Zootaxa 4097 (2): 203–219
http://www.mapress.com/j/zt/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://doi.org/10.11646/zootaxa.4097.2.3
http://zoobank.org/urn:lsid:zoobank.org:pub:FC27150E-263E-4BFA-BA6D-463149DEE20F

New species of microcaddisflies from China (Trichoptera: Hydroptilidae)

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Abstract

Five new species of hydroptilids in four genera are described from China, including three new species in Hydroptilinae: *Agraylea dactylina* **n. sp.**, *Allotrichia rhynchophyllum* **n. sp.**, and *Microptila hamatilis* **n. sp.**; and two new species in Stactobiinae: *Stactobiella mutica* **n. sp.** and *Stactobiella parallelica* **n. sp.** New records are given for *Stactobiella biramosa* MARTYNOV 1929 and *Pseudoxyethira thingana* (OLÁH) 1989. Genera *Agraylea*, *Allotrichia*, *Stactobiella*, and *Microptila* are new to Chinese fauna.

Key words: Hydroptilinae, Stactobiinae, *Agraylea*, *Allotrichia*, *Microptila*, *Stactobiella*, *Pseudoxyethira*, new records, new status

Introduction

MALICKY (2001) elevated the hydroptilid subfamily Ptilocolepinae to family status, a status later accepted by others (e.g., HOLZENTHAL *et al.* 2011; WICHARD 2013). Because of a need to avoid taxonomic redundancy, the remaining nominotypical subfamily is elevated to family Hydroptilidae and its included tribes are elevated to subfamily status. Of the 6 subfamilies in the microcaddisfly family Hydroptilidae *sensu stricto*, 3 have been recorded from China. Here we report on some recently collected species in the subfamilies Hydroptilinae and Stactobiinae, including several new species. The subfamily Hydroptilinae currently comprises 902 extant species in 26 extant genera. Species are known from all biogeographic regions except the Antarctic (MORSE 2015). Up to now, 48 species in 3 genera of Hydroptilinae [*Hydroptila* (34 spp.), *Oxyethira* (12 spp.), and *Ugandatrichia* (2 spp.)] have been documented from China (ZHOU *et al.* 2009, YANG *et al.* in press). Subfamily Stactobiinae includes 448 extant species in 13 extant genera, also with a cosmopolitan distribution (MORSE 2015). Only 6 species of Stactobiinae have been reported from China, represented by *Plethus* (1 sp.), *Pseudoxyethira* (=*Scelotrichia*) (1 sp.), *Stactobia* (3 spp.) and *Chrysotrichia* (1 sp.) (ZHOU *et al*. 2013, YANG *et al*. in press, MALICKY & CHANTARAMONGKOL 2007).

Our examination of materials from northern and southern China have revealed three new Chinese species in Hydroptilinae: *Agraylea dactylina* **n. sp.**, *Allotrichia rhynchophyllum* **n. sp.**, and *Microptila hamatilis* **n. sp.**, with the genera *Agraylea*, *Allotrichia*, and *Microptila* being new to the Chinese fauna, bringing the Chinese representation of this subfamily to 51 species in 6 genera. In Stactobiinae, the genus *Stactobiella* is newly recorded from northern China: *Stactobiella mutica* **n. sp.** and *Stactobiella parallelica* **n. sp.** are described; *Stactobiella biramosa* MARTYNOV 1929 was collected from northern China (Hei-long-jiang), and *Pseudoxyethira thingana* (OLÁH 1989) was collected in the southeastern part of China (Jiang-xi), bringing the Chinese records for this subfamily to 10 species in 5 genera.

Material and methods

Unless otherwise indicated, adults were collected over a pan trap with a 15-watt ultraviolet light powered by a

Accepted by R. Holzenthal: 29 Jan. 2016; published: 31 Mar. 2016

sealed rechargeable 12-volt battery. Traps were placed near the edges of streams for 2–3 hours beginning at dusk. The specimens were preserved in 80% ethyl alcohol. The unsclerotized tissue in abdomens of males was macerated by heating in a KOH solution to reveal internal and other hidden structures. Remnants of macerated tissue were removed mechanically by fine tipped forceps and needles. The specimens were then cleared in lactic acid in preparation for illustrations. Draft figures were drawn on white paper using an ocular grid on a Nikon SMZ645 dissecting microscope. These were then re-drawn on transparent paper in Black Archival Ink.

In the descriptions, colors are those observed for the specimens in alcohol. The morphological terms for male genitalia follow MARSHALL (1979). All the type specimens are stored in 80% alcohol and deposited in the Nanjing Agricultural University Insect Collection.

Agraylea CURTIS

Agraylea CURTIS 1834, 217; type species: *Agraylea sexmaculata* CURTIS 1834 (selected by WESTWOOD 1840, 51).

The genus *Agraylea* contains only 9 extant species, of which 3 species are West Palearctic, 2 Nearctic, 1 East Palearctic, 2 East–West Palearctic, and 1 Nearctic–West Palearctic (MORSE 2015).

According to MARSHALL (1979), male genitalia of *Agraylea* generally have a long ventral process on segment VII; segment IX usually has a deep dorso-anal indentation; tergite X is reduced to a short membranous lobe; the inferior appendages are well developed with posterior ends never concave; the subgenital plate tapers posteriorly without any lateral projections but with a median ventral projection in ventral view; and the aedeagus is relatively short and stout with distinct proximal and distal halves and spiral titillator (diagnosis modified from MARSHALL 1979).

Agraylea dactylina n. sp.

(Fig. 1)

Diagnosis. The new species differs from those species whose distribution extends into the East Palearctic Region, such as *A. sexmaculata*, *A. multipunctata* CURTIS 1834, *A. cognatella* MCLACHLAN 1880, and *A. taymyrensis* MEY 2003, in having 1) inferior appendages that are stoutly triangular, with a broad base about 1/2 the height of segment IX in lateral view, with inner margins of each appendage concave and bearing a tiny tooth on the inner surface subapically in ventral view; 2) the basodorsal projections of the inferior appendages are absent; 3) the divided halves of dorsum IX each has its dorso-posterior end produced into a bilobed projection. However, in those 4 other species, the inferior appendages are elongate, each with its height only about 1/4-1/5 the height of segment IX in lateral view, the baso-dorsal projections of the inferior appendages are well developed; the inner margins of each inferior appendage is straight without any subapical teeth on the inner margin in ventral view, and the dorso-posterior ends of the divided tergum IX are not each produced into a bilobed projection. In addition, this new species is similar to *A. multipunctata* in the identical shape of the aedeagus and in the long subgenital plate, but differs from that species in that the inferior appendages are not divided, but each appendage is roundly incurved with a blunt tip in ventral view (each inferior appendage is divided into three lobes with the ventral lobe straight, acute at apex in ventral view in *A. multipunctata*). It differs from *A. sexmaculata* in having the tip of the subgenital plate extending as far as the apices of the inferior appendages and the spiral titillator circling the aedeagus 1.5 times with the distal half directed straight backward (the subgenital plate extends only to the mid length of the inferior appendages and the spiral titillator circles the aedeagus not quite 1.2 times in *A. sexmaculata*).

Male. Length of each forewing 4.2 mm (n=2), antennae 36-segmented. Ventral process on sternum VII long, with enlarged apex having tiny denticles (Fig. 1F).

Male genitalia. Dorsum of IX completely divided, each half with dorso-posterior end produced into bilobed projection (bilob.d.pr.), with upper lobe bearing very tiny setae and with lower lobe slightly smaller in size and bearing long setae (Figs. 1A, 1B); pleura IX about as long as high in lateral view, anterior margins straight, posterior margins each with deep posterodorsal and posteroventral indentations, forming broadly rounded posterolateral lobe on each side (Fig. 1A). Tergum X reduced to short membranous lobe, nearly quadrate in dorsal view; triangular in lateral view, broad at base with dorsal margin sloping caudoventrad (Fig. 1A). Inferior

appendages massively triangular in lateral view, with broad base about 1/2 height of segment IX; in ventral view, each inferior appendage about 3.5 times as long as basal width, with inner surface concave, distal half curved mesad and gradually reduced to blunt tip and bearing tiny tooth subapically (Fig. 1B, 1C). Profile of exposed portion of subgenital plate peach-shaped with single pair of setae on apicolateral edges, far from apicomedian projection in dorsal view (Fig. 1B); full length of plate 3 times of its broadest width, with distal 1/3 tapering posteriorly to median ventral projection in ventral view (Fig. 1C); in lateral view, distal half curved downward and narrowing to truncate tip extending nearly to apices of inferior appendages (Fig. 1A). Aedeagus relatively short and stout with proximal and distal halves equal in length, spiral titillator circling aedeagus 1.5 times and with distal portion directed almost straight backward, apex of aedeagus slightly enlarged and bilobed (Fig. 1D).

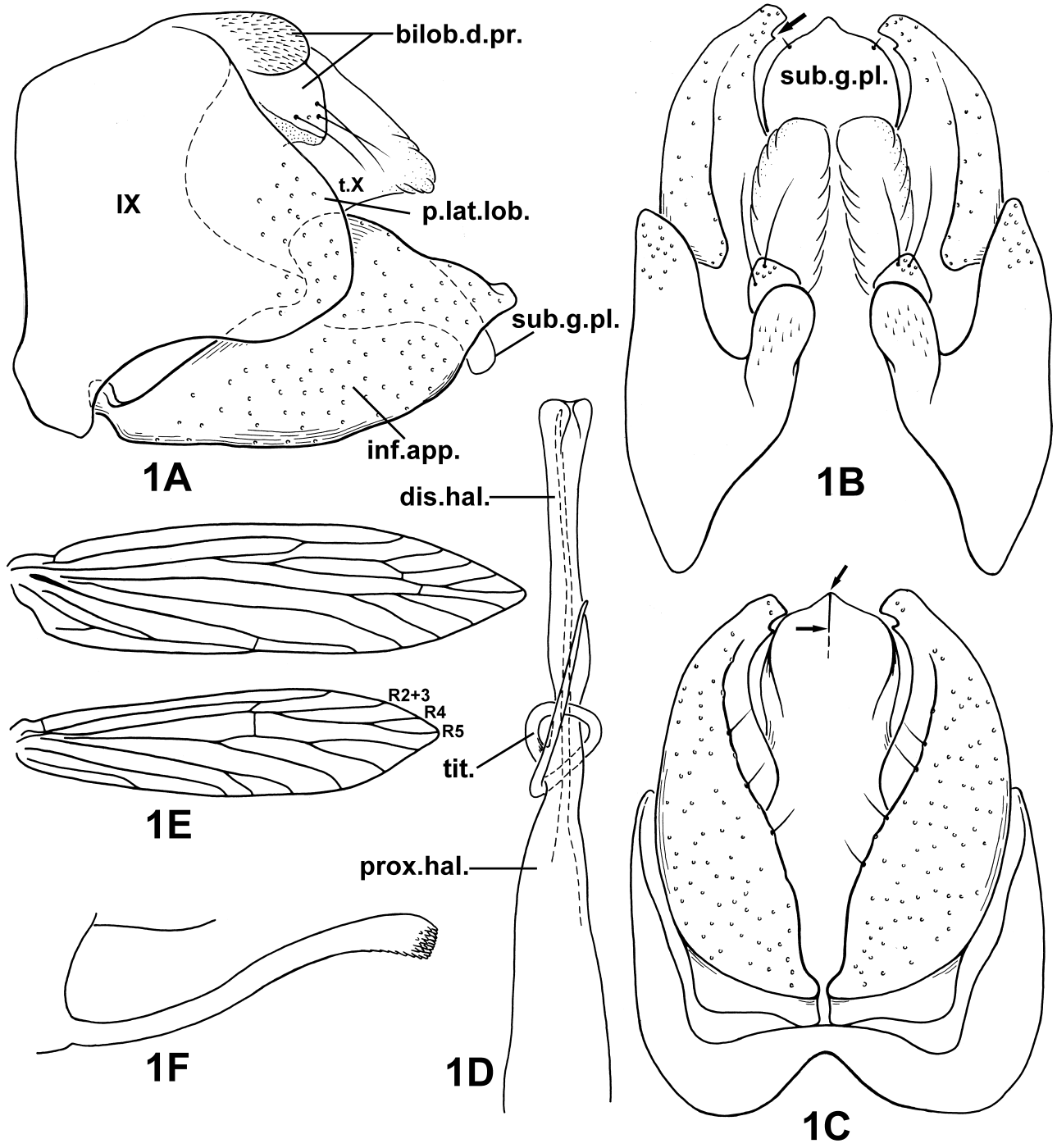

FIGURE 1. *Agraylea dactylina* **n. sp.** male genitalia. A, left lateral; B, dorsal; C, ventral; D, aedeagus; E, fore- and hing wings; F, ventral process of segment VII, left lateral. bilob.d.pr. = bilobed dorsal projection of IX; dis.hal. = distal half of aedeagus; inf.app. = inferior appendage; p.lat.lob. = posterior lateral lobe of segment IX; prox.hal. = proximal half of aedeagus; sub.g.pl. = subgenital plate; t.X = tergum X; tit. = titillator; IX = segment IX.

Holotype. Male; CHINA: Si-chuan Province, Kang-ding County, unnamed waterfall, tributary of Da-du River, 100 m upstream of G318 at 2824.9 km stone marker, N30.0665°, E102.1178°, alt. 1675 m, 29 Jun 2005, Coll. J.C. MORSE, CN05062901 (Fig. 8). **Paratype.** Same data as holotype, 1 male and 13 females.

Etymology. Greek, *dactylina* = digitate, with reference to the thumb-like posterodorsal projections of segment IX.

Distribution. Oriental–Palearctic Boundary Region of China: Si-chuan.

Discussion. Discovery of this new *Agraylea* species from China is significant biogeographically as it extends the genus *Agraylea* distribution from Holarctic and Nearctic Regions to the Oriental Region at a latitude of N30.0665°. However, the type specimens of our new species were collected from an unnamed waterfall, a tributary of the Da-du River with its headwaters originating in the Ya-la Snow Mountains—This tributary passes through the Zhe-duo Snow Mountain, with an altitude of 1675 m a.s.l. about 30 km away from the collecting locality, such that the water temperature of this stream was relatively low. Perhaps we can classify this area as belonging to the Oriental–Palearctic Boundary Region.

Allotrichia MCLACHLAN

Allotrichia MCLACHLAN 1880, 505, 508; type species: *Agraylea pallicornis* EATON 1873 (monobasic).

The genus *Allotrichia* only contains 8 extant species and 3 fossil species, all of which have a West Palearctic distribution (MORSE 2015). Our new species of *Allotrichia* from northeastern China represents a remarkable extension of the range of *Allotrichia* to include now both the West Palearctic Region and the East Palearctic Region.

Generally they are very similar to those of *Agraylea* except 1) the inferior appendages are short and broad with concave posterior margins and 2) the subgenital plate bears a pair of characteristic asymmetrical dorsolateral projections. We agree that the presence or absence of fork 1 (fork of R2 and R3) in hind wings has not proven to be a consistent feature in either *Agraylea* or *Allotrichia* (MARSHALL 1979); hind wing fork 1 is absent in all the new Chinese species in these two genera (e.g., Fig. 1E).

Allotrichia rhynchophyllum n. sp.
(Fig. 2)

Diagnosis. The new species is somewhat similar to *Allotrichia pallicornis*, the type species of this genus, in the general shape of male genitalia: 1) The anterior margin of segment IX has deep dorsal and ventral indentations forming an anterolateral lobe with a 70–75° angle on each side in lateral view; the posterodorsal margin is nearly straight. 2) The subgenital plate bears a pair of slender, dorsolateral projections. The new species differs from *A. pallicornis* in having 1) segment X rectangular, 2 times as broad as long in dorsal view; 2) the distal half of the subgenital plate strongly downcurved and with an acute apex in lateral view; and 3) inferior appendages with posterior margins slightly concave; whereas segment X is square, the subgenital plate is directed horizontally backward and with a blunt apex, and the inferior appendages have their posterior margins deeply concave in *A. pallicornis*.

Male. Length of each forewing 3.5 mm (n=1), antennae each 25-segmented. Ventral process on sternum VII long, with rough ventral surface in lateral view, subapically slightly concave, and with distal end enlarged in ventral view (Fig. 2E).

Male genitalia. Dorsum of segment IX completely divided, with transverse posterior margins nearly straight and aligned in dorsal view; pleura IX about 2/3 as long as high in lateral view, anterolateral margins protruding anterad in broadly rounded lobe forming a 70–75° angle on each side, upper posterolateral portion of pleura IX slightly concave and lower posterolateral portion protruding slightly backward forming blunt lobe with about 120° angle on each side (Fig. 2A). Tergum X rectangular, 1/2 as long as wide in dorsal view. Inferior appendages quadrangular, each with dorsal margin 2/3 as long as its ventral margin, and with posterior margin of appendage shallowly concave in lateral view (Fig. 2A); in ventral view, exposed portion of appendage almost quadrate, with

posteior margin slightly concave (Fig. 2C); inner suface of appendage with many tiny, acute protuberances evenly spaced (Fig. 2B, larger arrow). Subgenital plate well developed with basal half extending laterally downward and forming rectangular lateral lobe on each side of plate (Fig. 2A, 2B), distal portion tongue-like in dorsal view, strongly downcurved with acute tip in lateral view (Fig. 2A); pair of slender, dorsolateral projections set on each side of mid distance of plate, small acute process visible in both dorsal and lateral views just below base of each slender lateral projection (Fig. 2A, 2B, smaller arrow in each). Aedeagus relatively short and stout with proximal half 1.5 times as long as distal half, spiral titillator circling segment 1.5 times with the apical portion directed straight backward, apex of aedeagus slightly enlarged and bilobed (Fig. 2D).

Holotype. Male; CHINA: Hei-long-jiang Province, Yi-chun City, Wu-yi-ling, Wu-yun River in the Town of Yong-sheng, N47.54°, E128.53°, alt. 160 m, 31 July 1993, Coll. SUN C-h.

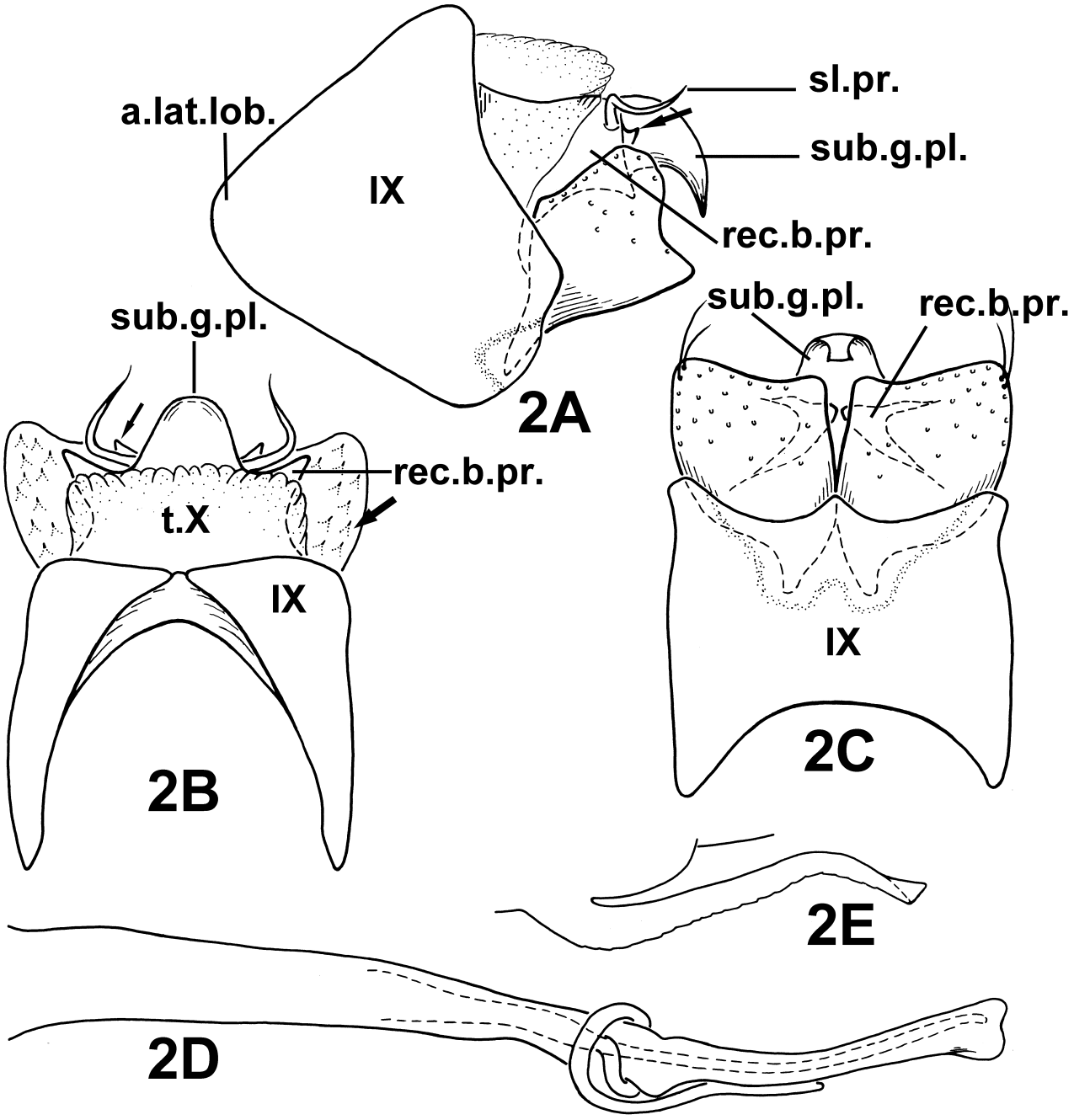

FIGURE 2. *Allotrichia rhynchophyllum* **n. sp.** male genitalia. A, left lateral; B, dorsal; C, ventral; D, aedeagus; E, ventral process of segment VII, left lateral. a.lat.lob. = anterior lateral lobe of IX; rec.b.pr. = rectangular basal projection of subgenital plate; sl.pr. = slender projection of subgenital plate; sub.g.pl. = subgenital plate; t.X = tergum X; IX = segment IX.

Etymology. Neuter Greek noun *rhynchophyllum* = nose-leaf, used in apposition with the genus name with reference to the beak-like shape of the distal portion of the subgenital plate in lateral view.

Distribution. East Palaearctic Region of China: Hei-long-jiang.

Microptila Ris

Microptila Ris 1897, 416; type species: *Microptila minutissima* Ris 1897 (monobasic).

The genus *Microptila* contains 16 extant species, of which 13 species are Oriental, 1 species is West Palearctic, 1 species is Afrotropical, and 1 species is Afrotropical–West Palearctic (Morse 2015). The new *Microptila* species described below is the first representative of the genus known in the typical Oriental Region of China (Yun-nan Province).

Microptila species have forewings that are each ~1.5–3.0 mm long, 3 ocelli, a mesoscutellum that is asymmetrically rhomboidal with its anterior margin widely convex in an obtuse angle and larger than its posterior angle, a metascutellum that is trapezoidal, and a spur formula of 0-3-4. *Microptila* male genitalia have segment IX with a shallow excision along the dorsoposterior margin; tergum X forms a short membranous dorsal lobe; inferior appendages are elongate, although not so long as in *Ugandatrichia* and arising from the ventroposterior margin of segment IX with apices slightly incurved; the subgenital plate is elongate; and the aedeagus is long with a short spiral titillator (diagnosis modified from Marshall 1979).

Microptila hamatilis n. sp.
(Fig. 3)

Diagnosis. The new species is somewhat similar to *Microptila hintama* Oláh 1989 from Vietnam in having a broad subgenital plate with lateral margins curling up in dorsal view. However, *M. hamatilis* n. sp. differs from it by having 1) the posterior margin of the dorsum of segment IX has a median U-shaped concavity in dorsal view (with a mesodorsal triangular projection in *M. hintama*); 2) the distal half of the aedeagus is not protruding basally but its apex forms a slender hook (with a triangular protrusion at the base of distal half and its apex is not hooked in *M. hintama*); and 3) the inferior appendages are fused for their basal 1/5, with the distal portions gradually diverging in ventral view (the inferior appendages are not fused at base, with their inner margins very close, almost parallel to each other in *M. hintama*).

Male. Length of each forewing 2.7–2.8 mm (n=2). Antennae each 20–22-segmented (n=2). Ventral process on sternum VII absent.

Male genitalia. Abdominal segment IX short dorsally, with lower half of anterior margin on each side strongly produced forward and with posterior margin roundly convex in lateral view (Fig. 3A); anterior margin of dorsum IX with deep semicircular excision, concavity on posterior margin U-shaped in dorsal view (Fig. 3B); in ventral view, anterior margin with deep triangular excision. Segment X membranous, only about 2/3 times as long as wide with posterior margin roundly convex in dorsal view, with its tip tilted slightly upward in lateral view (Fig. 3A, 3B). Inferior appendages stout, each about 2.5 times as long as wide and with blunt tip almost 2/3 times as tall as its midheight in lateral view; in ventral view, inner margins of inferior appendages fused at their basal 1/5, then widely divergent, lateral margins roundly convex; in dorsal view, inner surface of each appendage concave such that its dorsomesal margin looks ridge-like (Fig. 3B). Subgenital plate forming broad hood with rounded apex and with two lateral margins curling up in dorsal view (Fig. 3B), its tip extending to 2/3 distance of inferior appendage from base in lateral and ventral views (Figs. 3A, 3C); Aedeagus long, with proximal half 1.3 times as long as distal half, spiral titillator circling aedeagus 1.3 times and apex of aedeagus reduced to slender hook (Fig. 3D).

Holotype. Male, CHINA: Yun-nan Province, Da-li City, Zhong-he Village, N25.35°, E100.13°, alt. 2200 m, 22 May 1996, Coll. Wang B-x. and Gui F-r. **Paratype.** Si-chuan Province, Lu-ding County, 5 km south of Muo-zi-gou, N29.55°, E102.14°, alt. 1350 m, 7 June 1996, Coll. Yang L-f. and Wang X-h. 1 male and 1 female.

Etymology. Latin, *hamatilis* = with hooks, or hooked, referring to the hooked apex of the aedeagus.

Distribution. Oriental Region of China: Yun-nan, Si-chuan.

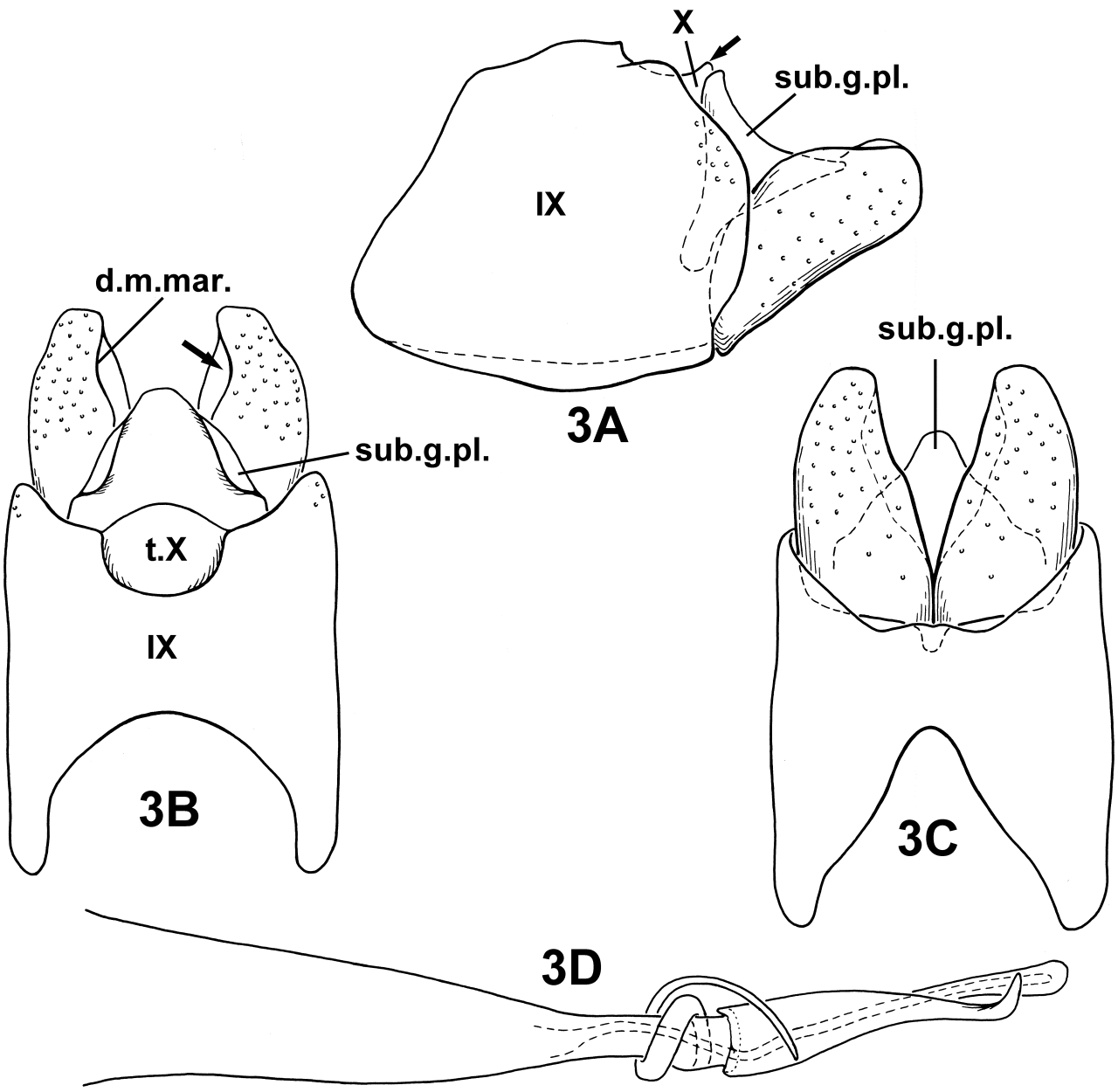

FIGURE 3. *Microptila hamatilis* **n. sp.** male genitalia. A, left lateral; B, dorsal; C, ventral; D, aedeagus. d.m.mar. = dorsomesal margin of an inferior appendage; sub.g.pl. = subgenital plate; t.X = tergum X; IX = segment IX.

Stactobiella MARTYNOV

Stactobiella MARTYNOV 1924, 37, 57; type species: *Stactobia ulmeri* SILTALA 1908 (monobasic) [a synonym of *Microptila risi* FELBER 1908, 14–16, synonymized by SPURIS 1989, 12]

The genus *Stactobiella* currently consists of 13 described species occurring in the East Palaearctic (4 species), the Western Palaearctic (2 species), the Nearctic (5 species), and the Oriental (2 species) Regions (MORSE 2015). XUE & YANG 1990 described *Stactobiella pulmonaria* from China (Hainan island), but MALICKY & CHANTARAMONGKOL (2007) transferred the species to *Chrysotrichia*, based on his specimens from Thailand and Laos, and he synonymized *Chrysotrichia tanduk* WELLS & HUISMAN 1993 (Malaysia) with this species. We re-examined the type specimens of *S. pulmonaria* and agree with the opinion of WELLS & HUISMAN (1993), the typical 1-3-4 tibial spur formula suggested that our species should be placed in *Stactobiella*, but the male genitalia

are typical of *Chrysotrichia*. Therefore, the species *Chrysotrichia pulmonaria* (XUE & YANG 1990) became the first species of that genus known in China. In this study, two new species, *Stactobiella mutica* n. sp. and *Stactobiella parallelica* n. sp., have been found in Oriental China and *Stactobiella biramosa* from northern China (Hei-long-jiang) is new to the Chinese fauna.

Stactobiella species have forewings that are ~1.5–3.0 mm; 3 ocelli; the metascutellum is long, as wide as or slightly narrower than the metascutum; the spur formula is 1-3-4. *Stactobiella* male genitalia have segment IX well developed with long anterior apodemes, tergum X is membranous, the shape of the inferior appendage varies among species, the subgenital is plate strongly sclerotized, arched; the aedeagus is a single tubule in most species (diagnosis modified from MARSHALL 1979).

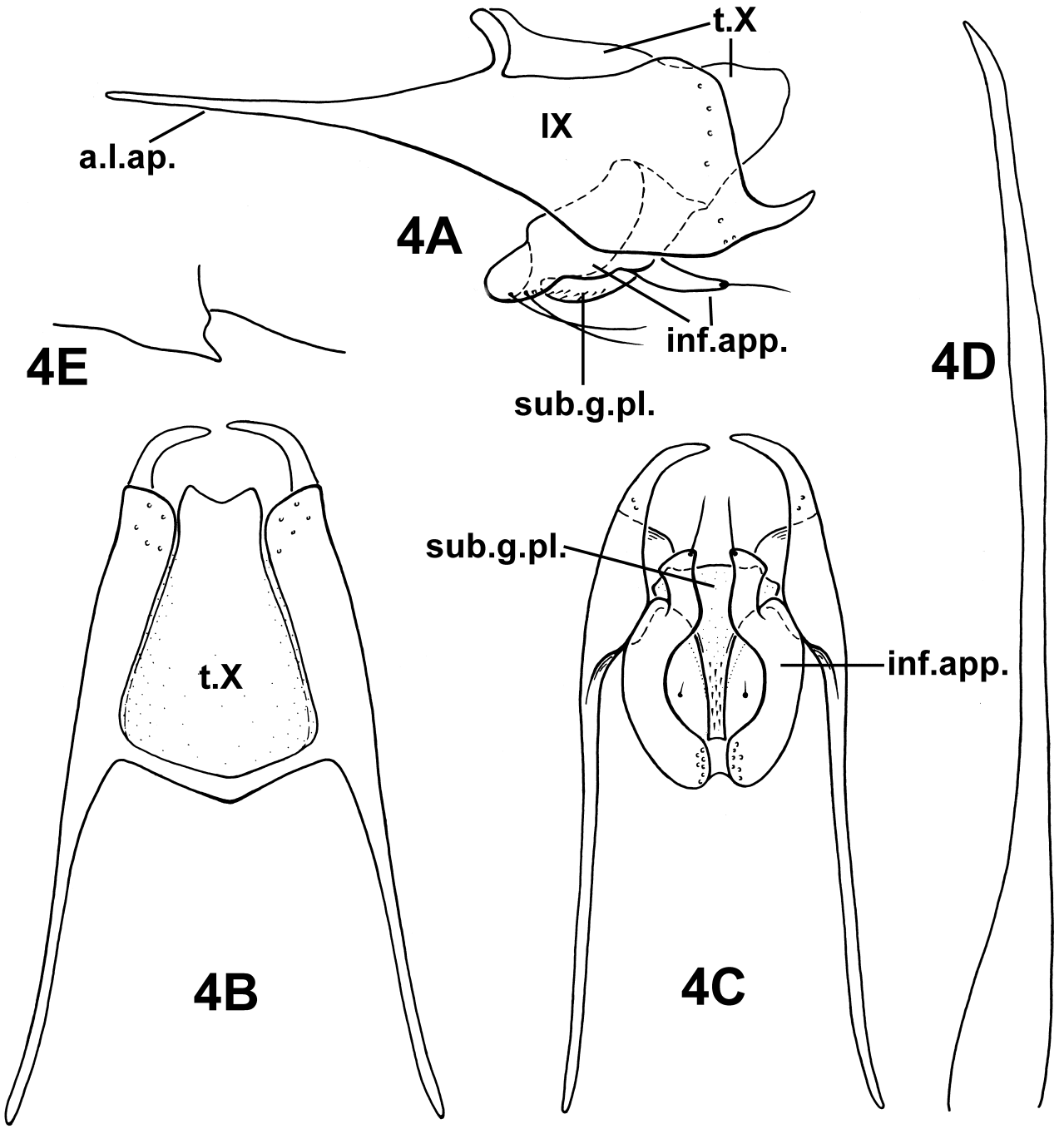

FIGURE 4. *Stactobiella mutica* **n. sp.** male genitalia. A, left lateral; B, dorsal; C, ventral; D, aedeagus; E, ventral process of segment VII, left lateral. a.l.ap. = anterolateral apodeme of segment IX; inf.app. = inferior appendage; sub.g.pl. = subgenital plate; t.X = tergum X; IX = segment IX.

***Stactobiella mutica* n. sp.**
(Fig. 4)

Diagnosis. The male of the new species is somewhat similar to that of *Stactobiella alasignata* BOTOSANEANU 1993 (Far East Russia) in having a deep posterior concavity on dorsum IX, a subgenital plate with a long stem, and inferior appendages bearing long setae. But *S. mutica* n. sp. differs from *S. alasignata* in having 1) the posteroventral corners of pleura IX forming slender projections with acute tips (*S. alasignata* is without projections on the posteroventral corners of pleura IX); 2) inferior appendages positioned underneath segment IX (in *S. alasignata* they are positioned posterior to segment IX); and 3) the long setae occur only on the anterior portions of the inferior appendages and the posterior portions of the appendages are thumb-like, each with a truncate apex bearing one setae (in *S. alasignata* the long setae are set all along the posterior margins of the inferior appendages and the posterior 1/3 portion of each inferior appendage is elongated with a rounded apex bearing at least 3 setae).

Male. Length of each forewing 1.8–1.9 mm (n=8). Antennae each 18-segmented (n=8). Ventral process on sternum VII small, short, triangular in lateral view (Fig. 4E).

Male genitalia. Anterolateral apodemes of segment IX set on dorsal half, extending to middle of segment VII; posteroventral corners of pleura IX forming slender hooks with acute tips tilted upward in lateral view (Fig. 4A) and strongly curved mesad with tips almost meeting each other in ventral view (Fig. 4C); posterior dorsum of segment IX forming deep trapezoidal concavity (Fig. 4B). Tergum X membranous, trapezoidal with anterior margin about 3 times as broad as posterior margin and with shallow emargination on posterior margin in dorsal view (Fig. 4B); in lateral view, apical portion of segment X forming triangular lobe with blunt apex extending beyond segment IX. Inferior appendages partly exposed from beneath segment IX with their posterior ends not extending beyond hooked tips of segment IX in lateral view (Fig. 4A); in ventral view, anteroventral 2/3 of inferior appendages thick and semicircular, together outlining open oval with many long setae on inner surfaces of anterior ends and with single pair of short setae submesally; posterior 1/3 of each inferior appendage thumb-like, with apex obliquely truncated and bearing one setae on apicomesal corner. Subgenital plate only about 2/3 as long as inferior appendages in ventral view, anteriorly forming long stem covered with tiny setae, posterior half fan-like, with apical region 8 times as broad as stem in ventral view (Fig. 4C). Aedeagus long, simple tube, broadest in basal 1/4, slightly thicker in third 1/4, apical portion slightly curved (Fig. 4D).

Holotype. Male; CHINA: Si-chuan Province, Ma-bian County, Tian-xing village, Zhong-shan-gou stream, 4.9 km W of bridge in Ma-bian N28.8492°, E103.5091°, alt. 597 m, 7 Jul 2005. Coll. ZHOU X., SUN C-h., ZHOU C-f., and J. MORSE, CN05070701 (Fig. 9). **Paratype.** Same data as holotype, 7 males.

Etymology. Latin, *mutica* = shortened, with reference to the truncate ends of the thumb-like posterior portions of inferior appendages.

Distribution. Oriental region of S.W. China: Southern Si-chuan.

***Stactobiella parallelica* n. sp.**
(Fig. 5)

Diagnosis. This new species from southeastern China is very similar to *S. mutica* n. sp., distributed in southwestern China, but *S. parallelica* n. sp. is readily distinguishable from *S. mutica* in that 1) the posteroventral hooks of pleura IX are very short, with tips tilted upward in lateral view and set far apart in ventral view (in *S. mutica* the hooks are slightly longer and straighter, with tips pointed backward in lateral view and very close to each other in ventral view); 2) the posterior 1/2 of the inferior appendages are straight, rod-like, and parallel to each other, each having a narrow apex in ventral view (in *S. mutica* the posterior portion of each inferior appendage is thumb-like, only 1/3 of the length of the appendage, with its apex obliquely truncate); and 3) the subgenital plate is less than 1/2 as long as the inferior appendages in ventral view (in *S. mutica* the plate is about 2/3 as long as the inferior appendages).

Male. Length of each forewing 1.5–1.7 mm (n=25). Antennae each 18-segmented (n=25). Ventral process on sternum VII small, short, triangular in lateral view.

Male genitalia. Anterior apodemes of segment IX projecting from middle of segment IX and extending forward to or slightly surpassing anterior margin of segment VII, posteroventral corners of pleura IX forming short

hooks with acute tips tilted upward in lateral view (Fig. 5A), and strongly curved mesad with their tips set far apart in ventral view (Fig. 5C); posterior dorsum of segment IX forming subrectangular concavity (Fig. 5B). Tergum X membranous, subrectangular, with anterior margin about 1.3 times as broad as posterior margin and shallow emargination presented on posterior margin in dorsal view (Fig. 5A); in lateral view, apical portion of X broadly rounded, slightly exposed beyond posterior margins of segment IX. Inferior appendages partly exposed from beneath segment IX with their posterior ends extending beyond the hooked tips of segment IX in lateral view (Fig. 5A); in ventral view, anteroventral 1/2 of inferior appendages thick and straight-edged laterally, semicircular mesally, together outlining open oval, each with row of setae on inner surface of anterior end and with single pair of short setae submesally, posterior 1/2 of inferior appendages straight, rod-like, parallel to each other, with narrow apices pointed backward and each bearing two setae, one near base of rod and one at tip (Fig. 5C). Subgenital plate less 1/2 as long as inferior appendages in ventral view, anteriorly forming short stem covered with tiny setae, posterior half fan-like, with apical margin at most 3 times as broad as stem in (Fig. 5C). Aedeagus long, simple tube, broadest in basal 1/7, very slightly thicker near middle, apically almost straight (Fig. 5D).

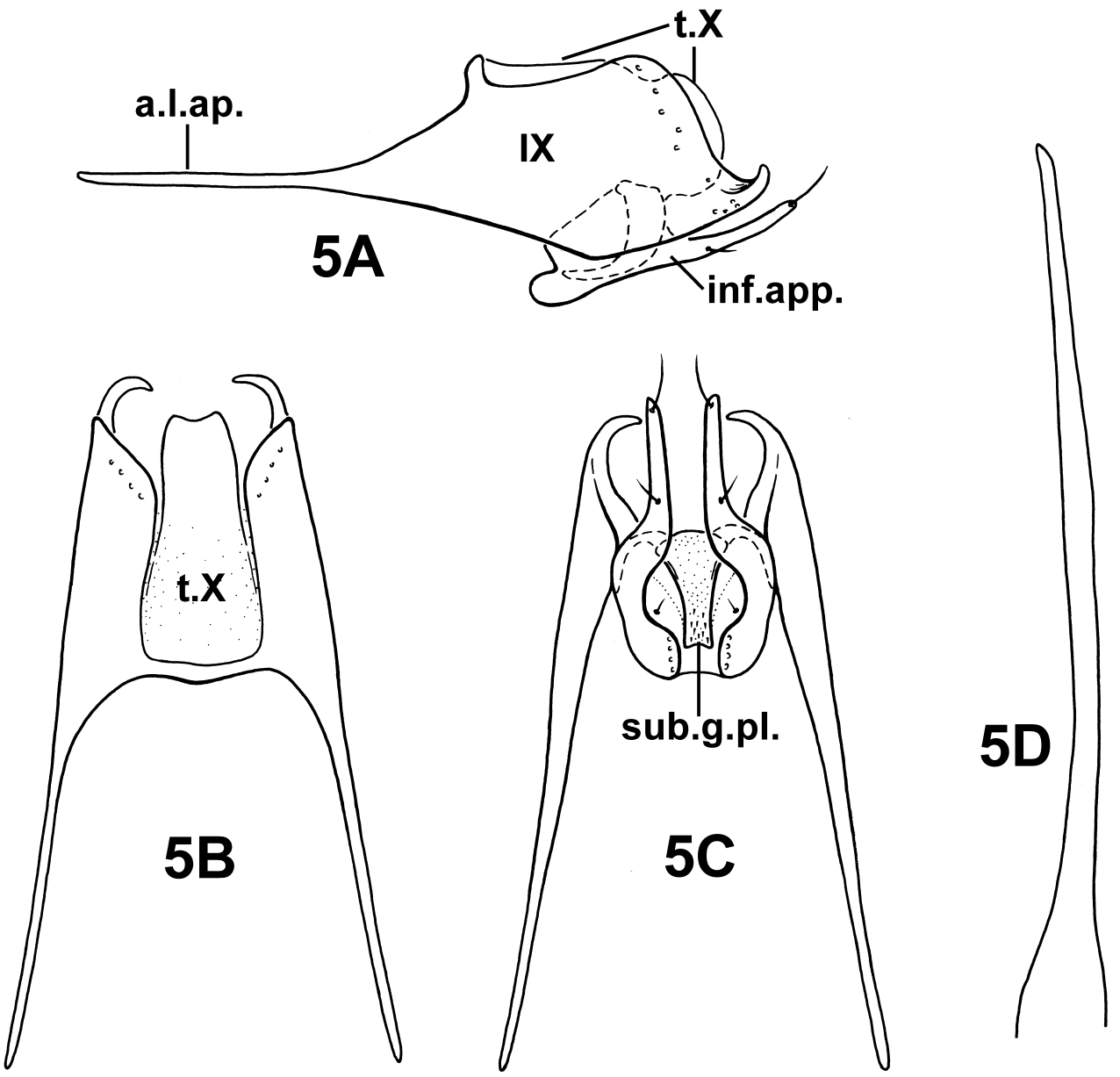

FIGURE 5. *Stactobiella parallelica* **n. sp.** male genitalia. A, left lateral; B, dorsal; C, ventral; D, aedeagus. a.l.ap. = anterolateral apodeme of segment IX; inf. app. = inferior appendage; sub.g.pl. = subgenital plate; t.X = tergum X; IX = segment IX.

Holotype. Male; CHINA. Jiang-xi Province, Jiu-Lian-shan Mt. National Nature Reserve, at the confluence of Huang-niu-shi & Da-shui-keng Streams, 1.2 km SE of Dun-tou Village, N24.31°, E114.25°, alt. 546 m, 9 June 2005, Coll. SUN C-h. **Paratypes.** Same data as holotype, 2 males; same Reserve except Dun-tou stream at San-dui bridge 500 m SE of Dun-tou village N24.32°, E114.25°, alt. 480 m, 9 June 2005, Coll. YANG L-f., and C. GERACI, 245 males; tributary of Da-qiu-tian River, Xia-gong-tang Stream, at Jiu-lian-shan Station hotel, N24°32'26", E114°27'58", alt. 590 m, 7 June 2005, Coll. YANG L-f. and C. GERACI, 19 males; Da-shui-keng Stream, 500 m upstream of confluence of Huang-niu-shi & Da-shui-keng Streams, N24.31°, E114.25°, alt. 553 m, 9 June 2005, Coll. ZHOU X., 1 male; at Da-qiu-tian Station, N24.34°, E114.25°, alt. 425 m, Coll. ZHOU X., 2 males; at Mei-hua-luo-di of Da-qiu-tian Station, N24.35°, E114.27°, Coll. YANG L-f., 3 males.

Etymology. Greek, *parallelica* = being parallel, referring to the rod-like posterior portions of the inferior appendages that are parallel to each other.

Distribution. Oriental region of southeastern China: Jiang-xi.

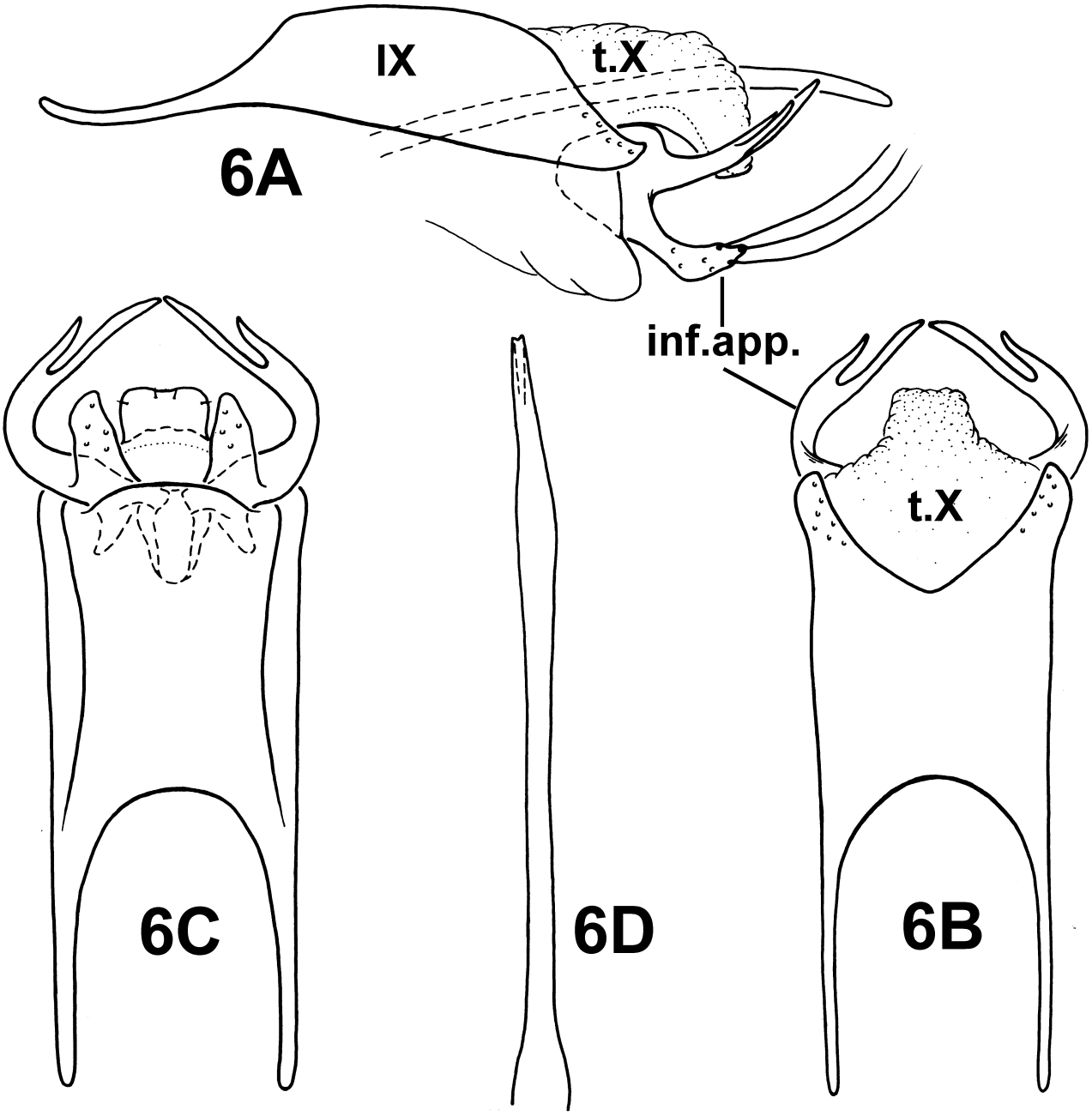

FIGURE 6. *Stactobiella biramosa* Martynov male genitalia. A, left lateral; B, dorsal; C, ventral; D, aedeagus. inf.app. = inferior appendage; t.X = tergum X; IX = segment IX.

***Stactobiella biramosa* MARTYNOV**
(Fig. 6)

Stactobiella biramosa MARTYNOV 1929, 297, figs. 5–6.

Remarks. This species is recorded from China for the first time. The male genitalia of our specimen from northern China are quite congruent with the drawings of *Stactobiella biramosa* provided by AREFINA *et al*. (2002), apart from the fact that 1) the pair of darkened bars within tergum X are not obvious (clearly observed in the specimens illustrated by AREFINA *et al*.), 2) the median spine on the lateral margin of each inferior appendage is absent (present on inferior appendages of the specimens of AREFINA *et al*.). The male genitalia of our specimens are redrawn here for comparison.

Specimen examined. CHINA. Hei-long-jiang Province, Yi-chun City: Wu-ying Village, Tang-wang River, N47.43°, E128.53°, alt. 250 m, 2 viii 1993, Coll. SUN C-h., 39 males; Wu-yi-ling, Ying-sheng Village, Wu-yun River, N47.43°, E128.53°, alt. 160 m, 31 vii 1993, Coll. SUN C-h., 121 males; Wu-yi-ling, Ying-sheng Village, Xi-mi-gan River, N47.43°, E128.53°, alt. 310 m, 30 vii 1993, Coll. SUN C-h., 5 males.

Distribution. Hei-long-jiang (East Palearctic Region of China); Russia.

***Pseudoxyethira* SCHMID, NEW STATUS**

Scelotrichia ULMER 1951, 73; type species: *Scelotrichia saranganica* ULMER 1951 (original designation); preoccupied by *Scelotrichia* REUTER 1890 in Hemiptera.

Pseudoxyethira SCHMID 1958, 44; type species: *Pseudoxyethira asgiriskanda* SCHMID 1958 (original designation). Synonymized with *Scelotrichia* ULMER by WELLS 1990, 373.

Madioxyethira SCHMID 1960, 89; type species: *Madioxyethira milinda* SCHMID 1960 (original designation). Synonymized with *Scelotrichia* ULMER by WELLS 1990, 373. Treated as a distinct genus by MALICKY 2006, 241–264.

Orientalitrichia KOÇAK & KEMAL 2012; inappropriate replacement name for *Scelotrichia* ULMER.

The genus *Pseudoxyethira* currently consists of 60 described species from the East Palaearctic (2 species), the Oriental (45 species), the Afrotropical (4 species), and the Australasian (9 species) Regions (MORSE 2015). Two species of this genus are already known in China, *P. levis* (WELLS & DUDGEON 1990) (Hong Kong) and *P. mador* (MALICKY 2012) (Mt. Jing-gang-shan, Jiang-xi). In this study, *P. thingana* from Vietnam was found in southern China, Jiang-xi Province.

***Pseudoxyethira thingana* (OLÁH)**
(Fig. 7)

Scelotrichia thingana OLÁH 1989, 267, fig. 12; type locality: Vietnam.

Remarks. This species is recorded from China for the first time. The male genitalia of our single specimen from southern China is basically congruent with the original description and drawings of *S. thingana*. However, the inferior appendages of our specimen are somewhat similar to the drawing of *O. nana* (MEY 1996) when viewed ventrally (Fig.7C), but like *O. thingana*, our specimen can be distinguished from *P. nana* by the fact that 1) the ventral process on segment VII is absent (present in *P. nana*), 2) the anterior apodemal rods of segment IX are set dorsally, they are no more than 3 times as long as segment IX in lateral view, and each rod is not straight and needle-like (Fig. 7A) (the anterior apodemal rods of segment IX are set ventrally, they at least 4 times as long as segment IX in lateral view, and each rod is straight and needle-like in *P. nana*); and 3) the basal 1/5 of the fused inferior appendages are convex laterally and gradually narrowing to the base in ventral view (Fig. 7C) (they are slightly concave, abruptly narrowing to a handle in the basal 1/4 in *P. nana*). The male genitalia of our specimen are redrawn here for comparison.

Taxonomic problems resulting from adherence with the International Code of Zoological Nomenclature (International Commission on Zoological Nomenclature 1999) certainly are to be corrected in compliance with professional standards and journal requirements (as for *Zootaxa*). Recently, though, some so-called “cyber

nomenclaturalists" (O'HARA 2011) have undertaken searches for junior homonyms among genera of animals. Upon finding a junior homonym, they then have published a replacement name, generally in an isolated paper, without communicating with specialists for the affected taxon, without peer review, and in obscure journals that they edit and publish themselves. The practice has been decried in *Zootaxa* by O'HARA (2011) and, with respect to old junior homonyms, by NEMÉSIO (2011). As they noted, lack of expertise with the affected taxa by these nomenclaturalists can often lead to errors and complications that must later be corrected (O'HARA 2011). Such is the case also with the junior homonym *Scelotrichia* ULMER 1951, homonym of *Scelotrichia* REUTER 1890 (Hemiptera: Nabidae, a subgenus of *Prostemma*). Upon discovery of this overlooked homonymy, KOÇAK & KEMAL (2012) published for this hydroptilid genus the replacement name *Orientalitrichia* nomen novum in their Centre's *Miscellaneous Papers*, apparently without peer review and without consulting modern trichopterologists. [Dr. Georg ULMER (1877–1963) is dead and could not be consulted.] Had their proposal been peer reviewed, especially by a modern trichopterologist, they would have learned that ULMER's name has at least one available synonym and should have been replaced by the oldest of these, *Pseudoxyethira* SCHMID 1958, rather than a new name (ICZN 1999, Article 60.2).

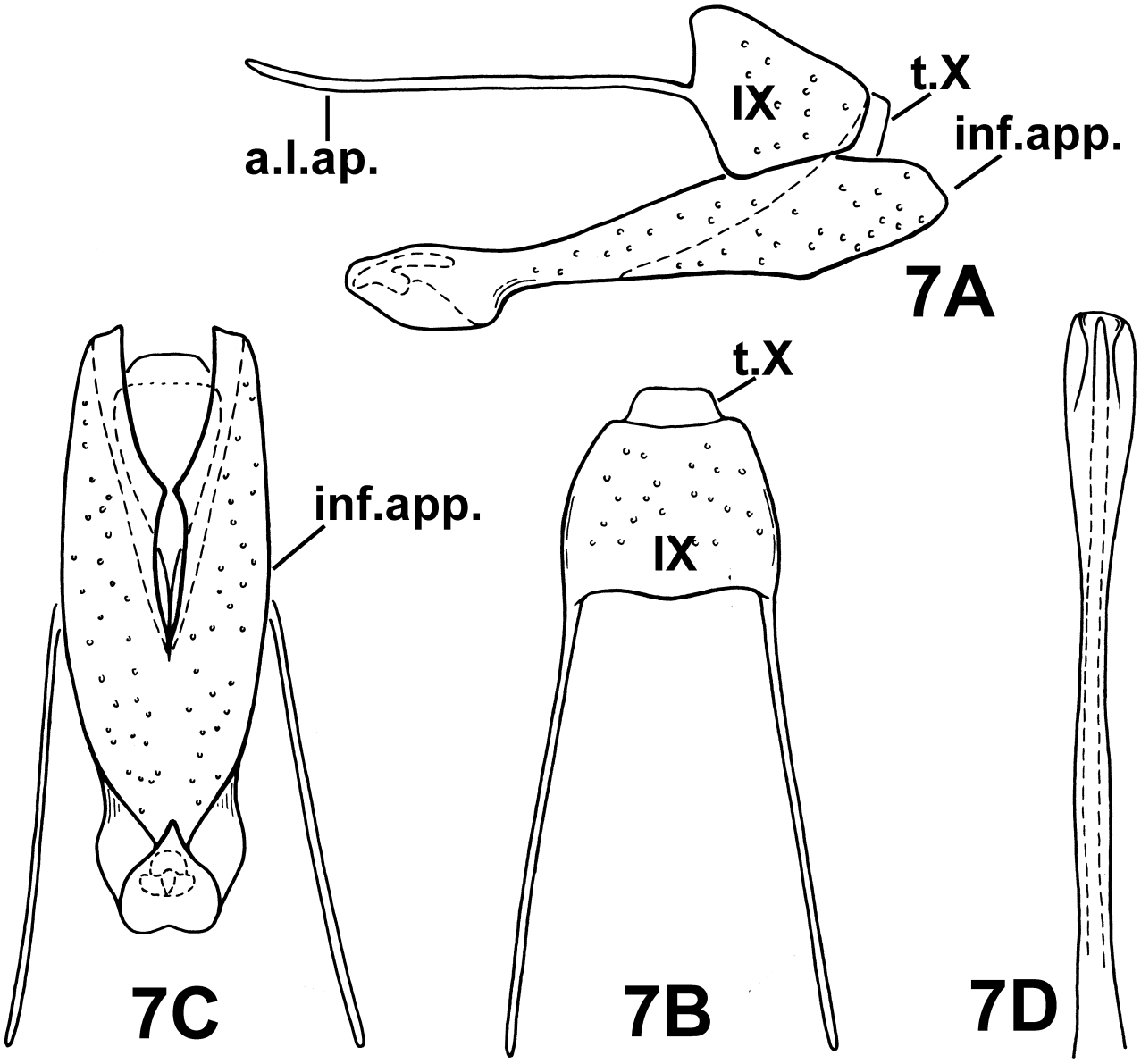

FIGURE 7. *Pseudoxyethira thingana* (Oláh) male genitalia. A, left lateral; B, dorsal; C, ventral; D, aedeagus. a.l.ap. = anterolateral apodeme of segment IX; inf.app. = inferior appendage; t.X = tergum X; IX = segment IX.

FIGURE 8. Type locality for *Agraylea dactylina* **n. sp.**: CHINA: Si-chuan Province, Kang-ding County, unnamed waterfall, tributary of Da-du River, 100 m upstream of G318 at 2824.9 km stone marker, N30.0665°, E102.1178°, alt. 1675 m, collection number CN05062901.

Specimen examined. CHINA: Jiang-xi Province: Jiu Lian Shan National Nature Reserve, tributary of Da-qu-tian River, Xia-gong-tang Stream at Jiu-lian-shan Station Hotel, N24°32'26", E114°27'58", elev 590 m, 7 June 2005, Coll. YANG L-f. and C. GERACI, 1 male.

Distribution. Jiang-xi, south China; Vietnam.

FIGURE 9. Type locality for *Stactobiella mutica* **n. sp.**: CHINA: Si-chuan Province, Ma-bian County, Tian-xing village, Zhong-shan-gou stream, 4.9 km W of bridge in Ma-bian N28.8492°, E103.5091°, alt. 597 m, collection number CN05070701.

Acknowledgements

We are especially grateful to Dr. SUN Chang-hai, Dr. Karl M. KJER, Dr. ZHOU Xin, Dr. Christy J. GERACI, Dr. ZHOU Chang-fa, Dr. WANG Bei-xin, and Dr. WANG Xin-hua for their help in collecting adults in the expeditions in southern China, Hengduan Mountain, and northeastern China in 2005, 1996, and 1993, respectively. We also thank sincerely Dr. Alice WELLS for her careful review of our manuscript and Guest Editor Dr. Ralph HOLZENTHAL for his editorial assistance. This work was partly supported by the United States National Science Foundation (DEB0316504).

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