

A Taxonomical Note on the Sumatran Species of the
Genus *Sophrops* (Melolonthidae,
Melolonthinae, Melolonthini)

Takeshi ITOH

Higashi-Naruo-chô 2-1-13-212, Nishinomiya, Hyôgo, 663 Japan

Abstract The Sumatran species of the melolonthine genus *Sophrops* allied to *Sophrops rugulosa* (BRENSKE), comb. nov., from Borneo Island, are dealt with. They contain 4 species including 3 subspecies, one of which is newly described here under the name of *S. rugulosa harauensis* T. ITOH, subsp. nov. A key to them is provided.

Up to this time, four melolonthine species related to *Brahmina rugulosa* BRENSKE, 1892, from western Borneo, have been known from Sumatra. They are *Brahmina cribripennis* BRENSKE, *Microtrichia confusa* MOSER, *M. deliensis* MOSER and *M. impressicollis* MOSER. They may be ascribed to the genus *Sophrops* and are closely allied to one another. It has been very difficult to identify these species exactly only from their original descriptions. Recently, I had an opportunity to examine a series of specimens of these beetles from Sumatra including some of their type specimens. As the result, I have come to the conclusion that in Sumatra Island, *S. cribripennis* comb. nov., *S. deliensis* comb. nov., *S. impressicollis* comb. nov., *S. rugulosa confusa* and *S. rugulosa harauensis* subsp. nov. can be recognized in relation with *S. rugulosa rugulosa* comb. nov. from Borneo.

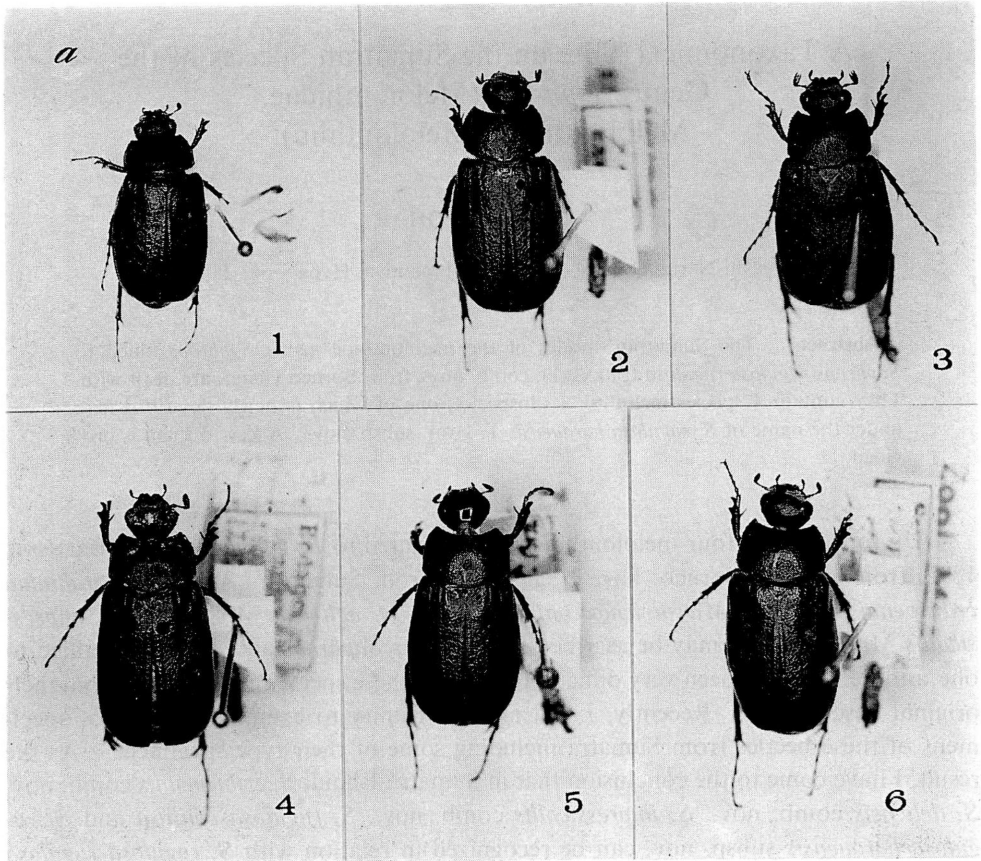
I am going to make comment on each species and subspecies, emphasizing specific differences and if necessary with illustrations.

The abbreviations used herein are as follows: CL – length of clypeus; CW – width of clypeus; PL – length of pronotum; PW – greatest width of pronotum; AC – length of antennal club; FT – length of the last 5 segments together in antennal foot-stalk; FW – greatest width of posterior femur; FL – length of posterior femur; IN – interocular distance; HW – head width.

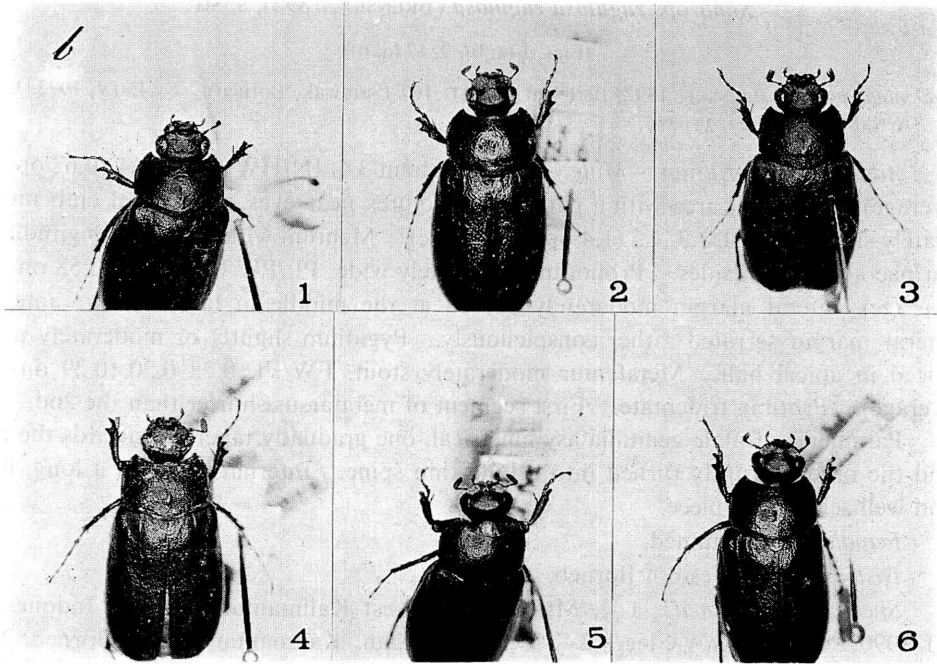
Before going further, I wish to express my sincere gratitude to Dr. F. HIEKE, Dr. M. UHLIG and Mr. J. SCHULZE of the Zoological Museum of Humboldt University, Berlin, for their kindness to have lent me the type specimens involved.

**Key to the Sumatran Species and Subspecies of the Genus *Sophrops*
Allied to *S. rugulosa rugulosa* (BRENSKE, 1892) from Borneo**

1 (2) Mentum with a pair of very remarkable longitudinal carinae along both sides.



- Clypeus shallower. Protibia bidentate.
 *S. cribripennis* (BRENSKE, 1892), comb. nov.
- 2 (1) Mentum with a pair of inconspicuous longitudinal carinae or without carinae along both sides. Protibia tridentate.
- 3 (4) Clypeus hardly emarginate at the anterior margin. Male genitalia with asymmetrical parameres. *S. deliensis* (MOSER, 1917), comb. nov.
- 4 (3) Clypeus clearly emarginate at the anterior margin.
- 5 (6) Pronotum clearly depressed in front of scutellum as well as vertex. Occipital area not punctate near eyes. ... *S. impressicollis* (MOSER, 1913), comb. nov.
- 6 (5) At least pronotum not depressed in front of scutellum. Occipital area more or less punctate near eyes. [*S. rugulosa* (BRENSKE, 1892), comb. nov.]
- 7 (8) Internal sac of male genitalia with 1 fully sclerotized piece.
 *S. rugulosa rugulosa* (BRENSKE, 1892), s. str.
- 8 (7) Internal sac of male genitalia with 2 fully sclerotized pieces, the smaller one of which bears a bundle of long bristles at the tip.



Figs. 1-6 (on pp. 260-261). — 1. (a) *Sophrops rugulosa rugulosa* (BRENSKE), comb. nov., ♂; (b), ditto, fore part of body. — 2. (a) *S. rugulosa confusa* (MOSER), ♂; (b) ditto, ♀, fore part of body. — 3. (a) *S. rugulosa harauensis* T. ITOH, subsp. nov., ♂; (b) ditto, fore part of body. — 4. (a) *S. impressicollis* (MOSER), comb. nov., ♂; (b) ditto, fore part of body. — 5. (a) *S. cribripennis* (BRENSKE), comb. nov., ♂; (b) ditto, fore part of body. — 6. (a) *S. deliensis* (MOSER), comb. nov., ♂; (b) ditto, fore part of body.

- 9 (10) Occipital area with a clear patch of punctures near eyes. The last segment of maxillary palpus clearly depressed. Pronotum with lateral margin curved more weakly in lateral view; antero-lateral margin serrated more strongly. *S. rugulosa harauensis* T. ITOH, subsp. nov.
- 10 (9) Occipital area hardly or slightly punctate near eyes. The last segment of maxillary palpus normally spindle-shaped. Pronotum with lateral margin curved more sharply in lateral view; antero-lateral margin serrated more inconspicuously. *S. rugulosa confusa* (MOSER, 1917)

***Sophrops rugulosa* (BRENSKE, 1892), comb. nov.**

Brahmina rugulosa BRENSKE, 1892, Berl. ent. Z., 37: 107 (Sarawak, Borneo). — FREY, 1972, Ent. Arb. Mus. G. Frey, 23: 355.

Sophrops rugulosa rugulosa (BRENSKE, 1892), s. str.

(Figs. 1 (a, b), 9, 17 (a, b))

Brahmina rugulosa BRENSKE, 1892, Berl. ent. Z., 37: 107 (Sarawak, Borneo). — FREY, 1972, Ent. Arb. Mus. G. Frey, 23: 355.

Additional description. Male. CW/CL about 3.6. IN/HW 0.61–0.64 (0.62 on an average). Occipital area with a patch of punctures near eyes. Antennal club moderately short, AC/FT 1.3–1.5 (1.4 on an average). Mentum without clear longitudinal carinae along both sides. Pronotum moderately wide, PL/PW 0.57–0.59 (0.58 on an average); lateral margin moderately curved at the middle in lateral view; antero-lateral margin serrated rather conspicuously. Pygidium slightly or moderately produced in apical half. Metafemur moderately stout, FW/FL 0.28–0.30 (0.29 on an average). Protibia tridentate. First segment of metatarsus shorter than the 2nd.

Parameres of male genitalia asymmetrical, one gradually tapering towards the tip and the other abruptly turned into a long thin spine. Internal sac with a long, flat and well sclerotized piece.

Female: not examined.

Distribution. Western Borneo.

Specimens examined. 1 ♂, Mt. Bawang, West Kalimantan, Borneo, Indonesia, III–1990, N. NISHIKAWA leg.; 2 ♂♂, Balaikrangan, Kalimantan Barat, Borneo, X–1989.

Notes. In this nominotypical subspecies, the parameres of male genitalia are asymmetrical in shape.

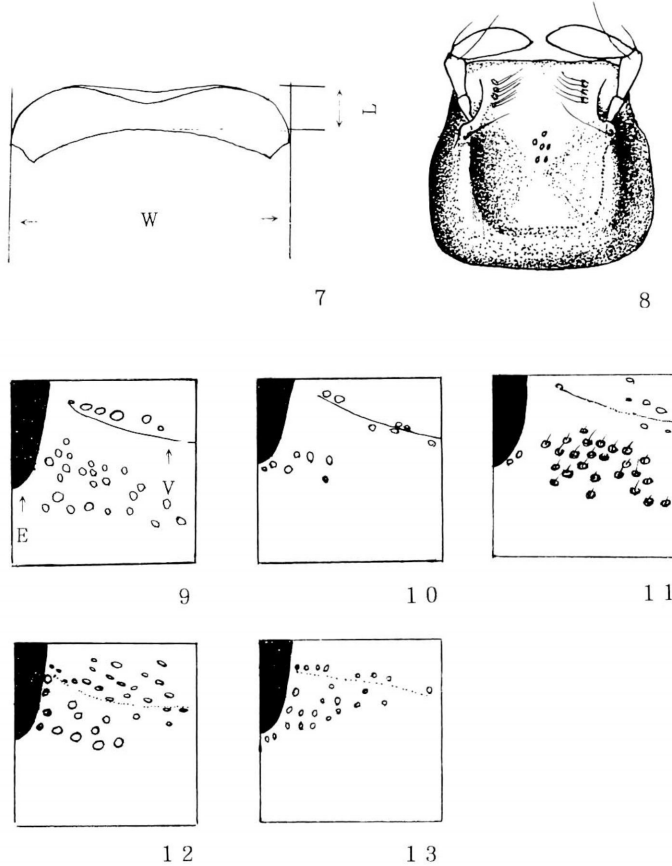
Sophrops rugulosa confusa (MOSER, 1917)

(Figs. 2 (a, b), 10, 14, 18 (a, b))

Microtrichia confusa MOSER, 1917, Stett. ent. Ztg., 78: 91 (Sumatra). — FREY, 1972, Ent. Arb. Mus. G. Frey, 23: 354.

Additional description. Male. CW/CL about 3.5. IN/HW 0.57–0.63 (0.60 on an average). Occipital area hardly or slightly punctate near eyes. AC/FT 1.3–1.7 (1.5 on an average). Mentum without clear longitudinal carinae along both sides. Pronotum moderately wide, PL/PW 0.54–0.61 (0.58 on an average); lateral margin moderately curved at the middle or just behind there in lateral view; antero-lateral margin serrated rather inconspicuously. Pygidium slightly produced in apical half. Metafemur moderately stout, FW/FL 0.27–0.31 (0.29 on an average). Protibia tridentate. First segment of metatarsus shorter than the 2nd.

Parameres of male genitalia symmetrical though geographically somewhat variable in shape, bent inwards like a hook at the tip in a topotypical specimen and tapering gradually towards the tip in a specimen from the Sumatran central district. Internal sac with a long, flat and well-sclerotized piece and a spoon-like piece with a bundle of inwardly directed long bristles at the tip.

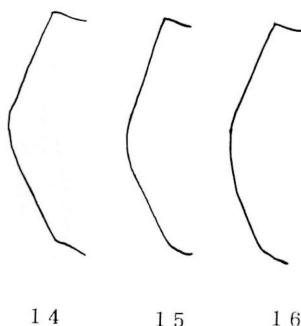


Figs. 7-13. — 7. Length (L) and width (W) of clypeus [in *Sophrors cribripennis* (BRENSKE), comb. nov. (♂)]. — 8. Longitudinal carinae of mentum in *S. cribripennis*. — 9-13. Punctures of occipital areas; 9, *S. rugulosa rugulosa* (BRENSKE), comb. nov., ♂; 10, *S. rugulosa confusa* (MOSER), ♂; 11, *S. rugulosa harauensis* T. ITOH, subsp. nov., ♂; 12, *S. cribripennis* (BRENSKE), comb. nov., ♂; 13, *S. deliensis* (MOSER), comb. nov., ♂. E: eye, V: vertex.

Female. IN/HW 0.58–0.61 (0.60 on an average), AC/FT 1.3–1.4 (1.4 on an average), PL/PW 0.56–0.59 (0.58 on an average), FW/FL 0.28–0.35 (0.32 on an average).

Distribution. Sumatra.

Specimens examined. 1 ♀, "Sumatra, WEYERS Y.", "Coll. BRENSKE", "*Microtrichia confusa* Mos. Type", "Zool. Mus. Berlin"; 5 ♂♂, 3 ♀♀, same data as for the type specimen; 1 ♀, "Sumatra, Barisan Gebirge", "Coll. BRENSKE", "Zool. Mus. Berlin"; 1 ♂, Air Mancur, near Bukit Tinggi, Sumatra, Indonesia, I~II-1988, JAMAAN leg.; 1 ♀, same locality, I-1989, JAMAAN leg.; 1 ♂, same locality, II-1989, Sin YAMADA leg.; 1 ♂, 1 ♀, Pangkalan, Paya Kumbuh, C. Sumatra, II-1988, S. YAMADA leg.; 2 ♂♂,



Figs. 14–16. Pronotal lateral margins in lateral view. — 14. *Sophrups rugulosa confusa* (MOSER), ♂; 15, *S. rugulosa harauensis* T. ITOH, subsp. nov., ♂; 16, *S. deliensis* (MOSER), comb. nov., ♂.

Mt. Singgalang, near Bukit Tinggi, W. Sumatra, IV~VI-1991, S. YAMADA leg.

Notes. This subspecies is closely allied to the nominotypical one and is distinguishable from it only by the structure of internal sac in the male genitalia. Detailed data of the type locality were not available from the type specimen.

***Sophrups rugulosa harauensis* T. ITOH, subsp. nov.**

(Figs. 3 (a, b), 11, 15, 19)

Description. Body length: 12.9–15.8 mm (♂).

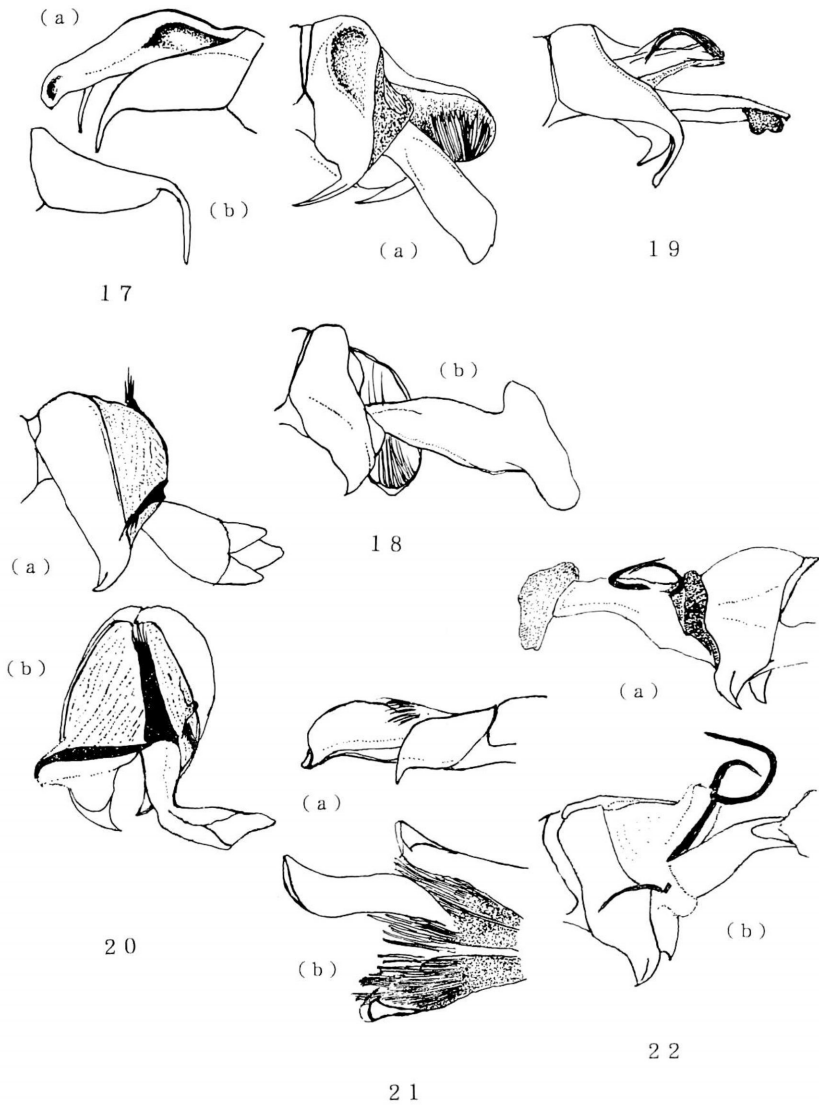
Male. Dorsal surface almost blackish, not shining. Clypeus shallow and wide, CW/CL about 4.0; anterior margin well emarginate. Frons not depressed. IN/HW 0.60–0.63 (0.62 on an average). Occipital area with a clear patch of punctures near eyes slightly apart from vertex. Antennal club relatively long, AC/FT 1.6–1.9 (1.8 on an average). Last segment of maxillary palpus remarkably depressed. Mentum without clear longitudinal carinae along both sides. Pronotum moderately wide, PL/PW 0.56–0.60 (0.58 on an average); lateral margins almost parallel from basal 2/3 to hind angles in dorsal view, and weakly curved almost at the middle in lateral view; antero-lateral margin remarkably serrate, postero-lateral one hardly serrate; disc not depressed in front of scutellum. Elytra hardly rugose. Metafemur wholly shining and more slender than in the other subspecies, FW/FL 0.25–0.28 (0.26 on an average). Protibia tridentate. First segment of metatarsus slightly shorter than the 2nd.

Parameres of male genitalia slightly asymmetrical, extending thinly and curved. Internal sac with 2 long, flat and well-sclerotized pieces, the shorter one bearing a bundle of inwardly directed long bristles at the tip.

Female. Unknown.

Distribution. Central Sumatra.

Specimens examined. Holotype: ♂, Harau Valley, Paya Kumbuh, Central Sumatra, III~IV-1988, MARLIS leg. Paratypes: 1 ♂, same data as for the holotype;



Figs. 17–22. Parameres and internal sacs of male genitalia. — 17. *Sophrors rugulosa rugulosa* (BRENSKE), comb. nov.; (a) right lateral view, (b) left lateral view. — 18. *S. rugulosa confusa* (MOSER); (a) toptypical specimen, (b) specimen from central Sumatra. — 19. *S. rugulosa harauensis* T. ITOH, subsp. nov. — 20. *S. impressicollis* (MOSER), comb. nov.; (a) left lateral view, (b) apical view. — 21. *S. cribripennis* (BRENSKE), comb. nov.; (a) right lateral view, (b) inside of parameres. — 22. *S. deliensis* (MOSER), comb. nov.; (a) right lateral view, (b) left lateral view.

1 ♂, same locality, VI-1988, MARLIS leg.; 1 ♂, same locality, IV~V-1989, MARLIS leg.; 2 ♂♂, same locality, X~XII-1989, MARLIS leg.; 1 ♂, same locality, II~IV-1990, MARLIS leg.; 2 ♂♂, same locality, III-1991, MARLIS leg.; 1 ♂, same locality, II-1988, SARIMUDANAS leg.; 1 ♂, same locality, IV-1989, SARIMUDANAS leg.; 3 ♂♂, same locality, III~IV-1992, SARIMUDANAS leg.

The holotype and a paratype are preserved in the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo, 2 paratypes in the collection of the Zoological Museum of Humboldt University, Berlin, and the rest in my collection.

Notes. This new subspecies is closely allied to *S. rugulosa confusa* (MOSER), but is strictly restricted in distribution to a narrow area of central Sumatra.

Sophrops impressicollis (MOSER, 1913), comb. nov.

(Figs. 4 (a, b), 20 (a, b))

Microtrichia impressicollis MOSER, 1913, Dtsch. ent. Z., 1913: 274-275 (Sumatra: Deli). — FREY, 1972, Ent. Arb. Mus. G. Frey, 23: 354.

Additional description. *Male.* CW/CL about 3.5. Frons depressed. IN/HW 0.57-0.62 (0.60 on an average). Occipital area not punctate near eyes. AC/FT 1.6-1.7 (1.6 on an average). Mentum without clear longitudinal carinae along both sides. Pronotum moderately wide, PL/PW 0.57-0.60 (0.58 on an average); lateral margin moderately curved behind the middle or at the middle in lateral view. Metafemur moderately stout, FW/FL 0.29-0.31 (0.30 on an average) and wholly shining. Protibia tridentate. First segment of metatarsus clearly shorter than the 2nd.

Parameres of male genitalia symmetrical and sickle-shaped. Internal sac with a long cylindrical well-sclerotized piece and 2 streaks of chitinous membrane, the latter bearing short setae at their tips.

Female. IN/HW 0.59-0.60 (0.59 on an average). AC/FT 1.4-1.6 (1.5 on an average). PL/PW 0.57-0.60 (0.58 on an average). FW/FL 0.36-0.38 (0.37 on an average).

Distribution. Sumatra.

Specimens examined. 1 ♂, 1 ♀, "Bedagei. int. Sumatra's O.K. ± 600' 2de Sem. 89, I. Z. KANNEGIETER.", "*Brahmina impressicollis* Mos. Type", "Zool. Mus. Berlin"; 1 ♂, same data as for type specimens, "*impressicollis* Mos.", "Zool. Mus. Berlin"; 1 ♂, 3 ♀♀, same data as for type specimens, "Zool. Mus. Berlin"; 1 ♂, "G. Tji Salimar. W. Preanger, ± 3000' Nov. 90., I. Z. KANNEGIETER", "Zool. Mus. Berlin"; 1 ♂, same locality, Sept. 95., I. Z. KANNEGIETER, "Zool. Mus. Berlin."

Notes. This species is closely allied to *S. rugulosa confusa* (MOSER), but it is larger, the pronotum is depressed at the base, and the internal sac of male genitalia has only one cylindrical, completely sclerotized piece.

Sophrops cribripennis (BRENSKE, 1892), comb. nov.

(Figs. 5 (a, b), 7, 8, 12, 21 (a, b))

Brahmina cribripennis BRENSKE, 1892, Berl. ent. Z., **37**: 106 (Sumatra). — FREY, 1972, Ent. Arb. Mus. G. Frey, **23**: 354.

Additional description. Male. Clypeus shallow and wide, CW/CL about 4.9. Frons flat. IN/HW 0.57–0.61 (0.59 on an average). Occipital area with a small patch of punctures just behind vertex near eyes. AC/FT 1.5–1.7 (1.6 on an average). Mentum with clear longitudinal carinae along both sides. Pronotum moderately wide, PL/PW 0.56–0.59 (0.57 on an average); lateral margin moderately or weakly curved clearly behind the middle in lateral view. Metasternum shining in the central area. Abdomen almost shining except for the marginal areas. Metafemur opaque only around its upper marginal area and moderately stout. FW/FL 0.30–0.33 (0.31 on an average). Protibia bidentate. First segment of metatarsus almost as long as the 2nd.

Parameres of male genitalia symmetrical and slightly pointed at the tip. Internal sac with a long cylindrical well-sclerotized piece and a bundle of outwardly directed long bristles just inside parameres.

Female. Pronotum punctate slightly umbilicately, not so coarsely as in male. Pygidium moderately produced. Metafemur wholly shining. FW/FL 0.36. Protibia bidentate.

Only one female specimen known is deformed so that its fore body cannot be measured exactly.

Distribution. Sumatra, Malay Peninsula (new record).

Specimens examined. 1 ♂, “*cribripennis* type ♂. BRSK.”, “Sumatra Jija v.” (?), “Coll. BRENSKE”, “Zool. Mus. Berlin”; 1 ♀, same data as for type specimen; 1 ♂, Cameron Highlands, Pahang, Malaysia”; 1 ♂, same locality, 1987.

In the above records, question mark means possibility of my misreading of the spelling of “Jija v.”

Notes. Another female type specimen misidentified by BRENSKE is regarded as *S. deliensis* (MOSER), comb. nov. This misidentified specimen is labelled “Sumatra stgr”, “*Brahmina cribripennis* Type BRSK.”, “Zool. Mus. Berlin.” BRENSKE’s original description of this species is more or less misleading and careful scrutiny is needed for its interpretation.

Sophrops deliensis (MOSER, 1917), comb. nov.

(Figs. 6 (a, b), 13, 16, 22 (a, b))

Microtrichia deliensis MOSER, 1917, Stett. ent. Ztg., **78**: 92 (Sumatra: Deli). — FREY, 1972, Ent. Arb. Mus. G. Frey, **23**: 354.

Additional description. Male. Dorsal surface almost blackish, sometimes dark brown in colour, and dull, not shining. Punctures on dorsum umbilicate and some

of them, mainly on elytra, with microscopically minute pubescence. IN/HW 0.58–0.66 (0.61 on an average). Occipital area slightly or hardly punctate just behind vertex near eyes. Antennal club shorter, AC/FT 1.2–1.5 (1.3 on an average). Mentum without clear longitudinal carinae along both sides. Pronotum wider and less convex, PL/PW 0.50–0.55 (0.53 on an average); lateral margin weakly curved at the middle in lateral view. Elytra slightly rugose. Metafemur moderately stout, FW/FL 0.27–0.32 (0.29 on an average) and wholly shining.

Parameres of male genitalia remarkably asymmetrical, one larger than the other. Internal sac with a long, well-sclerotized piece and 1 streak of chitinous membrane, the latter bearing coil-shaped ornaments at the tip.

Female. IN/HW 0.60–0.64 (0.62 on an average), antennal club as short as in male, AC/FT 1.1–1.4 (1.3 on an average). Pronotum wider, PL/PW 0.51–0.56 (0.53 on an average). Metafemur moderately stout as in male, FW/FL 0.34–0.39 (0.36 on an average).

Distribution. Sumatra (northern to central regions).

Specimens examined. 1 ♂, “Sumatra Deli”, “*Microtrichia deliensis* Type Mos.”, “Zool. Mus. Berlin”; 1 ♀, same locality, “*deliensis* Mos.”, “Zool. Mus. Berlin”; 1 ♂, Harau Valley, Paya Kumbuh, near Bukit Tinggi, C. Sumatra, 14–VIII–1987, T. ITOH leg.; 1 ♂, same locality, IV~V–1988, SARIMUDANAS leg.; 1 ♂, 1 ♀, same locality, IV–1989, SARIMUDANAS leg.; 3 ♂♂, 1 ♀, same locality, IX–1989, SARIMUDANAS leg.; 4 ♂♂, same locality, X–1989~I–1990, SARIMUDANAS leg.; 2 ♂♂, 2 ♀♀, same locality, II~IV–1990, SARIMUDANAS leg.; 1 ♂, 1 ♀, same locality, III–1991, SARIMUDANAS leg.; 2 ♂♂, same locality, III~IV–1992, SARIMUDANAS leg.; 3 ♂♂, 6 ♀♀, same locality, III~IV–1988, MARLIS leg.; 1 ♀, same locality, IX~X–1988, MARLIS leg.; 1 ♂, 2 ♀♀, same locality, II–1989, MARLIS leg.; 1 ♀, same locality, IV~V–1989, MARLIS leg.; 2 ♂♂, same locality, X~XII–1989, MARLIS leg.; 2 ♂♂, same locality, II~IV–1990, MARLIS leg.; 3 ♂♂, 1 ♀, same locality, III–1991, MARLIS leg.; 1 ♀, Pangkalan, Paya Kumbuh, near Bukit Tinggi, C. Sumatra, II–1988, Sin YAMADA leg.; 1 ♀, Lembah Anai, near Bukit Tinggi, C. Sumatra, II–1989, Sin YAMADA leg.; 1 ♀, “Sumatra strg”, “*Brahmina cribripennis* Type BRSK.”, “Zool. Mus. Berlin”; 2 ♀♀, “Bedagei. int. Sumatra’s O.K.±600’2de Sem. 89. I. Z. KANNEGIETER”, “Zool. Mus. Berlin.”

Notes. This species is characterized by the weakly emarginate clypeus, the wider pronotum and the smaller antennal club. One of BRENSKE’s female type specimens of *Brahmina cribripennis* is apparently misidentified with this species. Two of MOSER’s female type specimens of *Microtrichia impressicollis* are misidentified with this species as well.

要 約

伊藤 武：インドネシア・スマトラ島のヒメクロコガネ属 *Sophrops* の研究。——ボルネオ島に産する小型のクロコガネの一種、*Brahmina rugulosa* BRENSKE, 1892 とその類縁種でスマトラ島に産するものをヒメクロコガネ属 *Sophrops* のものと見なし、これら各種について解説した。今回、新た

に 1 新亜種 *Sophrops rugulosa harauensis* T. ITOH を記載し、これを含めて検索表を作成し、必要なものについては付図を掲載した。

References

- BRENSKE, E., 1892. Die Arten der Coleoptera Gattung *Brahmina* BLANCHARD. *Berl. ent. Z.*, **37**: 80–124.
FREY, G., 1972. Katalog aller in die Gattung *Sophrops* FAIRM. eingereihten Arten (Col. Scarab.).
Ent. Arb. Mus. G. Frey, **23**: 354–356.
MOSER, J., 1913. Beitrag zur Kenntnis der Melolonthiden (Col.). *Dtsch. ent. Z.*, **1913**: 271–297.
——— 1917. Beitrag zur Kenntnis der Melolonthiden. *Stett. ent. Ztg.*, **78**: 54–97.

Elytra, Tokyo, **21** (2): 269–270, Nov. 15, 1993

Collecting Records of *Rhagium morrisonense* KANO (Coleoptera, Cerambycidae, Lepturinae)

Tôru SHIMOMURA

1–17, Ohi 3-chome, Shinagawa-ku, Tokyo, 140 Japan

Rhagium morrisonense KANO, 1933, was described as a subspecies of *R. inquisitor* on a female specimen collected at the summit of Mt. Niitaka (=Mt. Yushan; =Mt. Morrison) in Taiwan. GRESSITT (1951) recorded Hassenzan (=Mt. Pahsienshan, Taichung Pref.) and Rokuritsuzan as the localities of this species (as *Stenocorus inquisitor morrisonensis*). HAYASHI (1963) recognized *R. morrisonense* as an independent species after examining a male and two female specimens collected on mountains of central Taiwan, without detailed locality and date. YU and NARA (1988) showed a female specimen collected at Wuling, Taichung Prefecture in their book with coloured illustrations. These are probably all the records of localities of *R. morrisonense* known up to the present.

I collected this species near Tayuling, ca. 2,500–2,600 m, on the borders between Nantou and Hualien Prefectures and near Kuanshan-yakou, ca. 2,600 m, Taitung Pref., Taiwan. The collecting data of this species are herewith reported from specimens preserved in my collection.

1) 2♂♂, 1♀, nr. Tayuling, ca. 2,500 m, Nantou Pref., Taiwan. (I collected some mature larvae on July 28, 1978, from under barks of fallen coniferous trees. Three larvae pupated from mid-September to early November, and the adults emerged in Tokyo at the beginning of November and early in December, 1978).

2) 18♂♂, 24♀♀, nr. Tayuling, ca. 2,600 m, Hualien Pref., Taiwan, 24 & 25-III-1980, T. SHIMOMURA leg. (from pupal cells under barks of a dead standing *Pinus armandi*