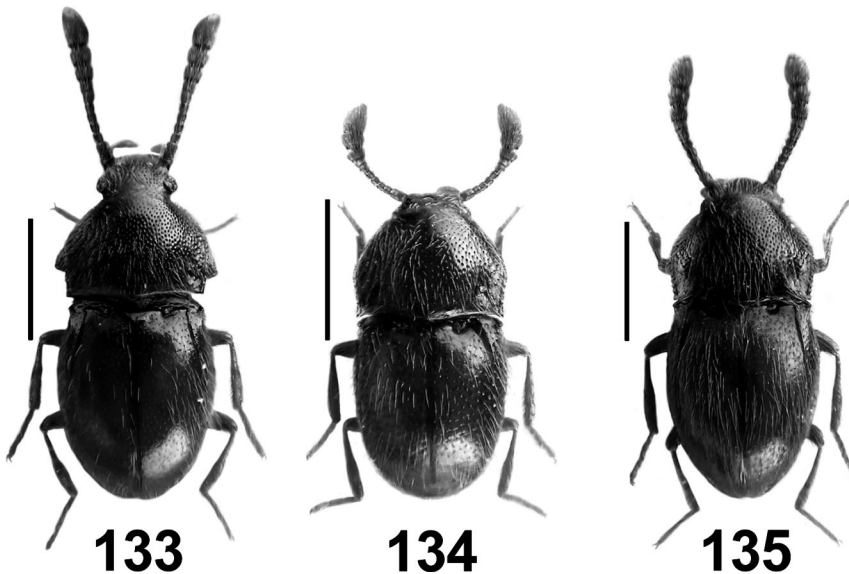
Elytra elongate, as convex as pronotum, broadest between middle and anterior third, length 0.62–0.67 mm (mean 0.65 mm), width 0.52–0.57 mm (mean 0.55 mm), EI 1.17–1.19. Subhumeral lines very short, only as long as 0.2x length of elytra, distinctly carinate; apices of elytra separately rounded. Punctuation of elytra nearly as dense as that on pronotum, but composed of distinctly smaller and shallower punctures; setation

similar to that on pronotum but slightly longer and more erect. Hind wings apparently polymorphic; studied only in three out of four known individuals, in the holotype and one paratype reduced to about half length of elytra, one paratype wingless.

Legs moderately long and slender, without peculiar characters.

Metaventricle with moderately large postcoxal impressions and convex central part, which is covered with sparse, but distinct punctures, additionally narrow area along anterior margin of metacoxae is covered with very dense, large punctures.

Aedeagus (Figs. 130–132) 0.40 mm in length, broadest near base and gradually narrowing toward apex, median lobe in ventral view with very broad, shallow and arcuate emargination of apical margin surrounded at each side by short, subtriangular projection; apical complex of projections nearly symmetrical, in ventral view with large shield-like structure composed of two elongate halves, in lateral view dorsal hook recurved; parameres nearly entirely fused to median lobe, only short apical parts recognizable, each with two setae.



Figs. 133–135. Dorsal habitus of *Cephemodes tamdaonus* sp. nov. (133), *C. nanos* sp. nov. (134) and *C. elongatus* sp. nov. (135). Scale: 0.5 mm.

Female. Externally indistinguishable from male; body length 1.14 mm, length of head 0.12 mm, width of head 0.27 mm, length of antennae 0.50 mm, length of pronotum 0.40 mm, width of pronotum 0.57 mm, length of elytra 0.62 mm, width of elytra 0.55 mm, EI 1.12.

Distribution. Northern Vietnam, Lao Cai and Vinh Phu Prov.

Material. Holotype male, two printed labels "Mt. Tam Dao, alt. 950 m, Vinh Phu Prov." and "[N-VIETNAM], 26. ix. 1995, S. Nomura leg.". Paratypes: two males, white printed label "Mt. Tam Dao, Vinh Phu Prov., [N-VIETNAM], 17. vi. 1997, S. Nomura leg."; 5 males, same data except for 950 m and 23. v. 2003; 1 male, 1 female, same data except for 21. v. 2003; 1 male, white printed label "Deo Tram Ton (LT: 1,800 m), Lao Cai Prov., [N-VIETNAM], 17. v. 2003, S. Nomura leg.".

Etymology. *Cephenodes nanos* is an unusually small representative of the subgenus *Fusionodes*, so its name is derived from a Greek adjective "nanos" meaning "minute".

***Cephenodes (Fusionodes) elongatus* sp. nov.**

(Figs. 135–138)

Diagnosis. This species differs from similar congeners in having very elongate body with large and dense punctures covering head and pronotum, contrasting with much smaller, but only slightly sparser punctation of elytra; identification should be confirmed by examination of uniquely shaped aedeagus.

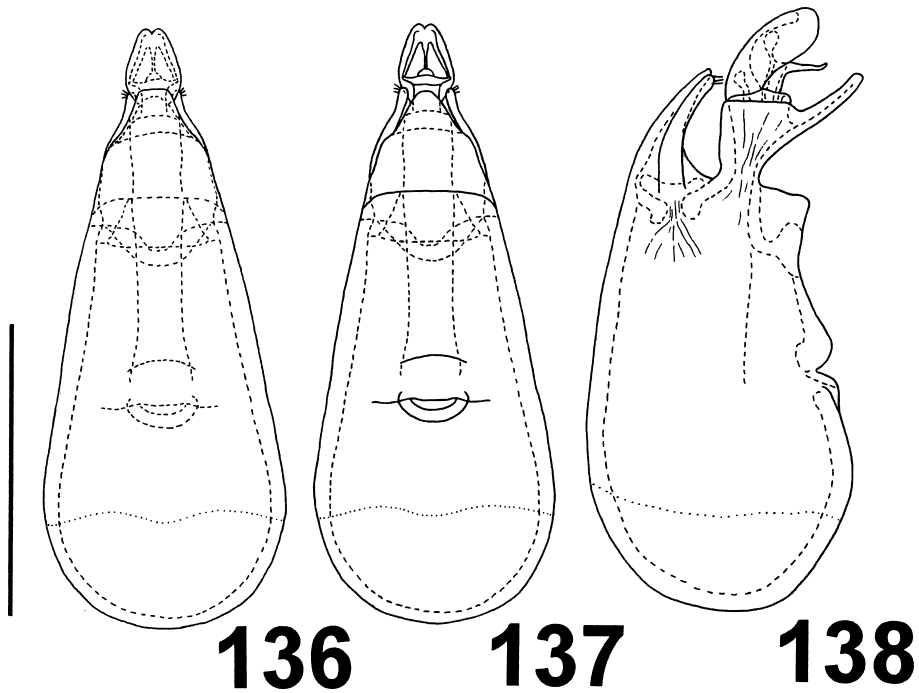
Description. Male (Fig. 135). Body moderately large, elongate and relatively slender, moderately convex, dark brown with yellowish setation, length 1.47–1.54 mm (mean 1.51 mm). Head moderately large, length 0.17 mm, width 0.35 mm, vertex and frons regularly convex and covered with large, deep, sharply marked punctures separated one from another by spaces slightly shorter than puncture diameters; supraantennal tubercles distinctly raised, impunctate; eyes large, strongly convex; setation of head moderately long and dense, suberect. Antennae relatively

short, moderately compact, length 0.70–0.75 mm (mean 0.72 mm), antennomere I only slightly longer than broad; II slightly narrower and distinctly longer than I, nearly 1.5x as long as broad; III–VI subequal in width and length, each distinctly narrower than II and slightly longer than broad; VII slightly broader and longer than VI, minimally longer than broad; VIII slightly broader than VII but comparable in length, minimally shorter than broad; IX broader and longer than VIII, about as long as broad; X slightly larger than IX, as long as broad; XI slightly broader than X, shorter than IX–X together.

Pronotum nearly semicircular in shape, broadest near middle, length 0.50 mm, width 0.62 mm; anterior margin broadly rounded; lateral margins rounded, finely serrate, from widest place distinctly convergent toward obtuse hind angles; posterior margin shallowly biemarginate; lateral ante-basal pits small and shallow, located closer to lateral than to posterior margins; lateral carinae narrow and not separated from lateral margins. Punctation on central part of pronotum composed of similar punctures as those on vertex and frons, separated one from another by spaces distinctly shorter than puncture diameters, narrow area along posterior margin remains impunctate, area near each front angle covered with larger and denser punctures than those in middle; setation moderately long and dense, only slightly suberect.

Elytra oval and elongate, widest near anterior third, as convex as pronotum, length 0.80–0.87 mm (mean 0.83 mm), width 0.65–0.67 mm (mean 0.66 mm), EI 1.23–1.30. Subhumeral lines short, as long as 0.4x length of elytra, distinctly carinate; apices of elytra separately rounded. Punctation very fine but composed of relatively well marked punctures distributed slightly unevenly and about as dense as those on central part of pronotum; setation similar to that on pronotum but slightly longer and more erect (but still rather suberect). Hind wings reduced, shorter than elytra.

Legs moderately long and slender, without peculiar characters.



Figs. 136–138. Aedeagus of *Cephennodes elongatus* sp. nov. in ventral (136), dorsal (137) and lateral (138) views. Scale: 0.2 mm.

Metaventrite very finely and sparsely punctate.

Aedeagus (Figs. 136–138) 0.42 mm in length, broadest near base and gradually narrowing toward apex, median lobe in ventral view subtrapezoidal; apical complex of projections symmetrical and relatively small, in lateral view with dorsal hook slightly arcuate and with broadly blunt apex; relatively long apical parts of parameres are visible, each bears three very short setae.

Female. Unknown.

Distribution. Northern Vietnam, Vinh Phu Prov.

Material. Holotype male, white printed label “Mt. Tam Dao (950 m), Vinh Phu Prov., [N-VIETNAM], 12. v. 2003, S. Nomura leg.”. Paratype: male, same data except for 16. v. 1999, and the date and collector’s name on separate label.

Etymology. The name reflects the elongate body shape of this species.

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