AMERICAN MUSEUM
Novitates

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CENTRAL PARK WEST AT 79TH STREET, NEW YORK, NY 10024
Number 3430, 72 pp., 211 figures, 2 tables February 27, 2004

Revision of the Asian Tribe Megarthropsini (Coleoptera: Staphylinidae: Tachyporinae)

LEE H. HERMAN[1]

CONTENTS

[1] Division of Invertebrate Zoology American Museum of Natural History. e-mail: herman@amnh.org

 ISSN 0003-0082

ABSTRACT

The species and genera of the Megarthropsini are revised. Descriptions and illustrations of the genera and species and keys for identification are presented. *Lacvietina*, a new genus, with four new species is described. Three of the new species, *L. aurora*, *L. copiosa*, and *L. cuprina*, are from Vietnam, and the fourth, *L. paricosta*, is from Malaysia and Thailand. *Lacvietina punctatissima* (Hayashi), from Taiwan, is a new combination and was transferred from *Tachinus*. A new species of *Nepaliodes*, *N. solangelae* from Thailand and China, is described. Seven new species of *Megarthropsis* are described; six of them, *M. deverra*, *M. durga*, *M. empusa*, *M. frazerensis*, *M. parca*, and *M. smetanai*, are from Malaysia; the seventh, *M. djawaensis*, is from Indonesia. A phylogenetic analysis supports Megarthropsini as a monophyletic tribe with Deropini as its sister group. Within Megarthropsini, *Peitawopsis* is the most basal genus to the remaining three genera, and *Lacvietina* is the sister group to *Megarthropsis* and *Nepaliodes*. The tribe is most readily distinguished from other taxa of the Tachyporinae by the densely and coarsely punctate body. Finally, the type species of *Paratachinus*, *P. laticollis* Cameron, is redescribed and discussed. *Lacvietina takashii* is a new combination.

INTRODUCTION

This revision was prompted by the collection of some odd specimens of unknown subfamilial assignment from the mountains of western Vietnam in 1998 and 1999. They turned out to be three undescribed species of a new genus of the rather anomalous Asian tribe of the Tachyporinae, the Megarthropsini. Understanding the position of the Vietnamese species required examination of the other genera of the tribe. This process led to the discovery of nine other unnamed species distributed among the other three genera, which until now included a total of only four species in three genera.

Megarthropsini was proposed by Cameron (1919: 231), who, while providing no characters specific to the tribe, presented a detailed description of his new monotypic genus from Singapore, *Megarthropsis*. When the tribe was published it was not assigned to a subfamily, but Cameron (1919: 232) stated that it appeared to be related to the ''Trichophyini'' and ''Tachyporini''. Later it was placed in the Tachyporinae (Cameron, 1921: 349).

The tribe included only *Megarthropsis*, and neither the tribe nor genus was cited again except in catalogs (Scheerpeltz, 1933: 1478; Blackwelder, 1952: 236) until 1983. Smetana (1983a) moved the monotypic Nepalese genus *Nepaliodes* Coiffait to the Megarthropsini, provided detailed descriptions and numerous illustrations for both genera, and discussed the position of the tribe in the Tachyporinae. In the same article Smetana extended the known range of *Megarthropsis* from Singapore to Borneo, and extended that of *Nepaliodes* from central Nepal (Bagmati Province) to Uttar Pradesh and West Bengal in India. The geographic range of the tribe was extended and the anatomical diversity increased when Smetana (1992) added the new monotypic, Taiwanese genus *Peitawopsis*; in the same article Smetana further illustrated *Megarthropsis*. More recently a second (Smetana, 1995a) and third species (Herman and Smetana, 2002) of *Peitawopsis*, both from Taiwan, were named.

The present article describes new taxa, presents new distributional data and characters, and discusses the relationships of the Megarthropsini and its components. The treatment of *Peitawopsis* herein is an expansion of a review by Herman and Smetana (2002). The descriptions of *Peitawopsis* and *P. watanabei*, the locality data, and the key to species are included so that this revisionary study stands alone and presents a comprehensive and coherent treatment of the tribe and its species.

ABBREVIATIONS

AMNH	American Museum of Natural History, New York, New York
ASC	A. Smetana collection, Ottawa, Ontario, Canada
CNC	Canadian National Collection of Insects, Ottawa, Ontario, Canada
GRC	G. de Rougemont collection, Londinières, France

IEBR	Institute of Ecology and Biological Resources, Hanoi, Vietnam
MHNG	Muséum d'Histoire Naturelle, Genève, Switzerland
MSC	Michael Schülke collection, Berlin, Germany
NHMW	Naturhistorisches Museum Wien, Wien, Austria

MEGARTHROPSINI

Megarthropsini Cameron, 1919: 231. Type genus: *Megarthropsis*, fixed by monotypy.
—Scheerpeltz, 1933: 1478 (world catalog supplement).—Smetana, 1983a: 142 (characters; discussion; key to genera).—Smetana, 1983b: 274 (tribe of Tachyporinae; key to tribes; characters).—Newton and Thayer, 1992: 66 (tribe of Tachyporinae).—Herman, 2001a: 678 (catalog).

DIAGNOSIS: Megarthropsini is distinguished from all tribes of the Tachyporinae by the dense, coarse punctation of the head, pronotum, and elytra (figs. 1, 171, 183, 188), the reflexed, explanate, anterolateral cephalic margin (figs. 171, 183, 189, 194), and the ventrobasal groove on the median lobe of the aedeagus (figs. 48, 80, 97, 152). It is separated from other tribes except the Vatesini by the emarginate posterior elytral margin (figs. 25, 69, 91, 114, 131, 143), and from other tribes but the Deropini by the presence of a neck (fig. 194).

DESCRIPTION: Length 2.7–4.9 mm; width 1.1–1.5 mm. Color dark to pale reddish brown and with or without yellowish brown lateral margins of pronotum and elytra.

Head with vertex coarsely punctate (figs. 1, 171, 183, 188); punctures setate. Head with anterolateral margin explanate and weakly to strongly reflexed from antenna to anterior margin of clypeus (figs. 171, 183, 189, 194); clypeus with (fig. 184) or without (figs. 189, 194) reflexed anterior margin. Epistomal suture present and complete (fig. 189) or incomplete (fig. 184); suture, when complete, angulate at middle; midcranial suture (figs. 1, 189) present, well developed or rudimentary, and extending posteriorly from middle of epistomal suture or absent. Postocular lateral margin of head with carina (figs. 172, 184) or rounded ridge (figs. 189, 194) extending medially from posterior margin of eye to neck. Neck present and broad (fig. 194). Gular sutures

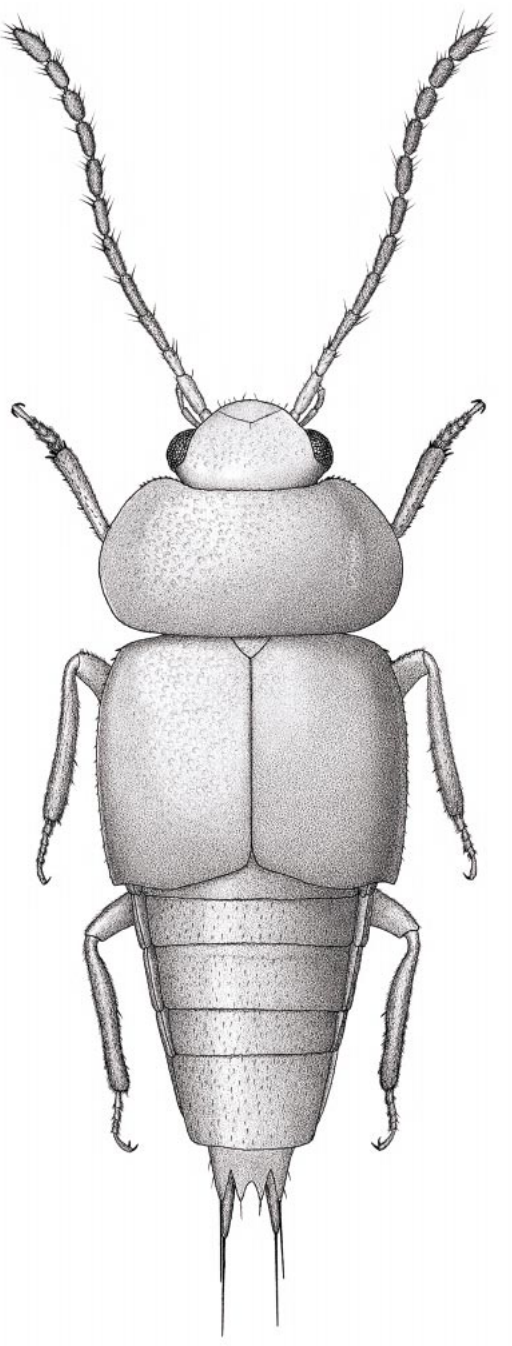


Fig. 1. *Lacvietina cuprina*.

moderately to widely separated and divergent from about middle. Submentum with coarse punctation or impunctate. Mentum coarsely punctate. Labial palp three-segmented; glossa emarginate medially. Maxillary palp four-segmented; fourth segment long, stout, and fusiform (figs. 184, 189); galea with dense cluster of apical setae and with row of setae on lateral margin. Mandible short, broad, and edentate; mola well developed. Antenna long or short and reaching to about middle of elytra or extending beyond posterior margin; antennal insertion beneath reflexed margin of clypeus and frons; antennomere 2 sparsely pubescent; antennomeres 3–11 with fine, dense pubescence.

Pronotum (figs. 1, 66, 79, 130, 188) wider than long; surface with coarse, setate punctation; lateral region explanate and strongly or feebly punctate; anterior and posterior angles angulate (figs. 79, 183) or broadly rounded (figs. 1, 188). Tergosternal suture present. Hypomeron strongly inflexed and not visible in lateral view; postprocoxal lobe present and visible in lateral view. Furcasternum medially carinate.

Elytra with coarse, setate punctation (figs. 1, 171, 183, 188); lateral margin moderately to strongly explanate and forming ''epipleural gutter''; epipleural ridge with row of spinelike setae (fig. 1); spinelike setae increasingly short posteriorly; epipleuron visible in lateral view; posterior margin emarginate (figs. 1, 25, 69, 91, 114); posterolateral angle strongly (fig. 91) to slightly (fig. 143) produced. Mesospiracular peritreme lightly sclerotized, triangular, moderately long, tapered medially; peritremes separated by small, interperitremal sclerite. Mesosternum with or without short midbasal carina; paramedial carina present or absent; median surface with curved carina near base of mesosternal process; mesosternal process grooved (fig. 146).

Tarsal formula 5–5–5.

Abdomen strongly tapered posteriorly (fig. 1). Segment II with one pair of paratergites. Segment III with two pairs of paratergites. Segments IV–VII with one pair of paratergites. Sternum I present as narrow sclerite anterior to II. Sternite II fused to III and with median carina. Sternite III with short, basal, median carina. Tergite VII with palisade fringe of posterior margin well developed, reduced, or absent. Tergites IX divided middorsally by tergum X (figs. 13, 73, 119, 144).

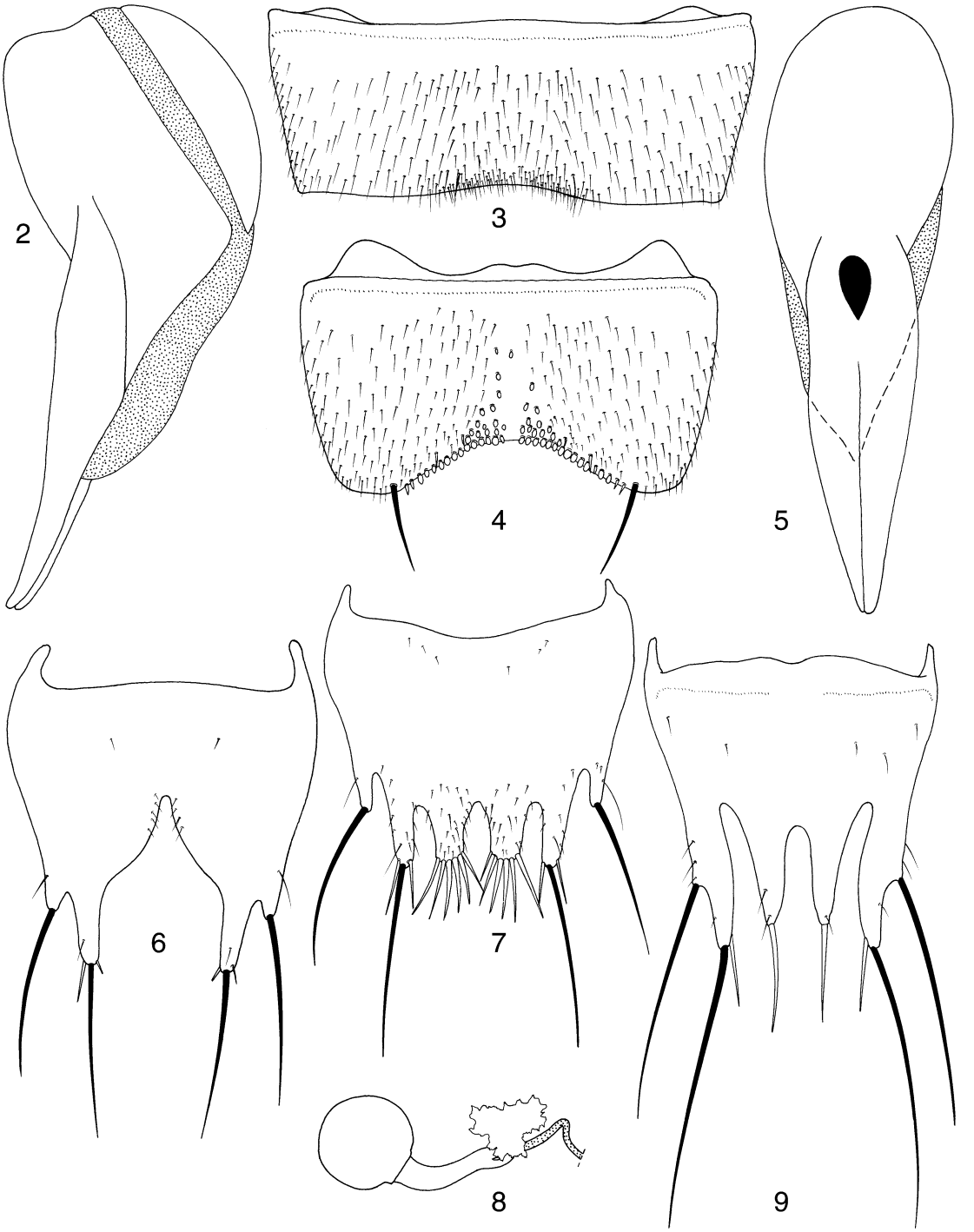
MALE: Sternites V–VII and sternum VIII variously modified; V–VII with large to small rounded lobe on internal surface of anterior margin (figs. 3, 4, 11, 87, 95, 108). Sternite VII with (figs. 4, 77) or without (fig. 40) peg setae. Sternum VIII (figs. 6, 51, 88, 111) with deep, apically wide, basally tapered, median emargination; narrow basal portion of emargination with tiny setae along margins; apical margin with four lobes, each with long, stout, dark, apical seta; lateral lobe small, paramedial lobe large.

Aedeagus with medial surfaces of parameres contiguous (figs. 5, 74, 93, 121); median lobe with shallow to deep longitudinal groove on ventral surface of bulbous base (figs. 48, 80, 97, 152).

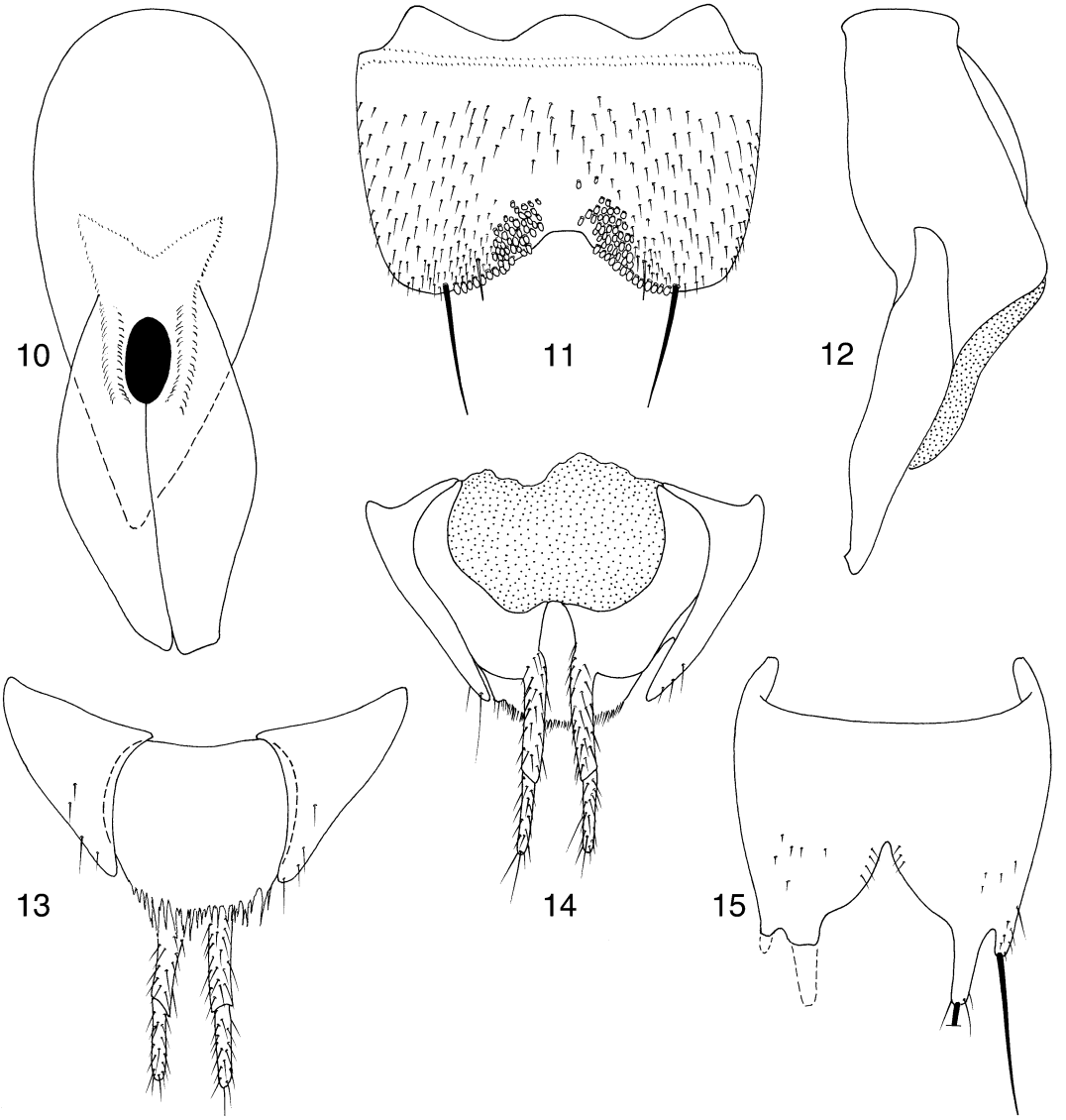
FEMALE: Sternites V–VI unmodified. Sternite VII with truncate or rounded posterior margin. Sternum VIII with five (figs. 68, 82) or six (figs. 7, 27, 141) apical lobes; lateral and paralateral apical lobes paired; median region with one or two apical lobes; median lobe(s) flattened and with apical, fanlike arrangement of setae of variable number. Tergum VIII with four (figs. 9, 16), five (figs. 28, 140), or six (fig. 81) apical lobes; lateral lobe with (figs. 9, 81, 140) or without (fig. 117) small secondary lobe on lateral edge; lateral and paralateral lobes paired, long and slender; median region with one or two lobes. Valvifers paired, broad, and curved (figs. 14, 72, 118, 145). Coxite long, slender, cylindrical, and pubescent (fig. 14); stylus long, slender, and pubescent (fig. 14) or short.

Spermatheca as in figures 8, 92, 99, 142.

DISCUSSION: Cameron (1919) established the tribe with one genus, *Megarthropsis*. Little was known or written about the group until Smetana (1983a, 1992) redescribed and discussed the tribe and its placement, added two genera (*Nepaliodes* and *Peitawopsis*), and published illustrations of characters and a habitus for the genera.



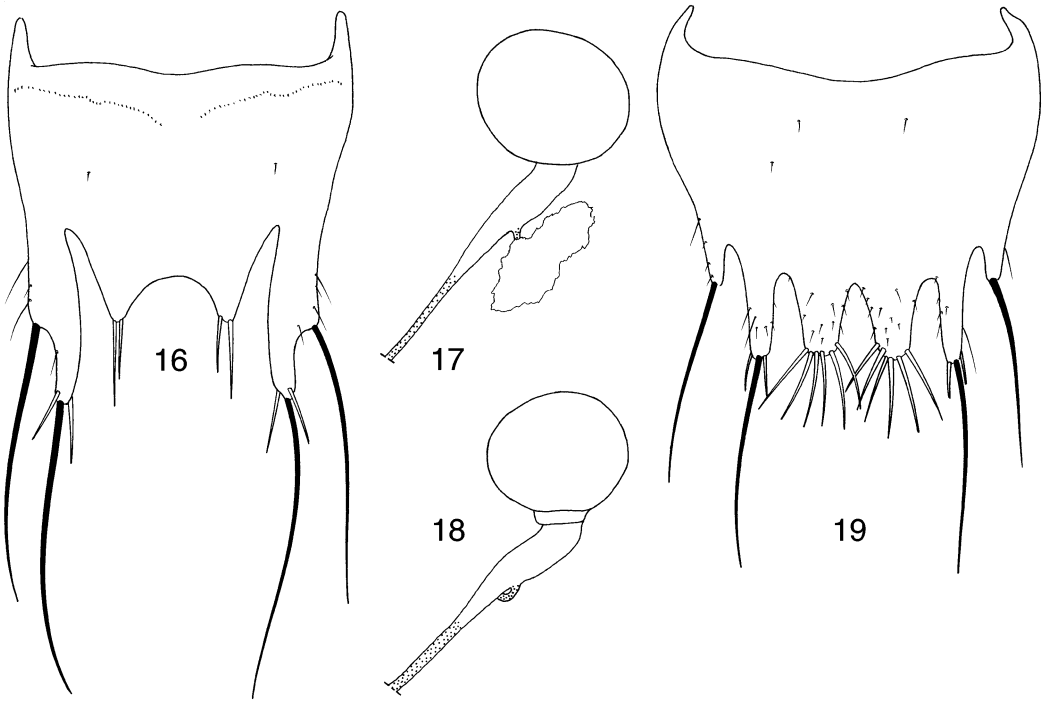
Figs. 2–9. *Megarthropsis decorata*. **2.** Aedeagus, lateral. **3.** Sternite VI, male. **4.** Sternite VII, male. **5.** Aedeagus, ventral. **6.** Sternum VIII, male. **7.** Sternum VIII, female. **8.** Spermatheca. **9.** Tergum VIII, female.



Figs. 10–15. *Megarthropsis deverra*. **10.** Aedeagus, ventral. **11.** Sternite VII, male. **12.** Aedeagus, lateral. **13.** Tergites IX and tergum X, female. **14.** Segment IX, ventral, female. **15.** Sternum VIII, male (broken lines represent completion of missing portion of segment; apical seta on right side cut off).

Apically expanded setae on the dorsal surface of the head, pronotum, and elytra are uniquely characteristic of the tribe but are too difficult to view without the high magnification of a compound microscope or scanning electron microscope to be useful as a practical diagnostic feature of the tribe.

DISTRIBUTION: The species of this tribe are all known from the southeastern quadrant of Asia. At present, species are reported from Nepal, India, Thailand, Malaysia, Singapore, Vietnam, China, and Taiwan. It is probable that the tribe occurs throughout the region, including other sites in China and Indonesia and other countries of Southeast Asia and that many more species will be found. All the species have been collected from moist to wet leaf litter, adjacent to or in stream



Figs. 16–19. *Megarthropsis deverra*. **16.** Tergum VIII, female. **17, 18.** Spermatheca. **19.** Sternum VIII, female.

beds, or on the forest floor. Collections have been made at elevations of 220–2900 m.

Key to Genera of the Megarthropsini

Here, in the other keys, and in the descriptions care must be taken when searching for peg setae on the abdominal sternites. Often their small size make them difficult to see with a stereoscopic microscope and they are more easily and reliably viewed with the higher magnification of a compound microscope.

1. Basal angles of pronotum angulate (figs. 66, 79); head with well-developed laterobasal postocular carina (figs. 172, 184) 2
— Basal angles of pronotum broadly rounded (figs. 1, 96); head with rounded laterobasal postocular ridge (figs. 189, 194) 3
2(1). Anterior margin of clypeus not reflexed but with weak ridge; anterior pronotal angle rounded (figs. 66, 172) . . . . . *Megarthropsis* Cameron
— Anterior margin of clypeus strongly reflexed (fig. 184); anterior pronotal angle angulate (fig. 79) . . *Nepaliodes* Coiffait
3(1). Elytral surface with lateral third concave, median portion convex (fig. 188); metasternum without pit adjacent to apex of mesosternal process . . . . . *Peitawopsis* Smetana
— Elytral surface convex to near margin (fig. 1); metasternum with deep pit adjacent to apex of mesosternal process (figs. 146, 196, 197) . . . . . *Lacvietina*, new genus

Megarthropsis Cameron

Figures 2–73, 171–182

Megarthropsis Cameron, 1919: 231. Type species: *Megarthropsis decorata* Cameron, fixed by monotypy.
—Cameron, 1921: 355, 406 (characters; checklist).—Scheerpeltz, 1933: 1478 (catalog).—Blackwelder, 1952: 236 (type species).—Smetana, 1983a: 144 (characters; illustrations).—Smetana, 1992: 204 (characters; illustrations; habitus).—Herman, 2001a: 678 (catalog).

Diagnosis: *Megarthropsis* can be separat-

ed from *Nepaliodes* by the angulate postocular carina (fig. 172), the rounded anterior angle of the pronotum (figs. 66, 172), and, except for *M. djawaensis*, the narrowly explanate lateral margin of the elytra (fig. 171). The first antennal segment of most species of *Megarthropsis* is parallel-sided to slightly tapered (fig. 171), but in one species, *M. djawaensis*, the scape is moderately strongly tapered apically and similar to that of *Nepaliodes*. *Megarthropsis* is distinguished from *Peitawopsis* and *Lacvietina* by the distinct postocular carina (fig. 172) and the angulate basal angle of the pronotum (fig. 66); the latter two genera lack both features.

DESCRIPTION: Length 3.8–4.2 mm; width 1.1–1.4 mm.

Color reddish brown with yellowish brown pronotal lateral margins; head usually dark reddish brown to nearly black.

Head (fig. 171) with dorsum densely and coarsely punctate. Clypeal surface largely impunctate, but with a few punctures present. Head (fig. 171) with lateral margin strongly reflexed from antenna to anterior margin of clypeus; anterior margin of clypeus with feeble ridge. Epistomal suture complete and angulate at middle; midcranial suture rudimentary, minute, and poorly developed (best seen in lightly pigmented or cleared specimens). Dorsum of head without midlongitudinal groove; surface with or without broad, shallow, median depression. Postocular lateral margin of head with carina extending posteromedially from eye; carina angulate near eye (fig. 172); postocular vertical carina present and extending ventrally from lateral carina. Gular sutures widely separated. Submentum impunctate. Antennae long, slender, and reaching beyond posterior margin of elytra; scape more or less parallel-sided from near base to apex (see *M. decorata*, *M. deverra*, *M. frazerensis*) or slightly (see *M. durga*, *M. empusa*, *M. parca*, *M. smetanai*) to moderately (see *M. djawaensis*) tapered apically; dorsal surface of scape with short, moderately dense pubescence and ventral surface sparsely pubescent.

Pronotum (figs. 66, 172) with anterior angle broadly rounded and extending beyond median portion of anterior margin; lateral margin unevenly curved to basal angle; basal angle strongly angulate; median three-quarters of notum coarsely and moderately densely punctate and strongly convex; lateral eighth explanate and with coarse, moderately dense punctation.

Elytra convex (fig. 171), slightly convex medially and strongly convex laterally; surface evenly, densely, and coarsely punctate; lateral sixteenth to fifth explanate and with margin reflexed; lateral margin with row of short spinelike setae extending from humeral angle to near basal angle; setae of epipleural ridge increasingly short posteriorly; posterior margin (figs. 25, 69) slightly, moderately, or strongly emarginate laterally; posterolateral angle slightly, moderately, or strongly produced (figs. 25, 69). Mesosternum with short, thick, midlongitudinal carina extending posteriorly from basal margin; paramedial carina rudimentary, present only basally. Metasternum with shallow depression adjacent to apex of mesosternal process; circum-mesocoxal ridge enlarged medially.

Procoxa without carina on medial surface.

MALE: Sternite VII (figs. 4, 11, 21) with wide emargination of posterior margin; surface with deep to shallow median depression and with or without median peg setae. Tergum VIII (figs. 26, 36, 39, 67) with four apical lobes.

Aedeagus (figs. 5, 10, 49, 59) with parameres straight or slightly curved; parameres of nearly equal length and width; median lobe with deep groove adjacent to midline of ventral surface of base (fig. 48).

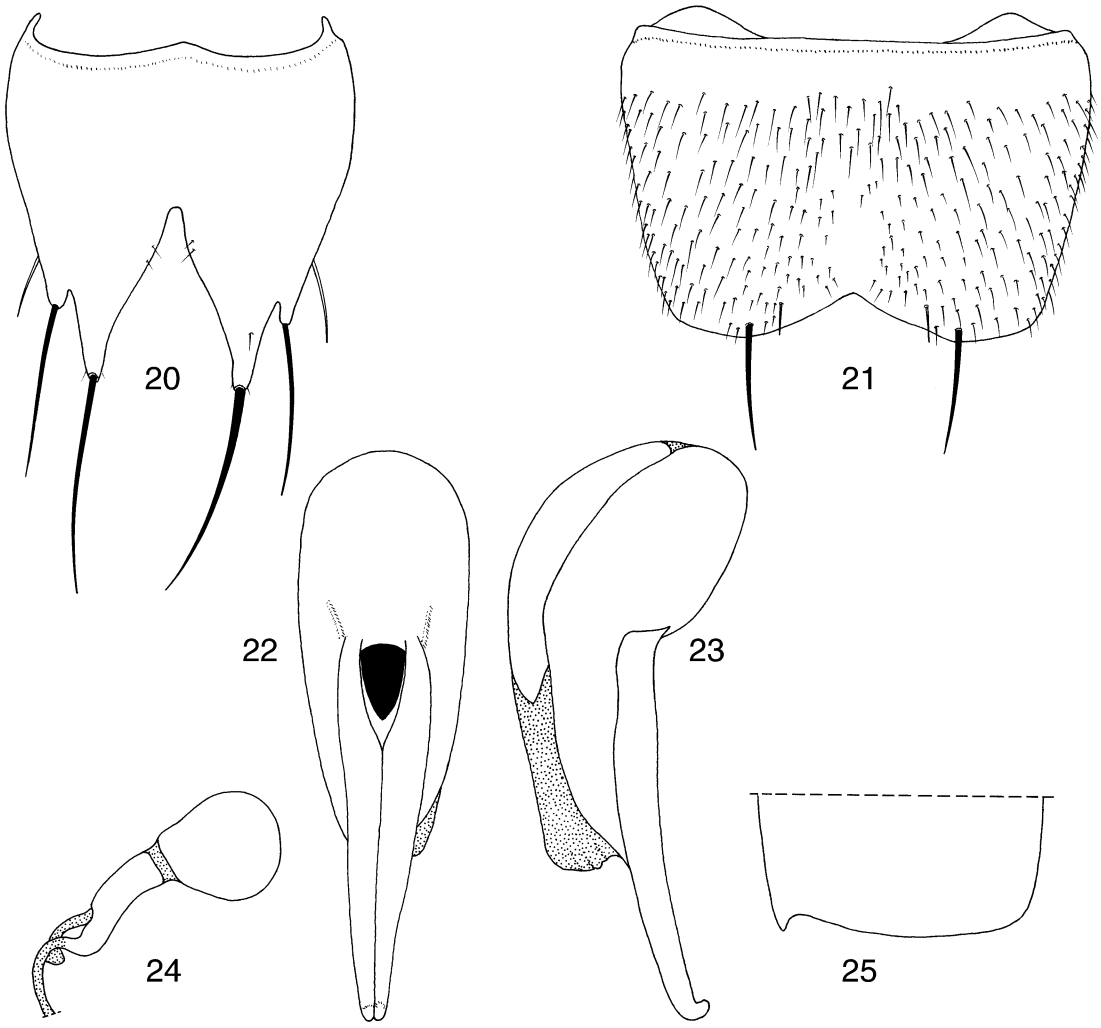
FEMALE: Sternum VIII with five (fig. 68) or six lobes (figs. 7, 19); median lobe or pair of lobes with one fanlike cluster of setae. Tergum VIII with four (figs. 9, 16) or five (fig. 28) apical lobes; lateral lobe with small secondary lobe on lateral edge.

Spermatheca (figs. 8, 57) with apex of capsule enlarged and globose, then abruptly constricted and tapered proximally to spermathecal duct; juncture of capsule with spermathecal duct not enlarged.

DISCUSSION: Cameron (1919: 231) described the genus in detail; Smetana (1983a: 144; 1992: 204–206) supplemented it with new characters and numerous illustrations.

KEY TO SPECIES OF *MEGARTHROPSIS*

1. Sternum VIII (fig. 6) with posterior margin emarginate (males) 2



Figs. 20–25. *Megarthropsis djawaensis*. **20.** Sternum VIII, male. **21.** Sternite VII, male. **22.** Aedeagus, ventral. **23.** Aedeagus, lateral. **24.** Spermatheca. **25.** Elytron, apical margin, left (setae omitted).

— Sternum VIII with posterior margin entire, not emarginate (females) 9

2(1). Sternite VII without peg setae (figs. 21, 40) 3

— Sternite VII with peg setae (figs. 4, 61) 4

3(2). Antennal scape tapered anteriorly from base; cephalic postocular vertical carina obliquely oriented . . . . . *M. djawaensis*, new species

— Antennal scape of more or less equal diameter throughout; cephalic postocular vertical carina dorsoventrally oriented . . . . . *M. empusa*, new species

4(3). Sternites V (fig. 63) and VI (fig. 65) with dense mat of pubescence in median depression . . . . *M. smetanai*, new species

— Sternites V and VI without dense median mat of pubescence 5

5(4). Sternite V (fig. 45) with small peg setae medially . . . . . *M. frazerensis*, new species

— Sternite V without peg setae 6

6(5). Sternite VII (fig. 11) with broad, deep emargination; parameres (fig. 10) obliquely truncate apically (in ventral or dorsal view) . . . . . *M. deverra*, new species

— Sternite VII (figs. 4, 33, 53) with broad, moderately deep emargination; parameres acute or subacute apically, not obliquely truncate (in ventral or dorsal view) . . 7

7(6). Sternite VII (fig. 53) without peg setae on disc . . . . . *M. parca*, new species
— Sternite VII (figs. 4, 33) with peg setae on disc 8
8(7). Sternite VII (fig. 33) with sinuate posterior margin . . . . . *M. durga*, new species
— Sternite VII (fig. 4) with evenly curved posterior margin . . . *M. decorata* Cameron
9(1). Sternum VIII (fig. 68) with one median lobe . . . . . *M. smetanai*, new species
— Sternum VIII (fig. 7) with two median lobes 10
10(9). Tergum VIII (fig. 28) with five lobes on apical margin . . . . . *M. djawaensis*, new species
— Tergum VIII (figs. 9, 34, 71) with four lobes on apical margin 11
11(10). Tergum VIII (fig. 55) tumescent at base of median lobes . . . . . *M. parca*, new species
— Tergum VIII without median tumescence, surface (in lateral view) straight from base to apex 12
12(11). Tergum VIII (fig. 16) with pair of short, broad, widely separated median lobes . . . . . *M. deverra*, new species
— Tergum VIII (figs. 9, 34) with pair of long narrowly separated median lobes . . . *M. decorata* Cameron, *M. durga*, new species

Description of Species

Megarthropsis decorata Cameron

Figures 2–9

Megarthropsis decorata Cameron, 1919: 232. Type locality: Singapore: Mandai. Lectotype, male, designated by Smetana (1983a: 146) in The Natural History Museum (London); not examined.

—Cameron, 1921: 379, 406 (characters; Singapore).—Scheerpeltz, 1933: 1478 (catalog).—Smetana, 1983a: 146 (lectotype designation; characters; figures 1–7 [only, the other illustrations refer to *M. parca*]; bionomics; Singapore).

Diagnosis: *Megarthropsis decorata* has no one feature that immediately separates it from all of its congeners; various characters must be used to distinguish it. The males of *M. decorata* can be separated from *M. smetanai* by the absence of a dense mat of setae on sternites V and VI, from *M. frazerensis* by the absence of peg setae on sternite V, from *M. deverra* by the shallower emargination of sternite VII (fig. 4) and the more slender parameres (fig. 5), from *M. durga* by the evenly curved emargination of sternite VII (fig. 4), and from *M. djawaensis*, *M. empusa*, *M. parca*, and *M. durga* by the large cluster of discal peg setae on sternite VII (fig. 4).

Females of *M. decorata* have two median lobes on sternum VIII (fig. 7) and a pair of straight, basally broad median lobes on tergum VIII (fig. 9). Tergum VIII is straight from the base to the apex; the median region is not tumid.

Description: Length 3.2–3.8 mm; width 1.1–1.3 mm. Color reddish brown and yellowish brown. Head dark reddish brown, nearly black. Pronotum with convex median region reddish brown, darker anteriorly than posteriorly; lateral, explanate region yellowish brown. Elytra dark reddish brown. Abdomen reddish brown. Antennae and legs pale reddish brown.

Head with deep, moderately large punctation dorsally; postocular vertical carina dorsoventrally oriented. Antennal scape more or less parallel-sided.

Pronotum with deep, moderately large punctation.

Elytra with deep moderately large punctation; lateroapical emargination moderately deep; epipleural gutter moderately wide.

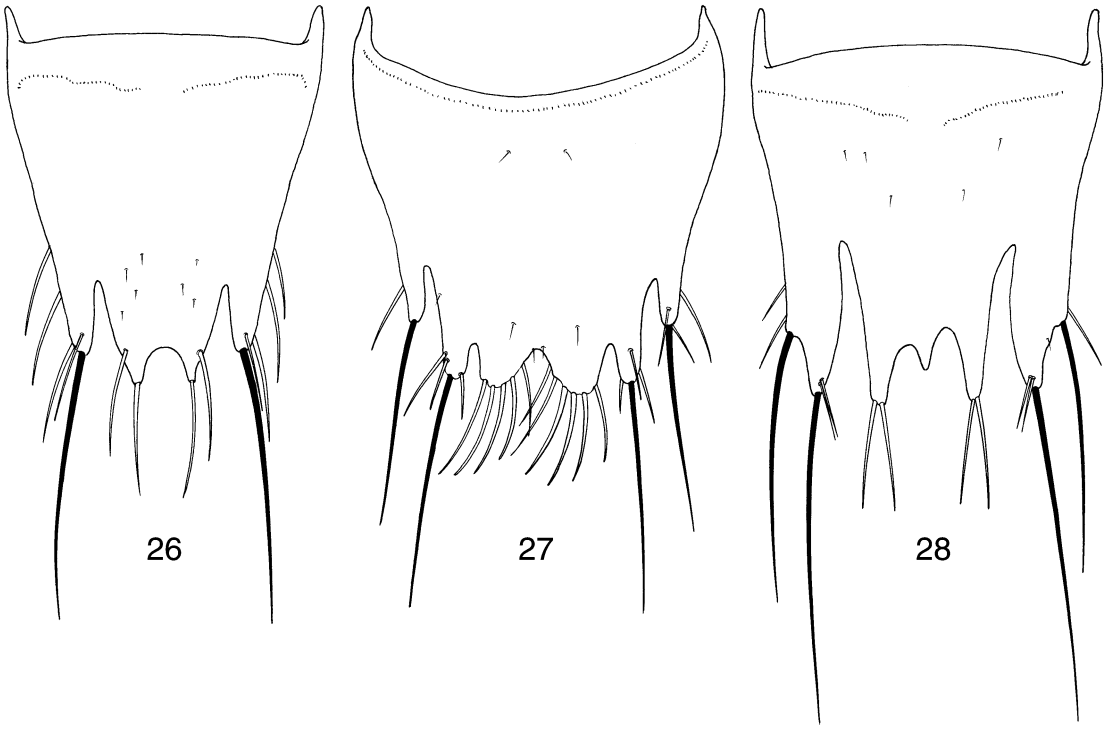
Wings fully developed. Tergite VII with well-developed palisade fringe on posterior margin.

Male: Sternite V with shallow median impression; surface without peg setae or dense mat of setae medially; posterior margin with broad, shallow, indistinct emargination.

Sternite VI (fig. 3) with shallow median impression; impression with dense cluster of setae near posterior margin; posterior margin with broad, shallow emargination.

Sternite VII (fig. 4) with broad, shallow median depression; posterior margin with broad, deep, evenly curved, median emargination; emargination without median notch; apical region of disc with two medially separated clusters of peg setae that also extend to and laterally along posterior margin; peg setae along posterior margin arranged in even or slightly sinuate row.

Sternum VIII (fig. 6) with deep, broad, median emargination; emargination strongly constricted near middle and with basal por-



Figs. 26–28. *Megarthropsis djawaensis*. **26.** Tergum VIII, male. **27.** Sternum VIII, female. **28.** Tergum VIII, female.

tion of emargination strongly narrowed; margins of emargination strongly sinuate.

Aedeagus (figs. 2, 5) with parameres straight, slender, and tapered to subacute apex.

FEMALE: Tergum VIII (fig. 9) with median pair of lobes straight, tapered apically, and broad basally; surface without tumescence at base of middle lobe. Sternum VIII (fig. 7) with three pairs of apical lobes.

Spermatheca as in figure 8.

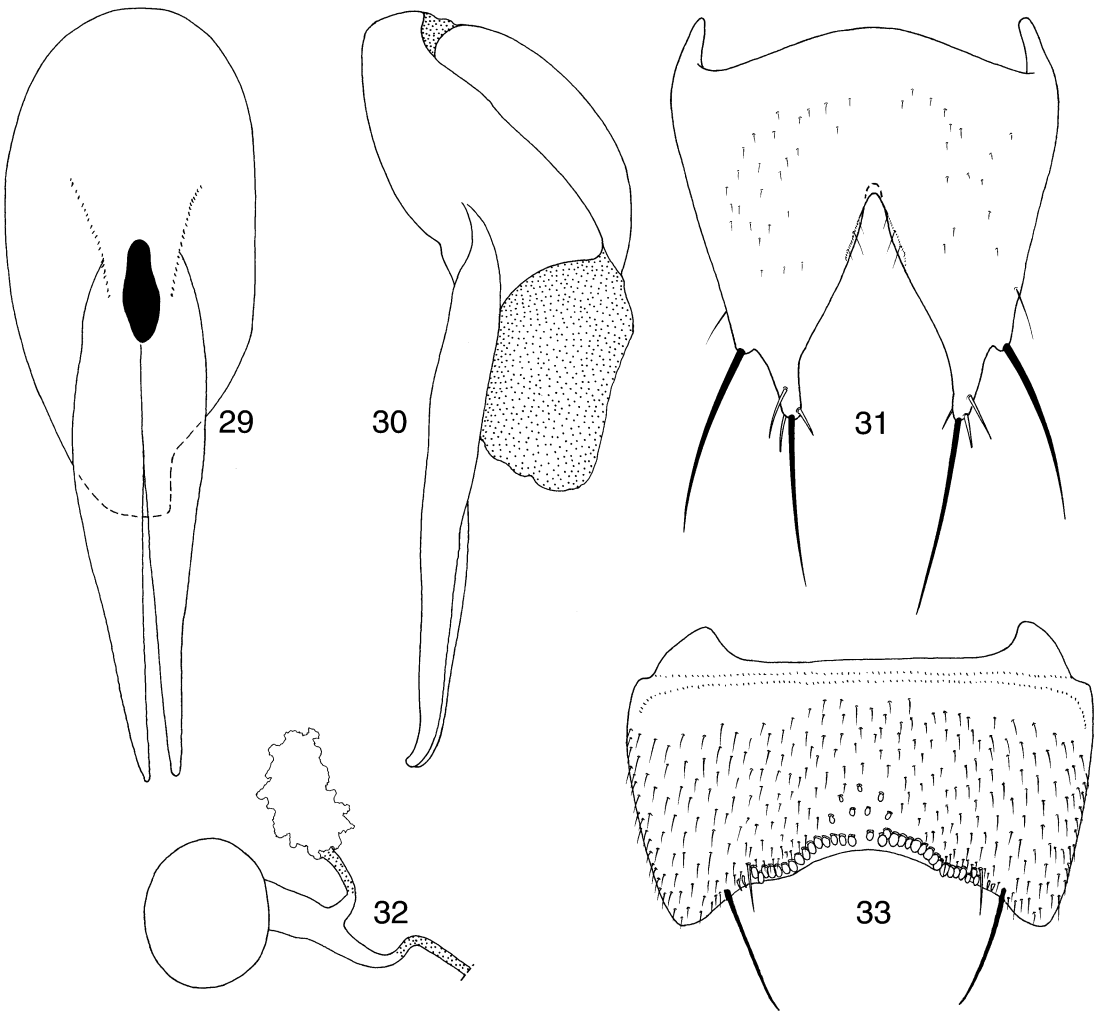
DISCUSSION: The illustrations cited in 1992 as *M. decorata* (Smetana, 1992: figs. 30–42) are of *M. smetanai* and in 1983 the illustrations of the female abdominal segments (Smetana, 1983a: figs. 8–10) are of *M. parca*.

Illustrations of the male of *M. decorata* from Singapore were published by Smetana (1983a: 1–7). The figures of *M. decorata* in the present article were taken from a specimen from Borneo.

DISTRIBUTION AND HABITAT: The species was described from Singapore. The type series was collected from Mandai; later two more specimens were collected from the Nee Soon swamp forest, which is in the Mandai region.

A male collected on Mt. Kinabalu, Borneo, is indistinguishable from the specimens from Singapore. Two females were collected with the male from Borneo. This disjunction of the distribution of *M. decorata* is surprising given the diversity of species in the Kinabalu region. However, because most species discussed herein are known from only one collecting site or are from different elevations on the same mountain, little can be said about the distribution of the species.

Specimens of the type series were collected in wet rotting leaves on the edge of a jungle stream (Cameron, 1919: 233) and from flood debris (Smetana, 1983a: 146). Smetana (op. cit.) concluded that the species lives in leaf litter and other debris in very wet habitats. Although no elevational data were included on the locality labels, the Mandai region is at low elevation (the highest point in Singapore is about 175 m). The specimens



Figs. 29–33. *Megarthropsis durga*. **29.** Aedeagus, ventral. **30.** Aedeagus, lateral. **31.** Sternum VIII, male. **32.** Spermatheca. **33.** Sternite VII, male.

from Mt. Kinabalu were collected from forest floor litter near a stream in the vicinity of the headquarters of the National Park at an elevation of about 1500 m.

MATERIAL EXAMINED: Five specimens: 3 males, 2 females. **Singapore**: Nee Soon Swamp forest, 24-V-68, R.W. Taylor (1 male, MHNG; 1 male, NHMW). **Malaysia**: Sabah: near Kinabalu N.P. headquarters, forest floor litter near Liwagu Stream, 29-VII-82, G.-M. de Rougemont (1 male, 2 females, GRC).

Three males and one female were dissected for genitalic and abdominal features.

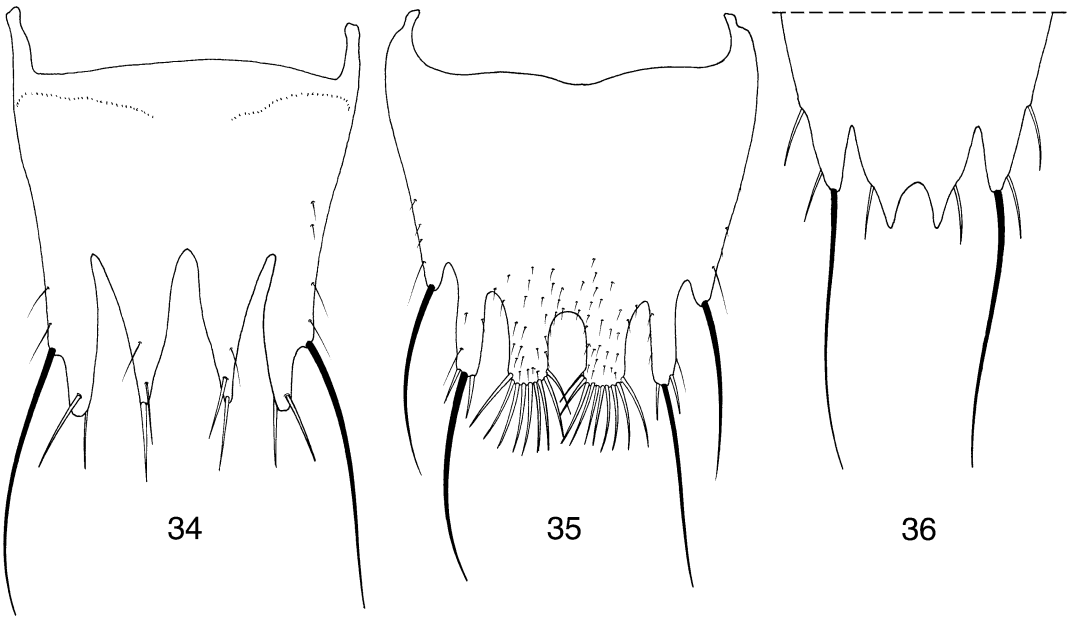
Megarthropsis deverra, new species

Figures 10–19

HOLOTYPE: Male. [Malaysia:] ''SABAH: Poring Hot Springs, Langanan Falls, 900–950 m 12.V.1987 Burckhardt—Löbl''. Deposited in the Muséum d'Histoire Naturelle, Genève, Switzerland (MHNG).

PARATYPES: One male, 1 female. Same data as holotype (1 female, MHNG). Malaysia: Sabah: Crocker Range, Mawar Waterfall env. (9c), 17.6.1996, vegetation debris and forest litter around fallen trees (1 male, NHMW).

DIAGNOSIS: The males of *M. deverra* can



Figs. 34–36. *Megarthropsis durga*. **34.** Tergum VIII, female. **35.** Sternum VIII, female. **36.** Tergum VIII, apex, male.

be distinguished from males of all other species by the broad deep emargination of sternite VII (fig. 11) and the short, broad, obliquely truncate parameres of the aedeagus (fig. 10).

The females can be distinguished from those of other species by the short, widely separated median pair of lobes of tergum VIII (fig. 16).

DESCRIPTION: Length 3.7–4.2 mm; width 1.2 mm. Color dark reddish brown, reddish brown, and yellowish brown. Head dark reddish brown, nearly black. Pronotum with explanate lateral region yellowish brown; convex median region dark reddish brown, nearly black anteriorly and paler reddish brown posteriorly. Elytra dark reddish brown, nearly black. Abdomen reddish brown. Antennae reddish brown. Legs pale reddish brown.

Head with deep, moderately large punctation dorsally; postocular vertical carina dorsoventrally oriented. Antennal scape more or less parallel-sided.

Pronotum with deep, moderately large punctation.

Elytra with deep moderately large punctation; lateroapical emargination moderately deep; epipleural gutter moderately wide.

Wings fully developed. Tergite VII with well-developed palisade fringe on posterior margin.

MALE: Sternite V with feeble, shallow median impression; surface without peg setae or dense mat of setae; posterior margin feebly emarginate.

Sternite VI with broad, shallow depression; surface with cluster of setae on posterior margin near lateral margin of impression, but without dense discal mat of setae; posterior margin with broad moderately deep emargination.

Sternite VII (fig. 11) with broad, moderately deep, median depression; posterior margin with broad, deep emargination; emargination truncate or slightly rounded medially and without median notch; apical region of disc with two medially separated clusters of numerous peg setae; peg setae along posterior margin arranged in evenly curved row.

Sternum VIII (fig. 15) with deep, broad, median emargination; emargination strongly constricted near middle and with basal portion strongly narrowed; margins of emargination strongly sinuate.

Aedeagus (figs. 10, 12) with parameres slightly bent to right (in ventral view); par-

ameres short, broad medially, and obliquely truncate apically.

FEMALE: Tergum VIII with median pair of lobes broad, short, and widely separated (fig. 16). Sternum VIII with three pairs of apical lobes (fig. 19).

Spermatheca as in figures 17, 18.

ETYMOLOGY: The name of this species is from the Latin for the Roman guardian of newborn children (Deverra) and is symbolized by a broom for sweeping away evil influences (Jordan, 1993); used in apposition.

DISTRIBUTION AND HABITAT: This species is known from two localities, one in the Mt. Kinabalu National Park at about 900 m, the other in the nearby Crocker Range.

MATERIAL EXAMINED: Three specimens: holotype male and male and female paratypes.

All specimens were dissected for genitalic and abdominal characters.

Megarthropsis djawaensis, new species

Figures 20–28

HOLOTYPE: Male. ''INDONESIA: W Java 'Ranca Upas' ca. 1300m 10 km S Ciwidey lg. Schuh 9.8.1994''. Deposited in the Naturhistorisches Museum Wien, Wien, Austria (NHMW).

PARATYPES: Two males, 3 females. Same data as holotype but collected from ''forest litter'' (1 male, 2 females, NHMW). Indonesia: W. Java, Situ Lembang, ca 1500 m, 15 km N. Bandung, lg. Schuh, 7.8.1994 (1 male, 1 female, NHMW).

DIAGNOSIS: This species is separated from all others of the genus by the apically tapered antennal scape, the oblique orientation of the postocular vertical carina, and the strongly produced posterolateral angle of the elytra (fig. 25). The punctation of the pronotum and dorsal surface of the head and elytra is coarser and deeper and the punctation of the pronotal disc is more sparse than for any of the other species of the genus. Only this species and *M. empusa* lack peg setae on sternite VII (fig. 21); these two species can be separated by the features listed in the preceding two sentences.

DESCRIPTION: Length 3.3–3.8 mm; width 1.3–1.4 mm. Color reddish brown and yellowish brown. Head dark reddish brown to nearly black. Pronotum with convex median region dark reddish brown anteriorly and reddish brown posteriorly; lateral, explanate region reddish brown. Elytra dark reddish brown. Abdomen reddish brown with apical segments darker reddish brown. Antennae and legs reddish brown.

Head with large, deep punctures on dorsal surface. Postocular vertical carina obliquely, dorsoposteriorly to ventroanteriorly, oriented. Antenna with first segment moderately tapered from base to apex.

Pronotum with large, deep punctures.

Elytra with large, deep punctation; lateroapical emargination deep (fig. 25); epipleural gutter wide.

Wings fully developed. Tergite VII with well-developed palisade fringe on posterior margin.

MALE: Sternite V without median impression, peg setae, or dense mat of setae medially; posterior margin without emargination.

Sternite VI with feeble median impression; surface without special cluster of setae; posterior margin without emargination.

Sternite VII (fig. 21) with broad, shallow, median impression; impression without setae medially, but with short setae along lateral margins; posterior margin with moderately deep, broadly V-shaped emargination; posterior margin evenly curved, not sinuate, to median emargination; surface without peg setae.

Sternum VIII (fig. 20) with deep, broad, median emargination; emargination more strongly narrowed near basal quarter; base of emargination narrowly rounded; margins of emargination weakly sinuate.

Aedeagus (figs. 22, 23) with parameres straight, slender, tapered, and narrowly rounded apically.

FEMALE: Tergum VIII (fig. 28) with paramedial lobes separated by smaller median lobe. Sternum VIII (fig. 27) with three pairs of apical lobes.

Spermatheca as in figure 24.

ETYMOLOGY: The name for this species is taken from a variant of the Indonesian name (Djawa) for Java.

DISTRIBUTION AND HABITAT: The species is known only from western Java where specimens were collected from forest litter at 1300 m and 1500 m in August.

MATERIAL EXAMINED: Six specimens: ho-

lotype male, 2 paratype males, and 3 paratype females.

Two males and one female were dissected for characters of the abdomen and genitalia.

Megarthropsis durga, new species

Figures 29–36

HOLOTYPE: Male. [Malaysia]: ''SABAH Mt. Kinabalu 1580 m, 27.IV.1987 Burckhardt—Löbl''. Deposited in the Muséum d'Histoire Naturelle, Genève, Switzerland (MHNG).

PARATYPES: Two males. Same data as holotype (1 male, MHNG). [Malaysia]: Sabah: Poring Hot Springs, Langanan Falls, 900–950 m, 12-V-1987, Burckhardt and Löbl (1 male, MHNG).

DIAGNOSIS: Males of *M. durga* can be separated from other species by the broad, moderately deep, sinuate posterior margin of sternite VII (fig. 33) and the sinuate row of peg setae near the margin. The disc of sternite VII has only a few peg setae medially.

Females are separated from other species, except *M. decorata* and *M. smetanai*, by the pair of median lobes of tergum VIII (fig. 34) that are straight and broad at the base; the surface adjacent to the base of the median lobes is not tumescent. This pair of median lobes is broader basally in *M. durga* than in *M. decorata* (fig. 9). Sternum VIII (fig. 35) of *M. durga* has a pair of median lobes in contrast to the single median lobe of *M. smetanai*. Denser cephalic, pronotal, and elytral punctation separate *M. durga* from *M. djawaensis*.

DESCRIPTION: Length 3.4–3.8 mm; width 1.4 mm. Color reddish brown and yellowish brown. Head reddish brown to dark reddish brown to nearly black. Pronotum with convex median region reddish brown to dark reddish brown; lateral explanate region yellow brown. Elytra and abdomen reddish brown. Antennae and legs pale reddish brown.

Head with deep, moderately large punctation dorsally; postocular vertical carina dorsoventrally oriented. Antennal scape more or less parallel-sided to slightly tapered apically.

Pronotum with deep, moderately large punctation.

Elytra with deep moderately large punctation; lateroapical emargination moderately deep; epipleural gutter moderately wide.

Wings fully developed. Tergite VII with well-developed palisade fringe on posterior margin.

MALE: Sternite V with feeble median impression; surface without peg setae or dense mat of setae; posterior margin without emargination.

Sternite VI with feeble median impression; impression with slightly denser row of setae along posterior margin, but without dense discal mat of setae; posterior margin with broad, shallow emargination.

Sternite VII (fig. 33) with broad, shallow median impression; posterior margin with broad, moderately deep, sinuate emargination; emargination without median notch; surface with small, median cluster of peg setae on disc and with row of peg setae along posterior margin; peg setae of posterior margin arranged in sinuate row and row narrowly divided medially.

Sternum VIII (fig. 31) with deep, broad, median emargination; emargination slightly more strongly constricted from about apical quarter and gradually convergent to base; margins of emargination moderately sinuate.

Aedeagus (figs. 29, 30) with parameres slightly curved to right (in ventral view), long, slender, and tapered to acute apices.

FEMALE: Tergum VIII (fig. 34) with median pair of lobes straight, tapered apically, and broad basally; surface without tumescence near base of median lobes. Sternum VIII (fig. 35) with three pairs of apical lobes.

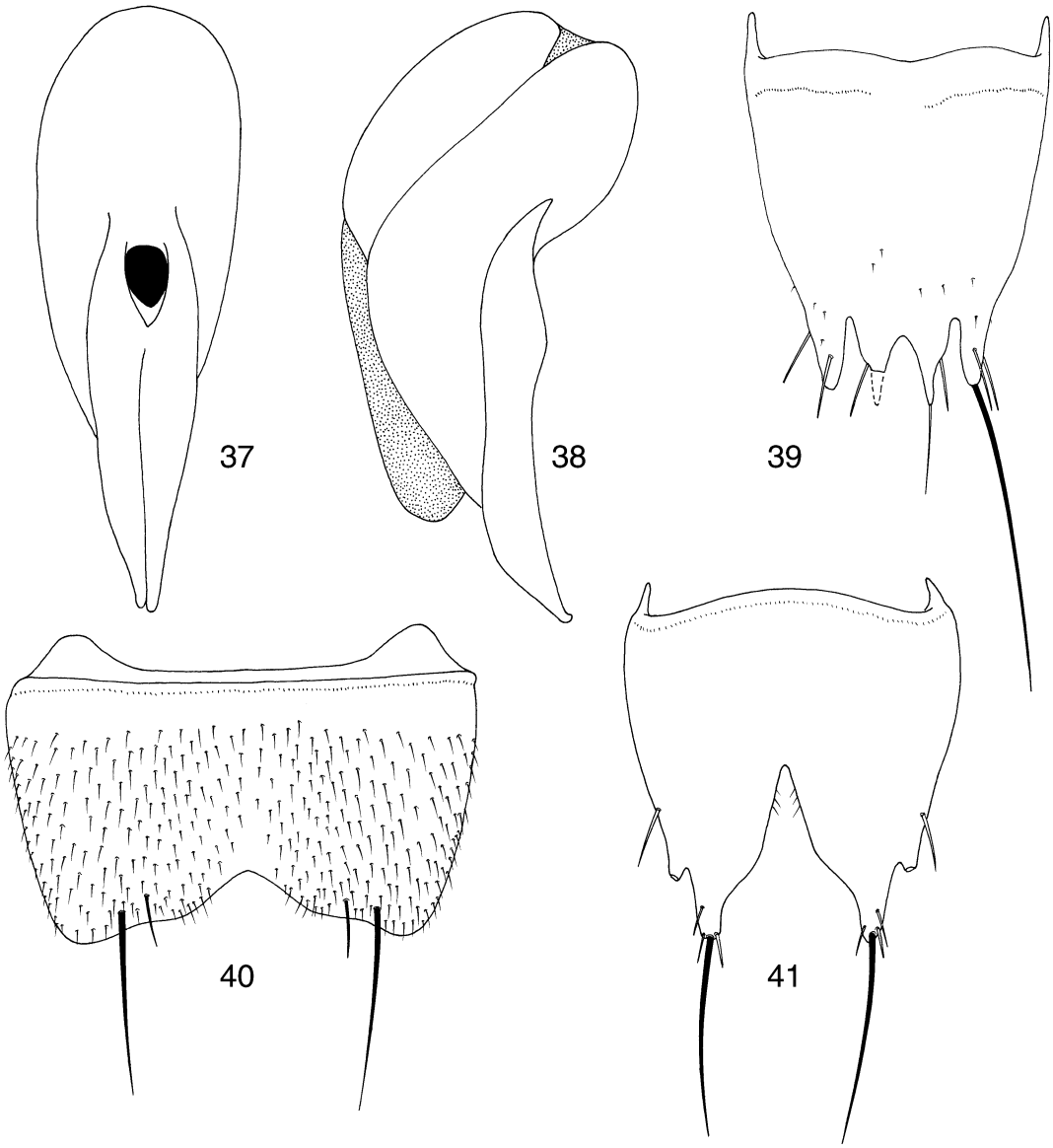
Spermatheca as in figure 32.

ETYMOLOGY: Named for the many armed Hindu goddess Durga, who is depicted as a woman riding on a lion or tiger and in whose hands are weapons. In later Hindu tradition, particularly in northern India, Durga is linked with the fertility of crops and is celebrated at harvest time in the Durga Puja (Jordan, 1993); used in apposition.

DISCUSSION: The females identified as *M. durga* are not designated as paratypes because they cannot be distinguished reliably from *M. decorata*.

DISTRIBUTION AND HABITAT: This species is known only from Mt. Kinabalu in Borneo where it was collected at 900–1580 m.

MATERIAL EXAMINED: Six specimens: holotype male, 2 paratype males, 3 females.



Figs. 37–41. *Megarthropsis empusa*. **37.** Aedeagus, ventral. **38.** Aedeagus, lateral. **39.** Tergum VIII, male (broken lines represent completion of missing portion of segment; long apical seta on left side of illustration missing). **40.** Sternite VII, male. **41.** Sternum VIII, male (long lateroapical setae missing).

The females are from the type locality and were collected with the holotype.

Three males and one female were dissected for genitalic and abdominal characters.

Megarthropsis empusa, new species

Figures 37–41

HOLOTYPE: Male. [Malaysia]: ''SABAH: Crocker Ra. 1600m, km 51 rte Kota Kinabalu-Tambunan, 18.V.87 Burckhardt—Löbl''. Deposited in the Muséum d'Histoire Naturelle, Genève, Switzerland (MHNG).

DIAGNOSIS: The absence of peg setae on sternite VII (fig. 40) will separate the males of this species from the others of the genus except *M. djawaensis*. This species is distinguished from *M. djawaensis* by the denser cephalic and pronotal punctation, the nearly

cylindrical first antennomere, the dorsoventral orientation of the vertical postocular carina that extends ventrally from the dorsolateral postocular carina, the less strongly produced posterolateral elytral angle, and the narrower epipleural gutter. The emargination of sternite VII of the male of *M. empusa* (fig. 40) is deeper than in *M. djawaensis* (fig. 21).

The female is unknown.

DESCRIPTION: Length 3.4 mm; width 1.2 mm. Color reddish brown and yellowish brown. Head dark reddish brown. Pronotum with convex median region dark reddish brown anteriorly and reddish brown to yellowish brown posteriorly; explanate lateral region yellowish brown. Elytra dark reddish brown. Abdomen reddish brown with darker apical segments. Antennae and legs reddish brown.

Head with moderately large punctation on dorsal surface; postocular ventral carina dorsoventrally oriented. Antennal scape more or less parallel-sided to slightly tapered apically.

Pronotum with moderately large punctation.

Elytra with moderately large punctation; posterolateral emargination moderately deep; epipleural gutter narrow.

Wings fully developed. Tergite VII with well-developed palisade fringe on posterior margin.

MALE: Sternite V slightly flattened medially; surface without peg setae or dense mat of setae medially; posterior margin with moderately wide feeble median emargination.

Sternite VI with wide, feeble median impression; impression with slightly denser pubescence near posterior margin; posterior margin with wide, shallow median emargination.

Sternite VII (fig. 40) with broad, shallow, median impression; impression without setae medially near posterior margin, but with short setae along lateral margin; posterior margin with broad, sinuate emargination; emargination deeper and more or less broadly V-shaped medially; surface without peg setae.

Sternum VIII (fig. 41) with broad, deep, median emargination; emargination strongly constricted from about middle and with basal portion of emargination strongly narrowed; margin of emargination strongly sinuate.

Aedeagus (figs. 37, 38) with paramere straight, moderately broad, and tapered to subacute apex.

FEMALE: Unknown.

ETYMOLOGY: The name is from the Greek (Empousa) for hobgoblin or a mischievious goblin, and is used for the species found hidden in a long series of *M. smetanai*.

DISTRIBUTION AND HABITAT: This species is known only from the Crocker Range in northern Borneo where it was collected at 1600 m with *M. smetanai*.

MATERIAL EXAMINED: One specimen: holotype male.

Megarthropsis frazerensis, new species

Figures 42–48

HOLOTYPE: Male. [Malaysia]: ''PAHANG Frazer's Hill 11.III.90 Rougemont''// ''Megarthropsis decorata Cam. det Rougemont'' [labels handwritten]. In collection of G.-M. de Rougemont (GRC) to be deposited in Natural History Museum, London.

PARATYPE: One male. Malaysia: Prov. Johor, Gg. Ledang (14), Hutan Lipur, 200 m, 4.2.1992, leg. Schillhammer (1 male, NHMW).

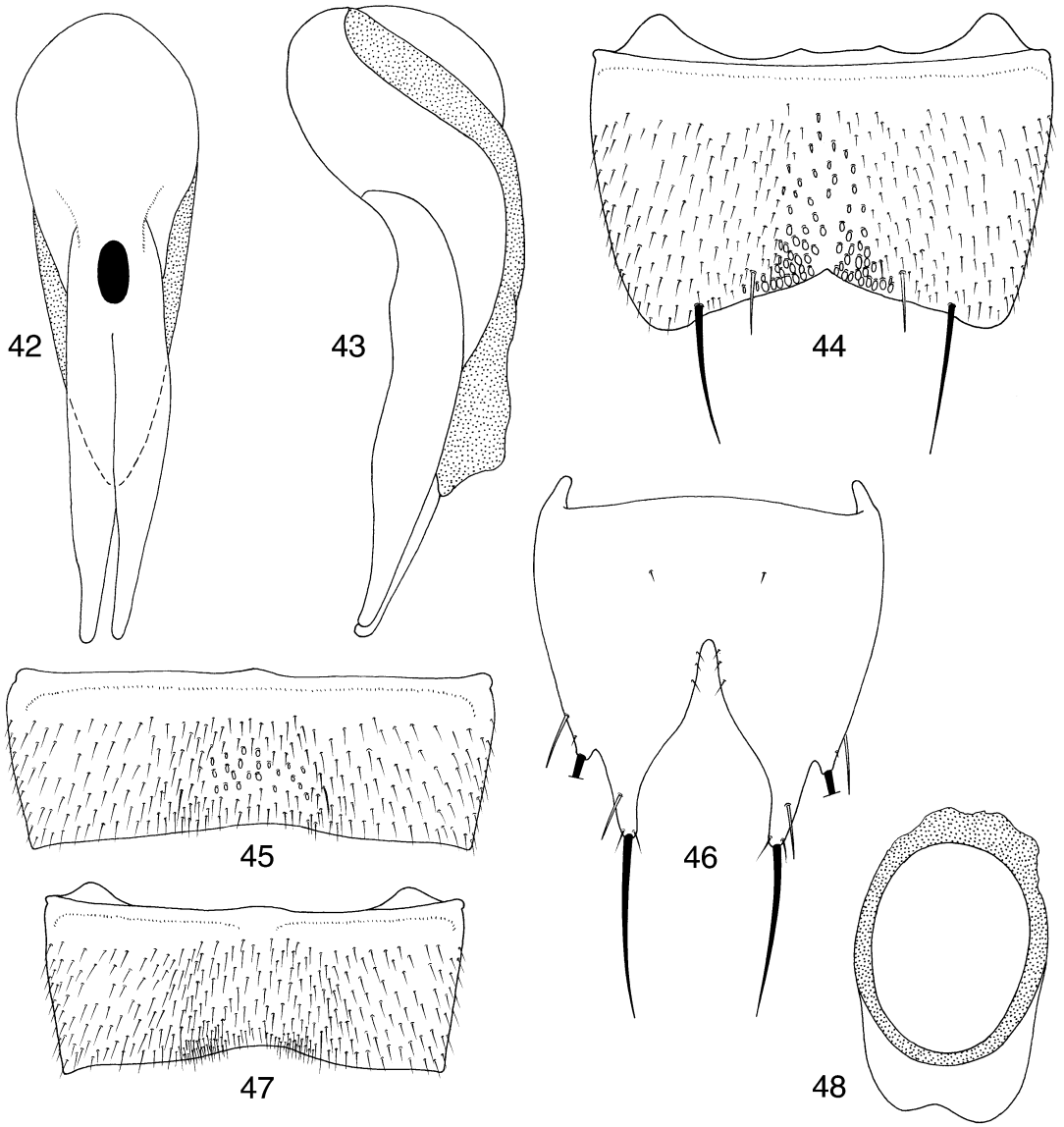
DIAGNOSIS: The male of *Megarthropsis frazerensis* can be separated from the males of all other species of the genus by the unique presence of a cluster of peg setae on the middle of the disc of sternite V (fig. 45). The emargination of the posterior margin of sternite VII is notched medially and the peg setae are divided into two clusters (fig. 44).

The female is unknown.

DESCRIPTION: Length 3.4 mm; width 1.2 mm. Color reddish brown and yellowish brown. Head dark reddish brown, nearly black. Pronotum with explanate lateral region yellowish brown; convex median region reddish brown, darker anteriorly and paler posteriorly. Elytra and abdomen reddish brown. Antennae and legs pale reddish brown.

Head with deep, moderately large punctation dorsally; postocular vertical carina dorsoventrally oriented. Antennal scape more or less parallel-sided.

Pronotum with deep, moderately large punctation.



Figs. 42–48. *Megarthropsis frazerensis*. **42.** Aedeagus, ventral. **43.** Aedeagus, lateral. **44.** Sternite VII, male. **45.** Sternite V, male. **46.** Sternum VIII, male (lateroapical setae cut off). **47.** Sternite VI, male. **48.** Aedeagus, anterior end, cross section.

Elytra with deep moderately large punctation; lateroapical emargination shallow; epipleural gutter moderately wide.

Wings fully developed. Tergite VII with well-developed palisade fringe on posterior margin.

MALE: Sternite V (fig. 45) with broad, shallow emargination of posterior margin; disc with scattered cluster of small peg setae in feeble impression.

Sternite VI (fig. 47) with broad, shallow, median impression; posterolateral edge of impression with small dense cluster of setae; posterior margin with moderately deep, rounded median emargination.

Sternite VII (fig. 44) with broad, shallow

median depression; posterior margin with broad, deep median emargination; emargination with small median notch; median region of disc with peg setae arranged in two dense, medially separated clusters; peg setae of anterior region scattered; peg setae along posterior margin aligned in more or less even, medially separated rows.

Sternum VIII (fig. 46) with deep, broad, median emargination; emargination wide apically and strongly constricted near middle and with basal portion of emargination strongly narrowed; margin of emargination strongly sinuate.

Aedeagus (figs. 42, 43) with parameres feebly bent to left (in ventral view) and tapered to subacute apex.

FEMALE: Unknown.

ETYMOLOGY: The name for this species is taken from the type locality, Frazer's Hill in West Malaysia.

DISTRIBUTION AND HABITAT: This species is known by only two Malaysian specimens and both lack further collecting data.

MATERIAL EXAMINED: Two specimens: holotype and paratype males.

Both specimens were dissected for genitalic and abdominal characters.

Megarthropsis parca, new species

Figures 49–58

HOLOTYPE: Male. [Malaysia]: ''SABAH Mt. Kinabalu 1900 m, 26.IV.1987 Burckhardt—Löbl''. Deposited in the Muséum d'Histoire Naturelle, Genève, Switzerland (MHNG).

PARATYPES: Three males, 5 females. Same data as holotype (2 males, 3 females, MHNG). [Malaysia]: Sabah: Mt. Kinabalu, 6200 ft, 22–26.VI.68, R.W. Taylor (1 male, MHNG). [Malaysia]: Borneo: Sabah: Mt. Kinabalu N.P., Summit Trail, 1890 m, [26.IV.86], A. Smetana (1 female, ASC). [Malaysia]: Sabah Mt. Kinabalu 1580 m, 27.IV.1987 Burckhardt—Löbl (1 female, MHNG).

—Smetana, 1983a: 146 (figs. 8–10; misidentified as *M. decorata*).

DIAGNOSIS: The evenly curved posterior margin of sternite VII (fig. 53), the single row of peg setae near the posterior margin, and absence of discal peg setae will separate the males of *M. parca* from other species. The ventral surface of each paramere is oblique to the midsagittal plane of the aedeagus; this configuration is unique among the known species.

Females of *M. parca* can be separated from other species by the tumid apical third of tergum VIII (fig. 55). Each lobe of the median pair of lobes of tergum VIII curves laterad from the midlongitudinal line and the lobes are slender (fig. 54).

DESCRIPTION: Length 3.7–4.1 mm; width about 1.4 mm. Color reddish brown; head, convex median region of pronotum, elytra, and abdomen with darker infusions; head darker than remainder of body; pronotum with explanate lateral portion paler reddish brown; antennae and legs pale reddish brown.

Head with deep, moderately large punctation dorsally; postocular vertical carina dorsoventrally oriented. Antennal scape more or less parallel-sided to slightly tapered apically.

Pronotum with deep, moderately large punctation.

Elytra with deep moderately large punctation; lateroapical emargination moderately deep; epipleural gutter moderately wide.

Wings fully developed. Tergite VII with well-developed palisade fringe on posterior margin.

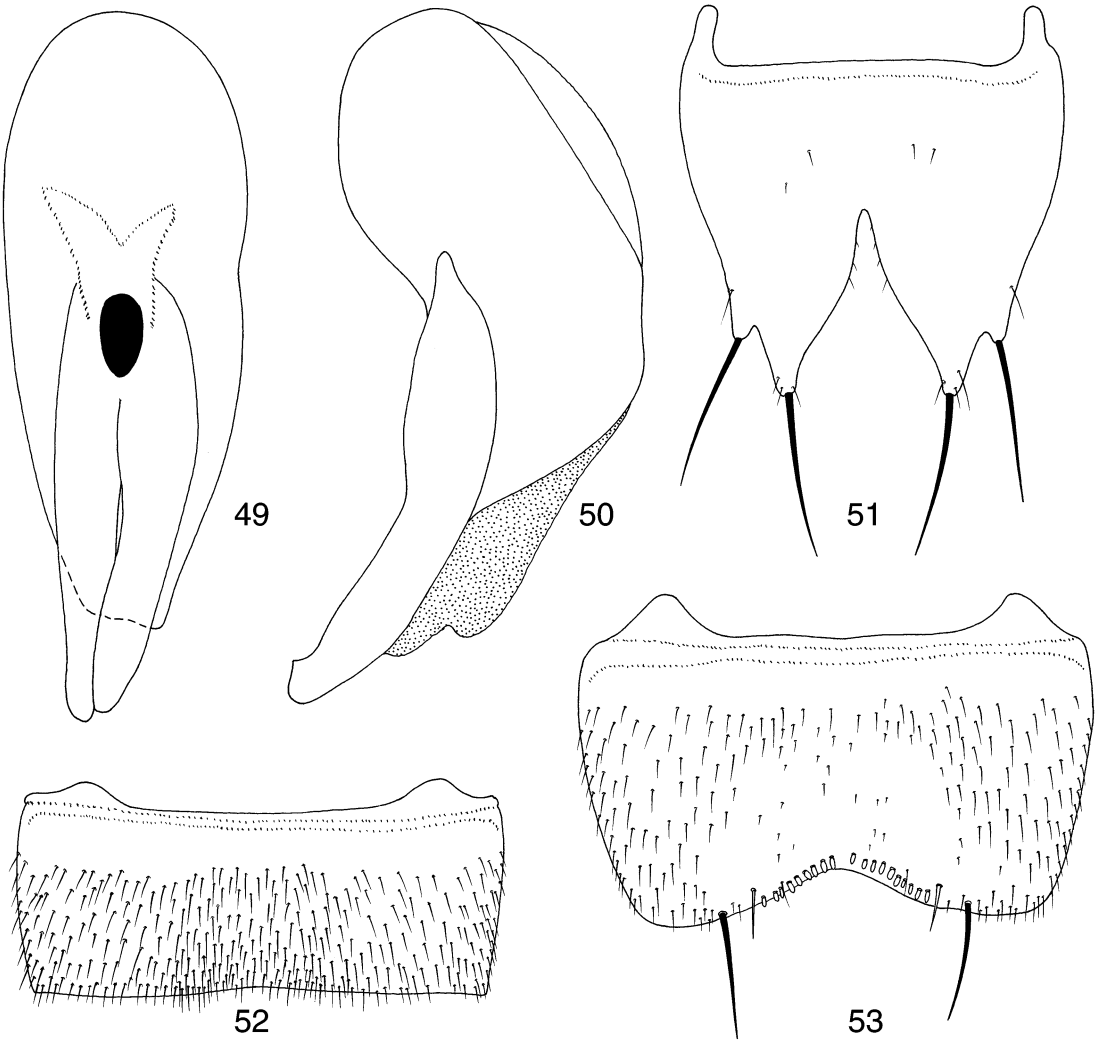
MALE: Sternite V with feeble median impression; surface without peg setae or dense setal mat; posterior margin with broad feeble emargination.

Sternite VI (fig. 52) with broad, shallow median depression; impression with moderately dense cluster of setae near posterior margin, but without dense setal mat; posterior margin with broad, shallow emargination.

Sternite VII (fig. 53) with broad, shallow median depression; posterior margin with broad, deep, evenly curved, median emargination; emargination without median notch; disc without peg setae; peg setae arranged in curved row adjacent to posterior margin; row continuous or slightly separated medially.

Sternum VIII (fig. 51) with deep, broad, median emargination; emargination moderately constricted near middle and gradually convergent to narrow base; margins of emargination moderately strongly sinuate.

Aedeagus (figs. 49, 50). Parameres more



Figs. 49–53. *Megarthropsis parca*. **49.** Aedeagus, ventral. **50.** Aedeagus, lateral. **51.** Sternum VIII, male. **52.** Sternite VI, male. **53.** Sternite VII, male.

or less straight (in ventral view), moderately long, moderately broad, and rounded apically; ventral surface oriented obliquely to midsagittal plane; apex with small point on ventral surface.

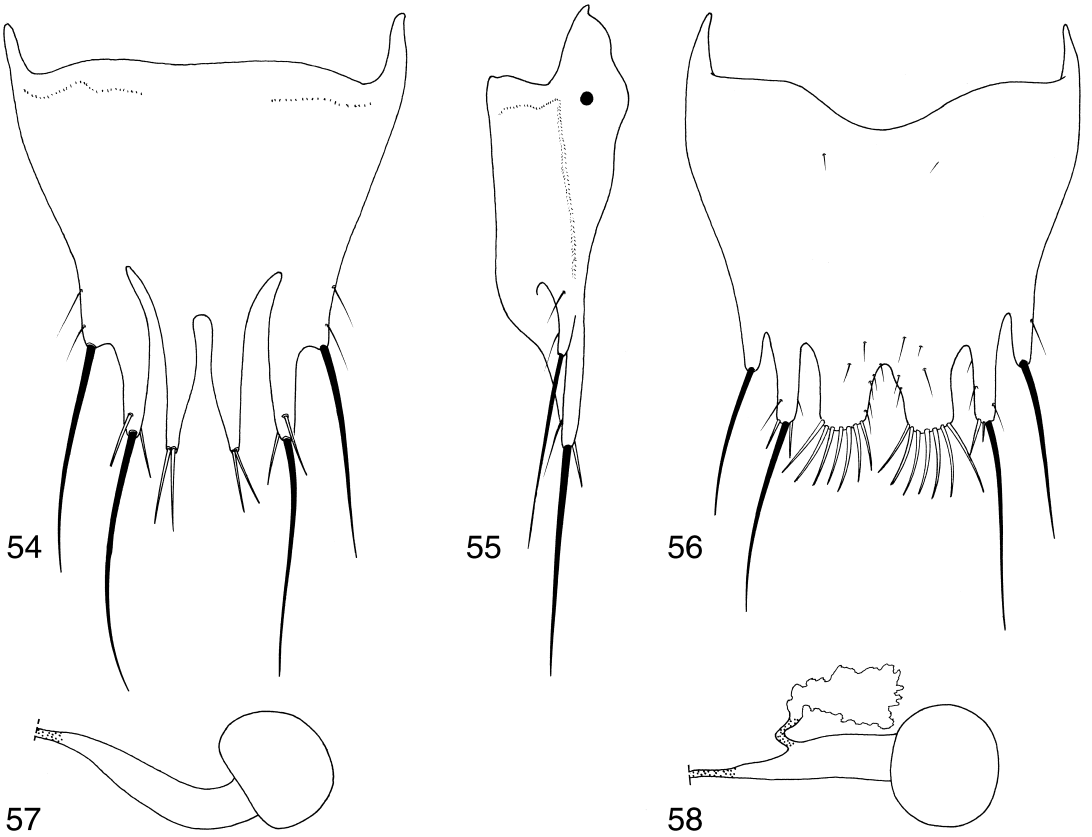
FEMALE: Tergum VIII (fig. 54) with median pair of lobes slightly curved laterally; median margin curved; lobes slender and moderately tapered apically; surface near base of median lobes strongly tumescent (fig. 55). Sternum VIII (fig. 56) with three pairs of lobes.

Spermatheca as in figures 57 and 58.

ETYMOLOGY: The name of this species is from the Latin (Parca) for the goddess of destiny and birth (Leach, 1992); used in apposition.

DISCUSSION: *Megarthropsis parca* was reported as *M. decorata* from East Malaysia, Sabah, Mt. Kinabalu (Smetana, 1983a: 146 and figs. 8–10).

DISTRIBUTION AND HABITAT: This species is known only from Mt. Kinabalu in Borneo where it was collected at 1580 to 1900 m.



Figs. 54–58. *Megarthropsis parca*. **54.** Tergum VIII, female. **55.** Tergum VIII, lateral, female. **56.** Sternum VIII, female. **57, 58.** Spermatheca.

MATERIAL EXAMINED: Nine specimens: holotype male and three male and five female paratypes.

Three males and three females were dissected for genitalic and abdominal features.

Megarthropsis smetanai, new species

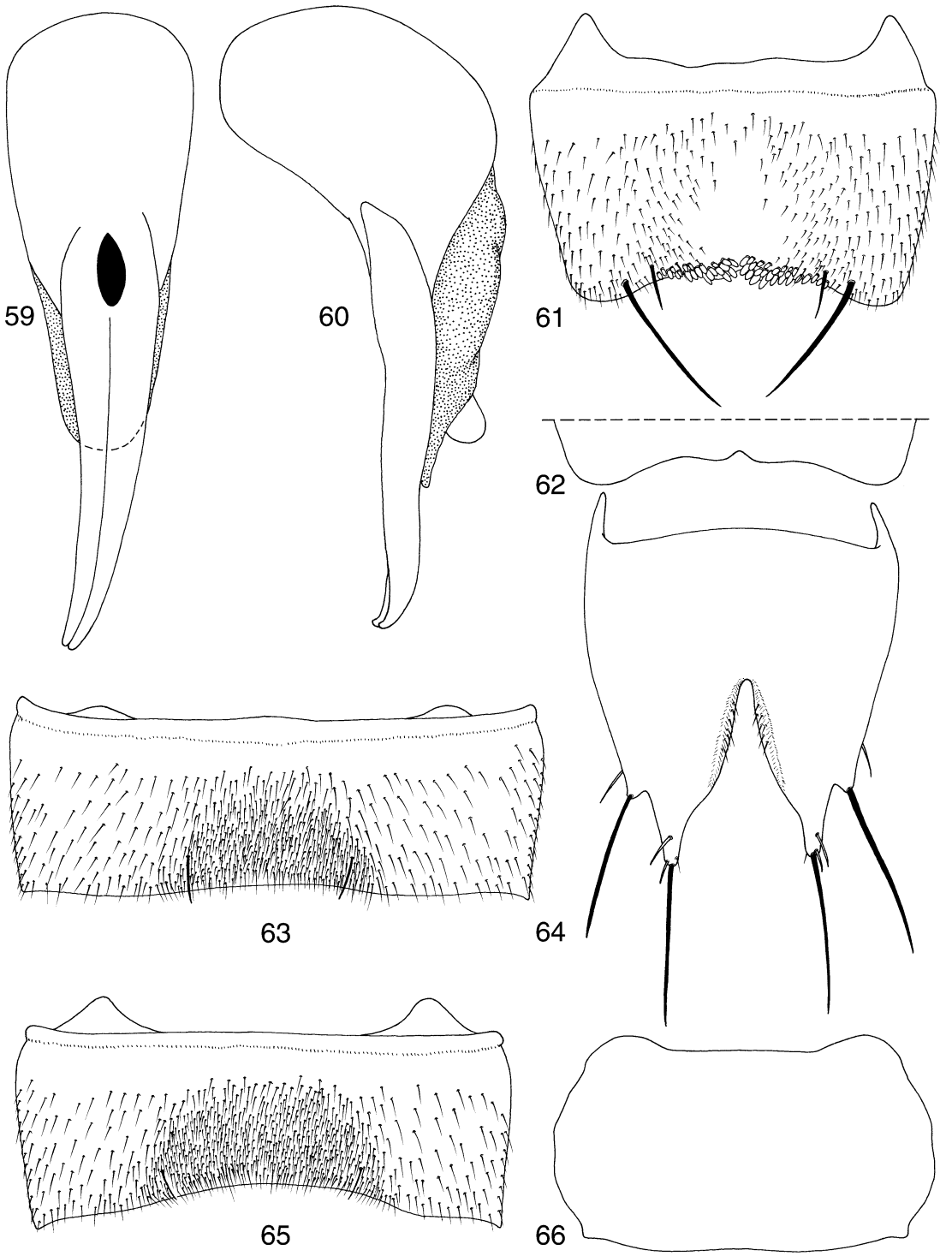
Figures 59–73, 171–182

HOLOTYPE: Male. [Malaysia]: ''SABAH Crocker Ra. 1600 m, km 51 rte Kota Kinabalu-Tambunan, 18.V.87 Burckhardt—Löbl''. Deposited in the Muséum d'Histoire Naturelle, Genève, Switzerland (MHNG).

PARATYPES: Thirty-two males, 16 females. [Malaysia]: Same data as holotype (15 males, 5 females, MHNG). Sabah: Mt. Kinabalu, 1430 m, 22-V-1987, Burckhardt and Löbl (3 males, MHNG); 1500 m, 30-IV-1987 (1 male, MHNG); 1500 m, 21-V-1987 (1 male, 2 females, MHNG); 1550 m, 28-IV-1987 (2 males, 2 females, MHNG); 1550 m, 29-IV-1987 (5 males, 3 females, MHNG); 1550–1650 m, 24-IV-1987 (1 male, 2 females, MHNG; 1 male, MSC); 1750 m, 27-IV-1987 (1 female, MHNG). Borneo: Sabah: Mt. Kinabalu National Park HQ, Liwagu Riv. Tr., 1520 m, 12-VIII-88, A. Smetana [B106] (1 male, AMNH); 11-VIII-88 [B100] (1 female, AMNH). Borneo: Sabah Mt., Kinabalu National Park HQ, Silau-Silau Tr., 1550 m, 4-IX-88, A. Smetana [B177] (1 male, AMNH); 2-IX-88 [B171] (1 male, AMNH).

—Smetana, 1992: 204–206 (figs. 30–42; misidentified as *M. decorata*).

DIAGNOSIS: Males of *M. smetanai* can be distinguished from their congeners by the dense mat of pubescence in the large median depression of sternites V and VI (figs. 63, 65). Sternite VII (fig. 61) has a deep, rounded median depression, the peg setae are arranged in a dense cluster along the posterior margin, and the posterior margin is sinuate



Figs. 59–66. *Megarthropsis smetanai*. **59.** Aedeagus, ventral. **60.** Aedeagus, lateral. **61.** Sternite VII, male. **62.** Sternite VII, apical margin, male (setae omitted). **63.** Sternite V, male. **64.** Sternum VIII, male. **65.** Sternite VI, male. **66.** Pronotum (setae omitted).

with a small, rounded median notch (fig. 62); this configuration is unique to *M. smetanai*.

The females of *M. smetanai* are distinguished from those of all other species by the presence of only five lobes on sternum VIII, the median lobe of which is broad (fig. 68).

DESCRIPTION: Length 3.3–4.6 mm; width 1.3–1.4 mm. Color reddish brown and yellowish brown. Head dark reddish brown to nearly black. Pronotum convex, median region dark reddish brown to reddish brown, posterior portion usually paler; explanate lateral region pale reddish brown to yellowish brown. Elytra and abdomen reddish brown. Antennae and legs pale reddish brown.

Head with deep, moderately large punctation dorsally; postocular vertical carina dorsoventrally oriented. Antennal scape more or less parallel-sided to slightly tapered apically (fig. 171).

Pronotum with deep, moderately large punctation.

Elytra with deep moderately large punctation; lateroapical emargination moderately deep; epipleural gutter moderately wide.

Wings fully developed. Tergite VII with well-developed palisade fringe on posterior margin.

MALE: Sternite V (fig. 63) with large, moderately deep, median depression; depression with dense mat of setae and depression nearly as long as segment; surface without peg setae; posterior margin with broad, shallow median emargination.

Sternite VI (fig. 65) with large, deep, median depression; depression nearly as long segment and surface covered with dense mat of setae; posterior margin with broad, moderately deep, median emargination.

Sternite VII (fig. 61) with large, deep, rounded, median depression; depression polished medially and without setae in middle, but with short setae laterally and basally; surface with dense cluster of peg setae along posterior margin; cluster of peg setae slightly separated medially; posterior margin with broad sinuate emargination; emargination with small, rounded median notch (fig. 62).

Sternum VIII (fig. 64) with broad, deep median emargination; emargination moderately strongly constricted at about apical third then gradually convergent to narrow base; margins of emargination moderately sinuate.

Aedeagus. Parameres (figs. 59, 60) bent moderately to left (in ventral view) and tapered to subacute apex.

FEMALE: Tergum VIII (fig. 71) with median pair of lobes straight and broad basally. Sternum VIII (fig. 68) with five lobes, one lateral and one paralateral pair of lobes and one broad median lobe.

Spermatheca as in figure 70.

ETYMOLOGY: This species is named to honor my friend and colleagueAleš Smetana for his many sterling contributions to our understanding of the Staphylinidae and who, over the years, I have come to admire for the quality of his work and depth of his knowledge. In large part his studies and collections of the Megarthropsini made the present work possible.

DISCUSSION: Figures 30–42 published by Smetana (1992) and identified as *M. decorata* are illustrations of *M. smetanai*.

Sternum VIII (fig. 68) of the females has one broad median lobe, but other members of the tribe, except the species of *Nepaliodes*, have a median pair of lobes. The broad lobe in *M. smetanai* is clearly the result of a fusion of this pair of median lobes.

DISTRIBUTION AND HABITAT: This species is known only from Mt. Kinabalu and the nearby Crocker Range where it was collected at elevations of 1430–1750 m. According to field notes for specimens collected by A. Smetana this species has been collected from fleshy mushrooms and soft polyporus-type mushrooms growing on a fallen rotting tree, and from fresh and rotting fruits of the ''kerosene tree''.

MATERIAL EXAMINED: Forty-nine specimens: holotype male, 32 male and 16 female paratypes.

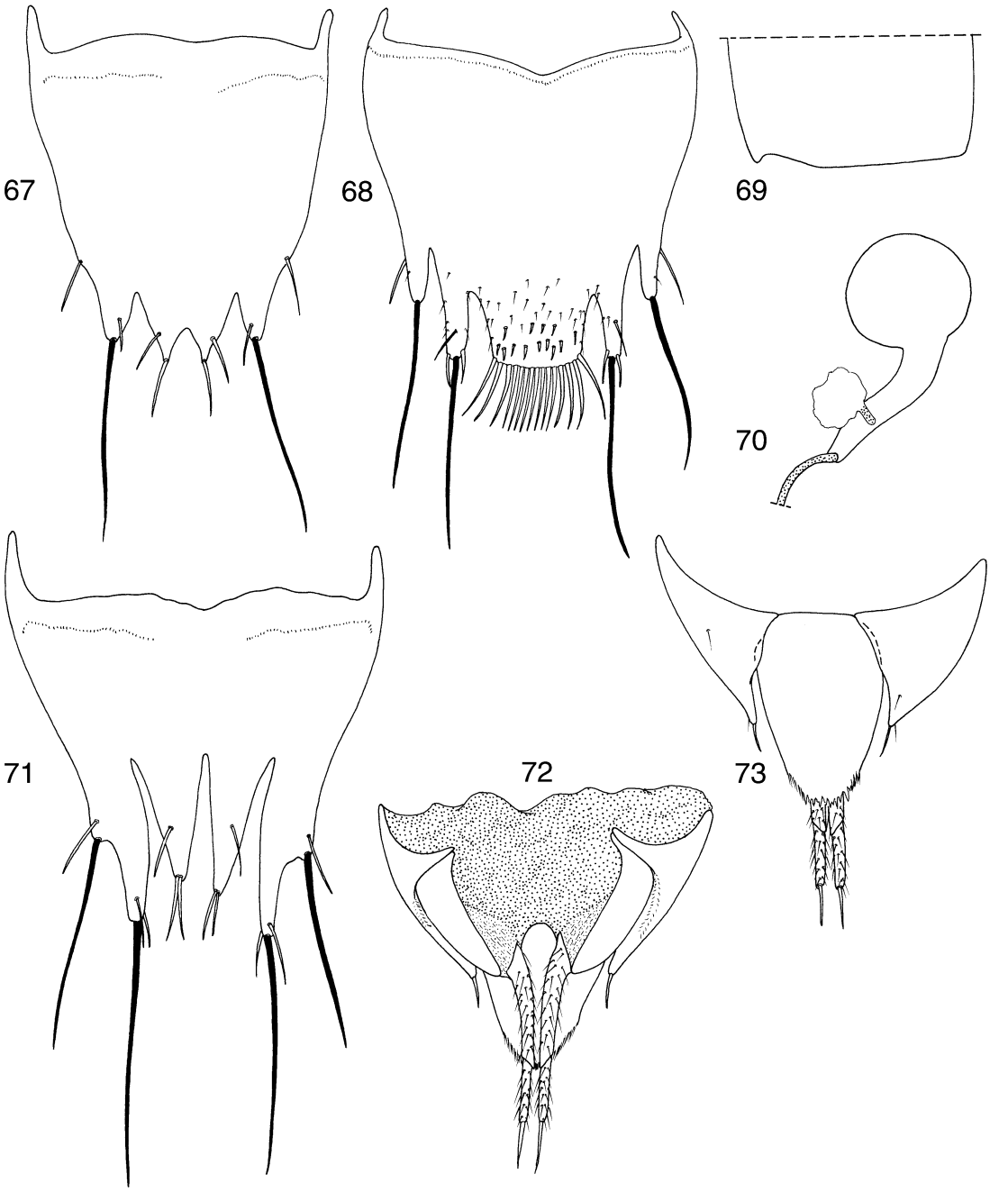
Six males and one female were dissected for genitalic and abdominal characters; one male was disarticulated.

Nepaliodes Coiffait

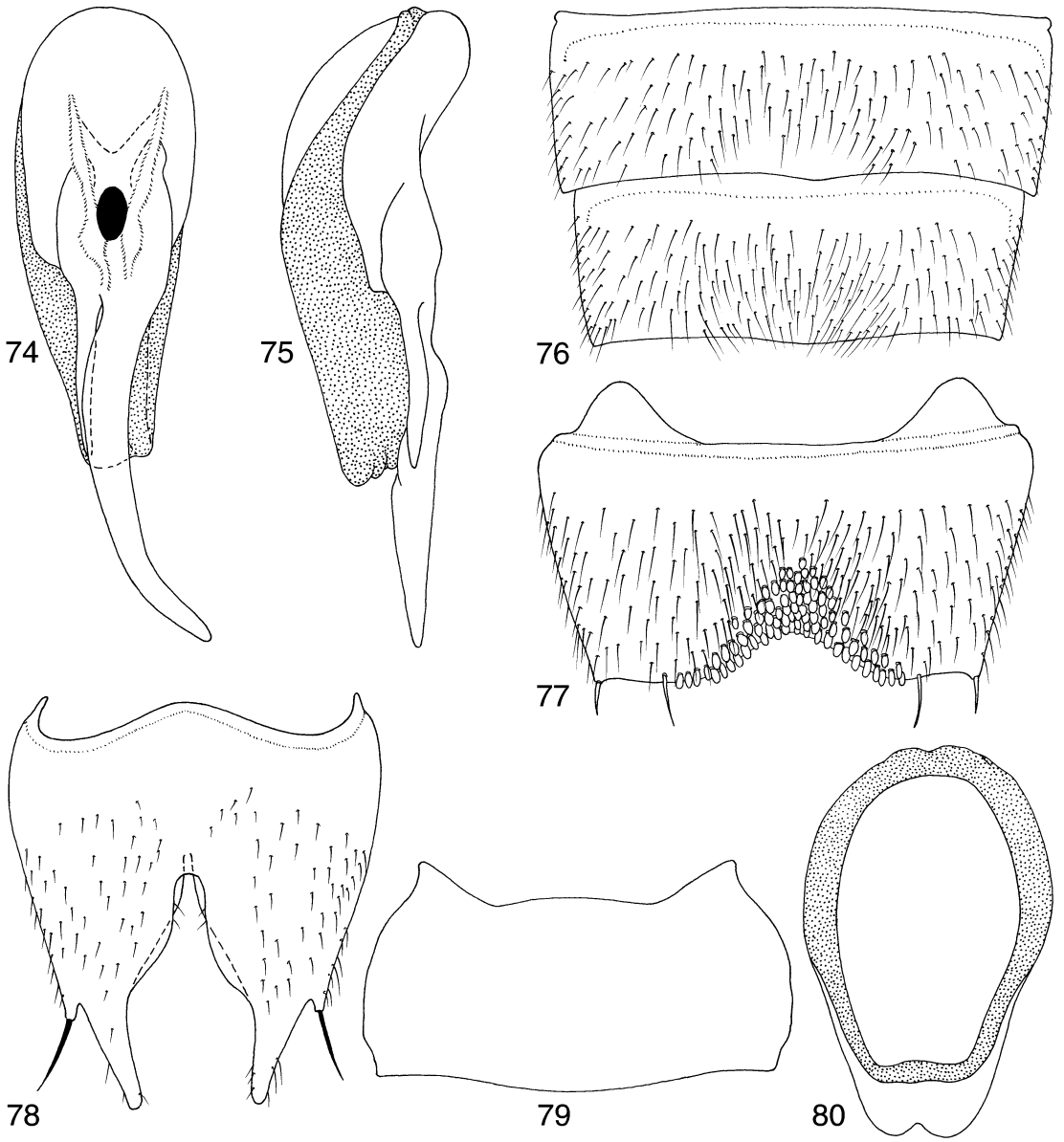
Figures 74–90, 183–187

Nepaliodes Coiffait, 1977: 272. Type species: *Nepaliodes variolosus* Coiffait, fixed by original designation and monotypy.

—Smetana, 1983a: 150 (characters; illustrations;



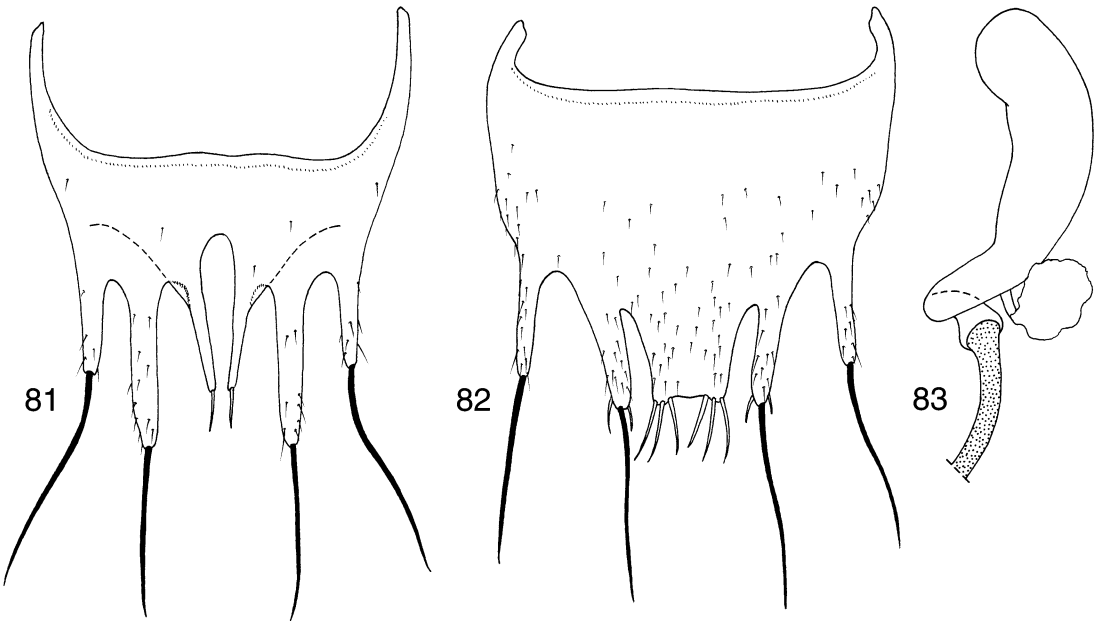
Figs. 67–73. *Megarthropsis smetanai*. **67.** Tergum VIII, male. **68.** Sternum VIII, female. **69.** Elytron, apical margin, left (setae omitted). **70.** Spermatheca. **71.** Tergum VIII, female. **72.** Segment IX, ventral, female. **73.** Tergites IX and tergum X, female.



Figs. 74–80. *Nepaliodes variolosus*. **74.** Aedeagus, ventral. **75.** Aedeagus, lateral. **76.** Sternites V and VI, male. **77.** Sternite VII, male. **78.** Sternum VIII, male (long apical setae missing). **79.** Pronotum (setae omitted). **80.** Aedeagus, anterior end, cross section.

habitus).—Smetana, 1992: 204 (characters; illustrations).—Herman, 2001a: 679 (catalog).

DIAGNOSIS: *Nepaliodes* is separated from other genera of the tribe by the apically tapered antennal scape (fig. 184), the angulate anterior and posterior angles of the pronotum (fig. 79), and the explanate, sparsely punctate lateral third or fourth of the elytra (fig. 183). The parameres (in ventral view) of *Nepaliodes* are curved to the right, and the right paramere is about twice as long as the left (figs. 74, 84) and is more strongly curved. Females have five lobes on the posterior margin of sternum VIII (figs. 82, 89), and tergum



Figs. 81–83. *Nepaliodes variolosus*. **81.** Tergum VIII, female. **82.** Sternum VIII, female. **83.** Spermatheca.

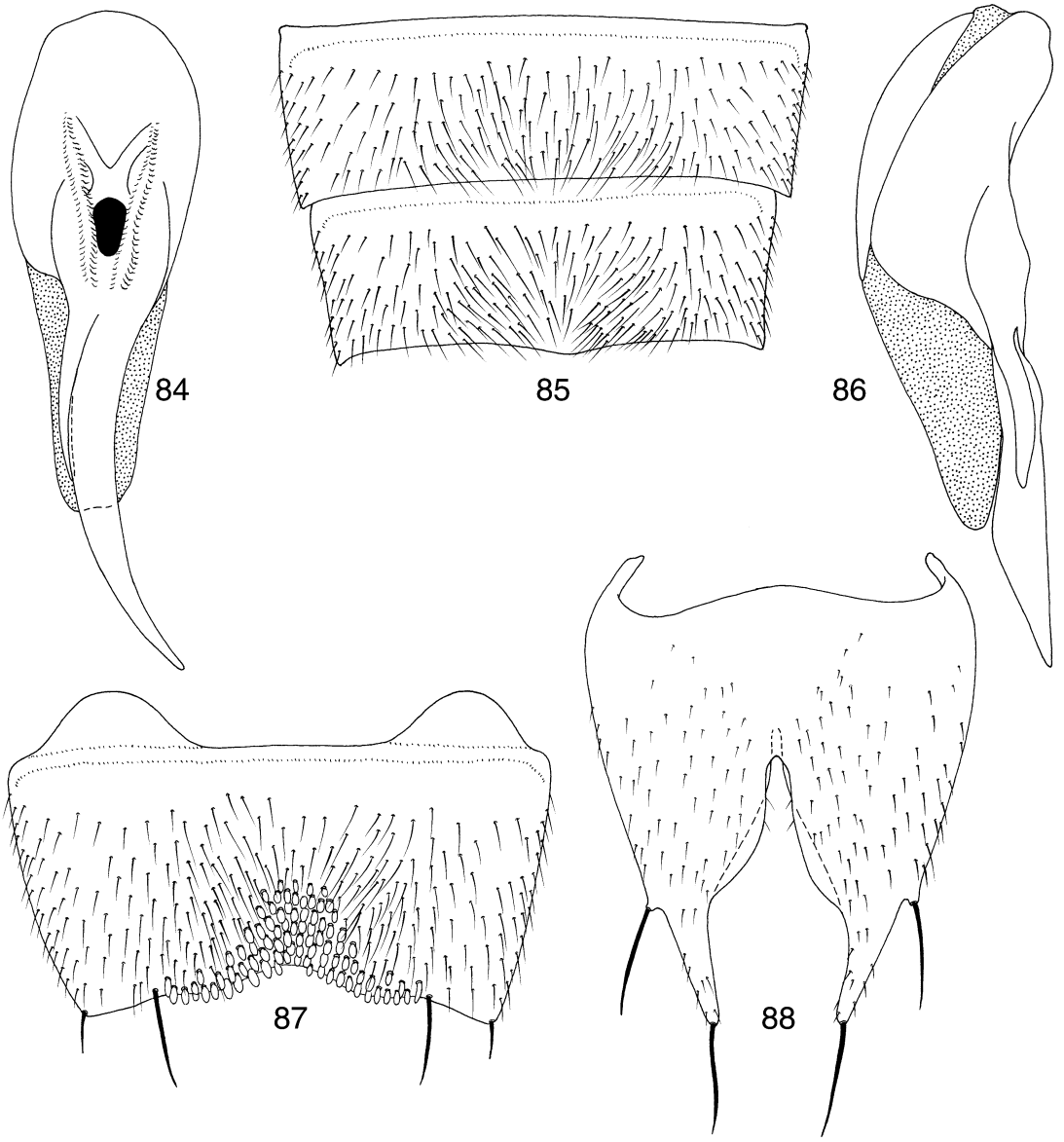
VIII has six slender lobes, the median pair of which is more slender than the others. The spermathecal capsule which tapers proximally from the apex is abruptly expanded before attaching to the spermathecal duct (figs. 83, 92).

DESCRIPTION: Length 3.7–5.0 mm; width 1.7–2.0 mm. Color evenly reddish brown to dark reddish brown.

Head (fig. 184) with dorsum coarsely and densely punctate. Clypeus sparsely punctate. Head with lateral margin strongly reflexed from antenna to anterior margin of clypeus (fig. 184); anterior margin of clypeus strongly reflexed (fig. 184). Epistomal suture (fig. 184) present laterally on reflexed portion of clypeus just anterior to antennal insertion, absent from median three-fifths; midcranial suture absent. Dorsum of head without midlongitudinal groove; surface with or without broad, shallow median depression. Postocular lateral margin of head with carina extending medially from eye (fig. 184); carina straight; vertical postocular carina absent. Gular sutures moderately widely separated. Submentum coarsely punctate. Antenna long and slender, reaching nearly to apical margin of elytra; scape tapered apically (fig. 184); dorsal surface of scape densely pubescent, ventral surface sparsely pubescent.

Pronotum (figs. 79, 183) with anterior angle angulate, narrowly rounded, and strongly produced beyond median portion of anterior margin; lateral margin broadly and unevenly rounded; basal angle angulate; median three-fifths coarsely and densely punctate and strongly convex; lateral fifth strongly explanate and surface sparsely and feebly punctate.

Elytra (fig. 183) with median two-thirds or three-quarters convex and densely and coarsely punctate; lateral third to quarter concave, sparsely and feebly punctate, strongly explanate, and with lateral margin reflexed; lateral margin with row of short, spinelike setae from humeral angle to near middle of lateral margin; spinelike setae increasingly short posteriorly; posterior margin deeply emarginate laterally (figs. 91, 183); posterolateral angle strongly produced and acute (fig. 91). Mesosternum with midlongitudinal carina extending from basal margin to near base of mesosternal process; paramedial carina rudimentary. Metasternum with shallow depression adjacent to apex of mesosternal process; circum-mesocoxal ridge enlarged medially.



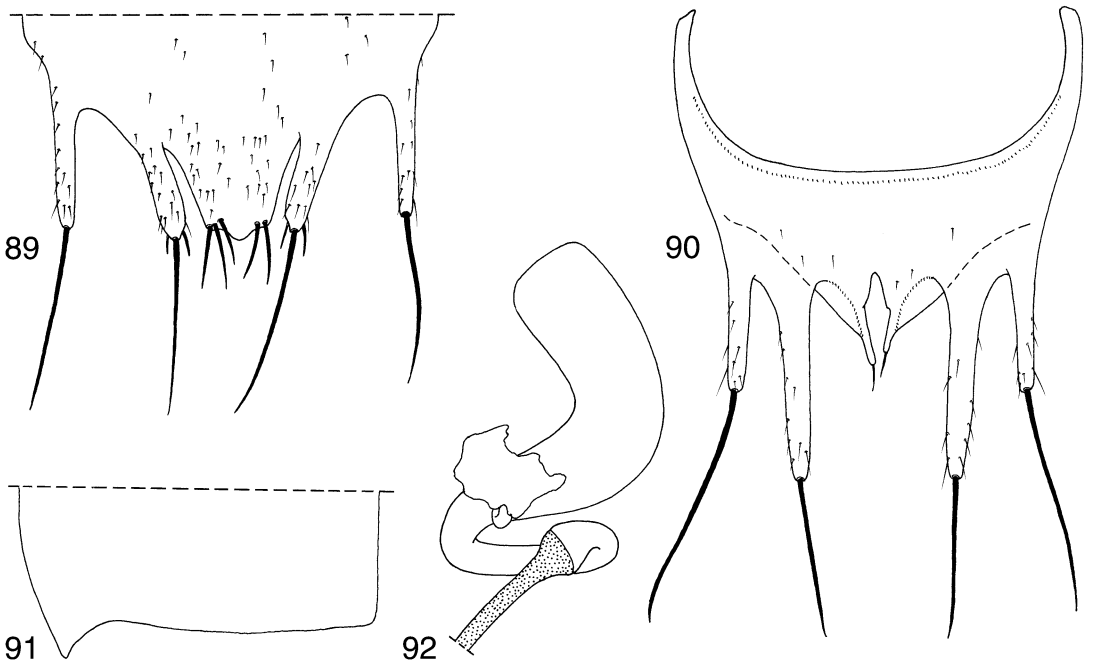
Figs. 84–88. *Nepaliodes solangelae*. **84.** Aedeagus, ventral. **85.** Sternites V and VI, male. **86.** Aedaegus, lateral. **87.** Sternite VII, male. **88.** Sternum VIII, male.

Procoxa without carina on median surface.

MALE: Sternite VII (figs. 77, 87) with wide emargination of posterior margin; surface with broad median depression and with median peg setae. Tergum VIII (figs. 78, 88) with three apical lobes; median lobe with shallow emargination.

Aedeagus (figs. 74, 75, 84, 86), in ventral view, with parameres closely appressed and curved to right; right paramere thicker, more strongly curved, and about twice as long as left; median lobe with deep longitudinal groove near middle of ventral base (fig. 80).

FEMALE: Sternum VIII (figs. 82, 89) with five apical lobes; median lobe broad and with two small, apical, fanlike clusters of setae, one on each side of midline; median lobe with midapical region more lightly pigment-



Figs. 89–92. *Nepaliodes solangelae*. **89.** Sternum VIII, apical portion, female. **90.** Tergum VIII, female. **91.** Elytron, apical margin, left (setae omitted). **92.** Spermatheca.

ed (and difficult to see) than lateroapical region. Tergum VIII (figs. 81, 90) with six slender apical lobes; median lobes more slender and shorter than lateral and paramedial lobes; lateral lobe without secondary lobe on lateral edge.

Spermathecal (figs. 83, 92) capsule curved and gradually tapered from apex to spermathecal duct; capsule expanded just before juncture with spermathecal duct.

DISCUSSION: The detailed description of *Nepaliodes* published by Coiffait (1977: 272) was amplified by Smetana (1983a: 150; 1992: 204), who also presented numerous illustrations.

Females are identified by their collection in association with the males and by distribution. Characters have not been found that permit species identification of the females. Illustrations of segment VIII (figs. 81, 82, 89, 90) of the two species suggest that females can be separated by features of the terga and sterna, but those variations are found in specimens of both species.

Specimens of both species are usually coated with a fine-grained, mudlike substance that can be removed after soaking them in ammonia.

Nepaliodes includes two species, *N. variolosus*, from Nepal and India and *N. solangelae* from Thailand and China.

KEY TO SPECIES OF *NEPALIODES*

1. Sternite VII (fig. 77) with posterior margin deeply emarginate (males) 2
— Sternite VII with posterior margin truncate or slightly emarginate (females) 3
2(1). Sternite VII (fig. 77) with broad, deep emargination; sternite V with setae posteriorly directed; sternite VI with setae of median region directed slightly to middle (fig. 76) . . . . . *N. variolosus* Coiffait
— Sternite VII (fig. 87) with broad, moderately deep emargination; sternites V and VI (fig. 85) with setae of median region medioposteriorly directed . . . . . *N. solangelae*, new species
3(1). Present in India and Nepal . . . . . *N. variolosus* Coiffait
— Present in Thailand and China . . . . . *N. solangelae*, new species

Description of Species

Nepaliodes variolosus Coiffait
Figures 74–83, 183–187

Nepaliodes variolosus Coiffait, 1977: 272. Type locality: Weg v. Pokhara z. Goropani, Zentral-Nepal. Holotype, male, deposited in Naturhistorisches Museum Wien; examined.
—Smetana, 1983a: 154 (characters; habitus; aedeagus; body parts; bionomics; India; Nepal).

Diagnosis: The deeper emargination of sternite VII (fig. 77), the finer, less medially directed pubescence of sternites V and VI (fig. 76), and the less strongly tapered, more apically blunt right paramere (figs. 74, 75) will separate the males of *N. variolosus* from *N. solangelae*. The females of the two species can be separated by locality.

Description: Length 3.7–5.0 mm; width 1.2–1.8 mm. Color reddish brown to dark reddish brown; explanate margins of head, pronotum and elytra paler; head darker.

Wings fully developed.

Tergite VII with palisade fringe present.

Male: Sternite V (fig. 76) with pubescence of median region fine and more or less posteriorly directed. Sternite VI (fig. 76) with pubescence of median region slightly directed to middle. Sternite VII (fig. 77) with broad, deep emargination of posterior margin; disc with dense cluster of peg setae along posterior margin and in shallow median depression of apical half. Sternum VIII (fig. 78) with deep median emargination; emargination broad apically and narrow basally; margins of emargination strongly sinuate and convergent to narrow base.

Aedeagus (figs. 74, 75) with right paramere about half as long as left; left paramere stout, strongly curved to left and tapered apically to moderately broad, rounded apex (in dorsal or ventral view).

Female: Tergum VIII (fig. 81), sternum VIII (fig. 82), and spermatheca (fig. 83). Species distinguished from *N. solangelae* by association with male and distribution.

Discussion: Two spellings of the name were used by Coiffait (1977: 244, 272, 273) in the original publication, namely *Nepaliodes variolasa* and *N. variolosa*. As first reviser Smetana (1983a: 154) selected and corrected the name to *N. variolosus*. Attached to the pin with the holotype, which was not examined by Smetana, is Coiffait's determination label for the species; it reads ''*Nepaliodes variolosa*''.

The labels record some specimens from ''Dobate Ridge NE Barahbise''. According to Smetana (1988: 176), that locality should read ''Pokhare NE Barahbise''; it is east of Kathmandu (Smetana, 1988: 172, site 25).

Distribution: *Nepaliodes variolosus* is known from Uttar Pradesh and West Bengal in India and Bagmati Province in Nepal at elevations of 1700, 1900, and 2700 m, respectively. In Nepal the species was collected from accumulations of deep, wet leaf litter in depressions and small gullies in a deciduous forest with dense undergrowth (Smetana, 1983a: 155).

Material Examined: Twenty-seven specimens: 13 males, 14 females. **Nepal**: holotype, locality cited above, September–October 1971, collected by H. Franz (1 male, NHMW); (Prov. Bagmati), Dobate Ridge [Pokhare: see Discussion above] NE Barahbise, 2700 m, 2.V.81, Löbl and Smetana (1 male, 2 females, MHNG; 1 male, 1 female, AMNH); Prov. Bagmati, Dobate Ridge [Pokhare; see remarks under Discussion above] NE Barahbise, 2800 m, 2.V.81, Löbl and Smetana (1 female, MHNG); Lalitpur Distr., 2 km S Godavari, 1700 m, 19-X-83, Smetana and Löbl (1 male, 2 females). **Inde**: Garhwal (UP), Mussoorie, No. 15, 1700 m, 19-X-79, I. Löbl (6 males, 2 females, MHNG); Kumaon (UP), Rangarh, No. 6B, 2000 m, 9.X.79, I. Löbl (4 males, 4 females, MHNG); Uttar Pr., Kumaon, Rangarh, No. 6B, 2250 m, 9.X.79, I. Löbl (1 female, MHNG). **India**: W. Bengal, Darjeeling dist., Algarah-Labha, 1900 m, 11-X-78, Besuchet and Löbl (1 female, MHNG).

Dissections of three males and two females were examined for features of the abdomen and for the male and female genitalia and genital segments.

No specimens were disarticulated.

Nepaliodes solangelae, new species
Figures 84–90

Holotype: Male. ''THAILAND: Chiang Mai Do'i Suthep, 1550 m 4.XI.1985, Burckhardt-Löbl''. Holotype deposited in the Muséum d'Histoire Naturelle, Genève, Switzerland (MHNG).
Paratypes: Six males. **Thailand**: Chiang Mai,

Doi Inthanon, 1650 m, 7.XI.1985, Burckhardt-Löbl (2 males, MHNG); Chiang Mai distr., Doi Suthep-Pui NP, 1080 m, 17.2.1995, leg P. Schwendinger, evergr. hill forest (1 male, MSC); ''Doi Phu Nan Province, 500 m, Kha Nat Park, 1700 m, Schwendinger, 6.10.91'' (1 male, MHNG) [according to information provided by I. Löbl, this label should read: ''N. Thailand, Nan Province, Doi Phu Kha National Park, 1700 m, 6.10.91, P. Schwendiger'']; Taksin Maharat N.P., 1000 m, 9.2.1993, Schwendinger (1 male, MHNG). **China**: Guangxi: Dawangling, 1190 m, 6.VIII.1999, J.R. Fellowes, 15 m closed canopy, broadleaf forest floor litter (1 male, GRC).

DIAGNOSIS: The males of this species are separated from those of *N. variolosus* by the shallower emargination of the posterior margin of sternite VII (fig. 87), the more strongly tapered, more apically acute right paramere (in ventral view; fig. 84), and the slightly coarser, more medially directed median setae of sternites V and VI (fig. 85). The females are identified by association with the male and by locality.

DESCRIPTION: Length 4.0–4.7 mm; width 1.8–2.0 mm. Color reddish brown to dark reddish brown; explanate margins of head, pronotum, and elytra paler; head darker.

Wings fully developed.

Tergite VII with palisade fringe present.

MALE: Sternite V (fig. 85) with setae of median region slightly coarse and mediposteriorly directed. Sternite VI (fig. 85) with pubescence of median region slightly coarse and strongly mediposteriorly directed; posterior margin with small median lobe. Sternite VII (fig. 87) with broad, moderately deep emargination of posterior margin; disc with dense cluster of peg setae in broad, shallow, median depression of apical half and along posterior margin. Sternum VIII (fig. 88) with deep median emargination; emargination broad apically and narrow basally; margin of emargination strongly sinuate to narrow base.

Aedeagus (figs. 84, 86) with left paramere (in ventral view) moderately curved and about half as long as right; right paramere stout, strongly curved and tapered apically to acute apex.

FEMALE: Tergum VIII (fig. 89), sternum VIII (fig. 90), and spermatheca (fig. 92). Species distinguished from *N. variolosus* by association with male and distribution.

ETYMOLOGY: This species is named for Solangel Casabona who has worked with me as a preparator for 25 years.

DISCUSSION: Females were not selected as paratypes because they can only be identified by distribution and by their collection in association with males. I have been unable to find characters of the females that distinguish the species.

DISTRIBUTION: This species is known from northern Thailand where it was collected at elevations of 1000–1780 m, and Guangxi Province, China, where it was collected at 1190 m.

MATERIAL EXAMINED: Seven males and 9 females: holotype male, 6 male paratypes, and 9 females. The localities from which the females were collected are the following. **Thailand**: Chiang Mai, Doi Inthanon, 1650 m, 7.XI.1985, Burckhardt-Löbl (6 females, MHNG); Chiang Mai, Doi Inthanon, 1780 m, 17.XII.86, P. Schwendinger (1 female, MHNG); Chiang Mai, Doi Suthep, 1400 m, 5.XI.1985, Burckhardt-Löbl (1 female, MHNG); Prov. Chiang Mai, Doi Suthep, 1320 m, 27.XII.1986, P. Schwendinger (1 female, MHNG).

Dissections of five males and three females were examined for features of the abdomen and characters of the male and female genitalia and genital segments.

No specimens were disarticulated.

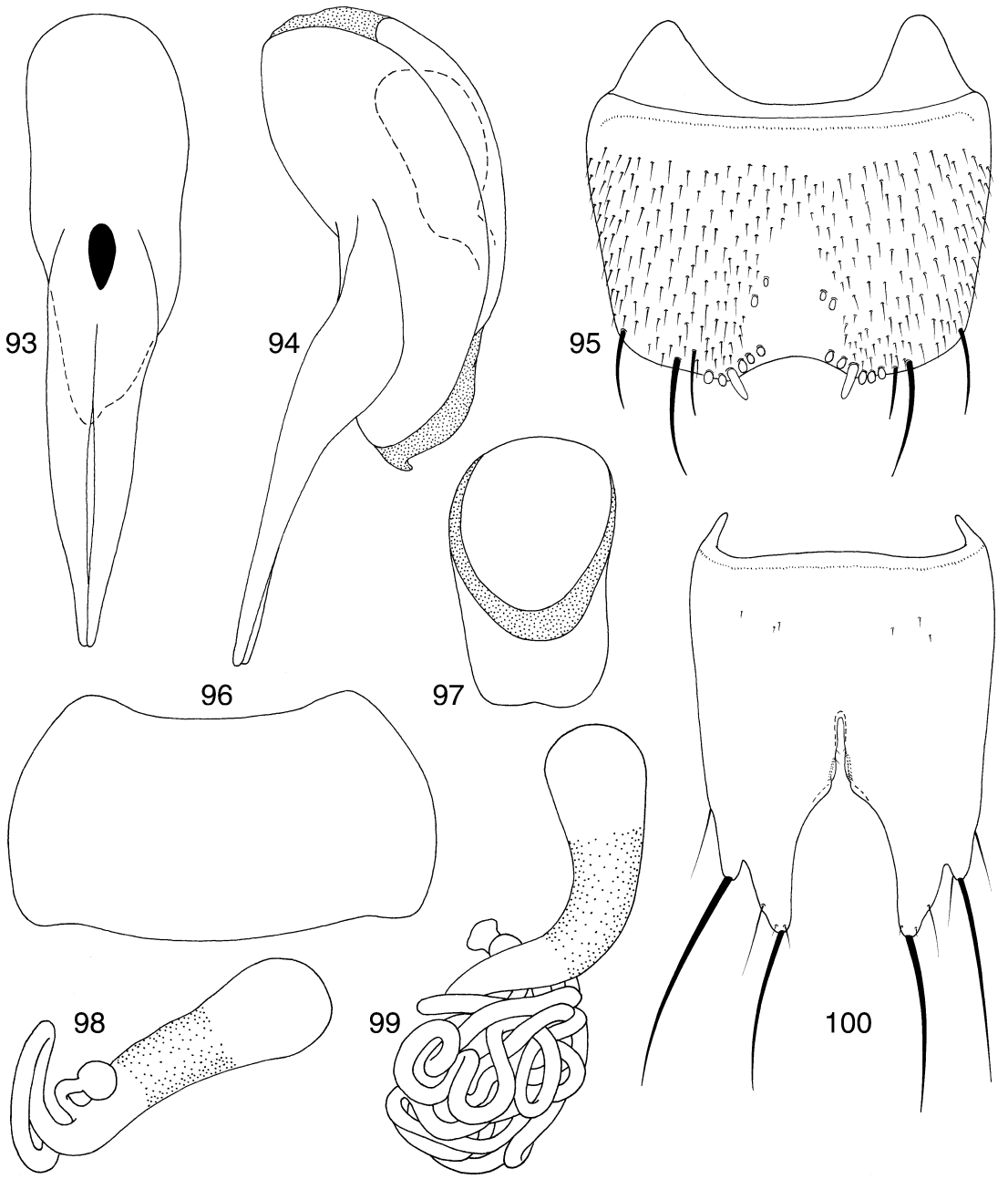
Peitawopsis Smetana

Figures 93–120, 188–193

Peitawopsis Smetana, 1992: 199. Type species: *Peitawopsis monticola* Smetana, fixed by original designation and monotypy.

—Herman, 2001a: 679 (catalog).—Herman and Smetana, 2002: 198 (diagnosis; key to species).

DIAGNOSIS: The broadly rounded posterior pronotal angle will separate *Peitawopsis* (figs. 96, 188) from *Nepaliodes* (fig. 79) and *Megarthropsis* (fig. 66) which have strongly angulate posterior angles. The lateral third of the elytra of *Peitawopsis* is concave (fig. 188), the elytra of *Megarthropsis* (fig. 171) and *Lacvietina* (fig. 1) are convex to the narrowly reflexed epipleural ridge, and the elytra of *Nepaliodes* (fig. 183) are convex to



Figs. 93–100. *Peitawopsis monticola*. **93.** Aedeagus, ventral. **94.** Aedeagus, lateral. **95.** Sternite VII, male. **96.** Pronotum (setae omitted). **97.** Aedeagus, anterior end, cross section. **98.** Spermatheca (coiled cluster omitted). **99.** Spermatheca. **100.** Sternum VIII, male.

about the lateral third or fourth, which is concave, explanate, and sparsely punctate. The posterior margin of the elytra of *Peitawopsis* is broadly and evenly emarginate from the lateroapical angle to the elytral suture, but is emarginate laterally in the other genera. The distinct postocular cephalic carina of *Nepaliodes* (fig. 184) and *Megarthropsis* (fig. 172)

is modified to a rounded ridge in *Peitawopsis* (fig. 189). The antennal scape of *Peitawopsis* (fig. 189) is nearly parallel-sided from near the base to the apex, whereas the scape of *Nepaliodes* (fig. 184) is tapered apically from the base.

DESCRIPTION: Length 3.3–4.6 mm; width 1.3–1.7 mm.

Color pale to dark reddish brown; head dark reddish brown, nearly black; anterior and lateral margins of pronotum and elytra pale reddish brown to yellowish brown.

Head (fig. 189) with dorsum moderately densely and moderately coarsely punctate. Clypeal punctation fine and sparse or absent. Head with lateral margin moderately strongly reflexed from antenna to anterior margin of clypeus (fig. 189); anterior margin of clypeus not reflexed and with fine transverse microsculpturing. Epistomal suture (fig. 189) present, complete, and angulate at middle; midcranial suture short (fig. 189). Dorsum of head with midlongitudinal groove extending posteriorly from epistomal suture to near neck and well-developed (fig. 189) to feeble. Postocular lateral margin of head with rounded ridge extending medially from eye (fig. 189); postocular vertical carina absent. Gular sutures widely separated. Submentum moderately coarsely punctate. Antenna short, reaching to near middle of elytra; scape (fig. 189) more or less parallel-sided from near base to apex, and with scattered setae dorsally and ventrally.

Pronotum (figs. 96, 188) with anterior and posterior angles broadly rounded; anterior angles produced beyond median portion of anterior margin; lateral margin broadly and evenly curved; median and lateral surfaces densely and coarsely punctate and with some anastomosing punctures; punctation slightly denser anteriorly and laterally than medially and posteriorly.

Elytra (fig. 188) reduced, combined width greater than length as measured from scutellar apex to line across lateroapical angles of elytra; surface with dense punctation. Elytra (fig. 188) with median two-thirds of dorsal surface shallowly convex and lateral third shallowly concave; surface evenly, densely, and moderately strongly punctate; lateral margin explanate and moderately reflexed; lateral margin with spinelike setae restricted to humeral angle; posterior margin with broad emargination; posterolateral angle strongly produced. Mesosternum without midlongitudinal basal ridge or carina; paramedial carina present basally and moderately long. Metasternum without depression or pit adjacent to apex of mesosternal process; circum-mesocoxal ridge moderately developed medially.

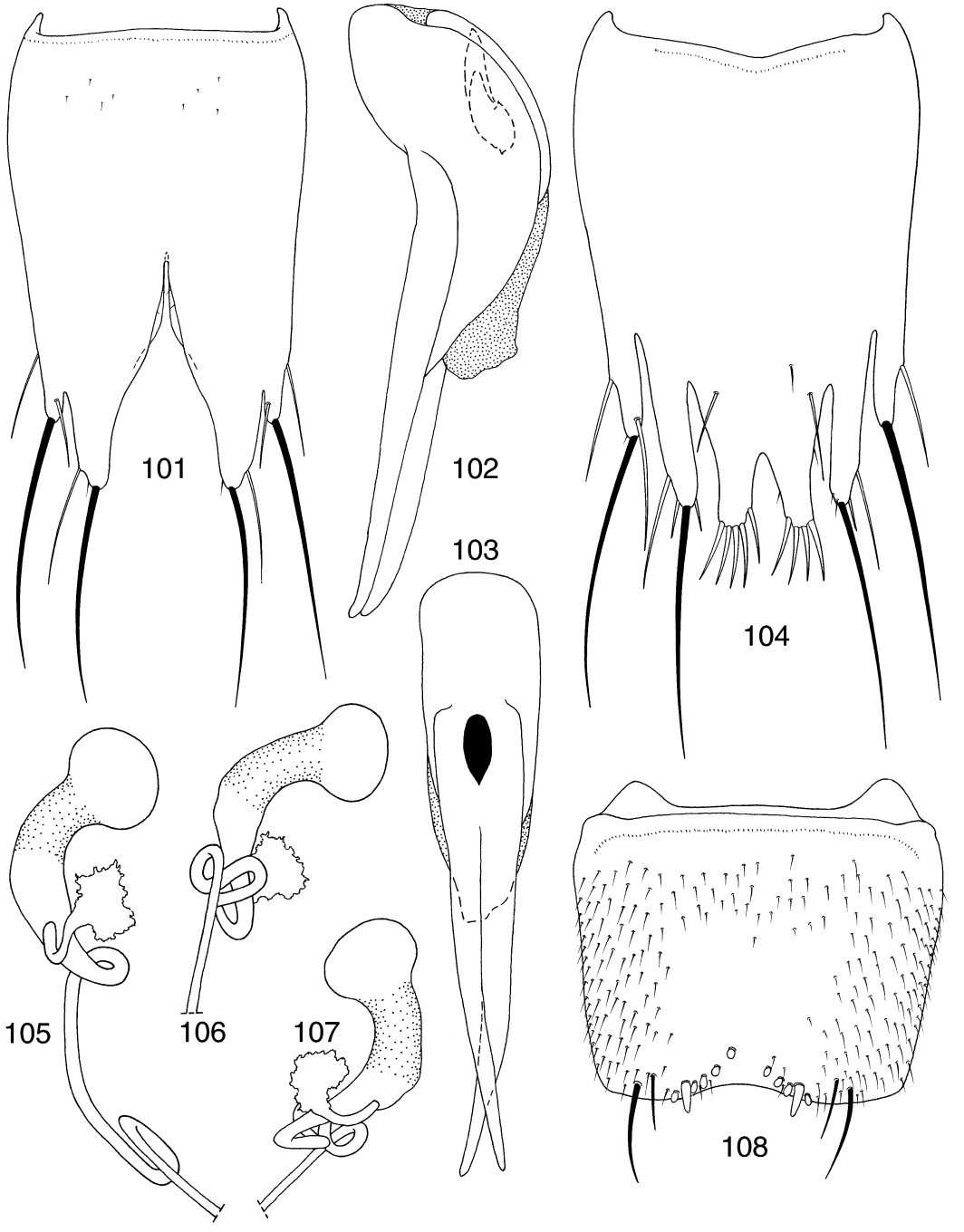
Procoxa with carina on median surface.

MALE: Sternite VII (figs. 95, 108, 110) with broad emargination of posterior margin; surface with peg setae and broad depression medially. Sternum VIII (figs. 100, 101, 111) with deep anteriorly tapered emargination. Tergum VIII with three apical lobes; median lobe with broad, shallow apical emargination. Aedeagus (figs. 93, 103, 112) with parameres tapered apically, straight, and of about equal length and width; median lobe with shallow groove (or depression) near middle of ventral surface of base (fig. 97).

FEMALE: Sternum VIII (fig. 104) with three pairs of lobes on posterior margin; median pair of lobes with fanlike cluster of setae on each lobe. Tergum VIII (figs. 117, 120) with four apical lobes; lateral lobe without secondary lobe on lateral edge.

Spermathecal capsule enlarged at apex and strongly constricted then tapered proximally (figs. 105, 116) or gradually tapered from apex to spermathecal duct (figs. 98, 99); juncture of capsule with spermathecal duct not enlarged; spermathecal duct with one or more loops near capsule.

DISCUSSION: *Peitawopsis*, with three species, is known only from the Chung-Yang Shan of Taiwan. The species have reduced elytra and wings, are flightless, and are found at elevations of 1500–2900 m. Two species, *P. monticola* and *P. watanabei*, live on Peitawushan where both were collected from moist litter on the forest floor. The two species were collected at one locality where *P. watanabei* was found in litter in depressions and gullies of the forest floor, and *P. monticola* was found in litter and debris along a trail. Although the two species overlap in their elevational distribution, *P. watanabei* is found at higher elevations to about 2900 m. The third species (*P. inexspectata*) is from Kuanshan and Peinantashan



Figs. 101–108. *Peitawopsis inexspectata*. **101.** Sternum VIII, male. **102.** Aedeagus, lateral. **103.** Aedeagus, ventral. **104.** Sternum VIII, female. **105**–**107.** Spermatheca, variation. **108.** Sternite VII, male.

where it also was collected from moist, forest floor litter.

KEY TO SPECIES OF *Peitawopsis*

1. Abdominal sternite VII (figs. 95, 110) with emarginate posterior margin (males) 2
— Abdominal sternite VII with rounded posterior margin (females) 4
2(1). Sternite VII (fig. 110) with uninterrupted row of peg setae near posterior margin . . . *P. watanabei* Herman and Smetana
— Sternite VII (figs. 95, 108) with two medially separated rows of peg setae near posterior margin 3
3(2). Sternite VII (fig. 95) with two rows of peg setae along posterior margin and with two small groups of peg setae on disc . . . . . *P. monticola* Smetana
— Sternite VII (fig. 108) with two rows of peg setae beginning at posterior margin and extending onto disc and without separate small group of peg setae on disc . . . . . *P. inexspectata* Smetana
4(1). Spermathecal capsule (fig. 99) gradually enlarged at one end; spermathecal duct with multiple loops near capsule . . . . . *P. monticola* Smetana
— Spermathecal capsule (figs. 105, 116) abruptly expanded at one end; spermathecal duct with a few loops near capule 5
5(4). Present on Peitawushan and its foothills . . . . *P. watanabei* Herman and Smetana
— Present on Kuanshan and Peinantashan . . . . . *P. inexspectata* Smetana

DESCRIPTION OF SPECIES

Peitawopsis monticola Smetana

Figures 93–100, 188–193

Peitawopsis monticola Smetana, 1992: 204. Type locality: Taiwan: Pingtung Hsien, Peitawushan Trail at 2000 m. Holotype in the Smetana Collection (ASC), to be deposited in the Muséum d'Histoire Naturelle, Genève, Switzerland; examined.

—Herman and Smetana, 2002: 199 (characters; distribution).

DIAGNOSIS: The posterior margin of sternite VII of the males of *P. monticola* has a medially separated row of peg setae and the disc has a small cluster of peg setae on each side of the midline (fig. 95); this configuration of peg setae will separate *P. monticola* from the other two species. The parameres of *P. monticola* are about as long as the median lobe (fig. 93) in contrast to the longer parameres of *P. inexspectata* (fig. 103).

The spermatheca of the females of *P. monticola* has the apical end gradually enlarged (figs. 98, 99) in contrast to the abruptly enlarged apical end of the other two species (figs. 106, 115). The spermathecal duct is densely coiled near the spermathecal capsule in *P. monticola* (fig. 99), but is only slightly coiled in *P. inexspectata* (fig. 106) and *P. watanabei* (fig. 116).

DESCRIPTION: Length 3.4–4.6 mm; width 1.4–1.6 mm.

Color pale to dark reddish brown, head usually dark reddish brown to nearly black. Pronotum with central region reddish brown to dark reddish brown to nearly black and with lateral, anterior, and posterior margins pale reddish brown to yellowish brown. Elytra with central region reddish brown to dark reddish brown to nearly black and with lateral and anterior margins pale reddish brown to yellowish brown. Antennae reddish brown to pale reddish brown. Legs pale reddish brown.

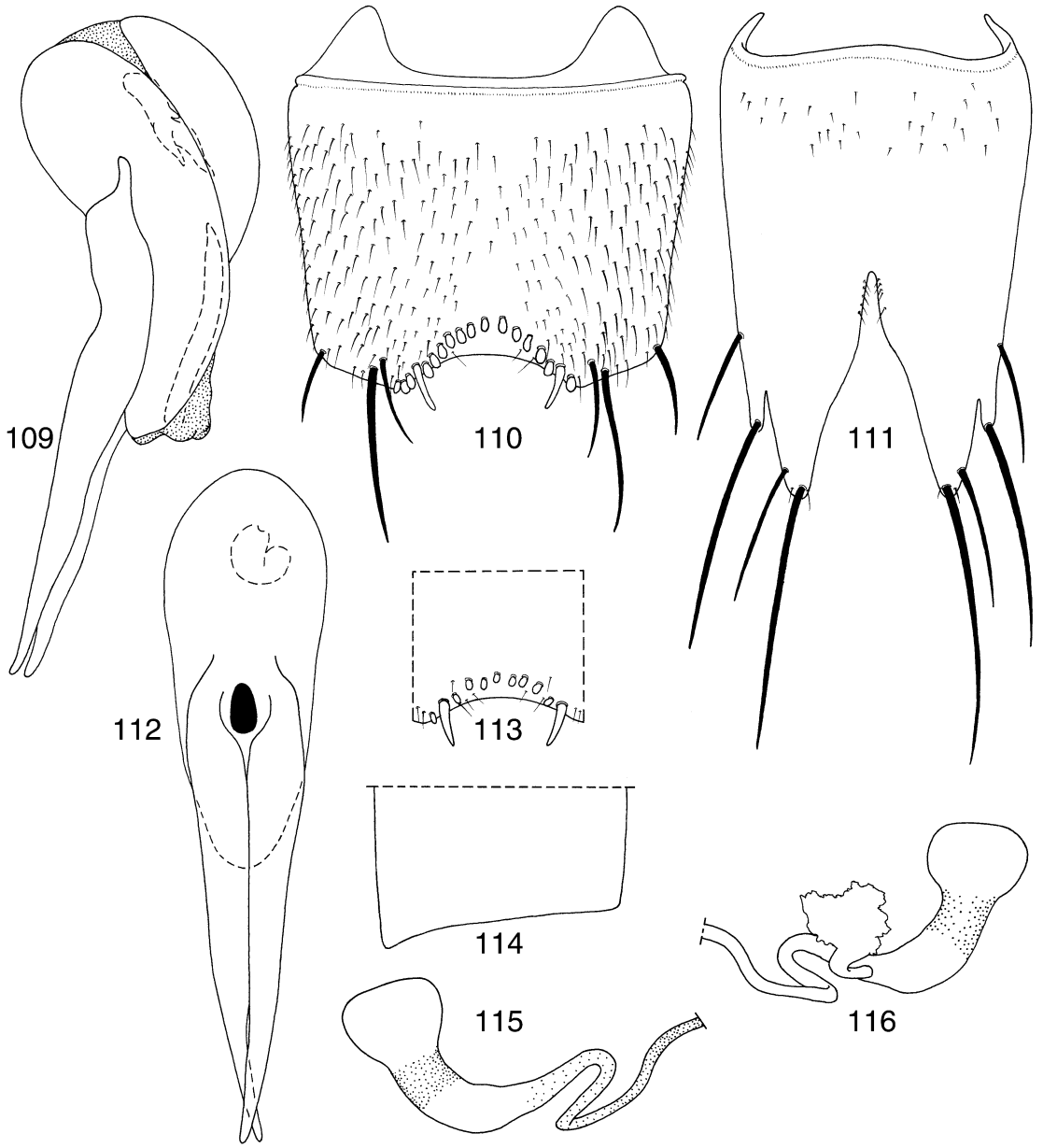
Wings reduced to minute pads.

Tergite VII with minute, irregularly interrupted palisade fringe on posterior margin.

MALE: Sternite V with feeble, median impression on apical half; impression without pubescence near apical margin, but present on remainder.

Sternite VI with shallow, median depression extending for most of length of segment; depression without pubescence on apical fifth, remainder sparsely pubescent.

Sternite VII (fig. 95) with moderately broad, moderately deep, arcuate median emargination of posterior margin; sternite with medially separated row of peg setae on posterior margin and with two, small, medially separated clusters of peg setae on disc near apical half; row of peg setae with longer spinelike seta near lateral end; sternite with 14–19 peg setae; posterior row with 10–14 peg setae and discal clusters each with one to three, but usually with two peg setae; disc with broad, shallow, slightly tapered depression from posterior margin for most of length; depression without punctation or pubescence on most of surface, but with fine

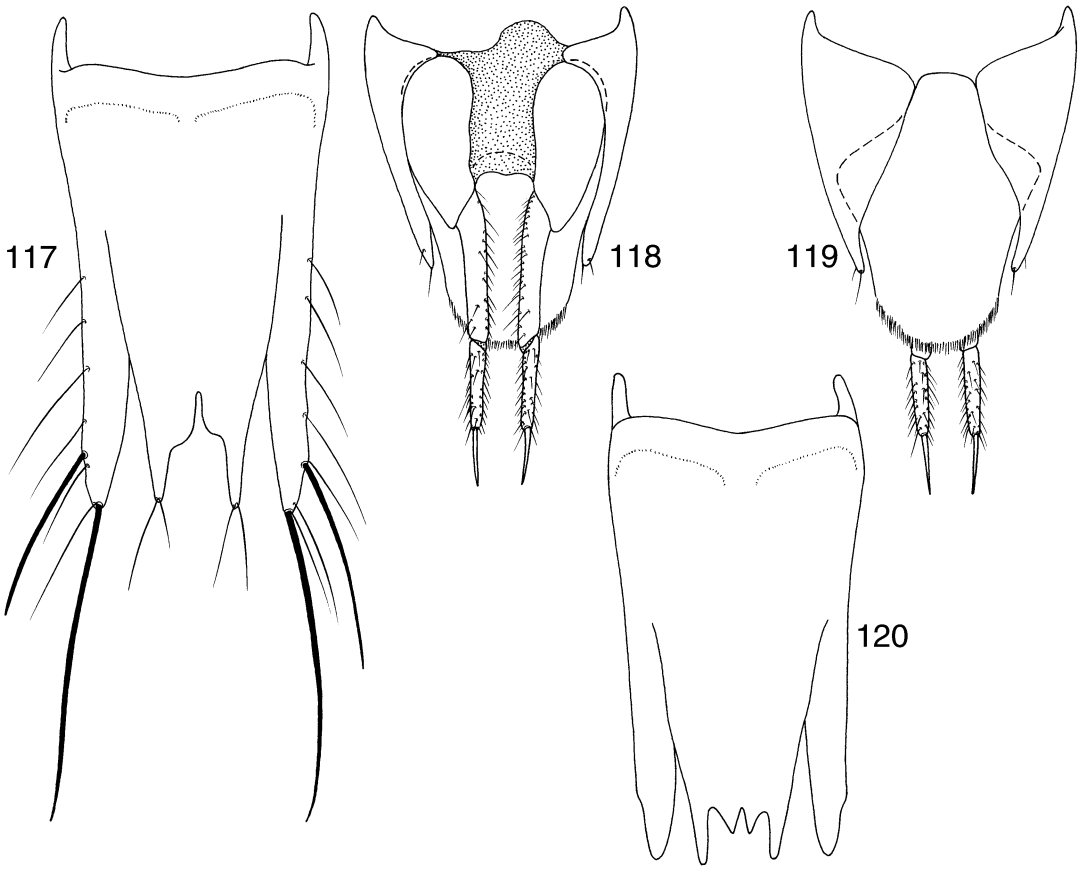


Figs. 109–116. *Peitawopsis watanabei*. **109.** Aedeagus, lateral. **110.** Sternite VII, male. **111.** Sternum VIII, male. **112.** Aedeagus, ventral. **113.** Sternite VII, middle of posterior margin, male (setae omitted from median portion of disc). **114.** Elytron, apical margin, left (setae omitted). **115, 116.** Spermatheca, two views.

punctation and fine setae on basal third and along lateral margin.

Sternum VIII (fig. 100) with broad, deep, median emargination; margins of emargination widely separated apically and gradually curved medially to about basal third then abruptly and narrowly separated; basal third of emargination narrow and tapered to narrowly rounded basal margin.

Aedeagus with parameres about as long as



Figs. 117–120. *Peitawopsis watanabei*. **117.** Tergum VIII, female. **118.** Segment IX, ventral, female. **119.** Tergites IX and tergum X, female. **120.** Tergum VIII, female, setae omitted.

median lobe (figs. 93, 94), as measured from apical margin of basal orifice to apex of parameres.

FEMALE: Spermathecal capsule gradually and moderately enlarged at apex and tapered from there toward spermathecal duct (figs. 98, 99); spermathecal duct with dense cluster of multiple loops near capsule (fig. 99).

DISCUSSION: The genitalic structures of this species differ significantly from the other species. The spermathecal duct is densely coiled near the spermathecal capsule, whereas the spermathecal duct of the other species have a few loops near the spermathecal capsule.

The aedeagus of *P. monticola* has a large, strongly sclerotized capsule within the aedeagus that is presumably part of the internal sac. This structure was not included in the description because the sclerotized structures of the internal sac of the other two species are much smaller and indescript.

DISTRIBUTION AND HABITAT: This species is known only from Peitawushan (see Smetana, 1995b: 6, site 10) in Pingtung Hsien where it was collected at 1500–2325 m. Specimens were collected in mature broadleaf forests by sifting leaves, humus, and other debris from the forest floor.

MATERIAL EXAMINED: Fifty-one specimens: 34 males, 17 females.

Taiwan: *Pingtung Hsien*: Peitawushan trail at 2000 m, May 23, 1991, A. Smetana, sifting fallen leaves, various other debris and humus accumulated along large fallen trees [T91] (holotype male, allotype, paratypes: 1 male, 2 females, ASC). Peitawushan, Kuai-Ku Hut, 2325 m, May 22, 1991, A. Smetana,

sifting fallen leaves and other debris along trail in mature broadleaf evergreen forest [T90] (paratypes: 11 males, 3 females, ASC); 2125 m, April 27, 1992, A. Smetana, sifting fallen leaves, dead vegetation, and various other moist debris in mature broadleaf evergreen forest [T102] (6 males, 2 females, ASC); 2130 m, April 27, 1992, A. Smetana, sifting fallen leaves, dead vegetation, and various other moist debris in mature broadleaf evergreen forest [T101] (4 males, 4 females, ASC; 2 males, 1 female, AMNH); 2135 m, April 30, 1992, A. Smetana, sifting fallen leaves, various other debris and humus accumulated along large fallen trees [T108] (5 males, 3 females, ASC). Peitawushan Trail at 1500 m, May 1, 1992, A. Smetana, sifting fallen leaves, various other debris, and humus accumulated along large fallen trees [T110] (4 males, 1 female, ASC).

Five males and two females were dissected for characters of the genital segments and genitalia, and one female was disarticulated.

Peitawopsis inexspectata Smetana

Figures 101–108

Peitawopsis inexspectata Smetana, 1995a: 131. Type locality: Taiwan: Kaohsiung Hsien, Kuanshan trail above Kaunshanchi River, 2550 m. Holotype in the Smetana Collection (ASC), to be deposited in the Muséum d'Histoire Naturelle, Genève, Switzerland; examined.

—Herman and Smetana, 2002: 200 (characters; distribution).

DIAGNOSIS: Sternite VII (fig. 108) of the males of *P. inexspectata* has a row of peg setae on each side of the midline that begins at the posterior margin and curves medioanteriorly onto the disc; the disc lacks separate clusters of peg setae. This arrangement of peg setae is unique among the three species of the genus.

The females of *P. inexspectata* are separated from *P. monticola* by the abruptly expanded apical end of the spermatheca of the former species (fig. 107) in contrast to the gradually expanded portion near the spermathecal capsule (fig. 99). Females of *P. inexspectata* and *P. watanabei* are similar and identified by distribution and association with the male.

DESCRIPTION: Length 3.2–4.4 mm; width 1.3–1.7 mm.

Color pale to dark reddish brown with dark reddish brown to nearly black head. Pronotum with central region reddish brown to dark reddish brown and lateral, anterior, and posterior margins pale reddish brown to yellowish brown. Elytra mostly pale reddish brown with darker central region. Antennae mostly dark reddish brown, paler basally. Legs reddish brown.

Wings reduced to minute pads.

Tergite VII with minute, irregularly interrupted palisade fringe on posterior margin.

MALE: Sternite V with shallow median depression on apical two-thirds; pubescence present on basal half of depression; apical half of depression without pubescence or punctation.

Sternite VI with shallow median depression extending for most of length of segment; depression with punctation and pubescence on basal third and without punctation or pubescence on midapical two-thirds.

Sternite VII (fig. 108) with moderately deep, arcuate, median emargination of posterior margin; sternite with row of peg setae on each side of midline of posterior region; rows begin at posterior margin and curve anteromedially onto posteromedial portion of disc; posterior margin with long, spinelike seta near posterolateral end of row of peg setae; sternite with 8–12 peg setae; median surface of sternite with shallow depression reaching from posterior margin to near base; depression slightly tapered anteriorly and with scattered fine punctation and minute setae around basal and lateral margins, but region anterior to, between, and posterior to rows of peg setae devoid of punctation or fine pubescence.

Sternum VIII (fig. 101) with broad, deep, median emargination; margins of emargination widely separated apically and gradually curved medially to about basal third, then strongly convergent and narrowly separated to base; basal third of emargination tapered to rounded basal margin.

Aedeagus with parameres longer than median lobe (figs. 102, 103) as measured from apical margin of basal orifice to apex of parameres.

FEMALE: Spermathecal capsule with apical end globular and abruptly enlarged and from there tapered toward spermathecal duct; sper-

mathecal duct with several loops near capsule (figs. 105–107).

DISTRIBUTION AND HABITAT: This species is known only from Kuanshan and Peinantashan (see Smetana, 1995b: 6, sites 18 and 48) in Kaohsiung Hsien, Taiwan, where it was collected at 2080–2550 m. Specimens were found in litter and debris on the floor of mature broadleaf evergreen, mixed broadleaf evergreen, and coniferous forests.

MATERIAL EXAMINED: Thirty-five specimens: 19 males, 16 females. **Taiwan**: *Kaohsiung Hsien*: Kuanshan trail above Kaunshanchi River, 2550 m, April 21, 1992, A. Smetana, sifting fallen leaves, twigs, and humus from floor of mature broadleaf evergreen forest [T96] (holotype male, allotype, paratypes: 3 males, 3 females, ASC; 1 female, AMNH); July 22, 1993, sifting leaves, twigs, and debris from floor of mature mixed broadleaf evergreen and coniferous (*Abies*) forest [T160] (1 male, paratypes: 2 males, ASC; 1 male, AMNH). Peinantashan trail, 2500 m, July 4, 1993, A. Smetana, sifting fallen leaves and other debris from under deciduous bushes along trail [T136] (3 males, 1 female, ASC); 2390–2490 m, July 4, 1993, sifting fallen leaves and other debris from under deciduous bushes along trail [T138] (3 males, 4 females, ASC); 2080 m, July 6, 1993, sifting layers of moist fallen leaves and other debris accumulated along wall of old forest road in mature broadleaf evergreen forest [T141] (4 males, 3 females, ASC); 2450 m, May 2, 1995, sifting debris from a few moist spots on floor of very dry mature mixed forest (*Quercus*, *Pinus*, *Chamaecyparis*) [T170] (1 male, 3 females, ASC).

One specimen lacking abdominal segments VI–X was collected at 2500 m along the Peinantashan Trail and is almost certainly *P. inexspectata*.

Five males and a female were dissected for features of the genital segments and genitalia and one female was disarticulated.

Peitawopsis watanabei Herman and Smetana

Figures 109–120

Peitawopsis watanabei Herman and Smetana, 2002: 202. Type locality: Taiwan: Pingtung Hsien, Peitawushan, above Kuai-Ku Hut, 2680 m. Holotype in the Smetana Collection (ASC), to be deposited in the Muséum d'Histoire Naturelle, Genève, Switzerland.

DIAGNOSIS: Males of *Peitawopsis watanabei* are separated from those of *P. inexspectata* and *P. monticola* by the uninterrupted row of peg setae near the posterior margin of sternite VII (fig. 110).

The females of *P. watanabei* are separated from those of *P. monticola* by the abruptly enlarged apical end of the spermatheca and by the slightly coiled end of the spermathecal duct near the capsule (figs. 115, 116). Females of *P. watanabei* and *P. inexspectata* are similar and separated by the site of collection.

DESCRIPTION: Length 3.3–3.7 mm; width 1.3–1.4 mm.

Color pale to dark reddish brown. Head dark reddish brown to nearly black. Pronotum with central region dark reddish brown; lateral, anterior, and posterior margins pale reddish brown to yellowish brown. Elytra with central region dark reddish brown and with lateral and anterior margins pale reddish brown to yellowish brown. Antennae reddish brown to dark reddish brown. Legs pale reddish brown to yellowish brown.

Wings reduced to minute pads.

Tergite VII with minute, irregularly interrupted palisade fringe on posterior margin.

MALE: Sternite V with slight impression on midapical half; impression with microsetae and micropunctures.

Sternite VI with feeble, anteriorly tapering, median depression; depression nearly as long as sternite; depression with microsetae and micropunctures basally and laterally and without punctures or setae midapically.

Sternite VII (fig. 110) with moderately broad, moderately deep, arcuate median emargination of posterior margin; surface adjacent to emargination with uninterrupted row of peg setae; gap between row of peg setae and posterior margin of sternite variable; sternite with 9–16 peg setae (figs. 110, 113); spinelike seta present near lateral end of row of peg setae; sternite without cluster of peg setae on disc separated from posterior row; surface with shallow, anteriorly tapering, median depression extending anteriorly from posterior margin; depression without setae or punctures on midposterior surface, but with micropunctures

and microsetae laterally, basally, and on most of median region.

Sternum VIII (fig. 111) with broad, deep, anteriorly tapering emargination; margin of emargination broadly and shallowly sinuate and medially convergent.

Aedeagus with parameres about as long as median lobe (figs. 109, 112), as measured from apical margin of basal orifice to apex of parameres.

FEMALE: Spermathecal capsule with apical end globular and abruptly enlarged then tapered to spermathecal duct; spermathecal duct with several loops near capsule (figs. 115, 116).

DISTRIBUTION AND HABITAT: This species is known in Pingtung Hsien from Peitawushan (see Smetana, 1995b: 6, site 10) and its foothills that extend south into northern Kaohsiung Hsien (about 25 km south of site 10 in Smetana, 1995b: 6), where it was collected at elevations of 1700 to 2910 m. Specimens were found in moist leaf litter and debris and moss on the floor of broadleaf evergreen and *Abies* forests. Unlike *P. monticola*, this species ascends to the main ridge of Peitawushan and occurs there in the *Abies* forest at close to 3000 m.

MATERIAL EXAMINED: Thirty specimens: 18 males, 12 females. **Taiwan**: *Pingtung Hsien*: Taiwan: Pingtung Hsien, Peitawushan, above Kuai-Ku Hut 2680 m, 29.IV.1992, A. Smetana, sifting moist fallen leaves, moss, and other debris from small seepage in mature *Abies* forest with lush undergrowth [T106] (holotype male; paratypes: 9 males and 6 females, ASC; 3 males, 2 females, AMNH). Peitawushan, Kuai-Ku Hut, 2325 m, May 21, 1991, A. Smetana, sifting litter in forest floor depression and in small gullies in mature broadleaf evergreen forest [T88] (paratype: 1 male, ASC). Peitawushan, above Kuai-Ku Hut, 2750 m, April 29, 1992, A. Smetana, sifting fallen leaves, old vegetation, moss and various other debris in forest floor depressions and small gullies in mature broadleaf forest intermixed with conifers [T107] (paratype: 1 male, ASC). Peitawushan ridge, 2800–2910, April 28, 1992, A. Smetana, sifting of moss, twigs, and various other debris on shaded areas below groups of low *Abies* trees [T105] (paratypes: 2 males, 2 females, ASC). *Kaohsiung Hsien*: Road above Tona Forest Station, Km 16–17, 1700–1800 m, April 28, 1998, A. Smetana, sifting moist to wet fallen leaves and other debris accumulated along rock wall at edge of forest road in mature broadleaf evergreen forest [T190] (paratypes: 1 male, 2 females, ASC).

Six males and three females were dissected for features of the genital segments and genitalia; a male and female were disarticulated.

Lacvietina, new genus

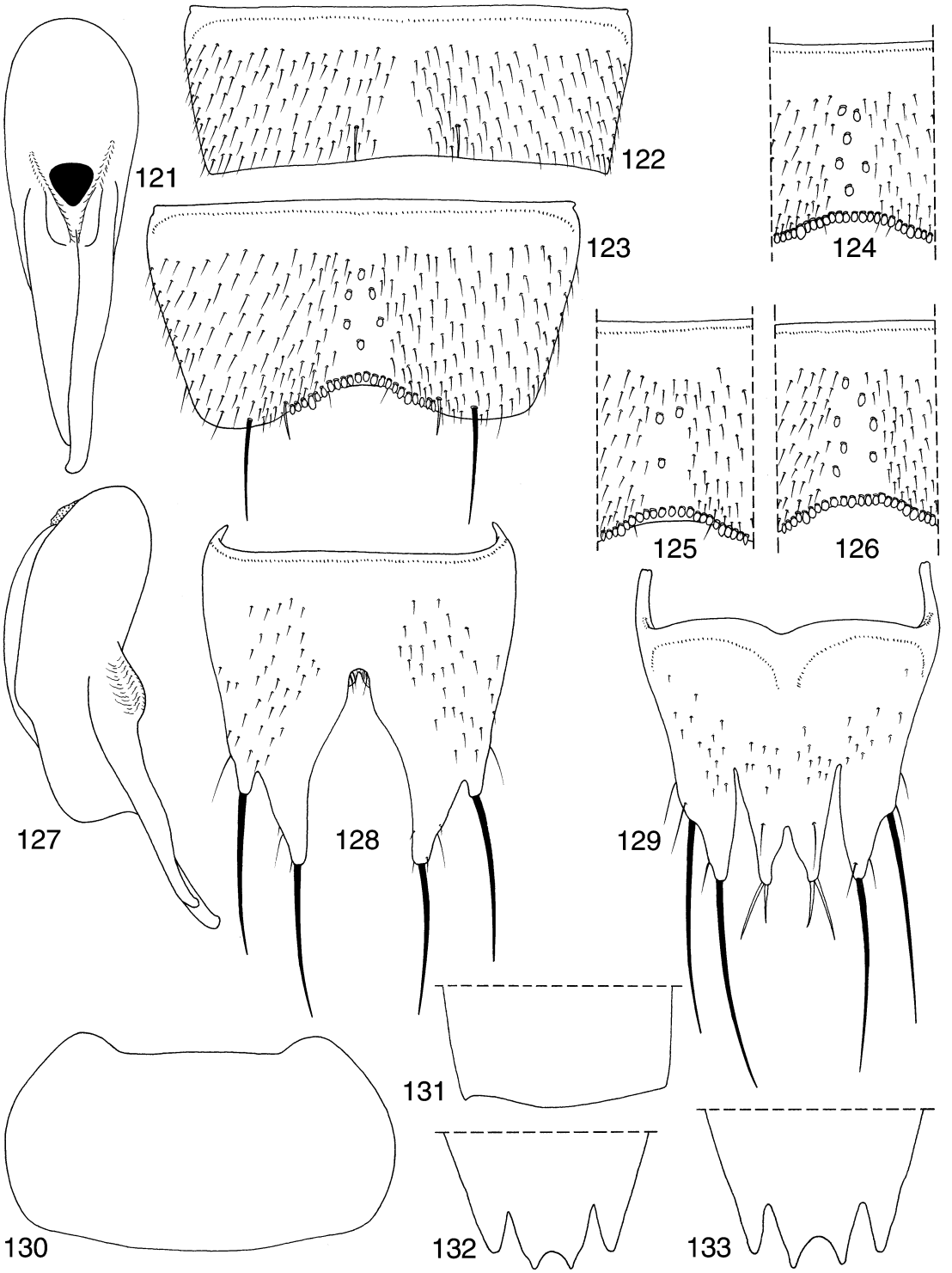
Figures 121–170, 194–203

Type species: *Lacvietina cuprina*, new species, fixed here by original designation.

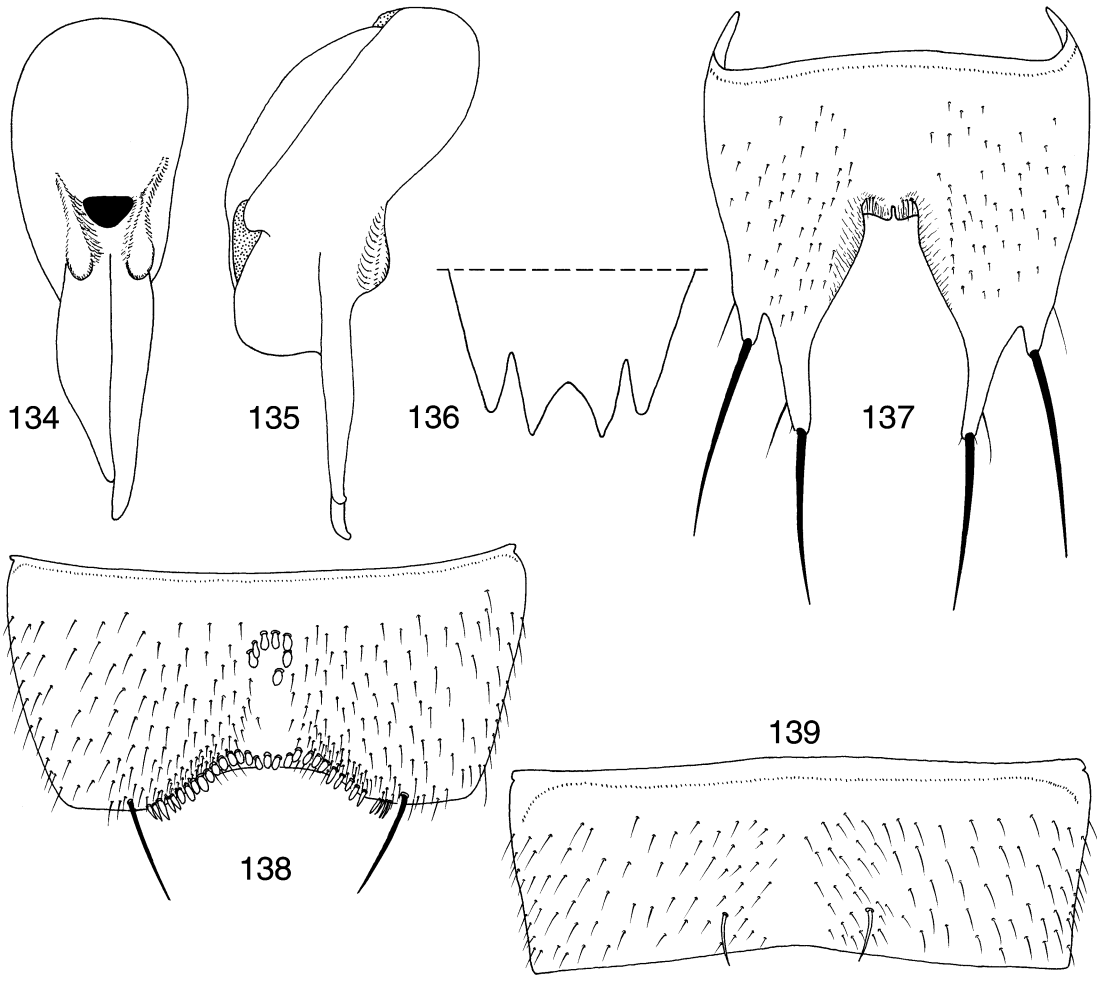
DIAGNOSIS: *Lacvietina* can be separated from all other genera of the tribe by the deep metasternal pit adjacent to the apex of the mesosternal process (figs. 146, 196, 197). The presence of a rounded ridge (fig. 194) in place of a postocular carina on the lateral side of the head and the rounded anterior and posterior angles of the pronotum (fig. 130) separate it from *Megarthropsis* and *Nepaliodes*. *Lacvietina* is distinguished from *Peitawopsis* by the convex elytra (fig. 1) and absence of a midlongitudinal groove on the vertex of the head (fig. 194).

DESCRIPTION: Length 2.7–3.7 mm; width 1.1–1.4 mm. Color dark to pale reddish brown.

Head (figs. 1, 194) with dorsum densely and coarsely punctate. Clypeus impunctate or with a few scattered punctures. Head with lateral margin moderately reflexed from antenna to near anterior margin of clypeus (fig. 194); anterior margin of clypeus not reflexed. Epistomal suture (fig. 1) present, entire, and angulate at middle; midcranial suture short and moderately to feebly developed and only visible in some specimens when cleared. Dorsum without median impression or midlongitudinal groove (fig. 194). Postocular lateral margin of head with rounded ridge extending posteromedially from eye; vertical postocular carina absent. Gular sutures widely separated. Submentum coarsely punctate. Antenna long, slender, and extending from about middle of elytra to near posterior margin; scape (fig. 194) more or less parallel-sided from near base to apex, not tapered api-



Figs. 121–133. *Lacvietina cuprina*. **121.** Aedeagus, ventral. **122.** Sternite VI, male. **123.** Sternite VII, male. **124–126.** Sternite VII, median posterior region, variation, male. **127.** Aedeagus, lateral. **128.** Sternum VIII, male. **129.** Tergum VIII, female. **130.** Pronotum (setae omitted). **131.** Elytron, apical margin, left (setae omitted). **132, 133.** Tergum VIII, apex, male (setae omitted).



Figs. 134–139. *Lacvietina aurora*. **134.** Aedeagus, ventral. **135.** Aedeagus, lateral. **136.** Tergum VIII, apex, male (setae omitted). **137.** Sternum VIII, male. **138.** Sternite VII, male. **139.** Sternite VI, male.

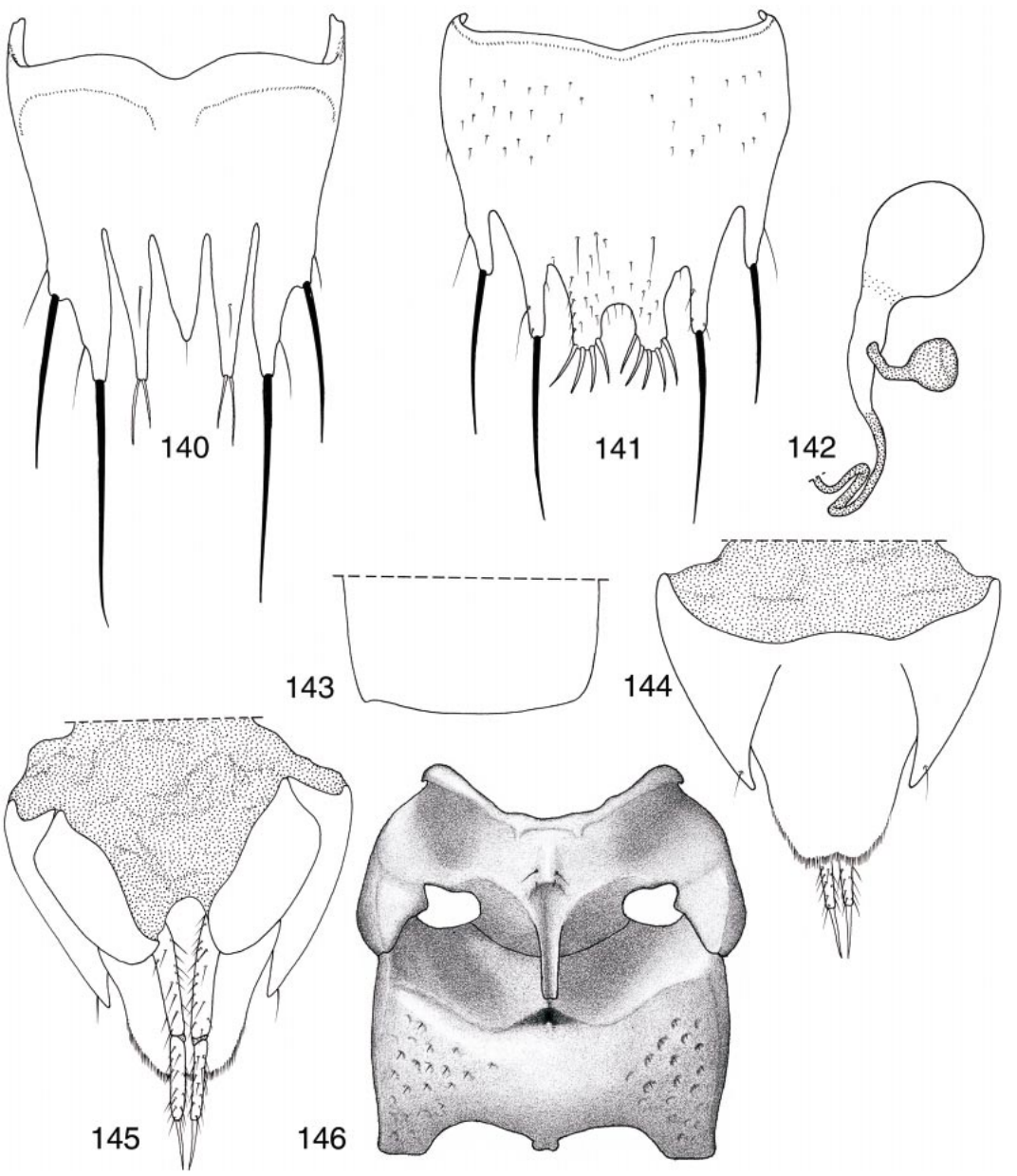
cally, and with scattered pubescence on dorsal and ventral surfaces.

Pronotum with anterior and posterior angles broadly rounded (figs. 1, 130); anterior angles produced beyond median portion of anterior margin; lateral margin evenly curved; median and lateral surfaces coarsely, densely, and evenly punctate; punctures distinct, not anastomosing; at least one species with moderately coarse, moderately dense punctation laterally and across base and with fine punctation medially and anteriorly (based on undescribed female [sp. A]).

Elytra (fig. 1) convex, moderately convex medially and strongly convex laterally; surface evenly, densely, and coarsely punctate; lateral margin narrowly reflexed and explanate; lateral margin with short, spinelike setae extending posteriorly from humeral angle; posterior margin moderately (figs. 1, 131) to slightly (fig. 143) emarginate laterally; female of one unnamed species without emargination; posterolateral angle moderately to slightly produced (figs. 131, 143). Mesosternum (fig. 146) without midlongitudinal basal carina; paramedial basal carina present and short. Metasternum with deep pit adjacent to apex of mesosternal process (figs. 146, 196, 197); circum-mesocoxal ridge moderately developed medially.

Procoxa without carina on medial surface.

MALE: Sternite VII (figs. 123, 138, 150)



Figs. 140–146. *Lacvietina aurora*. **140.** Tergum VIII, female. **141.** Sternum VIII, female. **142.** Spermatheca. **143.** Elytron, apical margin, left (setae omitted). **144.** Tergites IX and tergum X, female. **145.** Segment IX, ventral, female. **146.** Mesosternum and metasternum.

with wide emargination of posterior margin, broad median depression, and median cluster of peg setae. Tergum VIII with four apical lobes (figs. 132, 133, 136, 153).

Aedeagus (figs. 121, 134, 147) with parameres more or less straight in ventral view; left paramere (in ventral view) shorter and wider than right; median lobe with shallow groove (or depression) near middle of ventral surface of base (fig. 152).

FEMALE: Sternum VIII (figs. 141, 168) with three pairs of apical lobes; median pair

of lobes with apical, fanlike cluster of setae on each lobe. Tergum VIII with four (figs. 129, 170) or five (figs. 140, 151) apical lobes; median lobe or median pair of lobes moderately wide; lateral lobe with small secondary lobe on lateral edge.

Spermatheca (figs. 142, 170) globose apically, abruptly constricted, then tapered apically to spermathecal duct; juncture of capsule with spermathecal duct not enlarged.

DISCUSSION: Five species from Thailand, Malaysia, Vietnam, and Taiwan are known and characterized herein. A sixth species, from Indonesia, was examined but is known from only one female. It is likely that a seventh species (see below) from Thailand should be included.

The species were collected from montane regions at relatively low elevations. They were all collected from wet to very wet litter and debris. Without doubt other species will be found in southern China, Southeast Asia, and perhaps Indonesia.

Tachinus punctatissimus (Hayashi) is transferred herein to *Lacvietina*. Hayashi (1991) described the species in *Paratachinus* Blackwelder, 1952, a genus group name that was first proposed and characterized by Cameron (1932: 396) who, however, did not designate a type species, so the name was unavailable. Blackwelder (1952: 293) made the name available when he designated the type species (Herman, 2001b: 11). *Paratachinus*, originally established with two species, *Paratachinus monticola* Cameron and *Paratachinus laticollis* Cameron (a secondary homonym replaced by *Tachinus oblongopunctatus* Ullrich), is currently cited as a junior synonym of *Tachinus* (*Tachinoderus*) (Ullrich, 1975: 291; Campbell, 1988: 276; Li, 1995b: 207), but see Coiffait (1982: 39, 116; 1984: 117, 138) and Hayashi (1991: 48) who cited it as valid.

Tachinus (*Tachinoderus*) currently includes 42 species (extracted from Herman, 2001a). Based on the original descriptions of the pronotal punctation of the species in *Tachinoderus*, only *P. punctatissimus* Hayashi is reported to have the pronotum covered with coarse punctation, a characteristic feature of species in *Lacvietina*. The few species of the subgenus that were examined include *Tachinus* (*Tachinoderus*) *brunneicollis* Cameron, 1926, *T.* (*T.*) *debilis* Horn, 1877, *T.* (*T.*) *himalayicus* Cameron, 1926, and *T.* (*T.*) *monticola* Cameron, 1926; all have fine pronotal punctation and lack the metasternal pit. However, a species from Sumatra, for which I have seen only one female, has moderately coarse pronotal punctation basally and laterally and fine punctation medially and anteriorly and belongs in *Lacvietina*. Based on this specimen and on a habitus illustration by Pace (1986: fig. 10) it is likely that *Tachinus* (*Tachinoderus*) *rougemonti* Pace, 1986: 49, from Thailand, should be transferred to *Lacvietina*; that transfer must await study of the type or accurately identified specimens. Examination of other species in *Tachinus* (*Tachinoderus*) may result in a few additional reassignments.

ETYMOLOGY: The genus is named after the Lac Viet, an ancient group of people in Vietnam. The gender of the name is feminine.

KEY TO SPECIES OF *LACVIETINA*

1. Sternite VII (fig. 123) emarginate (males) 2
— Sternite VII truncate (females) 6
2(1). Sternite VII (fig. 150) with large cluster (ca. 25–30) of peg setae on median surface of disc . . . . . *L. copiosa*, new species
— Sternite VII (figs. 123, 138) with smaller cluster (ca. 3–13) of peg setae on median surface of disc 3
3(2). Sternite V (fig. 160) with pair of posteriorly diverging carinae medially . . . . . *L. paricosta*, new species
— Sternite V without carinae 4
4(3). Sternite VII (fig. 162) with posterior row of peg setae separated medially . . . . . *L. punctatissima* (Hayashi)
— Sternite VII (figs. 123, 138) with posterior row of peg setae continuous, not interrupted medially 5
5(4). Sternite VII (fig. 123) with row of peg setae evenly arranged along posterior margin . . . . . *L. cuprina*, new species
— Sternite VII (fig. 138) with row of peg setae sinuously arranged along posterior margin . . . . . *L. aurora*, new species
6(1). Tergum VIII (figs. 140, 151) with five apical lobes 7
— Tergum VIII (figs. 129, 171) with four apical lobes 8
7(6). Tergite VII with strong ground sculpturing between punctures; surface between punctures shining dully . . . . . *L. copiosa*, new species

— Tergite VII without or with feeble ground sculpturing between punctures, surface polished and strongly shining . . . . . *L. aurora*, new species

8(6). Elytral epipleuron with two rows of punctures, one along ventral margin and another along middle (fig. 195) . . . . . *L. cuprina*, new species

— Elytral epipleuron with one row of punctures along ventral margin . . . . . *L. punctatissima* (Hayashi)

Description of Species

Lacvietina cuprina, new species

Figures 121–133, 194–203

HOLOTYPE: Male. ''VIETNAM: Hatinh Pr., Raò An 13 km W Huang Son, rt. 8 7 km S Nuòc Sôt village 18°21′N, 105°15′E, 350 m V-3–1998, L. Herman, litter nr. drying forest stream''. On long-term loan to the American Museum of Natural History (AMNH), to be deposited in the Institute of Ecology and Biological Resources, Hanoi, Vietnam (IEBR).

PARATYPES: Sixty-eight males, 46 females. Same data as holotype (20 males, 10 females, AMNH; 15 males, 12 females, IEBR; 5 males, 4 females, MHNG); same locality and collector as holotype: V-2–1998, 450 m, litter near seep along river (3 males, 2 females, AMNH; 3 males, 1 female, IEBR); IV-21–1998, 220 m, decaying litter near stream (3 females, AMNH); IV-26–1998, 220 m, litter near stream (2 females, AMNH); IV-30–1998, 270 m, litter near stream (1 female, AMNH); IV-25–1998, 1150 m, litter near drying stream (2 males, 2 females, IEBR), IV-28–1998 (4 males, 4 females, AMNH), IV-20–1998 (2 males, 1 female, AMNH). Vietnam: Quang Binh Pr., SW of Chalo, nr. Laos Bdr., 17°40′N, 105°46′E, 400 m, IV-14, 15–1998, L. Herman (1 male, AMNH). Vietnam: Quang Nam Prov., 25 km (by air) S.W. Tra My, 940 m, IV-12–1999, 15°39′N, 108°02′E, flood debris, L. Herman (4 males, 1 female, AMNH, 3 males, IEBR); 15°12′14″N, 108°02′13″E, 850 m, IV-14–1999 (3 males, 2 females, AMNH; 3 males, 1 female, IEBR). Paratypes followed by the abbreviation ''IEBR'' are on long-term to the American Museum (AMNH) and will eventually be deposited in the Institute of Ecology and Biological Resources (IEBR).

DIAGNOSIS: The males of *Lacvietina cuprina* can be separated from their congeners by the small cluster of 3–7 peg setae on the disc of sternite VII, the evenly curved, uninterrupted row of peg setae on the posterior margin of sternite VII (figs. 123–126), the shallow, dully shining depression of sternite VI, and the absence of carinae on sternite V. The base of the emargination of sternum VIII (fig. 128) is rounded and narrower than in the other species (figs. 137, 154, 157, 161).

Females of *L. cuprina* are separated from those of the other species by the presence of a row of punctures along the ventral margin of the elytral epipleuron and another along the length of the middle (fig. 195); the other species have a row of punctures adjacent to the ventral margin only. Tergum VIII of *L. cuprina* is comprised of four apical lobes, whereas both *L. aurora* and *L. copiosa* have five (figs. 140, 151); *L. punctatissima* also has four apical lobes (fig. 171).

DESCRIPTION: Length 2.7–3.4 mm; width 1.1–1.3 mm. Color pale to dark reddish brown. Head darker than remainder of body, elytra darker than pronotum and abdomen. Pronotum with dark disc and paler margins. Abdomen with segments VII and VIII darker than or concolorous with preceding segments. Antennae and legs reddish brown.

Pronotal punctation extending to anterior margin and without lateroapical impunctate, polished spot mesad of anterolateral angle.

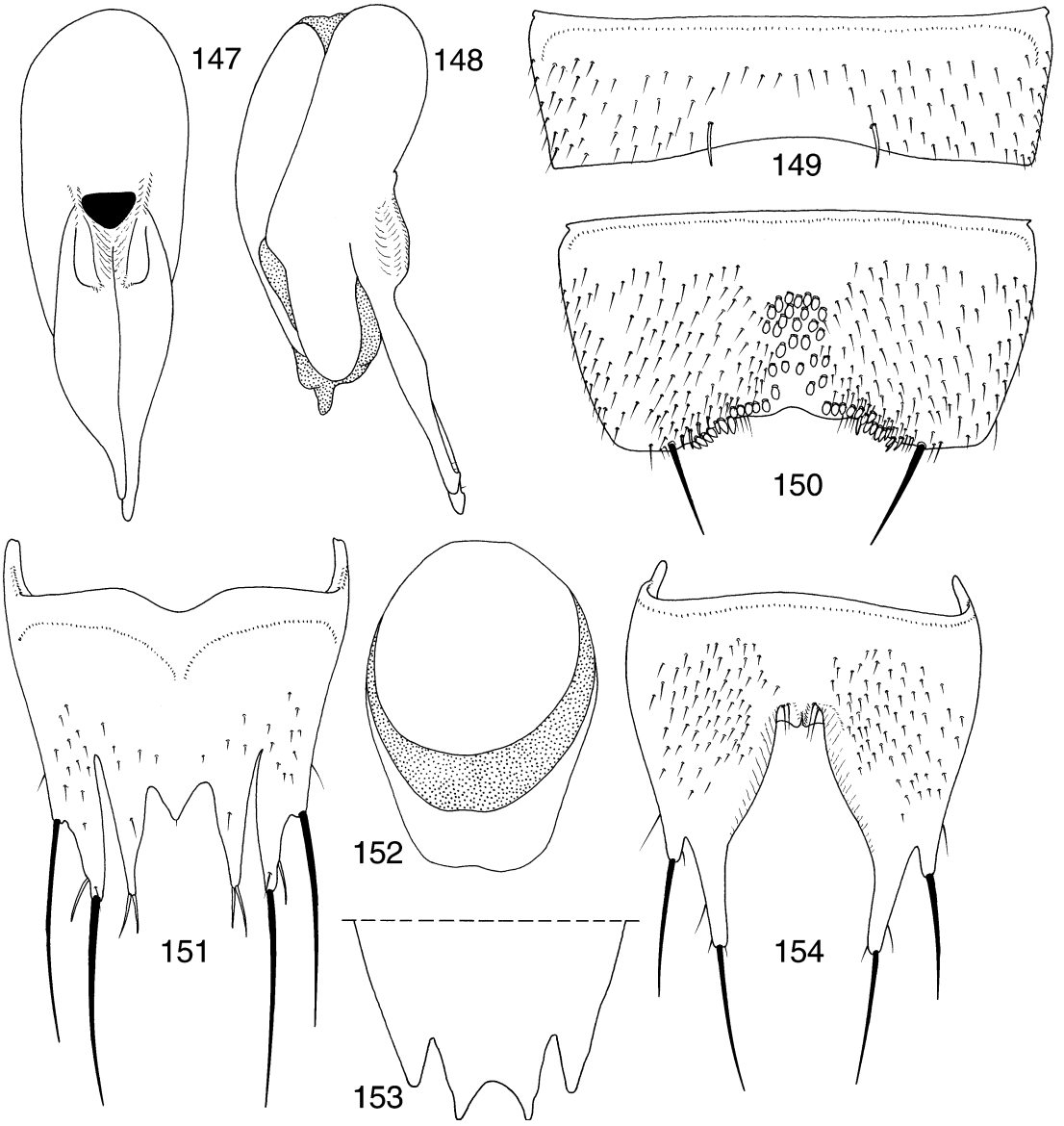
Elytra with posterolateral angle moderately to slightly produced (fig. 131); epipleuron (fig. 195) with two rows of punctures, one near ventral margin and second on midlongitudinal surface. Wings present and fully developed.

Tergite VII with moderately strong ground sculpturing between punctures; surface dully shining.

MALE: Sternite V with shallow median depression on apical half; depression tapered basally; surface of depression with ground sculpturing and with setae and punctation basally and laterally but absent midapically; posterior margin with broad, shallow median emargination.

Sternite VI (fig. 122) with shallow median depression; depression nearly as long as sternite; surface of depression with ground sculpturing and without punctures or setae except basally and laterally; posterior margin of sternite with broad shallow median emargination.

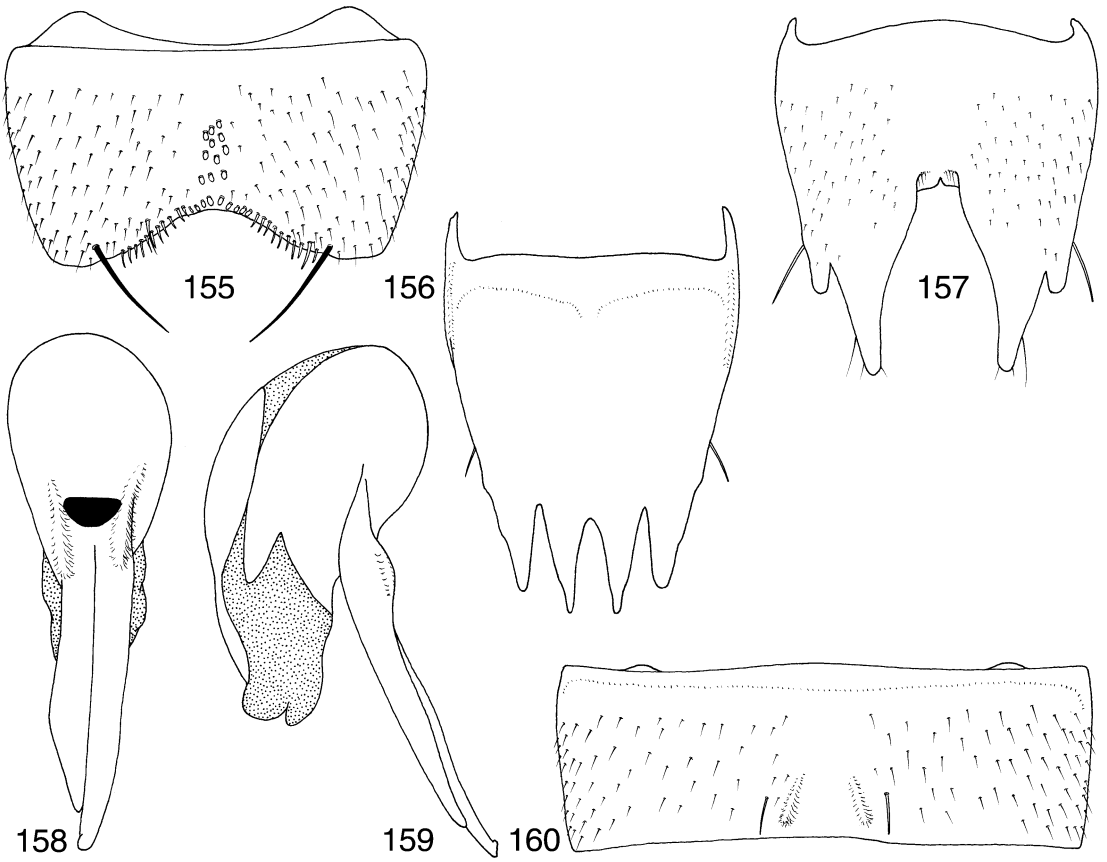
Sternite VII (fig. 123) with shallow me-



Figs. 147–154. *Lacvietina copiosa*. **147.** Aedeagus, ventral. **148.** Aedeagus, lateral. **149.** Sternite VI, male. **150.** Sternite VII, male. **151.** Tergum VIII, female. **152.** Aedeagus, anterior end, cross section. **153.** Tergum VIII, apex, male (setae omitted). **154.** Sternum VIII, male.

dian depression on apical three-fifths; depression elliptical and longer than wide; depression with ground sculpturing and with small group of 3–7 peg setae (figs. 123–126) on disc; posterior margin with broad, evenly curved, moderately deep emargination; surface adjacent to emargination with evenly curved row of peg setae bordered laterally by long, stout, darkly pigmented seta.

Sternum VIII (fig. 128) with broad, deep median emargination; margins of emargination moderately sinuate and converging to base and with surface adjacent to basal two-fifths beveled; basal margin narrowly round-



Figs. 155–160. *Lacvietina paricosta*. **155.** Sternite VII, male. **156.** Tergum VIII, male (setae omitted). **157.** Sternum VIII, male (apical setae missing). **158.** Aedeagus, ventral. **159.** Aedeagus, lateral. **160.** Sternite V, male.

ed; sternum with short, curved, medially notched ridge on inner surface adjacent to base of sternal emargination.

Tergum VIII (figs. 132, 133) with shallow to moderately deep, rounded emargination between median pair of apical lobes; emargination wider than deep.

Aedeagus asymmetrical (figs. 121, 127); parameres with lateral margins slightly sinuate, right (in ventral view) more sinuate than left; left paramere (in ventral view) shorter and slightly wider than right; left paramere slightly curved medially and slightly curved ventrally at apex; right paramere more strongly curved medially and ventrally near apex.

FEMALE: Tergum VIII (fig. 129) with four apical lobes.

DISTRIBUTION AND HABITAT: This species is known from the northern Vietnamese provinces of Hatinh, Quang Binh, and Quang Nam. It was collected at elevations of 220–1150 m from wet leaf litter near streams in Hatinh Province and from flood debris in Quang Nam Province.

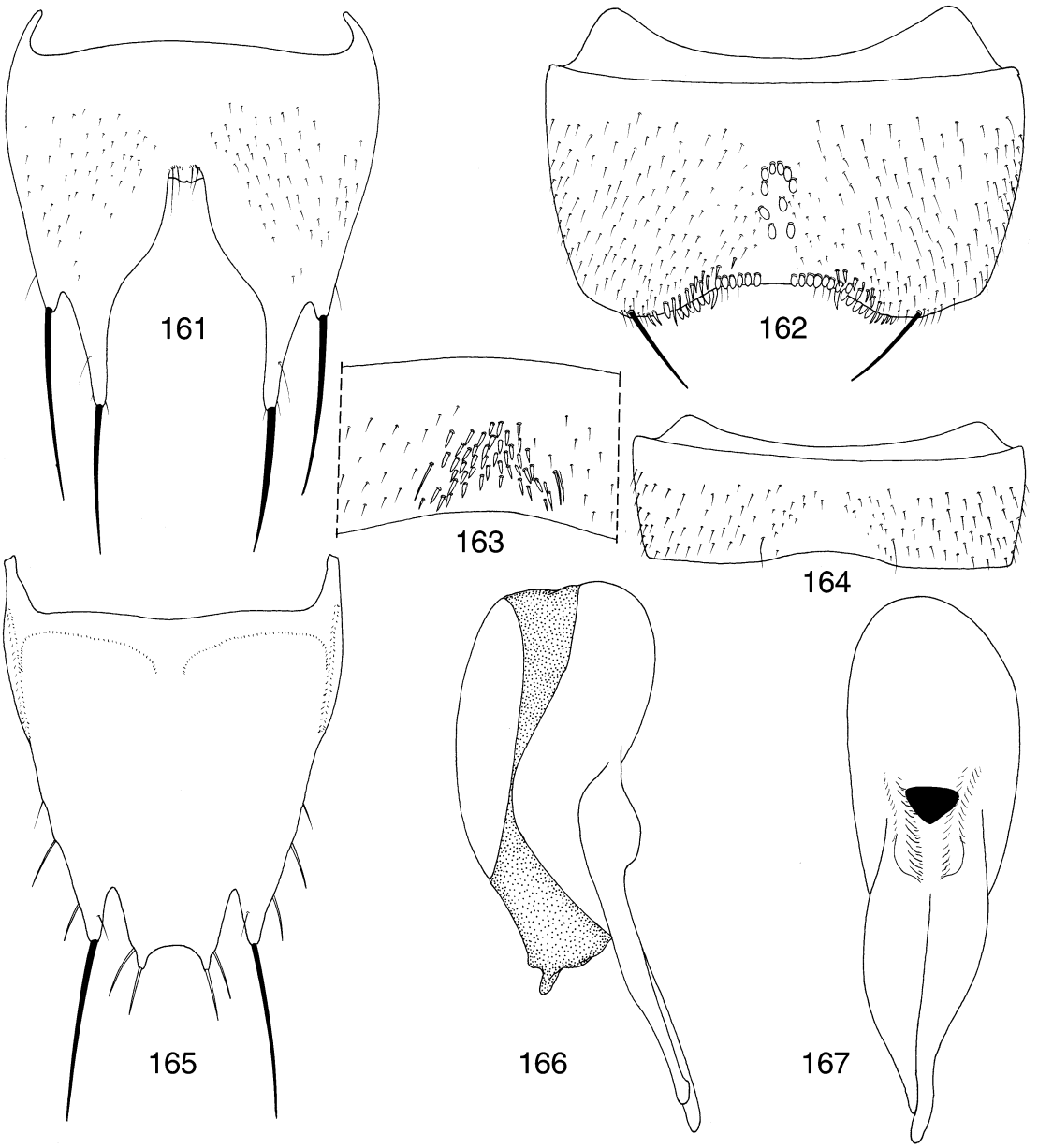
ETYMOLOGY: The name of this species is from the Latin for coppery (*cuprinus*).

MATERIAL EXAMINED: One hundred fifteen specimens. The holotype and 68 male and 46 female paratypes. Six males were dissected for the genitalic features and a male and female were disarticulated.

Lacvietina aurora, new species

Figures 134–146

HOLOTYPE: Male. ''VIETNAM: Hatinh Pr., Raò An 13 km W Huang Son, rt. 8 7 km S Nuòc Sôt village 18°21′N, 105°15′E, 1150 m IV-25–



Figs. 161–167. *Lacvietina punctatissima*. **161.** Sternum VIII, male. **162.** Sternite VII, male. **163.** Sternite V, median region, male. **164.** Sternite VI, male. **165.** Sternum VIII, male. **166.** Aedeagus, lateral. **167.** Aedeagus, ventral.

1998, L. Herman, litter nr. drying stream''. On long-term loan to the American Museum of Natural History (AMNH), to be deposited in the Institute of Ecology and Biological Resources, Hanoi, Vietnam (IEBR).

PARATYPES: Seven males, 5 females. Same data as holotype (2 males, 1 female, AMNH; 2 males, 1 female, IEBR; 1 male, MHNG); same locality and collector as holotype: IV-20–1998 (1 male, AMNH; 1 male, IEBR); IV-28–1998 (2 females, AMNH; 1 female, IEBR). Paratypes followed by the abbreviation ''IEBR'' are on long-

term to the American Museum (AMNH) and will eventually be deposited in the Institute of Ecology and Biological Resources (IEBR).

DIAGNOSIS: The males of *Lacvietina aurora* are distinguished from those of the other two species of the genus by the sinuous row of peg setae near the posterior margin of sternite VII (fig. 138), the evenly curved emargination of sternite VII (fig. 138), the small cluster of 7–9 peg setae on the midbasal portion of sternite VII, the polished median depression of sternite VI, and the absence of carinae on sternite V.

Females of *L. aurora* are separated from *L. cuprina* by the single row of punctures on the elytral epipleuron and the five apical lobes of tergum VIII (fig. 140), from *L. copiosa* and *L. punctatissima* (and probably *L. paricosta*) by the strongly shining interpunctational surface of tergite VII, and from *L. punctatissima* by the presence of five apical lobes of tergum VIII (fig. 140).

DESCRIPTION: Length 3.0–3.5 mm; width 1.1–1.4 mm. Body pale to dark reddish brown. Head darker than remainder of body, elytra darker than pronotum and abdomen. Pronotum with dark disc and paler margins. Antennae and legs reddish brown.

Pronotal punctation extending to anterior margin and without lateroapical impunctate spot mesad of anterolateral angle, but some individuals with slightly less dense punctation on small lateroapical spot.

Elytra with posterolateral angle moderately to slightly (fig. 143) produced; epipleuron with row of punctures near ventral edge and without row of punctures in median region. Wings present and fully developed.

Tergite VII without ground sculpturing between punctures or feeble if present; surface polished.

MALE: Sternite V with shallow median depression on apical fifth; depression increasingly deep and wide apically; basal and lateral margins of depression with cluster of short setae; midapical surface of depression polished; posterior margin of sternite with shallow median emargination.

Sternite VI (fig. 139) with moderately deep median depression on apical three-fourths; depression broad, about as wide as long; depression polished and without setae, punctation, or ground sculpturing; depression abruptly demarcated basally; lateral margins of depression slightly curved but approximately parallel to one another; posterior margin of sternite with broad, shallow emargination.

Sternite VII (fig. 138) with moderately deep median depression on apical two-thirds; depression broad, slightly longer than wide and ovoid; surface of depression shining, with patch of minute setae and punctures on lateral portion, and with small basal cluster of 7–9 peg setae; posterior margin of sternite with broad, deep, evenly curved emargination; emargination bordered by sinuous row of peg setae; row of peg setae bordered laterally by long, stout darkly pigmented seta.

Sternum VIII (fig. 137) with broad, deep emargination; lateral margins of emargination sinuate and converging to base and with surface adjacent to basal third beveled; basal margin of emargination truncate, beveled, and with small median notch.

Tergum VIII (fig. 136) with moderately deep, rounded emargination between median pair of apical lobes; emargination slightly wider than deep.

Aedeagus (figs. 134, 135) asymmetrical; parameres with lateral margins sinuously curved; left paramere (in ventral view) wider and shorter than right and with apical portion straight; apex of right slightly curved medially and with apex slightly bent ventrally.

FEMALE: Tergum VIII (fig. 140) with five lobes on posterior margin; median lobe tapered apically and with small seta at apex.

DISTRIBUTION AND HABITAT: The species is known from Hatinh Province in northern Vietnam at 1150 m. It was collected near the end of the dry season from leaf litter near a slow flowing, drying stream.

ETYMOLOGY: The name of this species is from the Latin for dawn (*aurora*) and refers to the fact that to reach the site of collection I had to leave camp before sunrise to have a sufficient amount of time to collect.

MATERIAL EXAMINED: Thirteen specimens. Male holotype and 7 male and 5 female paratypes.

Three males and one female were dissected for genitalic features. One male was disarticulated.

Lacvietina copiosa, new species
Figures 147–154

HOLOTYPE: Male. ''VIETNAM: Hatinh Pr., Raò An 13 km W Huang Son, rt. 8 7 km S Nuòc Sôt village 18°21′N, 105°15′E, 220 m IV-26–1998, litter near stream, L. Herman collector''. On long-term loan to the American Museum of Natural History (AMNH), to be deposited in the Institute of Ecology and Biological Resources, Hanoi, Vietnam (IEBR).

PARATYPES: Thirty-six males, 39 females. Same data as holotype (2 males, 3 females, AMNH). Same locality and collector as holotype: 350 m, litter near drying forest stream, V-3–1998 (5 males, 6 females, AMNH; 4 males, 5 females, IEBR; 2 males, 2 females, MHNG); 300–350 m, litter near forest stream, V-1–1998 (1 male, 2 females, AMNH; 1 male, 3 females, IEBR); 450 m, litter near seep along river, V-2–1998 (1 male, 1 female, AMNH; 1 male, IEBR); 1150 m, IV-28–1998 (1 male, 1 female, AMNH; 2 males, IEBR); IV-25–1998, 1150 m, litter nr. drying stream (1 male, AMNH). Vietnam: Quang Nam Prov.: 25 km (by air) S.W. Tra My, 940 m, IV-12–1999, 15°39′N, 108°02′E, flood debris, L. Herman (4 males, 1 females, AMNH; 5 males, 2 females, IEBR; 2 males, 2 females, MHNG); 15°12′14″N, 108°02′13″E, 850 m, IV-14–1999 (2 males, 6 females, AMNH; 2 males, 5 females, MHNG). Paratypes followed by the abbreviation ''IEBR'' are on long-term to the American Museum (AMNH) and will eventually be deposited in the Institute of Ecology and Biological Resources (IEBR).

DIAGNOSIS: The males of *Lacvietina copiosa* can be separated from those of the other four species by the large cluster of 26–30 peg setae on the disc of sternite VII (fig. 150), the medially interrupted row of peg setae along the posterior margin of sternite VII (fig. 150), and the wide parameres (fig. 147).

Females can be separated from those of the other species by the single row of punctures on the elytral epipleuron and the strong interpunctational ground sculpturing of tergum VII; the five apical lobes of tergum VIII (fig. 151) will separate it from *L. cuprina* (fig. 129) and *L. punctatissima* (fig. 171).

DESCRIPTION: Length 3.1–3.7 mm; width 1.3–1.4 mm. Body dark to pale reddish brown. Head darker than remainder of body, elytra darker than pronotum and abdomen. Pronotum with dark disc and paler margins. Antennae and legs reddish brown.

Pronotum with small to moderately large lateroapical impunctate, polished spot mesad of anterolateral angle; spots separated or connected by narrow to feebly developed, impunctate band.

Elytra with posterolateral angle moderately to slightly produced; epipleuron with row of punctures near ventral margin and without row of punctures in median region. Wings present and fully developed.

Tergite VII with strong ground sculpturing between punctures; surface shining dully.

MALE: Sternite V with moderately deep, midapical depression; depression with cluster of short dense setae medially and basally, but polished and without setae midapically; posterior margin with shallow median emargination.

Sternite VI (fig. 149) with broad, deep, polished, median depression; depression without setae, punctures, or ground sculpturing; depression abruptly demarcated basally; width of depression about twice length; lateral margins of depression diverging posteriorly; posterior margin broadly and shallowly emarginate.

Sternite VII (fig. 150) with broad, moderately deep, median depression; depression slightly longer than wide; surface of depression glabrous midapically and with remainder shining dully; depression with dense cluster of 26–30 peg setae; cluster of peg setae denser basally than apically; cluster of peg setae on posteriorly sloping plateau; sternite with irregular row of peg setae adjacent to posterior margin; apical row of peg setae separated medially and bordered laterally by long, darkly pigmented spinelike seta; posterior margin with broad, moderately deep, sinuate emargination; emargination as wide as median depression and with middle more deeply emarginate; median third of posterior margin without setae, polished, and more lightly sclerotized.

Sternum VIII (fig. 154) with broad, deep median emargination; lateral margin of emargination sinuously curved; emargination narrower basally than apically; surface of sternum adjacent to basal half of emargination slightly beveled and shallowly impressed; base of emargination moderately beveled, shallowly curved, and with pair of setae on each side of midline; base of emargination more or less truncate, and with small, median notch.

Tergum VIII (fig. 153) with moderately deep, rounded emargination between median pair of apical lobes; emargination wider than deep.

Aedeagus asymmetrical (figs. 147, 148); parameres each with small, subapical process on ventral surface (viewed laterally); lateral margins sinuously curved; left paramere (in ventral view) wider and shorter than right; apex of left paramere nearly straight; apex of right paramere curved medially.

FEMALE: Tergum VIII (fig. 151) with five lobes on posterior margin; median process short or long, tapered apically, and with small seta at apex.

DISTRIBUTION AND HABITAT: This species is known from the northern Vietnamese provinces of Hatinh and, farther to the south, Quang Nam. It was collected at elevations of 220–940 m from wet leaf litter near streams in Hatinh Province and from flood debris in Quang Nam Province.

ETYMOLOGY: The name of this species is from the Latin for furnished abundantly (*copiosus*) and refers to the large number of peg setae on sternite VII of the males.

DISCUSSION: Some males may have somewhat fewer or somewhat more peg setae on sternite VII than indicated in the description. The numbers in the description are based on a sampling of the males; no attempt was made to count the peg setae on all the males examined. The point is that *L. copiosa* has significantly more peg setae than the other species.

MATERIAL EXAMINED: Seventy-six specimens. Male holotype and 36 male and 39 female paratypes.

Four males and one female were dissected for genitalic features and a male and female were disarticulated.

Lacvietina paricosta, new species

Figures 155–160

HOLOTYPE: Male. ''Thailand, Chiangmai Doi Yuthep [= Suthep?], 1500 m 13.11.1995 leg. P. Wunderle''//''Paratachinus aurora Herm. det. M. Schülke, 2002''. Specimen missing right antenna. Deposited in collection of Michael Schülke (MSC).

PARATYPE: 1 male. Malaysia: Cameron Highl. Gn. Jasar, 1400–1600 m, 6.IV.1990, leg. A. Riedel (1 male, MSC).

DIAGNOSIS: The males of this species can be separated easily from the others of the genus by the pair of posteriorly diverging, medial carinae on sternite V (fig. 160) and the deep incision between the median pair of lobes of tergum VIII (fig. 156). The parameres of *L. paricosta* (fig. 158) are more slender than are those of *L. aurora* (fig. 134) and there are fewer peg setae along the posterior margin of sternite VII (fig. 155) than for *L. aurora* (fig. 138) and *L. cuprina* (fig. 123) and fewer medial peg setae in *L. paricosta* (fig. 155) than *L. copiosa* (fig. 150).

DESCRIPTION: Length 3.5 mm; width 1.2 mm. Color reddish brown. Head darker than remainder of body. Pronotum with darker reddish brown median region and pale reddish brown to yellowish brown lateral and basal margins. Abdominal segments darker basally than apically.

Pronotum with moderately large, impunctate, polished spot adjacent to anterior margin and mesad of anterolateral angle; impunctate spots connected by similarly impunctate and polished narrow band along anterior margin.

Elytra with posterolateral angle moderately strongly to weakly produced; epipleuron with one row of punctures adjacent to ventral edge. Wings fully developed. Tergum with moderately strong ground sculpturing between punctures; surface dully shining.

MALE: Sternite V (fig. 160) with medial pair of posteriorly diverging carinae; carinae larger apically than basally; median region without punctures or setae, but with cluster of minute, stout, cuticular processes between and at base of carinae (not shown in figure and visible only at high magnification of compound microscope; visible when viewed in glycerine with stereo microscope as pale spots); posterior margin feebly emarginate.

Sternite VI with broad, shallow median depression; depression nearly as long as segment and about a quarter of width; depression without punctures or setae on most of surface but with one stout seta near lateroapical margin; posterior margin feebly emarginate.

Sternite VII (fig. 155) with broad, shallow, indistinctly margined, median depression; depression with weak ground sculpturing and small median cluster of 11–12 peg setae; posterior margin with broad, evenly curved,

moderately deep emargination; emargination with row of peg setae medially; peg setae of posterior margin separated, not contiguous; peg seta of posterior margin bordered laterally by row of short setae; lateral edge of row of setae and peg setae marked by long, stout, darkly pigmented seta.

Sternum VIII (fig. 156) with broad, deep median emargination; margins of emargination strongly sinuate and converging to base; surface adjacent to basal fifth of emargination narrowly beveled; basal margin broad, truncate, beveled, and medially notched.

Tergum VIII (fig. 156) with deep emargination between median pair of lobes; emargination much deeper than wide.

Aedeagus (figs. 158, 159) asymmetrical; parameres with lateral margins moderately sinuate; right paramere (in ventral view) less strongly sinuate than left; left paramere (in ventral view) shorter and wider than right.

FEMALE: Unknown.

DISTRIBUTION AND HABITAT: The species is known from Cameron Highlands in West Malaysia and the Chiang Mai region of Thailand.

ETYMOLOGY: The name of this species is from the Latin for equal (*par*) and rib (*costa*) and refers to the pair of ridges or carinae on sternite V of the males.

MATERIAL EXAMINED: Two specimens. Male holotype and paratype.

Both males were dissected for abdominal and genitalic features. No specimens were disarticulated.

Lacvietina punctatissima (Hayashi), **new combination**

Figures 161–170

Paratachinus punctatissimus Hayashi, 1991: 48. Type locality: Taiwan: Taipei Hsien, Mt. Yangming. Holotype, female, deposited in collection of T. Shibata; not examined.

Tachinus punctatissimus (Hayashi): Herman, 2001a: 978.

DIAGNOSIS: The pronotum of *L. punctatissima* has a moderately large, polished, impunctate spot adjacent to the anterior margin near the anterolateral angle. Only *L. copiosa* has a similar, but smaller spot; the pronotal punctation of *L. cuprina* and *L. aurora* reaches the anterior margin. The males of *L. copiosa* have a large cluster of peg setae on the disc of sternite VII (fig. 150) and those of *L. punctatissima* have a small cluster (fig. 162). Other salient features of the males of *L. punctatissima* include the even, medially separated marginal row of peg of sternite VII (fig. 162), and the broad, moderately deep, polished depression on sternite VI. *Lacvietina punctatissima*, with one row of punctures near the ventral edge of the elytral epipleuron, is separated from *L. cuprina*, which has two rows, one near the ventral margin and one along the length of the middle (fig. 195).

The females of *L. punctatissima* have four apical lobes on sternite VIII (fig. 170) and those of *L. copiosa* (fig. 151) and *L. aurora* (fig. 140) have five.

DESCRIPTION: Length 3.3–3.6 mm; width 1.3 mm. Color reddish brown to dark reddish brown. Head darker than remainder of body, elytra darker than abdomen and about as dark as median portion of pronotum. Pronotum with dark disc and paler margins. Abdomen evenly pigmented.

Pronotum with moderately large, impunctate, polished spot adjacent to anterior margin and mesad of anterolateral angle; impunctate spots connected by similarly impunctate and polished narrow band along anterior margin.

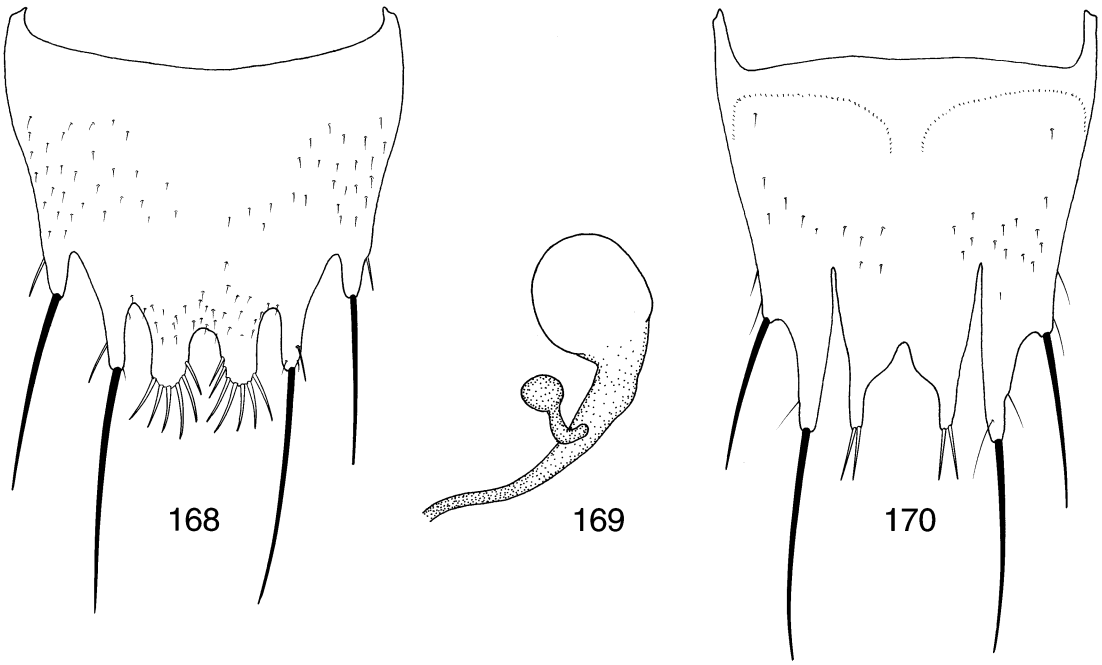
Elytra with posterolateral angle moderately strongly to weakly produced; epipleuron with one row of punctures adjacent to ventral edge. Wings fully developed.

Tergum VII with moderately strong ground sculpturing between punctures; surface dully shining.

MALE: Sternite V (fig. 163) with arc-shaped median depression; depression about half of length and about one-quarter of width of sternite; basal and medial portion of depression with dense cluster of small, spiniform setae; apical edge of depression strongly shining and without setae; posterior margin with broad, shallow emargination.

Sternite VI (fig. 164) with broad, curved median depression; depression about two-thirds of length and about one-third of width of sternite; depression with minute setae and punctures along perimeter but absent medially and with long seta near lateroapical margin; posterior margin with broad, shallow emargination.

Sternite VII (fig. 162) with broad, shallow,



Figs. 168–170. *Lacvietina punctatissima*. **168.** Sternum VIII, female. **169.** Spermatheca. **170.** Tergum VIII, female.

indistinctly margined, median depression; depression with weak ground sculpturing, scattered minute setae, and small, median cluster of 7–13 peg setae; posterior margin with broad, slightly sinuate, moderately deep emargination; posterior margin with row of medially separated peg setae in emargination; lateral edge of cluster of peg setae marked by long, stout, darkly pigmented seta.

Sternum VIII (fig. 161) with broad, deep median emargination; margins of emargination strongly sinuate and converging to base and with surface adjacent to basal two-thirds beveled; basal margin broad, truncate, beveled, and medially notched.

Tergum VIII (fig. 165) with shallow emargination between median pair of apical lobes; emargination wider than deep.

Aedeagus (figs. 166, 167) asymmetrical; parameres with lateral margins strongly sinuate; right paramere (in ventral view) more strongly sinuate than left; left paramere (in ventral view) shorter and wider than right.

FEMALE: Tergum VIII (fig. 170) with four apical lobes.

DISCUSSION: Hayashi (1991) based his description of this species on one female and placed it in *Paratachinus* Blackwelder, 1952. I did not examine the type, but the characters published by Hayashi (1991), including the glabrous spots on the anterior margin of the pronotum and features of the tergum and sternum VIII, are shared by the females studied in the present work. The males examined herein comprise one species and the males and females share features of the distribution of the pronotal punctation, so I conclude they are conspecific. In addition to the coarse cephalic, pronotal, and elytral punctation, specimens of *P. punctatissimus* have a weakly reflexed anterolateral margin of the head and, most importantly, a deep metasternal pit (see fig. 146); these features support its placement in *Lacvietina*, and it is so transferred herein. The postocular ridge is obsolete to poorly developed and evident as a sharper curve in the even curvature from the dorsal surface ventrally.

DISTRIBUTION AND HABITAT: *Lacvietina punctatissima* (Hayashi) is restricted to Taiwan, where it has been collected in five Hsiens, four in the north (Taitung, Ilan, Nan-

tou, and Taipei) and one in the south (Kaohsiung). The species has been collected at elevations of 550–1800 m. Most (perhaps all) of the specimens were collected from plant debris in wet to very wet habitats, both near flowing water and from moist spots on the forest floor. The species has been collected along with species of such wet-habitat genera as *Stenus*, *Dianous*, *Derops*, and *Atanygnathus*.

MATERIAL EXAMINED: Thirty-five specimens: 15 males, 20 females. **Taiwan:** *Ilan Hsien*: Shen-Mi Lake, 24°22′43″N, 121°44′12″E, 1110 m, 10.V.1995, A. Smetana, sifting leaflitter and other moist debris under shrubs/trees near lake [T177] (7 females, ASC). [Hsien cited as ''Illan'']: Near Chihtuan, July 23, 1978, Y. Shibata leg. (1 male, CNC); July 24, 1979, Y. Shibata leg. (1 female, CNC). *Kaohsiung [Hsien]*: Tengshih, 1400 m, 21–23.VII.2000, leg. H. Sugaya (1 male, 1 female, MSC); Tengchih, 1400 m, 21–23.VII.2000, leg. H. Sugaya (1 male, MSC). *Nantou [Hsien]*: Chosen-lintao, 1800 m, 11.X.1998, leg. H. Sugaya (2 males, 1 female, MSC); Tehuashe, 900 m, 25.X.2001, H. Sugaya leg. (1 male, MSC). *Taitung Hsien*: Hsinkangshan above Chengkang, 750 m, 18.IV.1998, A. Smetana, sifting moist plant debris along edges of abandoned forest road in subtropical, mostly broadleaf evergreen forest [T182] (2 males, 5 females, ASC); 800 m, 17.IV.1998, A. Smetana, Lise Robillard, sifting of wet plant debris at base of rock wall over which thin layer of water was running [T180] (1 male, 1 female, ASC); 550–600 m, 22.IV.1998, A. Smetana, sifting of soaking wet plant debris accumulated at base of dripping wet rock wall and collected together with *Atanygnathus* sp. [T187] (2 males, 1 female, ASC); 750 m, 21.IV.1998, A. Smetana, sifting of moist plant debris along edges of abandoned forest road in subtropical, mostly broadleaf evergreen forest [T185] (1 female, ASC); 800 m, 26.IV.95, A. Smetana, sifting moist to wet debris along edges of small creek [T167] (1 male, 1 female, ASC); 800 m, 27.IV.95, A. Smetana, sifting wet plant debris at base of rock wall over which thin layer of water was running and collected together with *Derops lisae* and species of *Stenus* and *Dianous* [T168] (2 males, 1 female, ASC); 900 m, 19.IV.98, A. Smetana, sifting moist plant debris in forest floor depressions, subtropical, mostly broadleaf evergreen forest [T184] (1 male, ASC).

Dissections of eight males and five females were examined for features of the abdomen, genital segments, and genitalia. One disarticulated male and female were examined.

The holotype, not examined for this study, is from Taipei Hsien.

Lacvietina sp. A

A sixth species was examined that differs from the preceding five. It is represented by only one female and so is not named because it is often impossible to identify the females or to associate them with males by means other than collecting site. The species is distinguished from all the others in the genus by the absence of medial pronotal punctation. Tergum VIII (of female) has five apical lobes, as do *L. aurora* and *L. copiosa*.

DESCRIPTION: Female. Length 4.0 mm; width 1.5 mm. Color reddish brown. Head nearly black and darker than remainder of body. Pronotum with pale reddish brown lateral and basal margins.

Head with a few scattered fine punctures and with scattered punctulation; surface polished. Antenna reaching nearly to posterior margin of elytra.

Pronotum with coarse, moderately dense punctation on lateral third and along basal third; median third and anterior margin with scattered punctulation and fine punctures and surface strongly shining to polished.

Elytra with posterolateral angle not produced; epipleuron with one row of punctures adjacent to ventral edge.

Tergum VIII with five apical lobes.

DISCUSSION: In the key to species for *Lacvietina*, this species will run to couplet 7, where it can be separated from both *L. aurora* and *L. copiosa* by the impunctate median third of the pronotum.

Although the posterolateral elytral margin is rounded, not emarginate as is the case for others of the Megarthropsini, the lateral margin of the head is reflexed from above the antennal insertion anteriorly, the postocular ridge is modestly developed, the neck is present, and the cephalic, pronotal, and ely-

tral punctation is coarse. The species is included in *Lacvietina* because of the presence of the intermesocoxal metasternal pit.

DISTRIBUTION: Indonesia: N. Sumatra, Kotacane, Gn. Sinabung, 2000 m, 7–8.X.1990, leg. A. Riedel (1 female, MSC).

MATERIAL EXAMINED: One female.

DISCUSSION

The Megarthropsini was first proposed as a ''n. group'' (but without characters specific to it) for one monotypic genus, *Megarthropsis*, from Singapore (Cameron, 1919: 231). *Megarthropsis* was stated to be ''undoubtedly . . . closely related to the Tachyporini'' and further on, ''related to the Trichophyini and Tachyporini'' (Cameron, 1919: 231–232). Later, Cameron (1921: 349, 355, 406) specifically included the tribe in the Tachyporinae and provided a few characters to separate it from the Tachyporini. That subfamilial assignment was followed by Scheerpeltz (1933: 1478), but there was no further discussion or characterization of the genus (or tribe) or addition of other genera or species until 1983, nor were there any published illustrations of characters or the body form. The genus and the tribe remained somewhat a mystery group.

Coiffait (1977: 272–275) described *Nepaliodes* with one species from Nepal and illustrated the antenna, maxillary palp, labrum, sternum VIII (with parts of VII and IX) of the male, the aedeagus, and outline of the body. Although Coiffait assigned the genus to the Tachyporinae, he wrote nothing about its tribal affiliation.

Smetana (1983a) published a definition of the Megarthropsini, moved *Nepaliodes* into it, and added new characters for both *Nepaliodes* and *Megarthropsis*. He also introduced numerous and detailed line illustrations and scanning electron microscope photographs of salient features of both genera, included a habitus for both species, and extended the range of *Nepaliodes* to India and *Megarthropsis* to Borneo. Smetana's work permitted recognition of the tribe without reference to types of the genera for the first time.

A third monotypic genus, *Peitawopsis*, from Taiwan was added (Smetana, 1992) and later a second species of it was named (Smetana, 1995). The tribe with only three genera and four species was still minuscule.

In 1998 and 1999, while collecting in Vietnam, I found many small, short and wide, densely punctate, odd, omaliine-like specimens that turned out to represent three new species of an unknown genus of the Megarthropsini and that are herein placed in a new genus, *Lacvietina*. To describe the new genus and understand its association with others of the tribe I requested specimens of the named Megarthropsini from colleagues who had collected in southern and eastern Asia from India and Nepal to Taiwan. As a result, in addition to the 3 new Vietnamese species, 10 others belonging to the new genus or to the three previously described genera were discovered. The new species of *Nepaliodes* extends the range of the genus from Nepal and India to Thailand and China. *Peitawopsis*, now with three species, is confined to the mountains of Taiwan (Herman and Smetana, 2002). The collections of *Megarthropsis* resulted in a minor explosion of species. The genus grew from one species to eight and the geographical range now reaches Java. Because six of the seven new species of *Megarthropsis* were collected on Mt. Kinabalu and in the Crocker Range, it seems likely that many more will be found as other areas are explored. Since the species of Megarthropsini all live in leaf litter, the likelihood is great of finding additional taxa of the Megarthropsini throughout the region from India and China to Taiwan and through the Indomalay peninsula and Indonesia, particularly Sumatra, Java, and Borneo.

Although the Megarthropsini is in the Tachyporinae, the relationships of the tribe to the others is unclear, as are the relationships of the genera within the tribe. Currently six tribes are included in the subfamily (Cordobanini, Deropini, Megarthropsini, Mycetoporini, Tachyporini, and Vatesini), but no derived larval (Ashe and Newton, 1993) or adult features have been found that clearly defined it. A seventh tribe, the Symmixini, is a synonym of the Tachyporini (Schülke, 2003).

Smetana (1983a: 143), in a detailed discussion of the subfamilial assignment of the Megarthropsini, discussed its relationship to the seven subfamilies of the Tachyporine group (see Herman, 2001a: v, for list) and

concluded that derived features of abdominal segments VII–X and the aedeagus supported its inclusion in the Tachyporinae. The relationship of the Megarthropsini within the subfamily was not addressed. Smetana (1983a: 143) argued that *Megarthropsis* and *Nepaliodes* should be combined in the Megarthropsini because both have the antenna inserted under the raised and explanate lateral margin of the frons and possess exocrine glands and a dorsal, postocular, cephalic carina. These features are unique in the Tachyporinae.

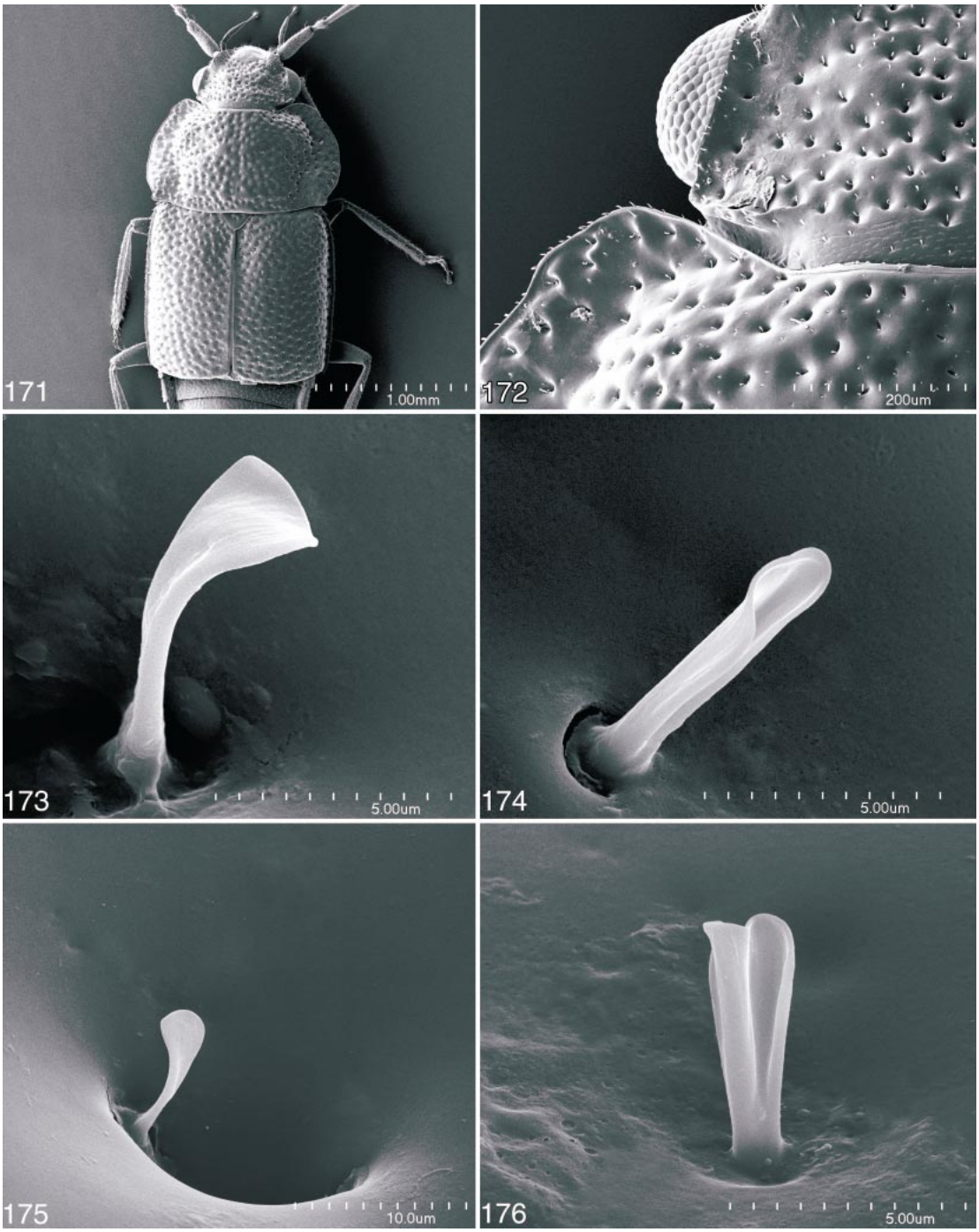
To examine the phylogenetic relationships of the genera of Megarthropsini and assess the tribe's position among the tribes of the Tachyporinae, examples of genera of the Deropini (*Derops divalis* [Sanderson]), Megarthropsini (all genera and species), Mycetoporini (*Lordithon fungicola* Campbell) Tachyporini (*Coproporus ventriculus* (Say), *Sepedophilus castaneus* (Horn), *Tachinus fimbriatus* Gravenhorst, *Tachyporus californicus* Horn), and Vatesini (*Vatesus clypeatus* (Wasmann) and *V. splendidus* [Wasmann]) were dissected. No specimens of the Cordobanini were available for study. *Cordobanus*, from Mexico and about which little has been written, is monotypic.

The following characters were employed in the analysis, and the distribution of the character states is summarized in the matrix (table 1).

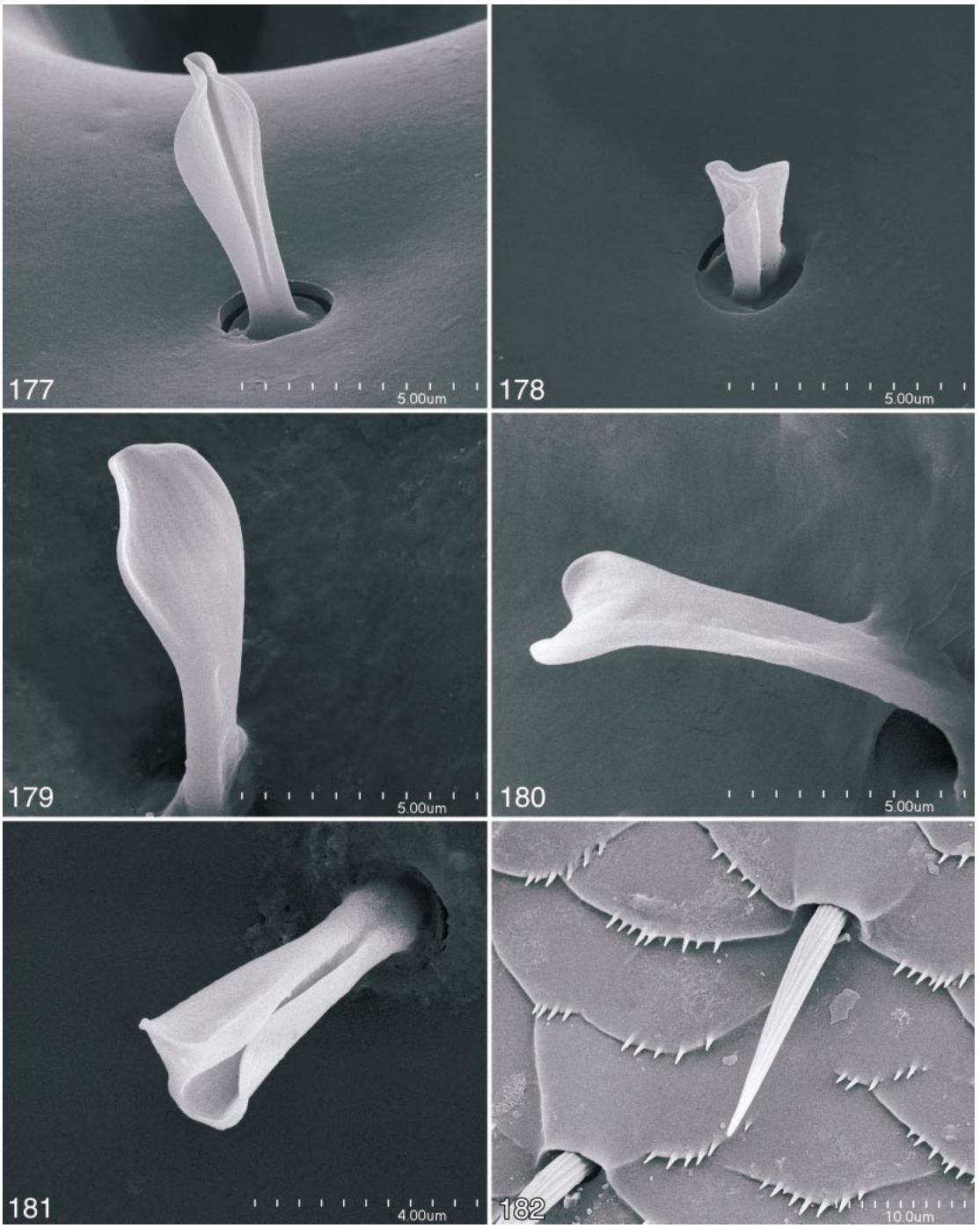
TABLE 1
Character Matrix

	000000000011111111 1
	012345678901234567 8
Mycetoporini	
Lordithon fungicola	000000000100000000 ?
Vatesini	
Vatesus splendidus	001100101100000?? 00
V. clypeatus	001100000110000?? 00
Tachyporini	
Coproporus ventriculus	001100001100000000 0
Tachinus fimbriatus	000000000000010111
Deropini	
Derops divalis	110000010000011001 0
Megarthropsini	
Lacvietina aurora	211110000010101111 1
L. cuprina	211110000010101111 1
L. copiosa	211110000010101111 1
L. paricosta	211110000010101111 1
L. punctatissima	211110000010101111 1
Megarthropsis decorata	212210010010001111 1
M. deverra	212210010010001111 1
M. djawaensis	212210010010001110 1
M. durga	212210010010001111 1
M. empusa	212210010010001110 ?
M. frazerensis	212210010010001111 ?
M. parca	212210010010001111 1
M. smetanai	212210010010001111 1
Nepaliodes solangelae	212111110100021112
N. variolosus	212111110100021112
Peitawopsis inexspectata	211110000011011111 0
P. monticola	211110000011011111 0
P. watanabei	211110000011011111 0

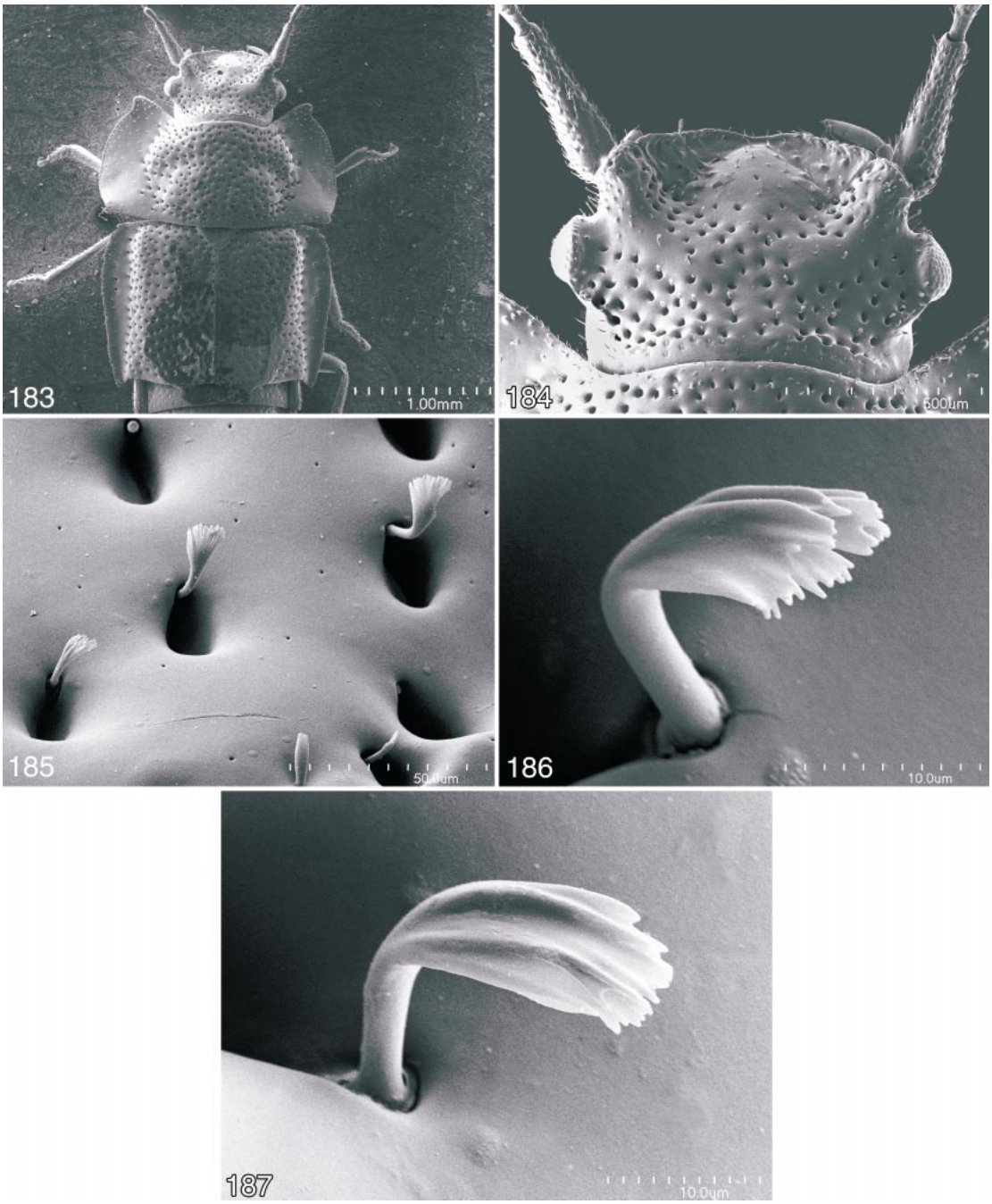
Character 0. Surface punctation (head, pronotum, elytra): 0 (fine); 1 (medium); 2 (coarse). CI/RI = 100/100. The cephalic, pronotal, and elytral dorsal surfaces of most species of the Tachyporinae are smooth and polished to shining dully with weak to strong microsculpturing. The surface has sparse to dense, fine micropunctation to larger, moderately coarse punctation; less commonly the punctation is large and coarse. The pronotal punctation may be more or less uniform or arranged marginally, submarginally, or discally and is often in rows. The elytral punctation may be uniform and sparse to dense, arranged in serial rows, or both. For many Mycetoporini, the surface is smooth and polished and the few punctures are arranged in serial rows, but some species have more uniform and denser pronotal and/or elytral punctation (M. Schülke, correspondence). Examples include *Mycetoporus bipunctatus* Campbell and *Mycetoporus lucidulus* LeConte (Campbell, 1991) with more evenly distributed, sparse pronotal punctation, and *Bolitopunctus punctatissimus* Campbell (Campbell, 1993a: 31, 64) with dense, minute pronotal punctulation. Species of *Parabolitobius* and *Bolitopunctus* have moderately dense and coarse elytral punctation in addition to one or more serial rows (Campbell, 1993a: 29–34, 65; Li et al., 2000b). By contrast, *Derops* (Deropini) has dense, moderately coarse punctation, and the genera of the Megarthropsini (figs. 1, 171, 183, 188, 194) all have prominent, dense, coarse, deep punctation. Some species currently included in *Tachinus* (*Tachinoderus*) have dense, coarser, cephalic, pronotal, and elytral punctation,



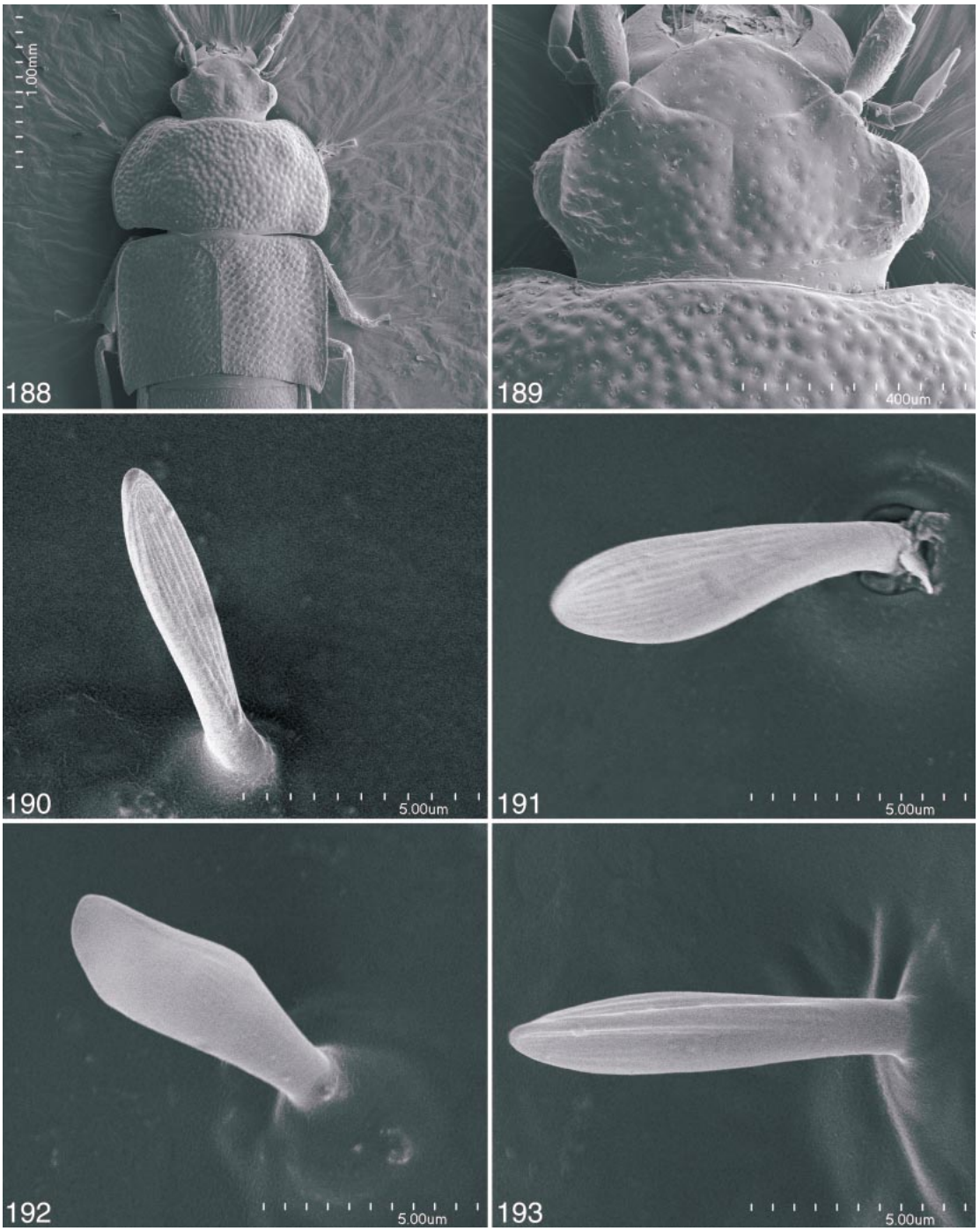
Figs. 171–176. *Megarthropsis smetanai*. **171.** Head, pronotum, and elytra. **172.** Head and pronotum, left lateral side. **173.** Head, dorsal, seta in deep puncture. **174.** Head, dorsal, seta in shallow depression. **175.** Pronotum, seta in deep puncture. **176.** Pronotum, setae in shallow depression.



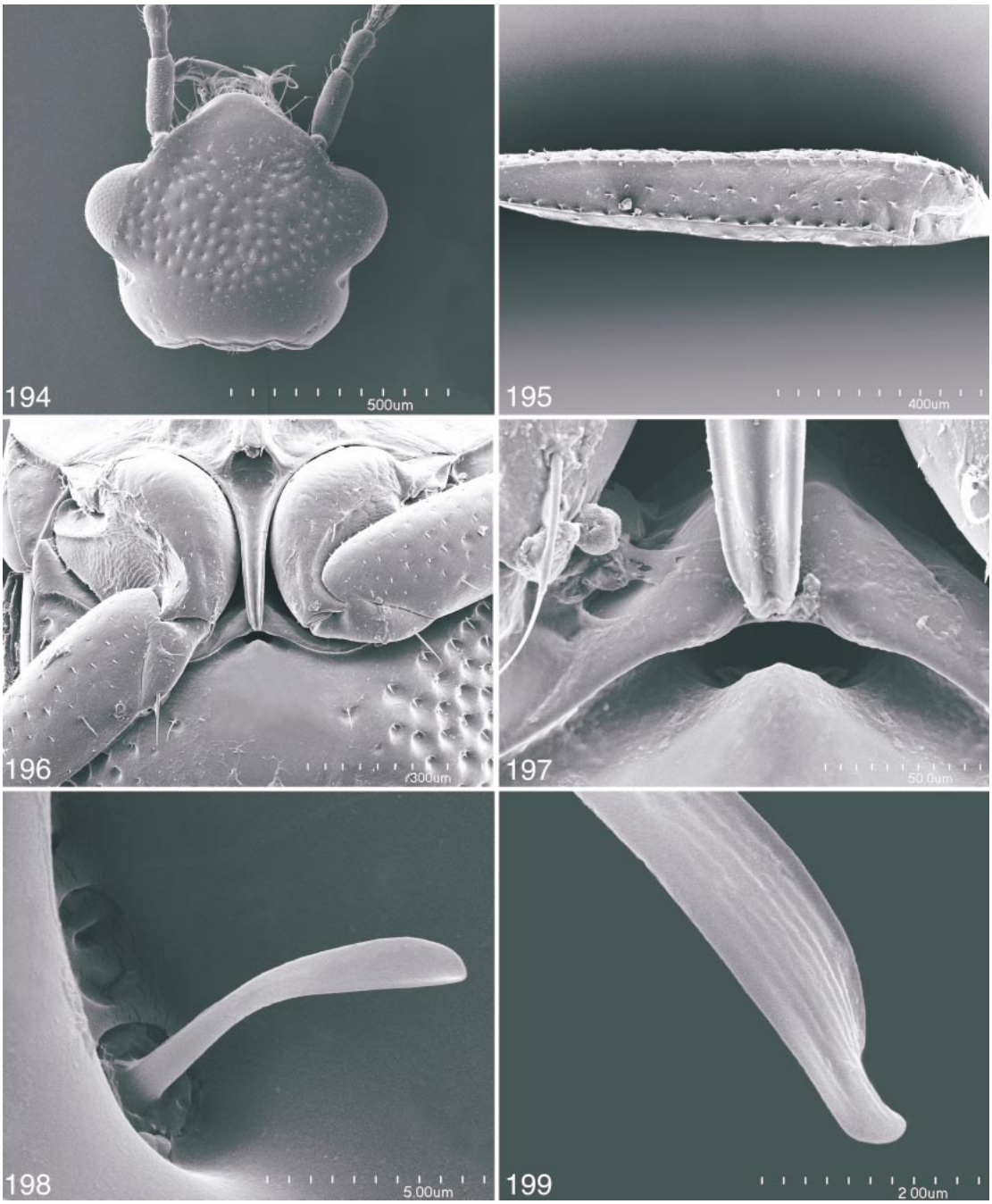
Figs. 177–182. *Megarthropsis smetanai*. **177.** Pronotum, seta in shallow depression. **178.** Pronotum, seta in shallow depression. **179.** Elytral seta in deep puncture. **180.** Elytral seta in deep puncture. **181.** Elytral seta in shallow depression. **182.** Abdominal seta, dorsal.



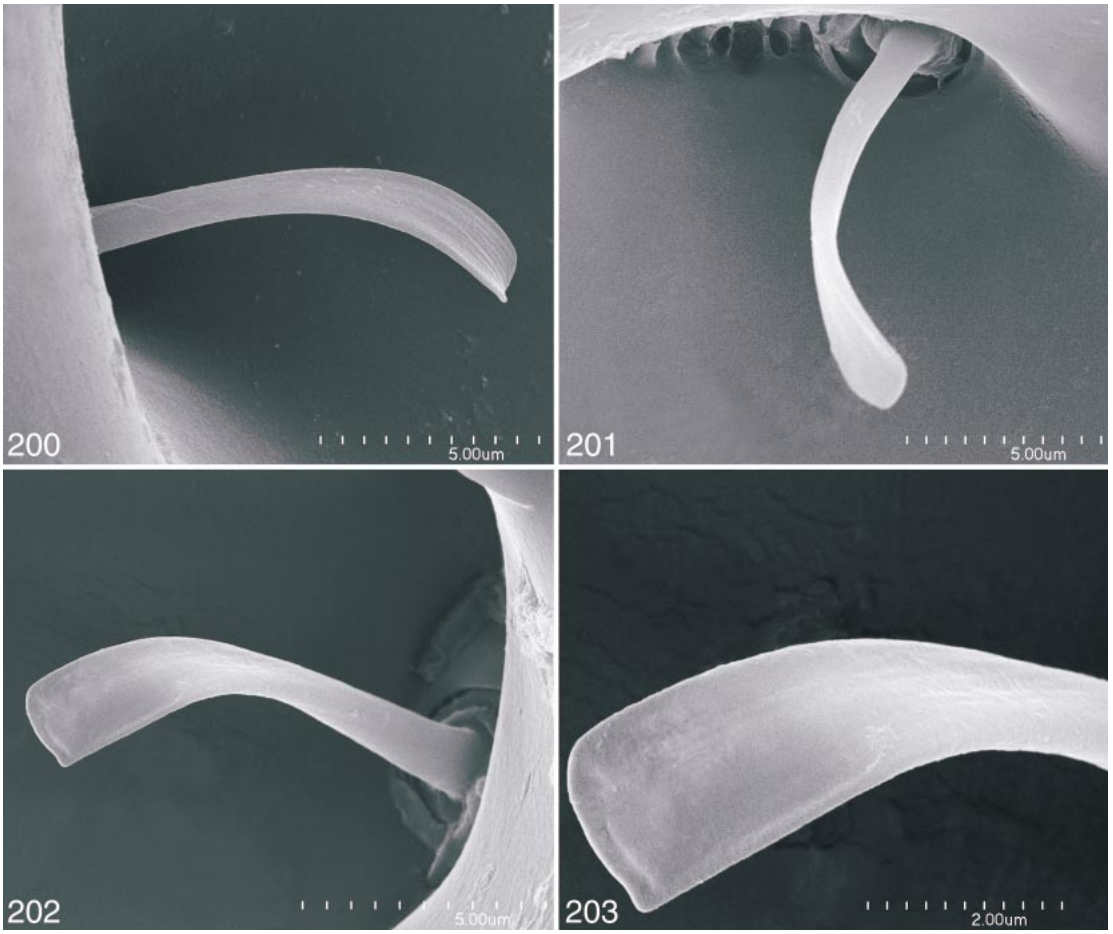
Figs. 183–187. *Nepaliodes variolosus*. **183.** Head, pronotum, and elytra. **184.** Head. **185.** Head, dorsal setae in deep punctures. **186.** Pronotal seta in deep puncture. **187.** Elytral seta in deep puncture.



Figs. 188–193. *Peitawopsis monticola*. **188.** Head, pronotum, and elytra. **189.** Head. **190.** Head, dorsal seta in deep puncture. **191**–**193.** Pronotal setae in deep punctures.



Figs. 194–199. *Lacvietina cuprina*. **194.** Head. **195.** Elytron, left, lateral view. **196, 197.** Pterothorax, ventral view. **198, 199.** Head, dorsal setae in deep punctures.



Figs. 200–203. *Lacvietina cuprina*. **200, 201.** Pronotum, setae in deep punctures. **202.** Elytral seta in deep puncture. **203.** Elytral seta, enlarged view of figure 202.

for example, *Tachinus* (*Tachinoderus*) *rougemonti* (Pace, 1986: 49); some other species in the subgenus have dense, moderately coarse elytral punctation, but most have fine, sparse to moderately dense punctation. The coarse, dense punctation in the Megarthropsini is visually the most distinctive feature shared by these tachyporines. Associated with the punctures are apically expanded setae that are uniquely present in all Megarthropsini (figs. 173, 175, 179, 180, 185–187, 190–193, 198–203).

Character 1. Neck: 0 (absent); 1 (present). CI/RI = 100/100. Most genera of the Tachyporinae lack a neck; the postocular portion of the head simply tapers gradually from the eyes to the posterior margin of the head. Uniquely, *Derops* and the Megarthropsini (fig. 194) have a broad, distinct neck.

Character 2. Postocular laterodorsal surface: 0 (unmodified); 1 (ridged); 2 (carinate). CI/RI = 66/90. The postocular laterodorsal region of the head of most Tachyporinae lacks a ridge or carina. *Vatesus* (Vatesini) and *Coproporus* (Tachyporini) both have a feebly developed, rounded ridge that gradually curves posteriorly from the eye. In the Megarthropsini the laterodorsal postocular region has a rounded ridge (figs. 189, 194) or strongly developed carina (figs. 172, 184) extending posteriorly from the eye. The postocular ridge of *Lacvietina* is modestly developed (fig. 194), and on some individuals of *L. punctatissimus* the ridge is obsolete and

evident only as a break in the even curvature from the dorsal to posteroventral surface.

Character 3. Postocular laterodorsal carina/ridge: 0 (absent); 1 (straight); 2 (angulate). CI/RI = 66/88. The angulate postocular carina (fig. 172) is found only in *Megarthropsis*. In *Nepaliodes* the carina (fig. 184) is straight and extends diagonally posteromedially from the eye, and the postocular ridge of *Peitawopsis* (fig. 189) and *Lacvietina* (fig. 194) is similarly straight. The feeble ridge of *Coproporus* and *Vatesus* simply follows the curvature of the head and is coded herein as straight.

Characters 4 and 5:

4. Clypeal lateral margin: 0 (unmodified); 1 (reflexed). CI/RI = 100/100.

5. Clypeal anterior margin: 0 (unmodified); 1 (reflexed). CI/RI = 100/100.

In the Megarthropsini (figs. 171, 184, 189, 194) the lateral margin of the head is reflexed beginning at the base of the antenna and extending onto the clypeus. The reflexed lateral margin is strongly developed in *Megarthropsis* (fig. 171) and *Nepaliodes* (fig. 184), and in the latter genus even the anterior clypeal margin is reflexed (fig. 184). In *Peitawopsis* (fig. 189) and *Lacvietina* (fig. 194) the lateral margin is less strongly reflexed and is only modestly developed in *Lacvietina*. Such reflexed margins of the head do not occur in other tachyporines. Only *Nepaliodes* has a reflexed anterior clypeal margin.

Character 6. Epistomal suture: 0 (present); 1 (absent). CI/RI = 50/50. The epistomal suture (figs. 1, 189) is well developed in most tachyporines, but is incomplete in *Nepaliodes* (fig. 184) and absent in some species of *Vatesus* (Vatesini). Most genera of the Tachyporini and Megarthropsini have a midcranial suture extending posteriorly from the middle of the epistomal suture (figs. 1, 189). It is lacking in *Nepaliodes* and short to rudimentary in the other three genera. The midcranial suture was not coded in the matrix.

Characters 7 and 8:

7. Pronotal posterolateral angle: 0 (rounded); 1 (angulate). CI/RI = 50/90.

8. Pronotal anterolateral angle: 0 (rounded); 1 (angulate). CI/RI = 50/66.

The anterior and posterior angles of the pronotum are rounded in most tachyporines and in *Lacvietina* (fig. 130) and *Peitawopsis* (fig. 188) of the Megarthropsini. The posterior angle is acute in *Megarthropsis* (fig. 66), and both the anterior and posterior angles are acute in *Nepaliodes* (fig. 79). In *Derops* and *Tachinomorphus* the posterior angle is acute, and in some species of *Coproporus* and *Vatesus* the anterior angle is acute.

Character 9. Postprocoxal lobe: 0 (present); 1 (absent). CI/RI = 100/100. The postprocoxal lobe is absent in *Vatesus* (Vatesini), *Coproporus* (Tachyporini), and the Mycetoporini and is present in other tachyporines.

Character 10. Elytral posterior margin: 0 (truncate or rounded); 1 (emarginate). CI/RI = 50/75. In most species of the Tachyporinae the posterior margin of the elytra is rounded or truncate. In the Megarthropsini and in some species of *Vatesus* (for example *V. clypeatus*, also see Seevers, 1958) it is emarginate. The posterior margin of *Peitawopsis* (figs. 114, 188) is broadly and evenly emarginate and the posterolateral angle large and acute. The posterior margin of *Lacvietina*, *Megarthropsis*, and *Nepaliodes* (figs. 25, 69, 91, 131) is emarginate laterally. The posterolateral emargination and acute angle are large in *Nepaliodes* (fig. 91) and *Megarthropsis djawaensis* (fig. 91), moderately large in *Peitawopsis* (fig. 114), moderately large to small in *Lacvietina* (fig. 131, 143) and the other species of *Megarthropsis* (fig. 69), and are particularly small in some individuals of *M. decorata*, *L. cuprina*, and *L. copiosa*. A similarly emarginate elytral margin occurs in many Aleocharinae (Hammond, 1975: 169 [character 12], 170). A female of an unnamed species of *Lacvietina* (sp. A) lacks the lateroapical emargination.

Character 11. Elytral (dorsolateral quarter) surface: 0 (convex); 1 (concave). CI/RI = 100/100. The elytra of *Peitawopsis* differ significantly from those of the other species of the Megarthropsini and other Tachyporinae. In *Peitawopsis* (fig. 188) the dorsal elytral surface is depressed and broadly concave beginning at the lateral margin and extending to about the lateral third or quarter; the remainder of the surface is shallowly convex. In other tachyporines the elytra are convex; they are shallowly convex from the elytral suture to just beyond the lateral third and then more strongly convex to the epipleural ridge. In some species the surface adjacent to the ely-

tral suture is more or less flattened. In *Lacvietina* (fig. 1) and *Megarthropsis* (fig. 171) the elytra are convex from the sutural margin laterally. The lateral elytral margin of *Lacvietina* (fig. 1) and *Megarthropsis* (fig. 171) is modified with a narrow to moderately wide epipleural gutter; the convexity of the elytra extends medially from this gutter. In *Nepaliodes* (fig. 183) the epipleural gutter is wide, prominent, and causes the lateral margin of the elytra to be concave and strongly explanate. The epipleural gutter of *Megarthropsis djawaensis* is wider and more distinctive and the lateral margin of the elytra more explanate than for other species of the genus.

Character 12. Metasternal intercoxal pit: 0 (absent); 1 (present). CI/RI = 100/100. Unique to *Lacvietina* is a metasternal pit adjacent to the apex of the mesosternal process (figs. 146, 196, 197). In *Megarthropsis* the ridge surrounding the mesocoxal acetabulum is large and well developed medially where it is sufficiently enlarged as to suggest a pit (see Smetana, 1983a: 206, fig. 41). However, in *Lacvietina* the pit is an invagination of the body wall, but not in *Megarthropsis*.

Character 13. Procoxal carina: 0 (absent); 1 (present). CI/RI = 50/66. The medial surface of the procoxa of both *Peitawopsis* and *Derops* (Deropini) is transversely carinate. Other tachyporines lack this carina, but it is present and more strongly developed in some genera of the Osoriinae and Piestinae.

Characters 14 and 15:

14. Parameres—medial surface: 0 (separated); 1 (contiguous); 2 (''fused''). CI/RI = 100/100.

15. Median lobe—ventrobasal groove: 0 (absent); 1 (present). CI/RI = 100/100.

In most genera the parameres are narrowly to widely separated, but are medially contiguous in the Megarthropsini and Deropini, and in some genera of the Tachyporini (M. Schülke, correspondence) such as *Tachinus* (but are slightly separated in some species). The parameres are fused in *Tachinomorphus* (Campbell, 1973b), separated basally (often) and contiguous or fused apically in *Nitidotachinus* (Campbell, 1993b), contiguous to narrowly separated in *Coprotachinus* (Campbell, 1994a), narrowly separated in *Cileoporus* (Campbell, 1994b) and in *Coproporus* and *Cilea* (Campbell, 1975), and separated in *Sepedophilus* and *Euconosoma* (Campbell, 1976a, 1976b) and *Tachyporus* (Campbell, 1979); in the latter two genera the parameres are narrowly separated or touching in some species. The parameres are separated in *Vatesus* (Vatesini), *Coproporus* (Tachyporini), and Mycetoporini (for example Campbell, 1991, 1993a). Unique to *Nepaliodes* (figs. 74, 84), the parameres are so tightly contiguous as to appear to be fused. Unique to the Megarthropsini is a ventrobasal groove of the median lobe. This groove is longitudinally oriented and is deep in *Nepaliodes* (fig. 80) and in most *Megarthropsis* (fig. 48), but is shallow in *Megarthropsis djawaensis*, *Peitawopsis* (fig. 97), and *Lacvietina* (fig. 152).

Character 16. Sternite VII (male)—internal marginal lobe: 0 (absent); 1 (present). CI/RI = 50/50. Sternite VII of the males of the Megarthropsini (figs. 4, 77, 95) has a large to small lobe on the internal, lateral portion of the basal margin. The basal margin of VI (fig. 3) and even V (fig. 63) is adorned with such lobes. A similar lobe is found in *Tachinus fimbriatus*.

Character 17. Sternite VII (male)—peg setae: 0 (absent); 1 (present). CI/RI = 50/80. Peg setae on sternite VII of males are found in *Olophrinus* (Campbell, 1993c), in many species of *Tachinus*, in some species of *Nitidotachinus* (Campbell, 1993b), in the Deropini, and in most Megarthropsini (fig. 4). Within the Megarthropsini two species, *M. djawaensis* (fig. 21) and *M. empusa* (fig. 40), lack peg setae, and in one species, *M. frazerensis* (fig. 45), the males also have peg setae on sternite V. They are found in a few species of the Mycetoporini (M. Schülke, correspondence). They are lacking in most other genera of the subfamily (various published articles and M. Schülke, correspondence).

Character 18. Tergum VIII (female)—secondary lobe of lateral lobe: 0 (absent); 1 (short and small); 2 (long and large). CI/RI = 66/85. Tergum VIII of the females has two pairs of lobes or processes in most species of the subfamily. Typically the median pair of lobes has one or more moderately stout, pale setae and the lateral pair has a long, stout, darkly pigmented (usually nearly black) seta. On the lateral margin and situated more anteriorly is another long, stout, ''black'' seta

which extends from an unmodified lateral margin, a ''bump'', a short lobe, or a long lobe. Species of *Tachinus* either lack or have a bump (see figures in Campbell, 1973a, and Li et al., 2000a), and some have a small lobe (for example *Tachinus fimbriatus*; also see Li et al., 2002). *Derops* has the long, black setae, but lacks the lobe or bump on the lateral margin of the segment (see Zheng, 2002: 193). Species of the Megarthropsini either lack the lobe (figs. 117) or have one that is short (figs. 34, 129, 140) or long (fig. 81).

The preceding characters (0–18) were coded (table 1) for all the species of the Megarthropsini along with one species for the Mycetoporini (*Lordithon fungicola*) and Deropini (*Derops divalis*), and two for the Vatesini (*Vatesus clypeatus* and *Vatesus splendidus*) and Tachyporini (*Tachinus fimbriatus* and *Coproporus ventriculus*). No effort was made to specify the relationships of the species within the genera of the Megarthropsini, rather the relationship among the genera of the Megarthropsini was the focus of this study.

One most parsimonious tree (steps = 34; CI = 70; RI = 89) resulted from applying the implicit enumeration (IE) command of the Hennig86 phylogenetic program to the matrix (table 1). The resulting hypothesis (fig. 204; see table 2 for diagnosis of clades) suggests that the Deropini, Megarthropsini, and part of the Tachyporini form a clade supported by the contiguous parameres (14.1) and presence of peg setae on sternite VII (17.1) in the males, and that the Deropini and Megarthropsini appear to be sister groups because they share dense, moderately coarse to coarse punctation (0.1) and the presence of a broad neck (1.1).

The analysis supports the following hypotheses. The Megarthropsini is monophyletic; the genera share dense, coarse punctation (0.2), the presence of a postocular laterodorsal cephalic ridge (2.1) or carina (2.2), a reflexed lateral clypeal margin (4.1), an emarginate posterior elytral margin (10.1), a ventrobasal groove on the median lobe (15.1), and a pair of lobes on the internal, anterior margin of sternite VII of the males (16.1). *Peitawopsis*, with three species, is monophyletic; the species share the presence of a postocular, dorsolateral cephalic ridge (2.1), concave dorsolateral elytral surface (11.1), and procoxal carina (13.1). *Peitawopsis* is the sister of the other three genera, a clade supported by the presence of a secondary lobe on the lateral surface of the lateral lobe of tergum VIII of the females (18.1, 18.2). *Lacvietina*, with five species, is monophyletic based on the presence of a median metasternal pit (12.1) and is the sister of *Megarthropsis* and *Nepaliodes* which together form a clade supported by the presence of a postocular, dorsolateral cephalic carina (2.2) and an angulate posterolateral pronotal angle (7.1). *Megarthropsis*, with eight species, is monophyletic based on the shared presence of the angulate postocular cephalic carina (3.2). The two species of *Nepaliodes* share the largest number of unique characters; these include the reflexed anterior clypeal margin (5.1), the absence of an epistomal suture (6.1), the angulate anterolateral pronotal margin (8.1), the ''fused'' parameres (14.2) that are asymmetrical and strongly curved, and the modification of the secondary lobe of tergum VIII of the females into a long slender process (18.2). The diagnosis of each clade and the distribution of the homoplasious states are listed in table 2. A female of an unnamed species of *Lacvietina* lacks the lateroapical elytral emargination, but the significance of this is unknown. Since only one such specimen has been examined, it is unclear if this is unique to the individual or characteristic of the species.

Although there was no intention to examine the tribal relationships within the Tachyporinae, additional conclusions can be drawn from the cladogram (fig. 204) and these hypotheses tested with more taxa that include examples of all genera of the subfamily and a representative cross section of the large genera, more characters, and, importantly, one or more outgroups selected from among representatives of the other subfamilies of the Tachyporine group (Herman, 2001a) along with *Habrocerus magnus* LeConte, an anomolous species of uncertain relationship or generic assignment (Assing and Wunderle, 1995: 341). Genera such as *Tachyporus* and *Sepedophilus* must be included in any tribal-level analysis; the former is the type genus of the Tachyporini, the latter has a number of unique features. The Mycetoporini is likely a

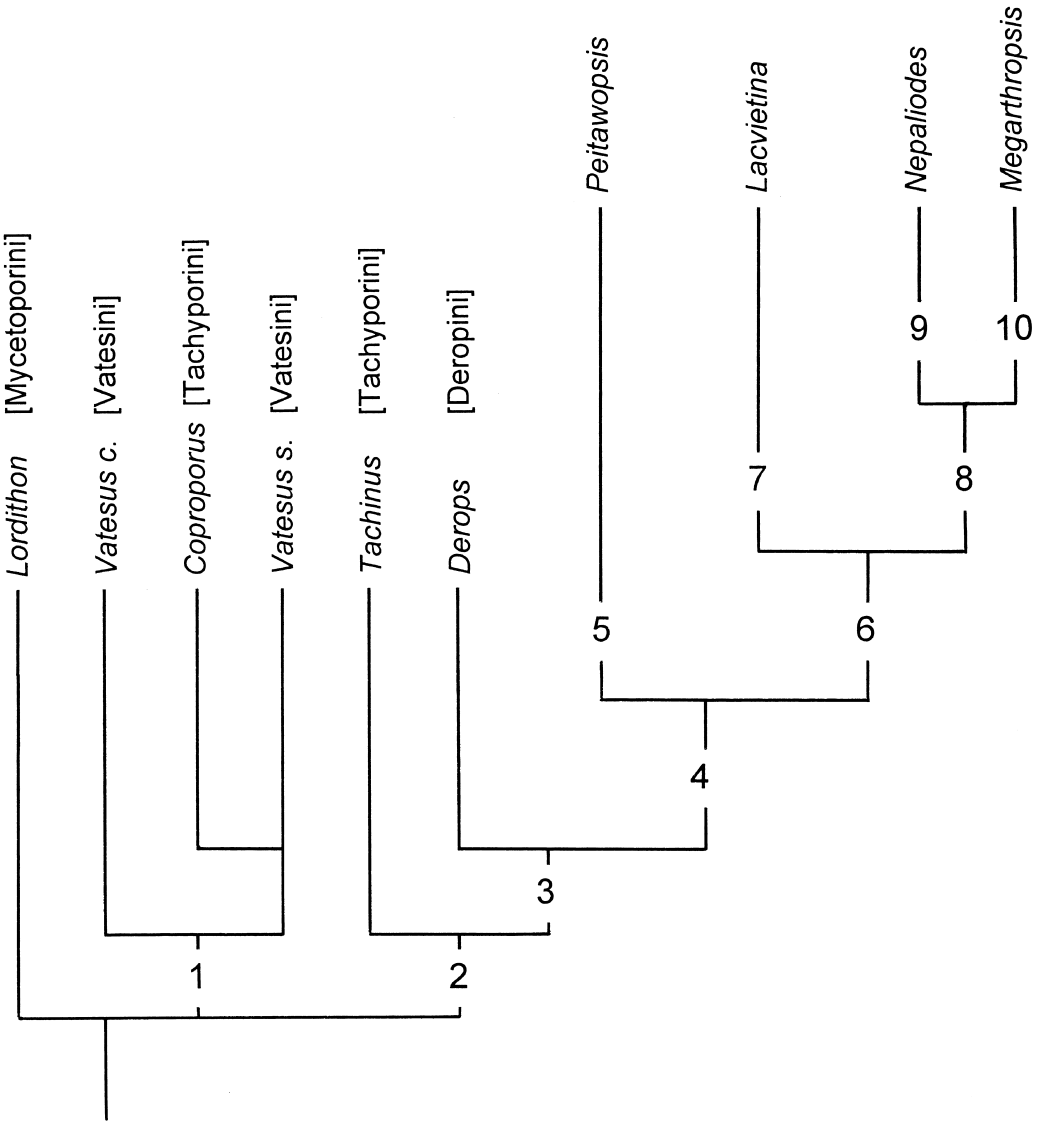


Fig. 204. Hypothesis of relationships of genera in the Megarthropsini. Single most parsimonious tree (19 characters; CI = 70; RI = 89; steps = 34). Numbers on clades correspond to diagnoses given in table 1 and discussed in text.

monophyletic group, but its placement, selected for purposes of this study to root the cladogram, requires further study. It is notable that *Coproporus* and *Vatesus* fall into the same clade. The species of *Vatesus* are myrmecophilus inquilines that live with army ants (Ecitonini) in the Neotropical region where currently 26 species are known (Seevers, 1958; Herman, 2001a). Removing from consideration the autapomorphic features that adapt the *Vatesus* adults for life with army ants, then *Coproporus* and *Vatesus* look much alike. They share the derived loss of the postprocoxal lobe (9.1), the strongly infolded elytral epipleuron, and the weak postocular cephalic ridge that follows the curvature of the head. The species in these genera are highly convex, strongly limuloid, and have little integumental ground sculpturing. *Coproporus* and *Vatesus* were included in the same clade

TABLE 2
Synapomorphic Character States for the Megarthropsini
(Homoplasious states are preceded by an asterisk)

Clade	Character state
1	*2.1, *3.1, 9.1
2	*14.1, 17.1
Tachinus	*16.1
3	0.1, 1.1
Derops	*13.1
4 (Megarthropsini)	0.2, *2.1, *3.1, 4.1, 10.1, 15.1, *16.1
5 (*Peitawopsis*)	11.1, *13.1
6	18.1
7 (*Lacvietina*)	12.1, *14.1
8	2.2, 7.1
9 (*Nepaliodes*)	5.1, 6.1, 8.1, 14.2, 18.2
10 (*Megarthropsis*)	3.2, *14.1

based on larval features (Ashe and Newton, 1993: 283). It seems probable that the two genera will be combined in the same tribe eventually; if they are, then the name of the tribe would be Vatesini. *Tachyporus* and *Tachinus* might be in different clades and perhaps in different tribes (M. Schülke, correspondence). Herein *Tachinus* is suggested to be the basal lineage of a clade with Deropini and Megarthropsini (fig. 204). If other genera related to *Tachinus* in fact do comprise a clade separate from *Tachyporus*, then the group would be named Tachinusini and that including *Tachyporus* would be Tachyporini.

A few other structures of interest were examined but not employed in the phylogenetic analysis.

In *Derops* the anterior margin of sternite VII has a large median lobe on the internal edge; this lobe is probably associated with secretory glands. The lobe seems to be unique to the genus.

Sternum VIII of the females of most Tachyporini has a pair of median lobes with a fanlike cluster of long setae on the posterior margin (figs. 7, 141) of each lobe. In *Nepaliodes* (figs. 82, 89) and one species of *Megarthropsis*, *M. smetanai* (fig. 68), that pair of lobes is fused into one broad lobe. *Nepaliodes* retains two clusters of fanlike setae, but for *M. smetanai* the clusters have coalesced into one. Because the lateral portions of the median lobe of *Nepaliodes* each have a fanlike cluster of setae and are more darkly pigmented than the median portion, there appears to be two lobes, not one. Fusion of the two lobes is also found in some species of *Tachinus* (Campbell, 1973a, 1988; Ullrich, 1975; Li, 1995a, 1995b; M. Schülke, correspondence), all *Sepedophilus* and *Euconosoma* (Campbell, 1976a, 1976b; M. Schülke, correspondence) and *Tachyporus* (Campbell, 1979; M. Schülke, correspondence). In *Tachinus* the fused lobe may have one or two fanlike clusters of setae (Campbell, 1973; Ullrich, 1975) and fusion evidently arose multiple times. Species of *Tachyporus* have one or two clusters of setae (Campbell, 1979); *Sepedophilus* and *Euconosoma* have one (Campbell, 1976a, 1976b). In some species of *Tachyporus* and *Tachinus* the fused lobe is slightly emarginate medially. The fanlike cluster of setae on sternum VIII is lacking in the Mycetoporini and Deropini.

The antennal scape of most species of the Megarthropsini is more or less cylindrical (figs. 189, 194). In *Nepaliodes* (fig. 184) the scape is strongly tapered from the base to the apex and is a useful feature for identifying the genus. In *Megarthropsis djawaensis* the scape is moderately strongly tapered toward the apex, and in *M. durga*, *M. parca*, and *M. smetanai* (fig. 171) it is slightly tapered in some individuals. The sole specimen of *M. empusa* has a slightly tapered scape. The tapered scape was not used in the analysis because of the intergrading variability.

In *Nepaliodes* the lateral margin of the elytra is strongly explanate (fig. 183) and the lateral edge reflexed forming a trough or gutter. This epipleural gutter is wide, the dorsal surface is polished, includes a few scattered punctures, and is characteristic of the genus. In *Lacvietina* (fig. 1) and *Megarthropsis* (fig. 171) the epipleural gutter is narrower and less dramatic, but it is still present; only in *Megarthropsis djawaensis* is it wider and more prominent and similar to the condition in *Nepaliodes*. In *Peitawopsis* (fig. 188) the epipleural gutter is absent; instead, the lateral quarter to third of the elytral surface is concave. An epipleural gutter is absent in other tachyporines.

Typically setae taper apically from the base and are often grooved (fig. 182). Evidently unique to the Megarthropsini are specialized setae on the dorsal surface. The api-

cally expanded setae are at the edge of deep punctures (figs. 173, 175, 179, 180, 185–187, 190–193, 198–203) and in *Nepaliodes* they are scalelike (figs. 185–187). Some have grooves (figs. 173, 190, 191, 193, 199), are shoehornlike (figs. 200), leaflike (fig. 199), or daggerlike (figs. 192). These setae are barely visible with a stereoscopic or compound microscope in *Nepaliodes*, *Megarthropsis*, and *Peitawopsis*, but can be seen only with a scanning electron microscope in *Lacvietina*. Smetana (1983a: 142, 143) speculated that the deep punctures and expanded setae were associated with secretions from exocrine glands. Figures 198 and 201 show pores at the base of the seta from which such secretions may emerge. Smetana (op. cit.) further surmised that the secretions were important for accumulation of a protective coating. Such a coating is well developed in *Nepaliodes*, *Megarthropsis*, and *Peitawopsis*, but is lacking in *Lacvietina*. Presumably the expanded setae help to wick the chemical over the integument in the three genera with large setae. In *Lacvietina* these specialized setae may be too small to disperse secretions over the surface. The abdomen in all four genera lacks the specialized setae and the deep, coarse punctures, but the surface is coated in the species of *Nepaliodes*. In addition to the expanded setae at the edge of large punctures, *Megarthropsis smetanai* (and perhaps all species in the genus) has minute, beautiful, convoluted (figs. 176, 177, 178) or tubular (figs. 174, 181) setae in slight depressions between the large punctures; their function is unclear.

As yet the Tachyporinae has not been successfully defined as a monophyletic group; however, there are interesting, perhaps informative, characters in adults, the distribution and use of which in a phylogenetic analysis might help support the composition and relationships of the tribes and perhaps even help begin defining a subfamily.

ACKNOWLEDGMENTS

I thank the following individuals for generously lending specimens from their private collections or from the collections in their care: Giulio Cuccodoro and Ivan Löbl (Muséum d'Histoire Naturelle, Genève, Switzerland), Guillaume-Marie de Rougemont (Londinières, France), Harald Schillhammer (Naturhistorisches Museum Wien, Austria), Michael Schülke (Berlin, Germany), andAleš Smetana (Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada).

I thank Volker Assing (Hannover, Germany), Marc Branham (American Museum of Natural History), and Michael Schülke (Berlin, Germany) who reviewed the manuscript and suggested improvements; Eleanor Sterling and Cal Synder of the Center for Biodiversity and Conservation at the American Museum of Natural History for organizing the fieldwork; Khuat Dang Long and Nguyen Tien Hiep of the Institute of Ecology and Biological Resources, Hanoi, Vietnam, for logistical support and companionship; andAlešs Smetana for his friendship and gracious hospitality during my numerous visits to Ottawa and for our many staphylinid discussions. Special acknowledgment is due Michael Schülke who pointed out several species buried in *Tachinus* that should be examined for this project. Thanks to Steve Thurston for helping to organize the pages of illustrations and to Sarfraz Lodhi for carrying out numerous miscellaneous tasks. Three anonymous reviewers made useful suggestions for improvement; I thank them.

The material from Vietnam is based on fieldwork supported by the National Science Foundation under grant no. 9870232 and the Center for Biodiversity and Conservation at the American Museum of Natural History.

REFERENCES

Ashe, J.S., and A.F. Newton. 1993. Larvae of *Trichophya* and phylogeny of the tachyporine group of subfamilies (Coleoptera: Staphylinidae) with a review, new species and characterization of the Trichophyinae. Systematic Entomology 18: 267–286.

Assing, V., and P. Wunderle. 1995. A revision of the species of the subfamily Habrocerinae (Coleoptera: Staphylinidae) of the world. Revue Suisse de Zoologie 102(2): 307–359.

Blackwelder, R.E. 1952. The generic names of the beetle family Staphylinidae, with an essay on genotypy. United States National Museum Bulletin 200: i–iv, 1–483.

Cameron, M. 1919. New species of Staphylinidae from Singapore. Part II. Transactions of the Entomological Society of London 1918: 231–246.

Cameron, M. 1921. New species of Staphylinidae from Singapore. Part IV (Conclusion). Transactions of the Entomological Society of London 1920: 347–413.

Cameron, M. 1932. The fauna of British India including Ceylon and Burma. Coleoptera. Staphylinidae, vol. 3. London: Taylor and Francis, xiii + 443 pp.

Campbell, J.M. 1973a. A revision of the genus *Tachinus* (Coleoptera: Staphylinidae) of North and Central America. Memoirs of the Entomological Society of Canada 90: 1–137.

Campbell, J.M. 1973b. A revision of the genus *Tachinomorphus* (Coleoptera: Staphylinidae) of North and Central America. The Canadian Entomologist 105: 1015–1034.

Campbell, J.M. 1975. A revision of the genera *Coproporus* and *Cilea* (Coleoptera: Staphylinidae) of America north of Mexico. The Canadian Entomologist 107: 175–216.

Campbell, J.M. 1976a. A revision of the genus *Sepedophilus* Gistel (Coleoptera: Staphylinidae) of America North of Mexico. Memoirs of the Entomological Society of Canada 99: 1–89.

Campbell, J.M. 1976b. A review of the Tachyporinae genus *Euconosoma* Cameron (Coleoptera: Staphylinidae) with a description of a new species from Nepal. The Coleopterists Bulletin 30(2): 139–145.

Campbell, J.M. 1979. A revision of the genus *Tachyporus* Gravenhorst (Coleoptera: Staphylinidae) of North and Central America. Memoirs of the Entomological Society of Canada 109: 1–95.

Campbell, J.M. 1988. New species and records of North American *Tachinus* Gravenhorst (Coleoptera: Staphylinidae). The Canadian Entomologist 120: 231–295.

Campbell, J.M. 1991. A revision of the genera *Mycetoporus* Mannerheim and *Ischnosoma* Stephens (Coleoptera: Staphylinidae: Tachyporinae) of North and Central America. Memoirs of the Entomological Society of Canada 156: 1–169.

Campbell, J.M. 1993a. A revision of the genera *Bryoporus* Kraatz and *Bryophacis* Reitter and two new related genera from America North of Mexico (Coleoptera: Staphylinidae: Tachyporinae). Memoirs of the Entomological Society of Canada 166: 1–85.

Campbell, J.M. 1993b. A review of the species of *Nitidotachinus* new genus (Coleoptera: Staphylinidae: Tachyporinae). The Canadian Entomologist 125: 521–548.

Campbell, J.M. 1993c. A review of the genus *Olophrinus* Fauvel (Coleoptera: Staphylinidae: Tachyporinae) with descriptions of three new species. Bulletin of the National Museum of Natural Science 4: 47–70.

Campbell, J.M. 1994a. A revision of the genus *Coprotachinus* Cameron (Coleoptera: Staphylinidae: Tachyporinae). Bulletin de l'Institut Royal des Sciences Naturelles de Belgique. Entomologie 64: 25–47.

Campbell, J.M. 1994b. *Cileoporus*, a new genus of rove beetles from Central and South America (Coleoptera, Staphylinidae, Tachyporinae). Studies on Neotropical Fauna and Environment 29(3): 125–144.

Coiffait, H. 1977. Staphilinides récoltés au Népal par le Professeur Franz (2^{e} partie). Bulletin de la Société d'Histoire Naturelle de Toulouse 112(1976): 243–275.

Coiffait, H. 1982. Contribution à la connaissance des Staphylinides de l'Himalaya (Népal, Ladakh, Cachemire) (Insecta: Coleoptera: Staphylinidae). Senckenbergiana Biologica 62: 21–179.

Coiffait, H. 1984. Staphylinides (Col.) de la région himalayenne et de l'Inde. II. Tachyporinae, Oxytelinae et Aleocharinae. Entomologica Basiliensia 9: 116–157.

Hammond, P. 1975. The phylogeny of a remarkable new genus and species of gymnusine staphylinid (Coleoptera) from the Auckland Islands. Journal of Entomology (B) 44(2): 153–173.

Hayashi, Y. 1991. Notes on Staphylinidae from Taiwan, VI. The Entomological Review of Japan 46(1): 45–51.

Herman, L.H. 2001a. Catalog of the Staphylinidae (Insecta: Coleoptera). 1758 to the end of the Second Millennium. II. Tachyporine group. Bulletin of the American Museum of Natural History 265: 651–1066.

Herman, L.H. 2001b. Nomenclatural changes in the Staphylinidae (Insecta: Coleoptera). Bulletin of the American Museum of Natural History 264: 1–83.

Herman, L., and A. Smetana. 2002. New species of *Peitawopsis* and a review of the genus (Coleoptera: Staphylinidae: Tachyporinae: Megarthropsini). Special Bulletin of the Japanese Society of Coleopterology 5: 197–204.

Jordan, M. 1993. Encyclopedia of Gods. Over 2,500 deities of the world. New York: Facts on File, ix + 337 pp.

Leach, M. 1992. Guide to the gods. Santa Barbara, CA: ABC-CLIO, xi + 995 pp.

Li, L.-Z. 1995a. A revision of the genus *Tachinus* Gravenhorst (Coleoptera, Staphylinidae) of Japan, I. The Japanese Journal of Systematic Entomology 1(1): 51–72.

Li, L.-Z. 1995b. A revision of the genus *Tachinus* Gravenhorst (Coleoptera, Staphylinidae) of Japan, II. The Japanese Journal of Systematic Entomology 1(2): 201–216.

Li, L.-Z., and N. Ohbayashi. 1996. The genus *Tachinus* (Coleoptera, Staphylinidae) from the Himalayas with descriptions of three new species. Japanese Journal of Entomology 64(1): 151–162.

Li, L.-Z., M.-J. Zhao, and N. Ohbayashi. 2002. A new species of the genus *Tachinus* (Coleoptera, Staphylinidae) from Mt. Emei, southwest China. Special Bulletin of the Japanese Society of Coleopterology 5: 205–208.

Li, L.-Z, M.-J. Zhao, and M. Sakai. 2000a. Two new species of the genus *Tachinus* (Coleoptera, Staphylinidae) from Zhejiang Province, east China. The Japanese Journal of Systematic Entomology 6(2): 299–302.

Li, L.-Z, M.-J. Zhao, and M. Sakai. 2000b. A new genus of the subfamily Tachyporinae (Coleoptera, Staphylinidae) with description of a new species from Japan. Japanese Journal of Systematic Entomology 6(1): 11–18.

Newton, A.F., Jr., and M.K. Thayer. 1992. Current classification and family-group names in Staphyliniformia (Coleoptera). Fieldiana: Zoology (n.s.) 67: 1–92.

Pace, R. 1986. *Phaenoctavius brasiliensis* n. gen., n. sp. del Brasile e *Tachinus* (*Tachinoderus*) *rougemonti* n. sp. della Thailandia (Coleoptera Staphylinidae). Bollettino del Museo Civico di Storia Naturale di Verona 11: 45–51.

Scheerpeltz, O. 1933. Staphylinidae VII. *In* S. Schenkling (editor), Coleopterorum Catalogus. 6(129): 989–1500. Berlin: Junk.

Schülke, M. 2003. Eine neue Art der Gattung *Symmixus* Bernhauer, mit Bemerkungen zur Tribus Symmixini Bernhauer (Coleoptera, Staphylinidae, Tachyporinae). Linzer Biologische Beiträge 35(1): 443–452.

Seevers, C.H. 1958. A revision of the Vatesini, a tribe of Neotropical Myrmecophiles (Coleoptera, Staphylinidae). Revista Brasileira de Entomologia 8: 181–202.

Smetana, A. 1983a. The tribe Megarthropsini Cameron (Insecta: Coleoptera: Staphylinidae). Senckenbergiana Biologica 64(1/3): 141–155.

Smetana, A. 1983b. The status of the staphylinid genera *Derops* Sharp and *Rimulincola* Sanderson (Coleoptera). Entomologica Scandinavica 14(3): 269–279.

Smetana, A. 1988. Revision of the tribes Quediini and Atanygnathini. Part II. The Himalayan region (Coleoptera: Staphylinidae). Quaestiones Entomologicae 24(2): 163–464.

Smetana, A. 1992. *Peitowopsis monticola*, a new genus and species of the tribe Megarthropsini from southern Taiwan (Coleoptera: Staphylinidae: Tachyporinae). Bulletin of the National Museum of Natural Science 3: 199–208.

Smetana, A. 1995a. A second species of the endemic Taiwanese genus *Peitawopsis* Smetana, 1992 from southern Taiwan (Coleoptera: Staphylinidae: Tachyporinae). Bulletin of the National Museum of Natural Science 5: 131–134.

Smetana, A. 1995b. Revision of the tribes Quediini and Tanygnathinini. Part III. Taiwan. (Coleoptera: Staphylinidae). National Museum of Natural Science. Special Publication Number 6: 1–145.

Ullrich, W.G. 1975. Monographie der Gattung *Tachinus* Gravenhorst (Coleoptera: Staphylinidae), mit Bemerkungen zur Phylogenie und Verbreitung der Arten. Dissertation zur Erlangung des Doktorgrades der Mathematisch-Naturwissenschaftlichen Fakultät der Christian-Albrechts-Universität zu Kiel, 365 pp., 61 pls.

Zheng, F.-k. 2002. The female of *Derops dingshanus* Y. Watanabe, 1999 (Coleoptera, Staphylinidae, Tachyporinae). Special Bulletin of the Japanese Society of Coleopterology 5: 193–195.

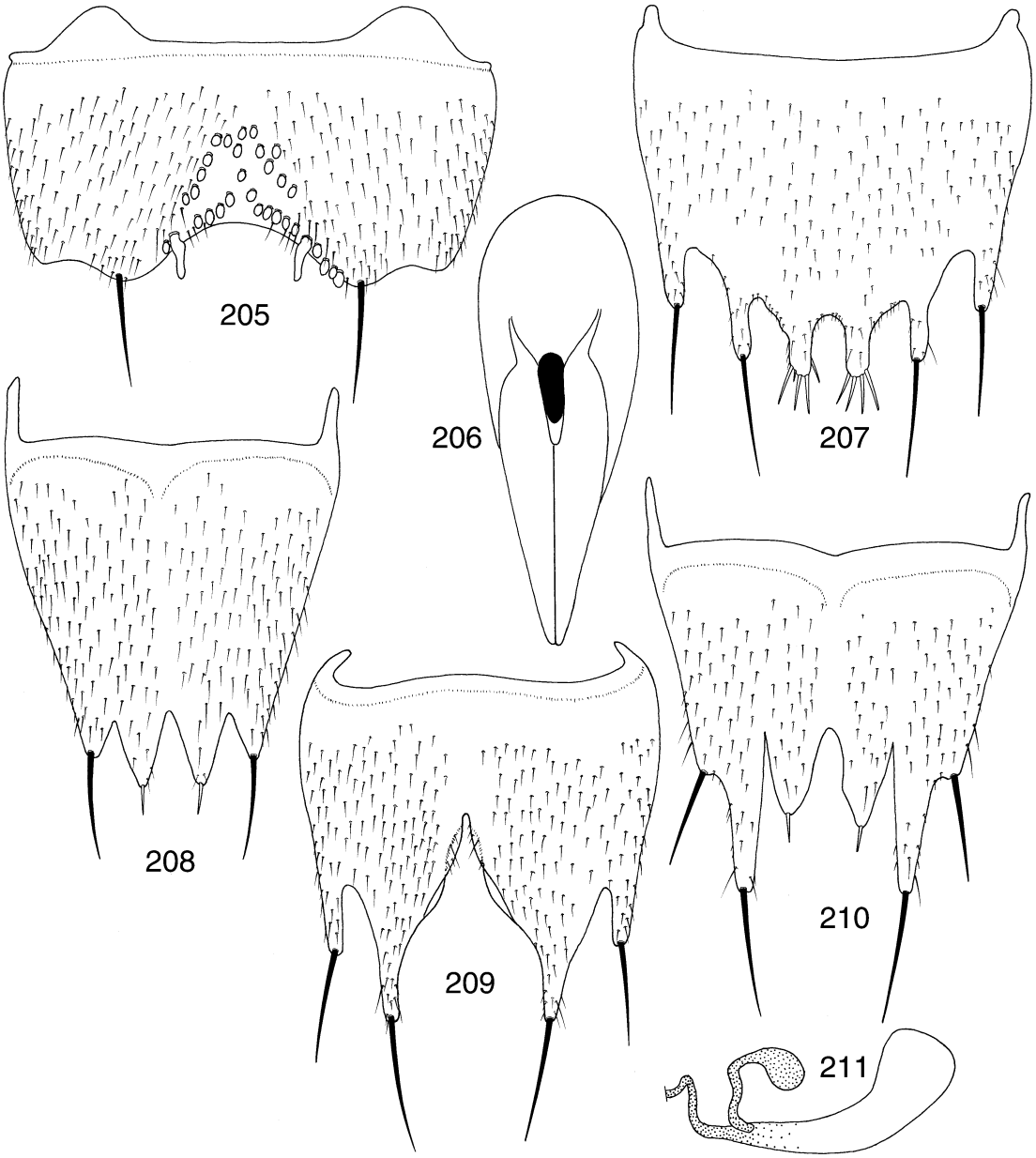
APPENDIX

Paratachinus laticollis Cameron

Paratachinus laticollis Cameron is the type species of *Paratachinus*. When Ullrich (1975) synonymized *Paratachinus* with *Tachinus* (*Tachinoderus*), *P. laticollis* became a junior secondary homonym of *Tachinus laticollis* Gravenhorst, 1802, and was replaced by *Tachinus oblongopunctatus* Ullrich.

After the original description nothing of substance was written about *Paratachinus laticollis* Cameron until Ullrich (1975: 313) redescribed and transferred the species to *Tachinus*, designated a lectotype, and illustrated the tergum and sternum VIII of the female. Cameron knew the species only by the females, and Ullrich saw only the type series. Coiffait (1984: 113) included the species in a key but provided no illustrations. Heretofore characters of the male have not been published.

Because *Tachinus punctatissimus* (Hayashi) was described in *Paratachinus*, but was found to be congeneric with a group of Southeast Asian species, it was essential to examine the type species of *Paratachinus* to determine the generic name of the group. *Paratachinus punctatissimus* shares with species of *Lacvietina* the metasternal pit, the coarse, dense cephalic, pronotal and ely-



Figs. 205–211. *Tachinus oblongopunctatus* Ullrich. **205.** Sternite VII, male. **206.** Aedeagus, ventral. **207.** Sternum VIII, female. **208.** Tergum VIII, male. **209.** Sternum VIII, male. **210.** Tergum VIII, female. **211.** Spermatheca.

tral punctation, the reflexed cephalic margin, the emarginate posterior margin of the elytron, and the asymmetrical aedeagus, and it differs from *Paratachinus laticollis* by these same features. *Paratachinus laticollis* and *Paratachinus punctatissimus* are not congeneric; the former remains in *Tachinus* (*Tachinoderus*) and the latter is transferred to *Lacvietina*.

Following is a redescription with illustrations of salient features of *P. laticollis* Cameron; in-

cluded for the first time are characters of the male. I did not study type material of *P. laticollis* Cameron; the description and discussion concerning this species are based on specimens identified by Milton Campbell. The specimens are consistent with the descriptions published by Cameron (1932) and Ullrich (1975). As the name suggests, the elongate pronotal punctation is a characteristic feature of the species.

Tachinus oblongopunctatus Ullrich
Figures 205–211

Tachinus oblongopunctatus Ullrich, 1975: 313 (replacement name).
—Coiffait, 1984: 133.—L.-Z. Li and Ohbayashi, 1996: 160.
Paratachinus laticollis Cameron, 1932: 397. Type locality: Darjeeling Dist.: Ghum, alt. 9000 feet. Type not examined. Junior secondary homonym of *Tachinus laticollis* Gravenhorst, 1802.

DESCRIPTION: Color reddish brown. Head and pronotum usually darker than elytra and abdomen.

Head and clypeus with feeble, scattered punctation; surface polished. Head not explanate laterally and without reflexed supraantennal or clypeal margins; surface near antennal insertion shallowly impressed. Epistomal suture present, complete or interrupted medially, and gradually curved, not angulate medially; midcranial suture absent. Dorsum without median impression or midlongitudinal groove. Postocular lateral margin without ridge or carina extending posterolaterally from eye; vertical postocular carina absent. Gular sutures widely separated and divergent from about middle. Submentum with scattered fine punctation. Antenna moderately long, extending to about basal quarter of elytra; scape more or less parallel-sided from near base to apex, not tapered; base of insertion visible from above.

Pronotum strongly convex; anterior and posterior angles broadly rounded; anterior angles produced beyond median portion of anterior margin; lateral margin evenly curved; dorsal surface covered with moderately dense, elongate punctation; punctation finer medially and anteriorly and increasingly coarse laterally and posteriorly; punctation most coarse near posterolateral margin; punctures distinct, not anastomosing.

Elytra convex, moderately convex medially and strongly convex laterally; dorsal surface evenly, densely, and coarsely punctate; lateral margin narrowly reflexed from humeral angle to about middle and with short, spinelike setae; posterior margin without emargination laterally; posterolateral angle rounded, not produced. Mesosternum with midlongitudinal basal carina; paramedial basal carina absent. Metasternum without pit adjacent to apex of mesosternal process (see figs. 146, 197); circum-mesocoxal ridge moderately strongly developed medially.

Abdominal segment II with one pair of paratergites; segment III with two pairs of paratergites; segments IV–VII with one pair of paratergites. Sternum I present as narrow sclerite anterior to II. Sternite II narrow, fused to III, and with median carina. Sternite III with median carina basally. Tergite VII with palisade fringe on posterior margin. Tergites IX divided middorsally by tergum X.

MALE: Sternite V unmodified. Sternite VI with feeble emargination of posterior margin; surface unmodified. Sternite VII (fig. 205) with broad, shallow median depression; depression with cluster of about 16 peg setae; sternite with medially separated row of peg setae adjacent to posterior margin; apical row of peg setae bordered laterally by long, darkly pigmented seta; posterior margin with broad, deep median emargination and with long, stout, sinuate, blunt-tipped seta on lateral fifth of emargination. Sternum VIII (fig. 209) with broad, deep median emargination; lateral margin of emargination sinuate; emargination with narrow, round base. Tergum VIII (fig. 208) with moderately deep, acute emargination between median pair of apical lobes; emargination deeper than wide. Aedeagus (fig. 206) more or less symmetrical in ventral view; parameres contiguous along medial margin; parameres straight and of equal length.

FEMALE: Tergum VIII (fig. 210) with four apical lobes; median pair of lobes shorter than lateral pair. Sternum VIII (fig. 207) with three pairs of lobes. Spermatheca as in figure 211.

DISTRIBUTION AND HABITAT: This species is known from India and Nepal and has been collected at 2000 to 3200 m elevation.

MATERIAL EXAMINED: Nine males and 9 females. **Nepal**: Khandbari District: Induwa Khola Valley, 2000 m, 14.IV.84, Smetana and Löbl (2 males, ASC), 16.IV.84 (1 male, 1 female, ASC), 2050 m, 16.IV.84 (1 male, 2 females, ASC); above Sheduwa, 3000 m, 31.III–1.IV.82, A. and Z. Smetana (1 male, ASC); Bakan, W of Tashigaon, 3200 m, 5.IV.82, A. and Z. Smetana (2 males, 1 female, ASC), 3100 m, 8.IV.82, A. and Z. Smetana (1 female, ASC); Forest NE Kuwapani, 2400 m, 24.IV.84, Smetana and Löbl (1 male, 1 female, ASC), 5.IV.84 (1 female, ASC), 2500 m, 28.III.82, A. and Z. Smetana (1 male, 1 female, ASC), 11.IV.82 (1 female, ASC).

ADDENDUM

Two relevant articles arrived just before the present study was due to be published. In one, a new species is placed in *Peitawopsis* and another species is transferred to the same genus. The second article concerns *Paratachinus*.

Lacvietina takashii (Hayashi), **new combination**

Peitawopsis takashii Hayashi, 2003a: 114. Type locality: Japan, Okinawa, Iriomote Is., near Kanbira Falls. Holotype, male, not examined.

DISCUSSION: No specimens of this species were studied, nonetheless the habitus illustration clearly demonstates that it should not be placed in *Peitawopsis*.

The posterior margin of the elytra of *Peitawopsis* is broadly emarginate. The emargination extends in a continuous arc from the lateral apical angle of one elytron to the other and the lateral third of the dorsal elytral surface is concave (see fig. 188 herein). These characters are among those diagnostic for the genus. The posterior elytral margin of *L. takashii* is emarginate only near the lateroapical angle, the remainder of the posterior margin is a broad convex curve and the dorsal surface of the elytra is broadly convex to near the ''gutter'' of the lateral margin (see fig. 1 by Hayashi, 2003a).

The elytral features illustrated for *L. takashii* are found in species of *Megarthropsis* and *Lacvietina*. The Japanese species cannot be included in *Megarthropsis* because it lacks the laterobasal angle of the pronotum of species in that genus (see fig. 171 herein). The elytral and pronotal features presented by Hayashi for *L. takashii* are in accord with those found in *Lacvietina*. Although the most diagnostic character for *Lacvietina*, the intermesocoxal metasternal pit (see figs. 196, 197 herein), was neither illustrated nor mentioned in the description for *L. takashii*, the species is transferred to *Lacvietina* with the implicit assumption that when examined the species will be found to have the pit.

The illustrations published for *L. takashii* (figs. 3–5 in Hayashi, 2003a) are similar to those for *L. punctatissima* (figs. 161, 162, 165 herein) and do not permit separation of the two species, but Hayashi (2003a: 118) discussed characters that differentiate them.

The presence of *L. takashii* on Iriomote Island slightly extends the range of *Lacvietina* from Vietnam and Taiwan.

Lacvietina punctatissima (Hayashi)

DISCUSSION: Hayashi (2003a: 114) transferred the species to *Peitawopsis*, but for the reasons presented in an earlier section of the present work the species should be placed in *Lacvietina*.

Paratachinus Blackwelder

Hayashi (2003b: 133) treated *Paratachinus* as a genus, not a subgenus as was done in the present work, but he erroneously stated that Cameron was the author of the name. According to the International Code of Zoological Nomenclature a genus-group name proposed after 1930 without a type species designation is unavailable (Article 13.3) and the first writer to satisfy the conditions of availability is the author of the name (Article 50.1). Cameron did not cite designate a type species so *Paratachinus* was unavailable; it became available when Blackwelder designated a type species so he is the author.

ADDENDUM REFERENCES

Hayashi, Y. 2003a. Notes on *Peitawopsis* (Coleoptera: Staphylinidae: Tachyporinae), with a description of a new species from Japan. The Entomological Review of Japan 58(2): 113–119.

Hayashi, Y. 2003b. Notes on *Paratachinus* (Coleoptera: Staphylinidae) with a description of a new species. The Entomological Review of Japan 58(2): 133–141.