

ELATERID BEETLES FROM BORNEO IN THE BISHOP MUSEUM (Coleoptera)

By Hitoo Ôhira¹

Abstract: In this paper, 12 subfamilies, 35 genera and 83 species of the elaterid beetles from Borneo in the Bishop Museum are examined, among which 1 genus and 24 species are new to science, besides various new records and combinations.

This paper is a result of the study on the elaterid beetles from Borneo (Sabah and Sarawak) which were made available through the courtesy of Dr J. L. Gressitt of Bishop Museum. I am deeply indebted to Dr Gressitt for his assistance in various ways, and to Miss C. M. F. von Hayek, British Museum (Natural History), Dr A. Villiers, Muséum National d'Histoire Naturelle of Paris, and Dr G. Demoulin, Institut Royal des Sciences Naturelles de Belgique, for their kind help in this study. The holotype of each species described in this paper is preserved in Bishop Museum.

Subfamily CHALCOLEPIDIINAE Schenkling, 1925

Paracalais elaps (Candèze, 1874), new combination Fig. 4 A.

Alaus elaps Candèze, 1874, Révis. Mon. Élatérides: 132 (Laos, Borneo, Java). — Fleutiaux, 1918, *Ann. Soc. Ent. Fr.* 87: 197 (Tonkin, Annam). Fleutiaux, 1918, *Bull. Mus. Hist. Nat. Paris* 24: 210 (Tonkin, Laos). — Fleutiaux, 1927, *Faune Colonies Françaises*: 106, pl. 1, f. 17 (Laos, Annam, Tonkin). — Fleutiaux, 1947, *Notes d'Ent. Chinoise* 11 (8): 300 (Tonkin).

SPECIMENS EXAMINED: SABAH: 1 ♀, Forest Camp, 19 km N of Kalabakan, 28.X.1962, Y. Hirashima; 1 ♀, ditto, 28.X.1962, K. J. Kuncheria.

DISTRIBUTION: Laos, Tonkin, Annam, Java, Borneo.

Paracalais griseofasciatus (Schwarz, 1902), new combination Fig. 4 B.

Alaus griseofasciatus Schwarz, 1902, *Stett. Ent. Ztg.* 63: 207 (Borneo).

Length 27 mm, width about 9 mm. Body robust, moderately elongate and subparallel-sided. Surface black except antennae and legs dusky brown. Body clothed with short, recumbent, fulvous scale-like setae and intermixed with some cinereous scale-like setae, but elytra have 2 large, obscure, transverse patches of cinereous scale-like setae as seen in Fig. 4 B. Surfaces of postbasal areas of elytra very strongly and transversely rugose.

SPECIMEN EXAMINED: SABAH: 1 ♀, Forest Camp, 19 km N of Kalabakan, 20.X.1962, K. J. Kuncheria.

DISTRIBUTION: Borneo.

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Paracalais lacteus (Fabricius, 1801), new combination Fig. 4 C.

Elater lacteus Fabricius, 1801, Syst. El. 2: 230 (Borneo).

Alaus lacteus: Candèze, 1857, Mon. Élatérides 1: 218, 386, t. 4, f. 9 (Sonde Is.). — Candèze, 1875, Bull. Soc. Ent. Belg.: 120 (Philippines). — Candèze, 1880, Ann. Mus. Civ. St. Nat. Genova 15: 192 (Malay). — Candèze, 1885, Bull. Soc. Ent. Belg.: 130 (Borneo). — Candèze, 1890, Bull. Soc. Ent. Belg.: 76 (Borneo). — Candèze, 1892, Ann. Mus. Civ. St. Nat. Genova (2) 12: 797 (Engano). — Candèze, 1893, Élat. Nouveaux 5: 14 (Engano). — Candèze, 1894, Ann. Mus. Civ. St. Nat. Genova (2) 14: 486 (Sumatra). — Heyne & Taschenberg, 1908, Exot. Käfer: 152, t. 25, f. 7 (Sunda Is.). — Fleutiaux, 1940, Ann. Soc. Ent. Fr. 109: 40 (Tonkin). — Fleutiaux, 1947, Notes d'Ent. Chinoise 11 (8): 302 (Indo-China).

SPECIMENS EXAMINED: SABAH: 1 ♂, Tawau, Quoin Hill, Cocoa Res. Sta., 225 m, 24.IX. 1962, Y. Hirashima.

DISTRIBUTION: Indo-China, Malay, Sumatra, Philippines, Borneo.

Paracalais mortuus (J. Thomson, 1856) Fig. 1 A, 4 D.

Iphis mortuus J. Thomson, 1856, Rev. Zool.: 473, t. 23, f. 1 (Borneo).

Alaus torquilla Candèze, 1857, Mon. Élatérides 1: 239, 386 (Borneo).

Alaus mortuus: Candèze, 1874, Révis. Mon. Élatérides: 129 (Borneo). — Candèze, 1891, Cat. Méthod. Élatérides: 32 (Borneo).

SPECIMENS EXAMINED: SABAH: 2 ♀♀, Tawau, Quoin Hill, Forest Camp, 1.3–5 km WSW of Cocoa Res. Sta., 9–20.VII.1962, Y. Hirashima; 1 ♂, 1 ♀, Forest Camp, 19 km N of Karabakan, 20.X.1962, K. J. Kuncheria; 1 ♀, ditto, 25.X.1962, K. J. Kuncheria; 1 ♀, ditto, 27.X.1962, Y. Hirashima; 1 ♂, ditto, 7–10.XI.1962, Y. Hirashima.

DISTRIBUTION: Borneo.

Paracalais putridus putridus (Candèze, 1857) Fig. 4 E.

Alaus putridus Candèze, 1857, Mon. Élatérides 1: 233, t. 4, f. 15 (Java). — Heyne & Taschenberg, 1908, Exot. Käfer: 152, t. 25, f. 8 (Java).

SPECIMENS EXAMINED: SABAH: 1 ♀, Forest Camp, 19 km N of Kalabakan, 60 m, 29.X.1962, Y. Hirashima; 1 ♀, Tawau, Quoin Hill, Cocoa Res. Sta., 225 m, 25.IX. 1962, Y. Hirashima.

DISTRIBUTION: Java, Borneo.

This species is here recorded from Borneo for the first time.

Lanelater mucronatus (Candèze, 1857), new combination Fig. 1 C, 4 F.

Agrypnus mucronatus Candèze, 1857, Mon. Élatérides 1: 42 (Borneo). — Candèze, 1874, Révis. Mon. Élatérides: 12 (Borneo). — Van Zwaluwenburg, 1936, Philipp. Journ. Sci. 59 (3): 396 (Philippines). — Fleutiaux, 1947, Notes d'Ent. Chinoise 11 (8): 289 (Indo-China).

SPECIMENS EXAMINED: SABAH: 1 ♂, Tawau, Quoin Hill, 15–20.VII.1962, Y. Hirashima; 1 ♂, ditto, 24.IX.1962, Y. Hirashima.

DISTRIBUTION: Indo-China, Laos, Philippines, Borneo.

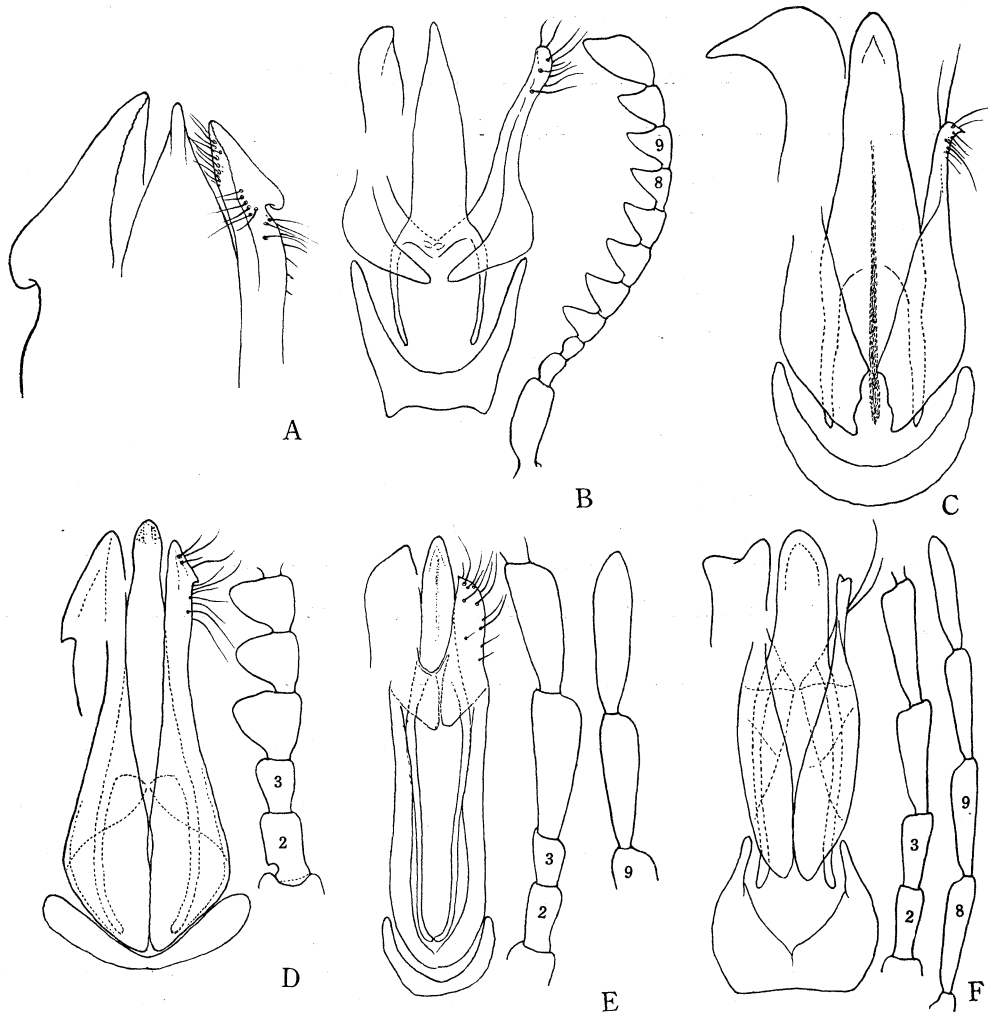


Fig. 1. A-F. Aedeagi and some segments of ♂ antennae.

A, *Paracalais mortuus* (J. Thomson, 1856). B, *Brachylacon (Brachylacon) tawauensis* n. sp. C, *Lanelater mucronatus* (Candèze, 1857). D, *Compsolacon borneoensis* n. sp. E, *Conoderus fasciatus* (Candèze, 1865). F, *Hemirrhaphes nigriceps* (Candèze, 1880).

***Sulcilacon geographicus* (Candèze, 1865)**

Fig. 4 G.

Adelocera geographicus Candèze, 1865, Élat. Nouveaux 1: 7 (Borneo). — Candèze, 1874, Révis. Mon. Élatérides: 24 (Malacca). — Fleutiaux, 1920, *Bull. Soc. Ent. Fr*: 187 (Laos).

Lacon (Sulcilacon) geographicus: Fleutiaux, 1927, Faune Colonies Françaises: 70 (Laos).

Sulcilacon geographicus: Fleutiaux, 1947, *Notes d'Ent. Chinoise* 11 (8): 271.

SPECIMENS EXAMINED: SABAH: 1 ex, Forest Camp, 19 km N of Kalabakan, 27.X.1962, Y. Hirashima.

DISTRIBUTION : Laos, Malacca, Borneo.

Subfamily AGRYPNINAE Fleutiaux, 1919

Agraeus lucasseni Candèze, 1893 Fig. 4 I.

Agraeus lucasseni Candèze, 1893, *Notes Leyd. Mus.* 15: 125 (Java). — Fleutiaux, 1935, *Ann. Soc. Ent. Fr.* 104: 25, f. (Java).

SPECIMENS EXAMINED : SABAH: 1 ex, W. Coast Residency, Ranau, 8 mi N of Paring Hot Springs, 500 m, 9-18.X.1958, L. W. Quate & T. C. Maa.

DISTRIBUTION : Java, Borneo.

This species is here recorded from Borneo for the first time.

Agraeus mannerheimi Candèze, 1857 Fig. 4 J.

Agraeus mannerheimi Candèze, 1857, *Mon. Élatérides* 1: 166, t. 3, f. 4 (Java). — Fleutiaux, 1935, *Ann. Soc. Ent. Fr.* 104: 26 (Java, Sumatra, Malacca, Borneo, Philippines). — Ôhira, 1970, *Ann. Hist. - Nat. Mus. Nat. Hung.* 62: 236, pl. 8, f. A, B, C (Singapore).

Agraeus Ritsemæ Candèze, 1883, *Notes Leyden Museum* 5: 204 (Sumatra).

SPECIMENS EXAMINED : SABAH: 1 ♂, Forest Camp, 19 km N of Kalabakan, 7-10.XI.1962, Y. Hirashima.

DISTRIBUTION : Java, Sumatra, Singapore, Philippines, Borneo.

***Brachylacon (Brachylacon) borneoensis* Ôhira, new species Fig. 4 L.**

♀. Length 4.3 mm, width about 1.5 mm. Body elongate, nearly parallel-sided and strongly convex above. Surface dusky brown except at posterior angles of pronotum and most parts of undersides of body more or less dark reddish brown, legs dark brown and antennae yellow-brown (basal segment dark brown). Body clothed with short, recumbent, pale yellow setae on dorsal surface, but intermixed with some fulvous setae and forming irregular patterns.

Head gently convex between eyes, impressed on subvertical portion between antennae; surface deeply and regularly punctate. Antenna short, not touching posterior angle of pronotum; basal segment robust; 2nd segment short and subcylindrical; 3rd segment subglobose and a little shorter than 2nd; 4th to 10th segments acutely serrate. Pronotum subquadrate, clearly wider than long (length and width measured at median points), sides nearly parallel from base to apical 1/3, then abruptly tapering towards anterior angles; disc strongly convex, moderately densely and deeply punctate; posterior angles short, nearly right-angled, without carina above. Scutellum longer than wide, flattened, punctulate and pubescent. Elytra about 1.5 × as long as basal width; sides gradually widening from base to apical 2/3, then rounded and gradually tapering towards apices which are normally rounded; striae defined; intervals flattened, deeply and regularly punctate.

Holotype ♀ (BISHOP 9852), SABAH: Forest Camp, 19 km N of Kalabakan, 16.X.1962, Y. Hirashima. Paratypes : SARAWAK: 1 ex, Sarikei Dist. Rejang Delta, 15-26.VII.1958, T. C. Maa; SABAH: 1 ex, Liawan, 14-19.I.1959, T. C. Maa.

DISTRIBUTION : Borneo.

This new species is closely allied to *Brachylacon (Brachylacon) microcephalus microce-*

phalus (Motschulsky, 1858) from Ceylon, but can be distinguished from the latter by the larger and more stout body, by the more coarsely and deeply punctate on the disc of pronotum.

Brachylacon (Brachylacon) sarawakensis Ôhira, new species Fig. 4 K.

♀. Length 4.5 mm, width about 1.7 mm. Body robust and oblong ovate. Surface blackish brown entirely except tarsi of legs more or less dark brown and antennae yellow-brown (basal segment blackish brown). Body clothed with recumbent, golden yellow setae all over, but intermixed with some black pubescence and forming irregular patterns; disc of pronotum with a pair of small clusters of yellowish pubescence and forming eye-like spots.

This new species is closely allied to the above-mentioned one (*B. (B.) borneensis* n. sp.), but can be distinguished from the latter in the following points: the body robust and stouter; the disc of pronotum with a pair of small clusters of yellowish setae; the sides of pronotum weakly crenate at posterior 1/2, etc.

Holotype ♀ (BISHOP 9853), SARAWAK: Nanga Pelagus nr Kapit 180-585 m, 7-17. VIII.1958, T. C. Maa.

DISTRIBUTION: Borneo.

Brachylacon (Brachylacon) tawauensis Ôhira, new species Fig. 1 B, 4 M.

♀. Length 2.5 mm, width about 1 mm. Body small, ovate and strongly convex above. Surface a little shining, yellow-brown to castaneous except head and disc of pronotum slightly darker, elytra with a few of irregular, obscurely dark brown fasciae, antennae (basal segment brown) and legs yellow-brown; vestiture recumbent, yellow, but intermixed with some fulvous pubescence on area of patches on elytra.

Head gently convex between eyes, clearly impressed on vertical portion between antennae; surface deeply and coarsely punctate. Antenna short, not touching posterior angle of pronotum; basal segment robust and oblong ovate; 2nd segment small and subglobose and a little larger than third which is globose; 3rd to 10th segments acutely serrate. Pronotum subquadrate, clearly wider than long (length and width measured at median points); sides nearly parallel on basal 2/3, then abruptly tapering towards anterior angles; disc strongly convex, but clearly depressed at posterior angles, deeply and evenly punctate; posterior angles short, right-angled, without carina above. Scutellum subtriangular and pointed apically. Elytra about 1.6 × as long as basal width; sides gradually widening on basal 1/3, then rounded and gradually tapering towards apices; striae not defined; whole surface deeply and regularly punctate.

Holotype ♀ (BISHOP 8954), SABAH: Tawau Residency Kalabakan R., 48 km W of Tawau, 9-18.XI.1958, T. C. Maa. Paratypes: 5 exs, same data as holotype; 1 ex, Gomantong Caves, 22-26.XI.1958, T. C. Maa; 1 ex, Tawau, Quoin Hill, 3-7.VII.1962, H. Holtmann; 1 ex, Tawau, Quoin Hill, Cocoa Res. Sta., 225 m, 25.IX.1962, Y. Hirashima.

DISTRIBUTION: Borneo.

This new species is very closely allied to *Brachylacon (Brachylacon) microcephalus microcephalus* (Motschulsky, 1858) from Ceylon, but can be distinguished from the latter by the smaller body, by the parallel-sided pronotum on posterior 2/3, and by having very obscure fasciae on elytra.

Agrypnus (Agrypnus) ornatus (Candèze, 1857)

Lacon ornatus Candèze, 1857, Mon. Élatérides 1: 102, t. 1, f. 15 (Java). — Candèze, 1874, Révis. Mon. Élatérides: 69 (Java).

SPECIMENS EXAMINED: SABAH: 1 ex, W. Coast Residency, Kundasan, 1240 m, 15.X.1958, T. C. Maa; 1 ex, Tenompok, Mt Kinabalu, 17-21.X.1958, T. C. Maa; 1 ex, ditto, 3.XI.1958, T. C. Maa; 1 ex, 26-31.I.1959, T. C. Maa; 1 ex, ditto, 29.II.1959, T. C. Maa.

DISTRIBUTION: Java, Borneo.

This species is here recorded from Borneo for the first time.

Adelocera (Adelocera) modesta (Candèze, 1857)

Lacon modestus Candèze, 1857, Mon. Élatérides 1: 118 (Java). — Candèze, 1874, Révis. Mon. Élatérides: 63 (India, Malay). — Fleutiaux, 1905, *Ann. Soc. Ent. Fr.* 74: 320 (Borneo, Sumatra, Indo-China). — Fleutiaux, 1927, Faune Colonies Françaises: 65 (Annam, Laos). — Fleutiaux, 1947, *Notes d'Ent. Chinoise* 11 (8): 265 (Indo-Malay Archipelago).

SPECIMENS EXAMINED: SABAH: 1 ex, Sandakan Bay (NW), Sepilok For. Res., 1-10 m, 29.X.1957, J. L. Gressitt.

DISTRIBUTION: Southeast Asia, Borneo.

Adelocera (Adelocera) tosta (Candèze, 1857)

Lacon tostus Candèze, 1857, Mon. Élatérides 1: 129 (India Orientalis). — Candèze, 1888, *Ann. Mus. Civ. St. Nat. Genova* (2) 6: 669 (Burma).

Adelocera tosta: Fleutiaux, 1927, Faune Colonies Françaises: 78, pl. 2, f. 24 (Tonkin, Laos, Annam, Cambodia). — Fleutiaux, 1942, *Ark. für Zool.* 33A (18): 3 (Burma). — Fleutiaux, 1947, *Notes d'Ent. Chinoise* 11 (8): 265 (SE Asia, Borneo, Sumatra). — Ôhira, 1970, *Ann. Hist.-Nat. Mus. Nat. Hung.* 62: 222 (Indo-China).

SPECIMENS EXAMINED: SARAWAK: 1 ex, Kapit Dist., Merirai, 30-300 m, 1-6.VIII.1958, T. C. Maa; 1 ex, Bau Dist., Lake Area, 30.VIII.1958, T. C. Maa; SABAH: 1 ex, W. Coast Residency, Ranau, 8 mi. N of Paring Hot Springs, 500 m, 8-11.X.1958, L. W. Quate & T. C. Maa.

DISTRIBUTION: Southeast Asia, Borneo.

Compsolacon borneoensis Ôhira, new species Fig. 1 D, 4 H.

♂. Length 11 mm, width about 3 mm. Body elongate, sides nearly parallel and more or less depressed above. Surface black to blackish brown except antennae and tarsi of legs dark reddish brown. Body rather opaque and clothed with small, recumbent, fulvous scale-like setae, but intermixed with some cinereous scale-like setae on head, at sides of pronotum and elytra.

Head weakly and triangularly impressed between eyes; surface deeply and coarsely punctate; clypeal margin transverse, well-ridged over antennal insertions, but depressed and obliterated at middle. Antenna short, not reaching posterior angle of pronotum; basal segment elongate and subcylindrical; 2nd segment small, subcylindrical and nearly as long as 3rd which is subconic; 4th to 10th segments rather acutely serrate; 11th segment oblong ovate, clearly longer than

preceding one. Pronotum nearly as long as wide (length and width measured at median points); sides not crenate, widest at middle, narrowest at posterior angles which are obtusely angulated; disc slightly convex and more or less depressed at basal area, coarsely, deeply and regularly punctate; posterior angles short, each bears a long, prominent carina above which extends anteriorly almost $3/4$ length of pronotum. Scutellum constricted at middle. Elytra about $2.2 \times$ as long as basal width, sides nearly parallel from base to apical $1/3$, then rounded and gradually tapering towards apex. Tarsal concavations of body beneath absent. Aedeagus and some segments of ♂ antenna as figured.

♀. Very similar to ♂, but body robuster and antennae a little shorter.

Holotype ♂ (BISHOP 9855), SABAH: W. Coast Residency, Ranau, 500 m, 28.IX.-7.X.1958, L. W. Quate. Paratypes: SARAWAK; 1 ♂, Bau Dist., Lake Area, 30.VII.1958, T. C. Maa; 1 ♀, Nanga Pelagus nr Kapit, 180-585m, 7-14.VIII.1958, T. C. Maa. SABAH: 1 ex, W. Coast Residency, Ranau, 500 m, 28.IX.-7.X.1958, L. W. Quate & T. C. Maa; 1 ex, ditto, 8 mi. N of Paring Hot Springs, 500 m, 9-18.X.1958, L. W. Quate; 1 ex, Tawau Residency, Kalabakan, 14-15.XI.1958, L. W. Quate & T. C. Maa.

DISTRIBUTION: Borneo.

This new species is closely allied to *Compsolacon apodixus* (Candèze, 1865) from the Philippines, but can be distinguished from the latter by the absence of a pair of small transverse ridges on the disc of pronotum.

Meristhus (Meristhus) erinaceus Candèze, 1896 Fig. 4 O.

Meristhus erinaceus Candèze, 1896, Élat. Nouveaux 6: 11 (Burnei, Kina Balu). — Ôhira, 1971, *Bull. Aichi Univ. of Education (Nat. Sci.)* 20: 227, pl. 1, f. I, J; pl. 2, f. D (Sarawak, Kota Kinabalu).

SPECIMENS EXAMINED: SARAWAK: 1 ex, Kapit District, Merirai Valley, 28-31.VII.1958, T. C. Maa. SABAH: 1 ex, Sandakan Bay (NW), Sepilok For. Res., 1-10 m, 29.X.1957, J. L. Gressitt.

DISTRIBUTION: Borneo.

Meristhus (Meristhus) minusculus Candèze, 1874

Meristhus minusculus Candèze, 1874, Révis. Mon. Élatérides: 104 (Sarawak). — Candèze, 1878, *Ann. Mus. Civ. St. Nat. Genova* 12: 104 (Sarawak). — Candèze, 1894, *Ann. Mus. Civ. St. Nat. Genova* (2) 14: 486 (Sumatra). — Fleutiaux, 1895, *Ann. Soc. Ent. Belg.* 39: 167 (Sumatra). — Ôhira, 1971, *Bull. Aichi Univ. of Education (Nat. Sci.)* 20: 228, pl. 2, f. C (Sarawak).

SPECIMENS EXAMINED: SARAWAK: 17 exs, Kapit District, Marirai Valley, 28-31.VII.1958, T. C. Maa; 5 exs, Nanga Pelagus nr Kapit, 180-585 m, 7-14.VIII.1958, T. C. Maa.

DISTRIBUTION: Sumatra, Borneo.

Meristhus (Meristhus) sarawakensis Ôhira, new species Fig. 4 N.

♂. Length 2.5 mm, width 0.7 mm. Body small, moderately elongate and subparallel-sided. Surface castaneous-brown to testaceous except head, disc of pronotum, scutellum, obscure patterns on elytra darker and fuscous; antennae and legs yellow-brown; vestiture small, cy-

lindrical, erect and pale yellow.

Head triangularly impressed at middle; surface coarsely and rugosely punctate; clypeal margin well-ridged over antennal insertions, impressed and obliterated at middle. Pronotum subquadrate, clearly wider than long (length and width measured at median points); sides slightly sinuate before posterior angles, subparallel at middle, then abruptly converging towards anterior angles which are clearly produced anteriorly; disc gently convex, moderately densely and evenly punctate, having a shallow longitudinal impression in middle; posterior angles short, truncated apically, without carina above. Scutellum subquadrate, longer than wide, with a shallow longitudinal ridge in middle. Elytra about $1.5 \times$ as long as basal width; sides nearly parallel on basal $1/4$, then rounded and gradually tapering towards apices; striae defined, indefinitely punctate; intervals weakly elevated, obscurely punctate. Propleura of prothorax each with a shallow tarsal concavation.

Holotype ♂ (BISHOP 9856), SARAWAK; Bau District, Lake Area, 30.VIII.1958, T. C. Maa. Paratype: 1 ex, same locality as holotype, 2.IX.1958, T. C. Maa.

DISTRIBUTION. Borneo.

This new species is closely allied to *Meristhus* (*Meristhus*) *minusculus* Candèze, 1874 from Borneo and Sumatra, but can be distinguished from the latter by the slender body, by the straighter sides just before the posterior angles of pronotum.

Subfamily CONODERINAE Fleutiaux, 1919

Conoderus evanescens (Candèze, 1896) Fig. 5 B.

Monocrepidius evanescens Candèze, 1896, *Élat. Nouveaux* 6: 33 (Banguey, Borneo).

Conoderus evanescens: Schenkling, 1925, in Junk's Col. Cat. Pars 80, Elateridae 1: 106 (Banguey, Borneo).

SPECIMENS EXAMINED: SABAH: 3 exs, Sepilok For. Res., Sandakan Bay (NW), 1-10 m, 27.X.1957, J. L. Gressitt; 2 exs, Gomantong Caves, 22-26.XI.1958, T. C. Maa.

DISTRIBUTION: Borneo.

Conoderus fasciatus (Candèze, 1865) Fig. 1 E, 5 A.

Monocrepidius fasciatus Candèze, 1865, *Élat. Nouveaux* 1: 25 (Borneo).

Conoderus fasciatus: Schenkling, 1925, in Junk's Col. Cat. Pars 80, Elateridae 1: 106 (Borneo).

SPECIMENS EXAMINED: SABAH: 22 exs, Liawan, 14-19.I.1959, T. C. Maa; 2 exs, Tenompok, 15.II.1959, T. C. Maa; 1 ex, Forest Camp, 19 km N of Kalabakan, 16.X.1962, Y. Hirashima.

DISTRIBUTION: Borneo.

Conoderus minusculus (Schwarz, 1900) Fig. 5 C.

Monocrepidius minusculus Schwarz, 1900, *Deutsche Ent. Zeitschr.* 44: 90 (Sumatra).

Conoderus minusculus: Schenkling, 1925, in Junk's Col. Cat. Pars 80, Elateridae 1: 106 (Sumatra).

Length 4 mm, width about 1 mm. Body elongate and subparallel-sided; surface castaneous-brown except eyes, median longitudinal area and sides of pronotum, scutellum, sutural intervals

and three pairs of transverse fasciae on elytra black to blackish brown, antennae and legs yellow-brown, clothed with small, recumbent, golden yellow setae all over. This species is recorded here from Borneo for the first time.

SPECIMENS EXAMINED : SABAH: 3 exs, Sandakan Bay (SW), Sapagaya Lumber Camp, 2-20 m, 4.XI.1957, J. L. Gressitt; 1 ex, Liawan, 14-17.I.1959, T. C. Maa. SARAWAK: 2 exs, Sarikei Dist., Rejang Delta, 15-25.VII.1958, T. C. Maa.

DISTRIBUTION : Sumatra, Borneo.

***Simodactylus hirashimai* Ôhira, new species** Fig. 2 E, 5 K.

♂. Length 12 mm, width about 2.7 mm. Body slender, sides subparallel and moderately convex above. Surface a little shining, yellow-brown entirely except head, median longitudinal area of pronotum and scutellum more or less dusky brown, antennae blackish brown (basal 3 segments brown) and legs yellow-brown. Body clothed with pale yellow pubescence all over.

Head gently convex between eyes, flattened on subvertical portion between antennae; surface deeply and coarsely punctate; clypeal margin well ridged and rounded at middle. Antenna short, not reaching posterior angle of pronotum; basal segment robust and subcylindrical; 2nd segment small and subglobose; 3rd segment elongate and clavate, nearly as long as 4th; 4th to 10th segments moderately serrate. Pronotum subquadrate, clearly longer than wide (length and width measured at median points), sides weakly sinuate just before posterior angles, weakly rounded at middle; disc gently convex, moderately densely and evenly punctate; posterior angles sharply pointed behind and divergent, each bears double carinae above, with shorter inner carina than longer outer carina. Scutellum narrow, tongue-shaped and pointed apically. Elytra about $3 \times$ as long as basal width, sides nearly parallel on basal $1/2$, then weakly rounded and gradually tapering towards apex; apex of each elytron clearly emarginate, with sharply pointed outer angle; striae well defined; intervals weakly elevated and irregularly rugose. Legs slender, tarsi not lobed beneath; claws simple.

♀ unknown.

Holotype ♂ (BISHOP 9857), SABAH: Forest Camp, 19 km N of Kalabakan, 14.X.1962, Y. Hirashima. Paratype: 1 ♂, same locality and date as holotype.

This new species is somewhat allied to *Simodactylus yamianus* Ôhira, 1970 from Lanchsu Is. of Taiwan, but can be distinguished from the latter by the more slender body, by the shorter antennae and more acutely emarginate apex of elytra. Van Zwaluwenburg (1959, *Pacif. Ins.* 1 (4): 364) placed this genus in the subfamily Conoderinae, but the larval characters of *Simodactylus* are not of this subfamily. I consider that this genus should be placed in a different subfamily.

***Simodactylus tawauensis* Ôhira, new species** Fig. 2 C, 5 J.

Length 10.5 mm, width about 2 mm. Body elongate, sides subparallel and moderately convex above. Surface shining, dark castaneous-brown entirely except 1st to 4th intervals of elytra more or less castaneous-brown, antennae dusky brown (basal 3 segments brownish) and legs dark yellow-brown; vestiture pale yellow over surface of body.

Head gently convex between eyes, flattened on subvertical portion between antennae; surface moderately densely punctate, each puncture umbilicate; clypeal margin well-ridged and rounded at middle. Antenna short, not reaching posterior angle of pronotum; basal segment robust;

2nd segment short and subglobose; 3rd segment subclavate and a little shorter than 4th; 4th to 10th segments moderately serrate. Pronotum subquadrate, clearly longer than wide (length and width measured at median points); sides weakly sinuate before posterior angles, slightly rounded on anterior 1/2; posterior angles sharply pointed behind and slightly divergent; each bears double carinae above, with same length for both carinae. Scutellum narrow, subtriangular and pointed apically. Elytra about $3 \times$ as long as basal width, sides nearly parallel on basal 2/3, then weakly rounded and gradually tapering towards apex; apex of each elytron clearly emarginate, with sharply pointed outer angle; striae well defined and punctate-striate; intervals slightly elevated, punctulate, weakly and transversely rugose. Legs slender, tarsi not lobed beneath; claws simple.

♀ unknown.

Holotype ♂ (BISHOP 9858), SABAH: Sandakan Bay (SW), Sapagaya Lumber Camp, 2-20 m, 2.XI.1957, J. L. Gressitt. Paratypes: 1 ♂, Tawau, Quoin Hill Cocoa Res. Sta., 19.IX.1962, Y. Hirashima; 2 ♂♂, Forest Camp, 19 km N of Kalabakan, 11.X.1962, Y. Hirashima.

This new species is somewhat allied to the above-mentioned one (*S. hirashimai* n. sp.), but can be distinguished from the latter by the narrower and darker body, by the weakly rugose intervals of elytra.

Subfamily NEGASTRIINAE Nakane et Kishii, 1956

Hemirrhaphes nigriceps (Candèze, 1880) Fig. 5 F.

Arrhaphes nigriceps Candèze, 1880, *Ann. Mus. Civ. St. Nat. Genova* 15: 194 (Sumatra).

SPECIMENS EXAMINED: SABAH: 8 exs, Tenompok, 10-14.II.1959, T. C. Maa; 2 exs, Ranau, 22-25.II.1959, T. C. Maa.

DISTRIBUTION: Sumatra, Borneo.

This species is here recorded from Borneo for the first time.

Arrhaphes erythrurus Schwarz, 1902 Fig. 2 A, 5 G.

Arrhaphes erythrurus Schwarz, 1902, *Stett. Ent. Ztg.* 63: 258 (Sumatra).

SPECIMENS EXAMINED: SABAH: 2 exs, Tenompok, 1460 m, Jesselton, 17-18.X.1958, T. C. Maa; 3 exs, ditto, 10-19.II.1959, T. C. Maa; 8 exs, Tenompok, 10-14.II.1959, T. C. Maa.

DISTRIBUTION: Sumatra, Borneo.

This species is here recorded from Borneo for the first time.

Quasimus (Quasimus) subovalis Fleutiaux, 1930

Quasimus subovalis Fleutiaux, 1930, *Bull. Mus. Hist. Nat. Paris* (2) 2: 643 (Tonkin, Bengal, Sumatra, Yunnan, Tenasserim). — Ôhira, 1970, *Ann. Hist.-Nat. Mus. Nat. Hung.* 62: 238 (Singapore).

SPECIMENS EXAMINED: SARAWAK: 17 exs, Kapit Dist., Merirai Valley, 28-31.VII.1958,

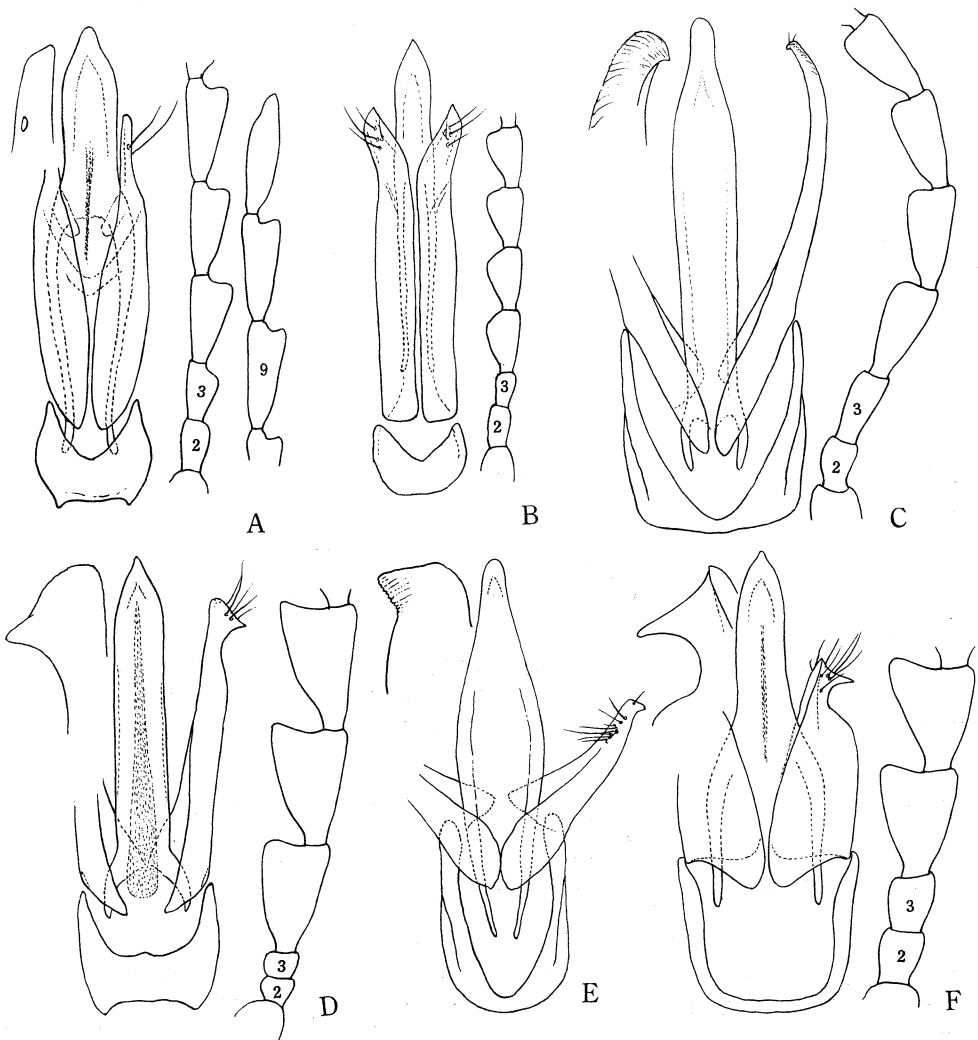


Fig. 2. A-F. Aedeagi and some segments of ♂ antennae.

A, *Arrhaphes erythryurus* Schwarz, 1902. B, *Hypdonus fasciatus* (Candèze 1865). C, *Simodactylus tawauensis* n. sp. D, *Neotrichophorus borneoensis* n. sp. E, *Simodactylus hirashimai* n. sp. F, *Neodiploconus homostictus* (Candèze, 1860).

T. C. Maa ; 5 exs, Rejang Delta, 15-25.VII.1958, T. C. Maa. SABAH : 3 exs, Tenompok, 13.II.1959, T. C. Maa.

DISTRIBUTION : Indo-China, Malay, Sumatra, Borneo.

Hypdonus borneoensis Ôhira, new species Fig. 5 D.

♂. Length 3 mm, width about 0.7 mm. Body small, moderately elongate nearly parallel-sided. Surface black to blackish brown except at posterior angles of pronotum and 2 pairs of

patterns of elytra (oblique band at humeral parts and subovate ones near apex) brownish yellow to slightly orange-yellow, antennae and legs yellow-brown; vestiture pale yellow.

Head gently convex between eyes and slightly impressed at middle; surface coarsely punctate, but intermixed with some small punctures among larger ones; clypeal margin well ridged and rounded at middle; eyes large and prominent. Antenna elongate, extending beyond posterior angle of pronotum by apical segment at least; 2nd segment subcylindrical and nearly 2× as long as 3rd which is subglobose, and these two together a little longer than 4th; 4th to 10th segments moderately serrate. Pronotum subquadrate, clearly wider than long (length and width measured at median points); sides slightly sinuate just before posterior angles, rounded at middle, then gradually tapering towards anterior angles; disc gently convex, moderately densely punctate, but intermixed with some punctures among smaller ones; posterior angles slightly divergent, each bears a long, distinct carina above, which extend anteriorly along lateral margin almost 2/3 length of pronotum. Scutellum subtriangular, impressed at middle and convergent and pointed apically. Elytra about 2× as long as basal width, sides nearly parallel on basal 2/3, then rounded and tapering towards apex; striae shallowly ridged; intervals flattened and punctulate.

♀. Very similar to ♂, but antennae shorter (nearly as long as posterior angles of pronotum).

Holotype ♂ (BISHOP 9859), SABAH: Tenompok, 10-14.II.1959, T. C. Maa. Paratypes: 8 exs, Tenompok, 10-14.II.1959, T. C. Maa; 6 exs, Ranau, 22-25.II.1959, T. C. Maa.

DISTRIBUTION: Borneo.

This new species is closely allied to *Hypdonus fasciatus* (Candèze, 1865) from Borneo, but can be distinguished from the latter by the larger and darker body, by the weakly sinuate sides before the posterior angles of pronotum.

Hypdonus fasciatus (Candèze, 1865), new combination Fig. 2 B, 5 E.

Cryptohypnus fasciatus Candèze, 1865, Élat. Nouveaux 1: 39 (Borneo).

Hypnoidus fasciatus: Schenkling, 1925, in Junk's Col. Cat. Pars 80, Elateridae 1: 210 (Borneo).

SPECIMENS EXAMINED: SABAH: 2 exs, Sandakan Bay (NW), Sepilok For. Res., 1-10 m, 29.X.1957, J. L. Gressitt; 2 exs, Gomantong Caves, 22-26.XI.1958, T. C. Maa; 1 ex, Ranau, 22-25.II.1959, T. C. Maa; 2 exs, Tawau, Quoin Hill, 3-7.VII.1962, H. Holtmann; 3 exs, Quoin Hill, Forest Camp, 3-5 km WSW of Cocoa Res. Sta., 9-20.VII.1962, Y. Hirashima; 5 exs, Forest Camp, 19 km N of Kalabakan, 60 m, 18.X.1962, Y. Hirashima. SARAWAK: 1 ex, Kampong Pueh, Lundu Distr., 690-1500 m, 25-31.V.1958, T. C. Maa.

DISTRIBUTION: Borneo.

Zorochrus sarawakensis Ôhira, new species Fig. 5 I.

Length 2.5 mm, width 0.8 mm. Body small and oblong ovate. Surface a little shining, black at anterior and posterior angles of pronotum, some parts of undersides of prothorax more or less brownish yellow, elytra with 3 pairs of small, yellowish brown patches, viz. a pair of patches situated near humeral angles, a pair of small patches situated 2nd and 3rd intervals at posterior portion of scutellum, and a pair of subovate patches situated further posteriorly. Antennae and legs yellow-brown.

Head gently convex between eyes, flattened on subvertical portion between antennae; clypeal margin well ridged, semicircular and weakly impressed at middle. Antenna rather short, extending slightly beyond posterior angle of pronotum; basal segment robust, subovate; 2nd segment subcylindrical and slightly longer than 3rd which is subclavate, these two together distinctly longer than 4th; 4th to 10th segments moderately serrate. Pronotum subquadrate, clearly wider than long (length and width measured at median points); sides slightly sinuate just before posterior angles, weakly rounded at middle, then gradually tapering towards angles; disc moderately convex, densely and deeply punctate, with a longitudinal ridge at middle; posterior angles projected behind and not divergent, each bears a distinct carina above, extending anteriorly along lateral margin nearly to anterior margin. Scutellum subovate and constricted apically. Elytra about 1.8× as long as basal width, sides nearly parallel on basal 1/2, then gradually tapering towards apices; striae well defined, but not punctate in striae; intervals weakly elevated, punctulate and finely scabrous.

♀. Very similar to ♂, but antennae a little shorter.

Holotype ♂ (BISHOP 9860), SARAWAK: Kapit Dist., Merirai Valley, 28-31.VIII.1958, T. C. Maa. Paratypes: 16 exs, same data as holotype.

This new species is somewhat allied to *Hypnoidus pictus* Candèze, 1892 from India, but can be distinguished from the latter by the more shining body, by the more sparsely and finely punctate on the disc of pronotum and elytra, and by the acuminate apex of scutellum.

Zorochrus maai Ôhira, new species Fig. 5 H.

Length 2-2.5 mm, width 0.5-0.7 mm. Body small and moderately elongate, sides nearly parallel and gently convex above. Surface a little shining, black to blackish brown entirely except at anterior and posterior angles of pronotum slightly yellow-brown, antennae dusky brown (basal 3 segments yellow-brown) and legs yellow-brown; vestiture golden yellow on dorsal surface, paler on undersides.

Head slightly convex between eyes; surface finely and evenly punctate; clypeal margin well ridged, rounded and weakly impressed at middle. Antenna rather short, nearly as long as posterior angles of pronotum; basal segment robust and subovate; 2nd segment cylindrical and nearly as long as 3rd which is subclavate, these 2 together clearly longer than 4th; 4th to 10th segments weakly serrate. Pronotum subquadrate, distinctly wider than long (length and width measured at median points); sides clearly sinuate just before posterior angles, rounded at middle, then gradually tapering towards anterior angles; disc moderately convex, finely and regularly punctate, with a shallow, median longitudinal smooth line on anterior 1/2; posterior angles acutely pointed and divergent, each bears a long, distinct carina above, which extends anteriorly almost 2/3 length of pronotum. Scutellum oblong-ovate and weakly pointed apically. Elytra about 2× as long as basal width; sides nearly parallel on basal 2/3, then rounded and gradually tapering towards extremities; striae defined, but not punctate in striae; intervals slightly elevated and punctulate.

♀. Very similar to ♂, but antennae a little shorter.

Holotype (BISHOP 9861), SARAWAK: Karapit Dist., Merirai Valley, 28-31.VII.1958, T. C. Maa. Paratypes: 12 exs, same data as holotype.

DISTRIBUTION: Borneo.

This new species is somewhat allied to the above-mentioned one (*Z. sarawakensis* n. sp.), but can be distinguished from the latter by the smaller body and black elytra,

by the simple punctures on the disc of pronotum.

Subfamily OXYNOPTERINAE Schenkling, 1925

Oxynopterus audouini Hope, 1842

Oxynopterus Audouini Hope, 1842, *Proc. Zool. Soc. London*: 77 (Borneo?).—Candèze, 1874, Révis. Mon. Élatérides: 206 (Java).—Van Zwaluwenburg, 1936 *Phil. Jl. Sci.* 59(3): 403 (Philippines).

SPECIMENS EXAMINED: SABAH: 1 ♂, Tawau, Quoin Hill Cocoa Res. Sta., 225 m, 27. IX.1962, Hirashima.

DISTRIBUTION: Java, Philippines, Borneo.

Subfamily SENDONIINAE Schenkling, 1927

Csikia tenompokensis Ôhira, new species Fig. 5 L.

♂. Length 7.5 mm, width about 2.5 mm. Body robust, sides subparallel and more or less depressed above. Surface shining, dark yellow to pale yellow-brown entirely, antennae dark brown (basal 2 segments yellow-brown) and legs dark yellow; vestiture pale yellow over surface of body.

Head gently convex between eyes, broadly impressed between antennae; surface sparsely punctate; clypeal margin transverse, well ridged at sides, but obliterated at middle. Antenna slender, at least apical 3 segments beyond posterior angle of pronotum; basal segment robust and subcylindrical; 2nd segment short and subclavate; 3rd segment elongate, subclavate and nearly as long as 4th; 4th to 10th segments feebly serrate. Pronotum subquadrate, clearly wider than its length, sides narrowly ridged and widest across base, then weakly sinuate and gradually narrowing towards anterior angles; disc slightly convex, finely and sparsely punctate; posterior angles short, nearly square, each bears a long carina above, extending anteriorly along lateral margin nearly to anterior margin. Scutellum tongue-shaped and pointed apically. Elytra about 2.3× as long as basal width, sides expanded laterally and gradually widening from base to apical 2/3, then rounded and tapering towards extremities which are normally rounded; striae well defined, but 1st and 2nd striae finely punctate-striate; intervals elevated, punctate and finely rugose. Prosternal process not excavated behind procoxae. Legs with 3rd and 4th tarsal segments clearly membranous lobed beneath.

♀ unknown.

Holotype ♂ (BISHOP 9862), SABAH: Tenompok, 29.II.1959, T. C. Maa.

DISTRIBUTION: Borneo.

This new species is somewhat allied to *Csikia dimatoides* Szombáthy, 1910 from Taiwan, but can be distinguished from the latter by the short posterior angles of pronotum, by the nearly straight sides just behind posterior angles of pronotum.

Csikia kanbaranga Ôhira, new species Fig. 5 M.

♀. Length 13 mm, width about 3.5 mm. Body robust, sides subparallel and slightly depressed above. Surface rather shining, castaneous-brown entirely except head and pronotum slightly darker, antennae dark brown and legs castaneous-brown. Body clothed with recumbent, short

cinereous setae, which are rather densely set, but intermixed with a few of long, elect, pale yellow pubescence on pronotum and elytra.

Head broadly and triangularly impressed at middle; surface sparsely and minutely punctate; clypeal margin transverse, well ridged at sides, but obliterated at middle. Antenna narrow, extending beyond posterior angles of pronotum by apical segment at least; basal segment robust and cylindrical; 2nd segment cylindrical and about 1/2 length of 3rd which is subclavate; 4th to 10th segments feebly serrate. Pronotum subquadrate, clearly wider than its length, sides widest at base, then weakly sinuate and gradually tapering towards anterior angles; disc gently convex, sparsely and minutely punctate; posterior angles weakly projected behind and slightly incurved, each bears a long, distinct carina above, which extends anteriorly along lateral margin nearly to anterior margin. Scutellum tongue-shaped and pointed apically. Elytra about 2.4× as long as basal width; sides weakly expanded laterally and gradually widening from base to apical 1/3, then rounded and gradually tapering towards extremities which are normally pointed apically; striae well defined; intervals slightly elevated, almost smooth and minutely punctate.

♂ unknown.

Holotype ♀ (BISHOP 9863), SABAH: Mt Kinabalu, Karubaranga, 2140 m, 22-30.X. 1958, T. C. Maa.

DISTRIBUTION: Borneo.

This new species is somewhat allied to the above-mentioned one (*C. tenompokensis* n. sp.), but can be distinguished from the latter by the larger and more robust body, by the densely clothed with cinereous setae on whole surface of body.

Subfamily ELATERINAE Fleutiaux, 1936

Neotrichophorus antennatus (Candèze, 1896), new combination Fig. 5 O.

Ludius antennatus Candèze, 1896, Élat. Nouveaux 6: 70 (Borneo).—Schenkling, 1927, in Junk's Col. Cat. Pars 88, Elateridae 2: 428 (Borneo).

Length 10 mm. Body narrow and elongate; surface pitchy black and shining; vestiture black except head, at sides of pronotum and ventral surface of body which are cinereous setae. Antennae black, but apical 3 segments yellow-brown and clothed with cinereous setae; legs black, with each trochanter and femur yellow-brown; at middle of elytra with a transverse band of fulvous setae.

SPECIMENS EXAMINED: SABAH: 1 ♂, Tawau Residency, Kalabakan R., 48 km W of Tawau, 9-18.XI.1958, T. C. Maa.

DISTRIBUTION: Borneo.

Neotrichophorus borneoensis Ôhira, new species Fig. 5 N.

♂. Length 8.5-10.5 mm, width 2-2.5 mm. Body elongate, subparallel-sided and moderately convex. Surface shining on head and pronotum, rather opaque on elytra, dusky brown to dark reddish brown except disc of pronotum, scutellum, most parts of elytra black to blackish brown. Body clothed with fulvous spine-like setae on head, pronotum and ventral surface of body, but elytra provided with blackish setae except basal area with transverse band of fulvous setae.

Head gently convex between eyes, flattened on vertical portion between antennae; surface

deeply and coarsely punctate; clypeal margin prolonged downwards and U-shaped. Antenna elongate and extending beyond posterior angle of pronotum by apical 2 segments at least; basal segment elongate and subcylindrical; 2nd and 3rd segments small and globose; 4th to 10th segments acutely serrate and depressed. Pronotum trapezoid, clearly longer than wide (length and width measured at median points); sides widest at base, then gradually narrowing towards anterior angles; disc strongly convex, deeply and coarsely punctate, each puncture forming scratch-like shape, bearing a shallow, longitudinal canalicularation in middle; posterior angles acutely projected behind and slightly curved downwards, each bears a distinct carina above. Scutellum elongate, tongue-shaped, punctulate and pubescent. Elytra about $2.6\times$ as long as basal width, widest at basal area, then gradually tapering towards apices which are acutely pointed apically; striae defined, deeply and regularly punctate; intervals slightly elevated, irregularly and transversely rugose and granulated.

♀ unknown.

Holotype ♂ (BISHOP 9864), SABAH: Tawau Residency Kalabakan R., 30 mi. W of Tawau, 9-18.XI.1958, L. W. Quate. Paratypes: 3 ♂♂, same locality as holotype, 9-18.XI.1958, L. W. Quate; 1 ♂, ditto, 28.IX.-7.X.1958, L. W. Quate; 1 ♂, Liawan, 14-17.I.1959, T. C. Maa.

This new species somewhat resembles *N. germanus* (Candèze, 1894) from Sumatra, but can be distinguished from the latter by having fulvous setae on the head, pronotum and basal area of elytra.

***Agonischius pectoralis* Candèze, 1863** Fig. 5 P.

Agonischius pectoralis Candèze, 1863, Mon. Élatérides 4: 411 (Sarawak).

SPECIMENS EXAMINED: SARAWAK: 1 ♀, Kampong Pueh, Lundu Dist., 690-1500 m, 6-12.VI.1958, T. C. Maa; 2 ♀♀, ditto, Sarikei Dist. Rejang Delta, 15-26.VII.1958, T. C. Maa; 1 ♀, ditto, Nanga Pelagus nr Kapit 180-585 m, 7-17.VIII.1958, T. C. Maa. SABAH: 1 ♀, Ranau, 11.X.1958, L. W. Quateo.

DISTRIBUTION: Borneo.

***Chiagosnius flavofasciatus* (Schwarz, 1902), new combination** Fig. 6 I.

Agonischius flavofasciatus Schwarz, 1902, *Stett. Ent. Ztg.* 63: 305 (Borneo).

Length 5-6 mm. Body moderately elongate and subparallel-sided; surface black and tinged with an aeneous lustre, at posterior angles of pronotum, longitudinal patterns of elytra, elytral epipleura and legs yellow-brown; vestiture pale yellow all over surface of body.

SPECIMENS EXAMINED: SABAH: 1 ♀, Tenompok, 3.XI.1958, T. C. Maa; 1 ♂, Liawan, 14-17.I.1959, T. C. Maa.

DISTRIBUTION: Borneo.

***Chiagosnius placidus* (Candèze, 1900), new combination**

Agonischius placidus Candèze, 1900, *Élat. Nouveaux* 7: 98 (Borneo).

Length 5 mm. Body small and moderately elongate; surface black and rather opaque except prothorax reddish brown, antennae black and legs dusky brown (tarsi brown); clothed with

pale yellow pubescence, but at sides of elytra provided with fulvous setae.

SPECIMENS EXAMINED : SABAH : 1 ♀, Tenompok, 13.II.1959, T. C. Maa.

DISTRIBUTION : Borneo.

Chiagosnius popularis (Candèze, 1896), new combination

Agonischius popularis Candèze, 1896, *Élat. Nouveaux* 6 : 76 (Borneo).

SPECIMENS EXAMINED : SABAH : 1 ex, Liawan, 14-19.I.1959, T. C. Maa ; 1 ex, Tenompok, 13.II.1959, T. C. Maa ; 1 ex, Ranau, 22-25.II.1959, T. C. Maa.

DISTRIBUTION : Borneo.

Chiagosnius proximus (Candèze, 1896), new combination.

Agonischius proximus Candèze, 1896, *Élat. Nouveaux* 6 : 75 (Borneo).

SPECIMENS EXAMINED : SABAH : 2 ♀♀, Liawan, 14-19.I.1959, T. C. Maa ; 1 ♂, Keningau, 12-17.I.1959, T. C. Maa ; 1 ♀, Singkor, 19. I.1959, T. C. Maa.

DISTRIBUTION : Borneo.

Chiagosnius rufangulus (Schwarz, 1902), new combination Fig. 5 Q.

Agonischius rufangulus Schwarz, 1902, *Stett. Ent. Ztg.* 63 : 303 (Borneo).

SPECIMENS EXAMINED : SABAH : 1 ♂, Ranau, 22-25.II.1959, T. C. Maa.

DISTRIBUTION : Borneo.

Chiagosnius rusticulus (Candèze, 1896), new combination

Agonischius rusticulus Candèze, 1896, *Élat. Nouveaux* 6 : 76 (Borneo).

Length 5 mm. Body moderately elongate and subparallel-sided ; surface yellow-brown and tinged with dark aeneous lustre, head, pronotum (except at anterior and posterior margins), and most parts of ventral surface of body darker and dusky brown, antennae blackish brown (basal 2 segments reddish brown) ; clothed with pale yellow pubescence all over. Pronotum subquadrate, without median longitudinal channel in middle.

SPECIMENS EXAMINED : SABAH : 1 ♀, Tenompok, 13.II.1959, T. C. Maa.

DISTRIBUTION : Borneo.

Subfamily MELANOTINAE Jacobson, 1913

Metriaulacus gobius (Candèze, 1860) Fig. 5 R.

Melanotus gobius Candèze, 1860, *Mon. Élatérids* 3 : 329 (Java).— Candèze, 1888, *Ann. Mus. Civ. St. Nat. Genova* (2)6 : 684 (Tenasserim).

Metriaulacus gobius : Fleutiaux, 1933, *Ann. Soc. Ent. Fr.* 102 : 214 (Laos, Java, Tenasserim, Philippines, N. India).

SPECIMEN EXAMINED : SABAH : 1 ♂, Mt Kinabalu, Tenompok-Kundasan, 4.XI.1958, T. C. Maa.

DISTRIBUTION : Laos, Java, Malay, Indo-China, North India, Borneo.

Neodiploconus borneoensis Ôhira, new species Fig. 3 A, 5 U.

♂. Length 8 mm, width about 1.6 mm. Body elongate, sides subparallel and moderately convex above. Surface a little shining and dusky castaneous, antennae dark brown and legs brownish yellow ; vestiture fulvous all over surface.

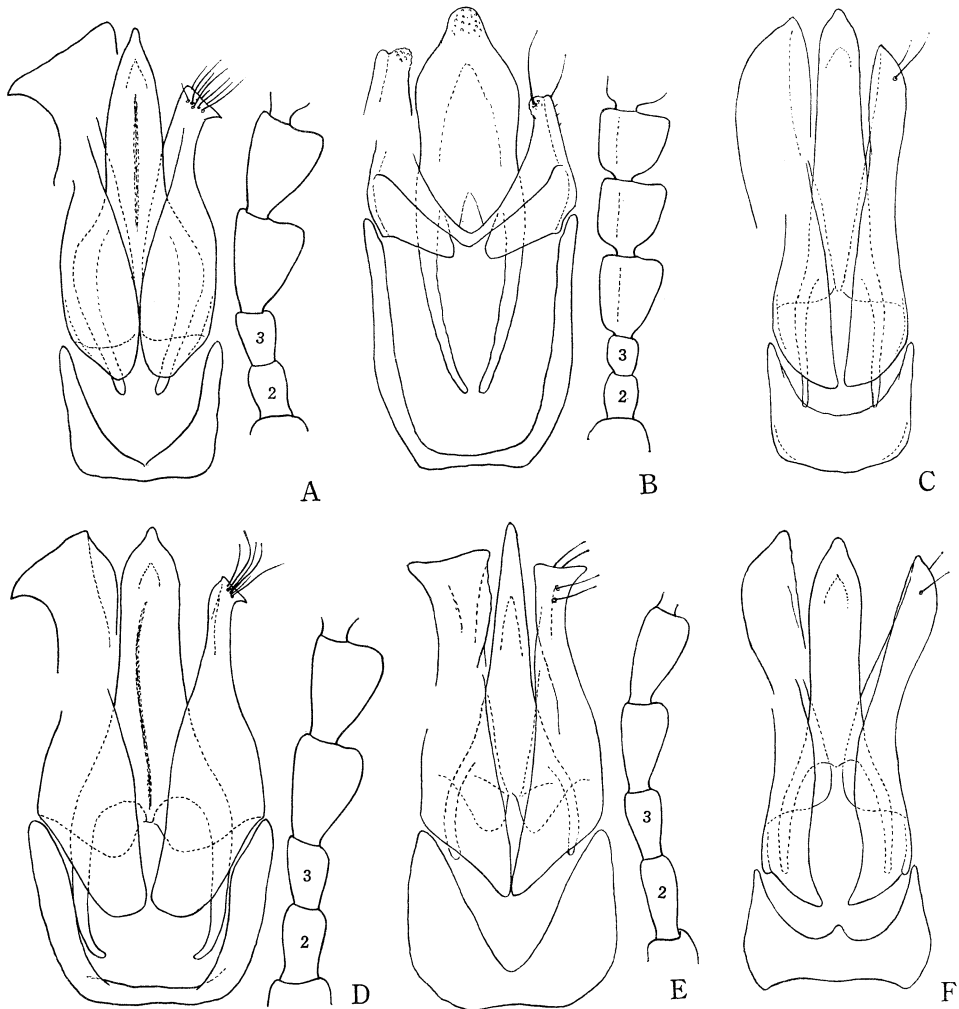


Fig. 3. A-F. Aedeagi and some segments of ♂ antennae.

A, *Neodiploconus borneoensis* n. sp. B, *Abelater nigrifolius* (Candèze, 1881). C, *Glyphonyx sarikeiensis* n. sp. D, *Melanotus (Spheniscosomus) cuneolus* Candèze, 1860. E, *Lanecarus gressitti* n. sp. F, *Glyphonyx ranauensis* n. sp.

Head broadly impressed at middle; surface deeply and coarsely punctate; clypeal margin well ridged, rounded at middle and weakly expanded anteriorly; nasal area well developed, nearly as long as wide. Antenna slender, extending beyond posterior angle of pronotum by apical segment at least; 2nd segment small and subglobose; 3rd subclavate and a little longer than 2nd, and these 2 together nearly as long as 4th; 4th to 10th segments moderately serrate. Pronotum trapezoid, a little longer than its width (length and width measured at median points); sides slightly sinuate before posterior angles, slightly rounded at middle; disc moderately convex, having a deep, median longitudinal channel on posterior 1/2, obliterated on anterior 1/2, surface deeply and coarsely punctate, but punctures becoming deeper and coarser laterally; posterior angles projected behind and weakly divergent, each bears a double carina above. Scutellum subquadrate and clearly longer than wide. Elytra about $2.6 \times$ as long as basal width, sides nearly parallel on basal 1/2, then rounded and gradually tapering towards apices which are normally rounded; striae well defined, deeply and coarsely punctate; intervals slightly elevated, punctulate, irregularly and transversely rugose.

♀. Very similar to ♂, but body robuster and antennae a little shorter.

Holotype ♂ (BISHOP 9865), SABAH: Tawau Residency Kalabakan R., Tawau, 9-18. IX.1958, T. C. Maa. Paratypes: 1 ♂, W. Coast Residency, Ranau, 28.IX.-7.X.1958, T. C. Maa; 1 ♂, ditto, Kalabakan, 1240 m, 15.X.1958, L. W. Quate; 1 ♀, Forest Camp, 19 km N of Kalabakan, 60 m, 21.XI.1962, K. J. Kuncheria.

This new species is somewhat allied to *Neodiploconus homostictus* (Candèze, 1860) from Borneo, but can be distinguished from the latter by the dusky brown body, by the absence of reddish patch at base of elytron.

Neodiploconus homostictus (Candèze, 1860) Fig. 2 F, 5 S.

Diploconus homostictus Candèze, 1860, Mon. Élatérides 3: 295, t. 5, f. 3 (Borneo).—Candèze, 1894, Ann. Mus. Civ. St. Nat. Genova (2) 14: 495 (Malacca, Sumatra).

Length 10-11 mm. Body moderately elongate and subparallel-sided; surface rather opaque, black except basal area of elytra yellow-brown to dark reddish brown.

SPECIMENS EXAMINED: SARAWAK: 1 ♂, Bau Dist., Pangkalan Tebang, 300-450 m, 7.IX. 1958, T. C. Maa. SABAH: 1 ♀, W. Coast Residency, Ranau, 8 mi. N of Paring Hot Springs, 500 m, 9-18.X.1958, L. W. Quate; 1 ♂, Forest Camp, 19 km N of Kalabakan, 15.X.1962, K. J. Kuncheria.

DISTRIBUTION: Malacca, Sumatra, Borneo.

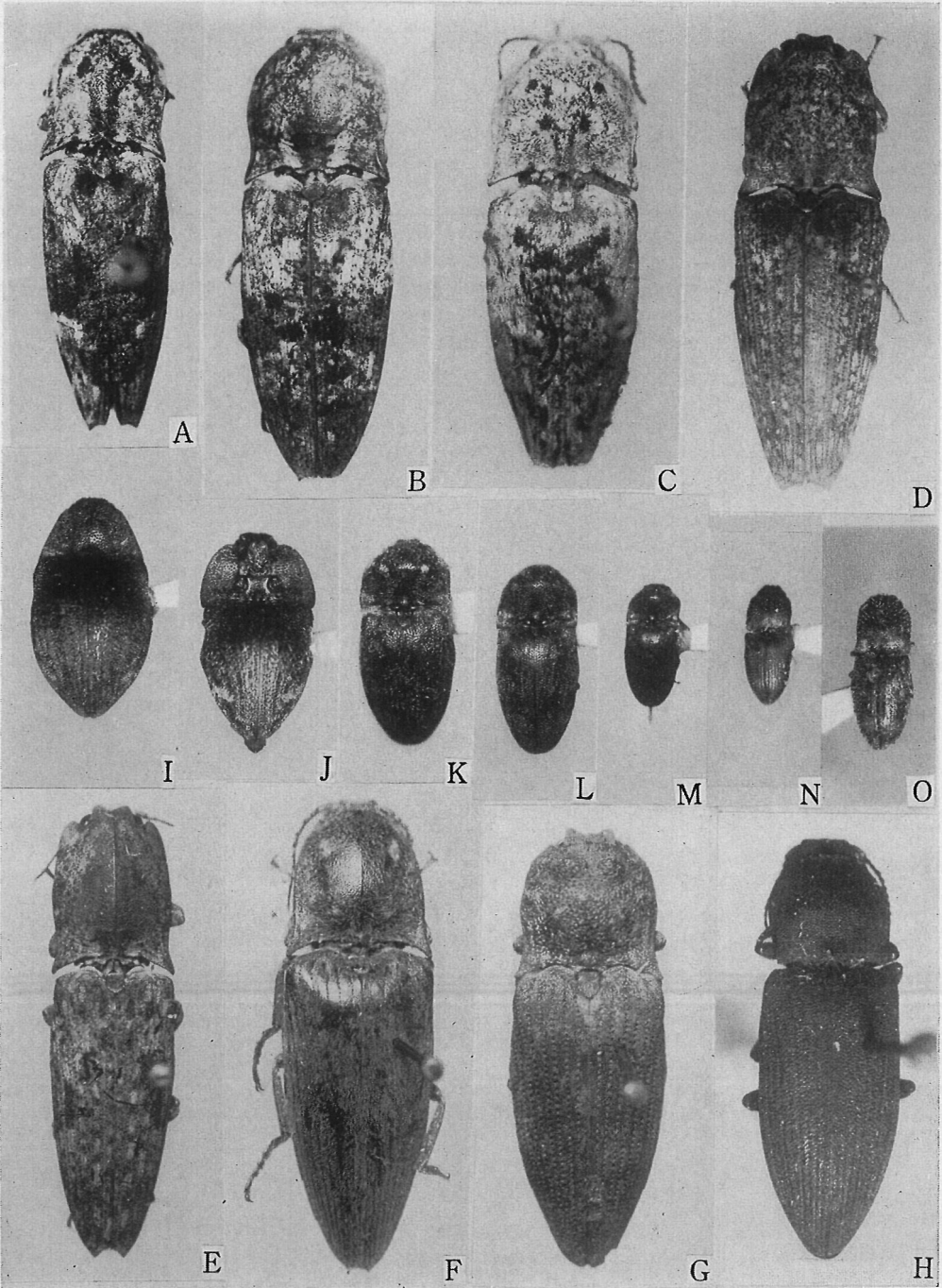
Neodiploconus seminiger (Candèze, 1893)

Diploconus seminiger Candèze, 1893, Élat. Nouveaux 5: 47 (Siam).

Neodiploconus seminiger: Schenkling, 1927, in Junk's Col. Cat. Pars 88, Elateridae 2: 268 (Siam, Borneo).

SPECIMEN EXAMINED: SARAWAK: 1 ♂, Nanga Pelagus nr Kapit, 180-585 m, 7-14. VIII.1958, T. C. Maa.

DISTRIBUTION: Borneo, Thailand.



Neodiploconus tersus (Candèze, 1896) Fig. 5 T.

Diploconus tersus Candèze, 1896, *Élat. Nouveaux* 6 : 61 (Borneo).

SPECIMENS EXAMINED : SABAH : 2 ♂ 1 ♀, Liawan, 14-17.I.1959, T. C. Maa.

DISTRIBUTION : Borneo.

Melanotus (Spheniscosomus) cuneolus Candèze, 1860 Fig. 3 D, 6 A.

Melanotus cuneolus Candèze, 1860, *Mon. Élatérides* 3 : 329 (Java).

Spheniscosomus cuneolus : Candèze, 1894, *Ann. Mus. Civ. St. Nat. Genova* (2) 14 : 496 (Sumatra).

Abdomen with outer margin of 5th sternite usually with 3 dentations.

SPECIMENS EXAMINED : SABAH : 1 ex, Tawau Residency, Kalabakan R, 48 km W of Tawau, 9-18.XI.1958, Y. Hirashima ; 4 exs, Forest Camp, 19 km N of Kalabakan, 16.X.1962, Y. Hirashima ; 4 exs, 20.X.1962, K. L. Kuncheria ; 2 exs, 60 m, 27.X.1962, K. L. Kuncheria ; 2 exs, 18.XI.1962, Y. Hirashima.

DISTRIBUTION : Sumatra, Java, Borneo.

Melanotus (Spheniscosomus) elongatus (Schwarz, 1902), status nov. Fig. 6 B.

Spheniscosomus elongatus Schwarz, 1902, *Stett. Ent. Ztg.* 63 : 275 (Borneo).

SPECIMENS EXAMINED : SABAH : 1 ♀, Forest Camp, 19 km N of Kalabakan, 19.X.1962, K. J. Kuncheria.

DISTRIBUTION : Borneo.

Melanotus (Melanotus) mendiculus Candèze, 1869

Melanotus mendiculus Candèze, 1896, *Élat. Nouveaux* 6 : 64 (Borneo).

SPECIMENS EXAMINED : SABAH : 1 ♀, Kiam Base, N of Kinabalu, 4.II.1959, T. C. Maa.

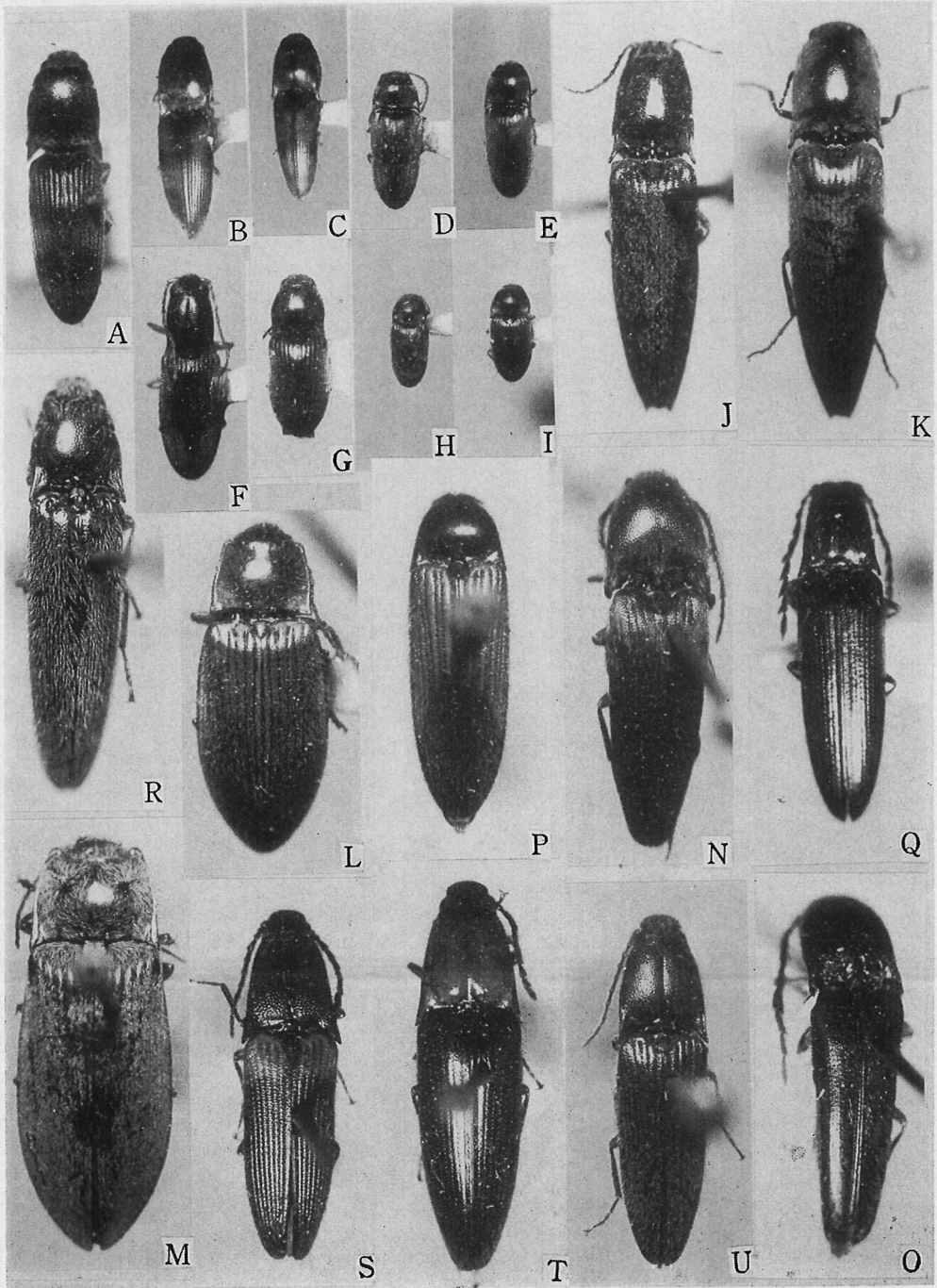
DISTRIBUTION : Borneo.

Subfamily PHYSORRHININAE Fleutiaux, 1919

Anchastus castelnaui Candèze, 1878

Fig. 4. A-O. Adults in dorsal aspect.

A, *Paracalais elaps* (Candèze, 1874) ; body length 15 mm. B, *Paracalais griseofasciatus* (Schwarz, 1902) ; 27 mm. C, *Paracalais lacteus* (Fabricius, 1801) ; 21 mm. D, *Paracalais mortuus* (J. Thomson, 1856) ; 32mm. E, *Paracalais putridus putridus* (Candèze, 1857) ; 26mm. F, *Lanelater mucronatus* (Candèze, 1857) ; 28 mm. G, *Sulcilacon geographicus* (Candèze, 1865) ; 26 mm. H, *Compsolacon borneoensis* n. sp. (Paratype) ; 13 mm. I, *Agraeus lucasseni* Candèze, 1893 ; 5 mm. J, *Agraeus mannerheimi* Candèze, 1857 ; 5 mm. K, *Brachylacon (Brachylacon) sarawakensis* n. sp. (Holotype) ; 4.5 mm. L, *Brachylacon (Brachylacon) borneoensis* n. sp. (Paratype) ; 4 mm. M, *Brachylacon (Brachylacon) tawauensis* n. sp. (Paratype) ; 2.5 mm. N, *Meristhus (Meristhus) sarawakensis* n. sp. (Paratype) ; 2.5 mm. O, *Meristhus (Meristhus) erinaceus* Candèze, 1896 ; 3 mm.



Anchastus castelnaui Candèze, 1878, *Élat. Nouveaux* 2 : 24 (Bangkok). — Candèze, 1888, *Ann. Mus. Civ. St. Nat. Genova* (2) 8 : 676 (Burma). — Fleutiaux, 1929, *Ency. Ent., Coleoptera* : 41 (Laos, Tonkin). — Ôhira, 1970, *Ann. Hist.-Nat. Mus. Nat. Hung.* 62 : 240, f. 4 (Singapore).

SPECIMENS EXAMINED : SABAH : 1 ex, Paring, nr Ranau, 23.I.1959, T. C. Maa ; 1 ex., Liawan, 14-19.VI.1959, T. C. Maa. SARAWAK : Kapit Dist., Merirai Valley, 28-31.VII.1958, T. C. Maa ; 1 ex, Nanga Pelagus nr Kapit, 180-585 m, 7-17.VIII.1958, T. C. Maa.

DISTRIBUTION : Laos, Tonkin, Burma, Malay, Sumatra, Borneo.

Anchastus ferrugineipennis Candèze, 1900 Fig. 6 C.

Anchastus ferrugineipennis Candèze, 1900, *Élat. Nouveaux* 7 : 91 (Borneo).

SPECIMENS EXAMINED : SABAH : 2 exs, Ranau, 22-25.II.1959, T. C. Maa.

DISTRIBUTION : Borneo.

Anchastus nitidus Candèze, 1878 Fig. 6 D.

Anchastus nitidus Candèze, 1878, *Élat. Nouveaux* 2 : 25 (Borneo).

SPECIMEN EXAMINED : SABAH : 1 ♀, Sandakan Bay (NW), Sepilok For. Res., 1-10 m, 26.X.1957, J. L. Gressitt.

DISTRIBUTION : Borneo.

Anchastus simulans Candèze, 1883 Fig. 6 F.

Anchastus simulans Candèze, 1883, *Notes Leyden Mus.* 5 : 210 (Sumatra). — Schwarz, 1906, *Gen. Insectorum* 46, *Elat.* : 134, t. 5, f. 3 (Sumatra). — Van Zwaluwenburg, 1959, *Pacif. Ins.* 1(4) : 377 (Bodjo I., Mentawai).

Length 6 mm. Body moderately elongate and nearly parallel-sided ; surface shining, reddish-brown except antennae and elytra entirely black, and legs yellow-brown ; vestiture recumbent and black. Striae on elytra not grooved, but deeply and regularly punctate, with intervals flattened and smooth. This species is recorded here from Borneo for the first time.

Fig. 5. A-U. Adults in dorsal aspect.

A, *Conoderus fasciatus* (Candèze, 1865) ; body length 6.5 mm. B, *Conoderus evanescens* (Candèze, 1896) ; 4.5 mm. C, *Conoderus minusculus* (Schwarz, 1900) ; 4 mm. D, *Hypdonus borneoensis* n. sp. (Paratype) ; 3 mm. E, *Hypdonus fasciatus* (Candèze, 1865) ; 3 mm. F, *Hemirrhaphes nigriceps* (Candèz, 1880) ; 5 mm. G, *Arrhaphes erythrurus* Schwarz, 1902 ; 4mm. H, *Zorochrus maai* n. sp. (Paratype) ; 2 mm. I, *Zorochrus sarawakensis* n. sp. (Paratype) ; 2.5 mm. J, *Simodactylus tawauensis* n. sp (Holotype) ; 10.5 mm. K, *Simodactylus hirashimai* n. sp. (Holotype) ; 12 mm. L, *Cisikia tenompokensis* n. sp. (Holotype) ; 7.5 mm. M, *Csikia kanbaranga* n. sp. (Holotype) ; 13 mm. N, *Neotrichophorus borneoensis* n. sp. (Paratype) ; 10 mm. O, *Neotrichophorus antennatus* (Candèze, 1896) ; 10 mm. P, *Agonischius pectoralis* Candèze, 1863 ; 9 mm. Q, *Chiagosnius rufangulus* (Schwarz, 1902) ; 8 mm. R, *Metriaulacus gobius* (Candèze, 1860) ; 12 mm. S, *Neodiploconus homosticus* (Candèze, 1860) ; 11 mm. T, *Neodiploconus tersus* (Candèze, 1896) ; 12 mm. U, *Neodiploconus borneoensis* n. sp. (Holotype) ; 8 mm.

SPECIMENS EXAMINED : SARAWAK ; 1 ex, Sadong, Kampong Tapuh, 300-450 m, 4-9.VII.1958, T. C. Maa ; 1 ex, 10.VII.1958, T. C. Maa.

DISTRIBUTION : Sumatra, Borneo.

Anchastus venustus Candèze, 1865 Fig. 6 E.

Anchastus venustus Candèze, 1865, *Élat. Nouveaux* 1 : 27 (Borneo).

Length 4-5 mm. Body moderately elongate and gently convex above; surface reddish brown except elytra entirely black, antennae dusky brown (basal 3 segments brown) and legs brownish yellow ; vestiture fulvous all over surface.

SPECIMENS EXAMINED : SARAWAK : 4 exs, Sarikei Dist., Rejang Delta, 15-25.VII.1958, T. C. Maa.

DISTRIBUTION : Borneo.

Subfamily AMPEDINAE Fleutiaux, 1947

Abelater bivittatus (Candèze, 1878), new combination Fig. 6 G.

Melanoxanthus bivittatus Candèze, 1878, *Ann. Mus. Civ. St. Nat. Genova* 12 : 128 (Borneo).

SPECIMENS EXAMINED : SABAH : 1 ex, Tawau, Quoin Hill, 3-7.VII.1962, Y. Hirashima ; 1 ex, 15-20.VII.1962, Y. Hirashima ; 1 ex, 7.IX.1962, Y. Hirashima.

DISTRIBUTION : Borneo.

Abelater cruciellus (Candèze, 1894), new combination Fig. 6 H.

Melanoxanthus cruciellus Candèze, 1894, *Ann. Mus. Civ. St. Nat. Genova* (2) 14 : 492 (Sumatra).

SPECIMENS EXAMINED : SABAH : 5 exs, Tawau, Quoin Hill Cocoa Res. Sta., 13.IX.1962, Y. Hirashima ; 1 ex, Tawau Residency, Kalabakan R., 48 km W of Tawau 9-18.XI.1958, L. W. Qate.

DISTRIBUTION : Sumatra, Borneo.

This species is recorded here from Borneo for the first time.

Abelater nigrifulus (Candèze, 1881), new combination Fig. 3 B.

Melanoxanthus nigrifulus Candèze, 1881, *Élat. Nouveaux* 3 : 69 (Java).

SPECIMENS EXAMINED : SABAH : 10 exs, Tawau, Quoin Hill, 15-20.VII.1962, Y. Hirashima ; 1 ex, 26.VII.1962, Y. Hirashima ; 1 ex, Forest Camp, 19 km N of Kalabakan, 30.XI.1962, Y. Hirashima.

DISTRIBUTION : Borneo, Java.

This species is recorded here from Borneo for the first time.

Abelater sexpustulatus (Schwarz, 1902), new combination

Melanoxanthus sexpustulatus Schwarz, 1902, *Deut. Ent. Zeitschr.* 46 : 327 (Borneo).

SPECIMENS EXAMINED : SARAWAK : 2 exs, Sarikei Dist., Rejang Delta, 15-25.VII.1958, T. C. Maa. SABAH : 1 ex, Tawau, Quoin Hill Cocoa Res. Sta., 8.IX.1962, Y. Hirashima.

DISTRIBUTION : Borneo.

Melanoxanthus? fumosus Schwarz, 1900

Melanoxanthus fumosus Schwarz, 1900, *Deut. Ent. Zeitschr.* 44 : 92 (Sumatra).

SPECIMEN EXAMINED : SABAH : 1 ex, Kalabakan, 10-19.XI.1958, T. C. Maa.

DISTRIBUTION : Sumatra, Borneo.

This species is recorded here from Borneo for the first time.

Ganoxanthus virgatus (Candèze, 1892) Fig. 6 J.

Melanoxanthus virgatus Candèze, 1891, *Ann. Mus. Civ. St. Nat. Genova* (2)12 : 777 (Burma).—
Fleutiaux, 1918, *Ann. Soc. Ent. Fr.* 87 : 222 (Tonkin).

Ganoxanthus virgatus : Fleutiaux, 1928, *Ency. Ent., Coleoptera* : 157 (Tonkin, Annam, Laos).—
Fleutiaux, 1947, *Notes d'Ent. Chinoise* 11(8) : 412.

SPECIMEN EXAMINED : SABAH : 1 ♂, Kalabakan, 10-19.XI.1958, T. C. Maa.

DISTRIBUTION : Burma, Tonkin, Laos, Borneo.

This species is recorded here from Borneo for the first time.

Megapenthes? curtus Candèze, 1878

Megapenthes curtus Candèze, 1878, *Élat. Nouveaux* 2 : 27 (Siam).— Fleutiaux, 1889, *Ann. Soc. Ent. Fr.* (4) 9 : 142 (Indo-China).— Fleutiaux, 1922, *Trans. Ent. Soc. London* 1922 : 422 (Seychelles I.).

SPECIMEN EXAMINED : SABAH : 1 ♀, Forest Camp, 19 km N of Kalabakan, 28.X.1962, K. J. Kuncheria.

DISTRIBUTION : Seychelles I., Thailand, Malacca, Sumatra, Borneo.

Megapenthes nigrolateralis (Schwarz, 1900)

Melanoxanthus nigrolateralis Schwarz, 1900, *Deut. Ent. Zeitschr.* 44 : 324 (Borneo).

Megapenthes nigrolateralis : Schwarz, 1906, in Wytzman, *Gen. Ins.* 46, Elateridae : 124 (Borneo).—
Schenkling, 1925, in Junk's *Col. Cat. Pars* 80, Elateridae 1 : 170 (Borneo).

SPECIMEN EXAMINED : SABAH : 2 ♂♂, Ranau, 22-25.II.1959, T. C. Maa.

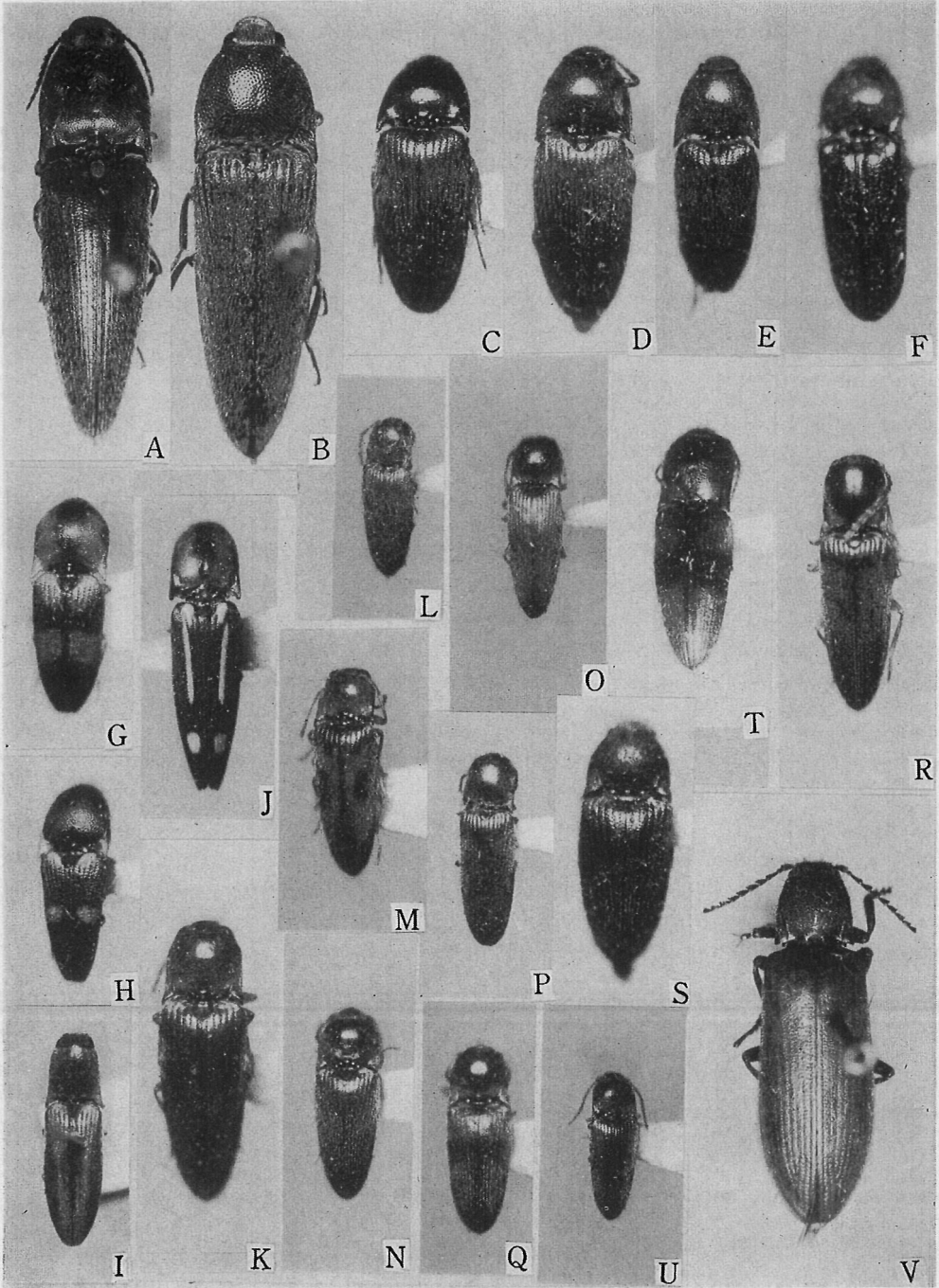
DISTRIBUTION : Borneo.

Procaerus (Agaripenthes) deletus (Candèze, 1900), new combination

Melanoxanthus deletus Candèze, 1900, *Élat. Nouveaux* 7 : 14 (Borneo).

SPECIMENS EXAMINED : SABAH : 4 exs, Tawau Town at Beach, 9.XI.1958, T. C. Maa.

DISTRIBUTION : Borneo.



Procaerus ligatus (Candèze, 1878)

Melanoxanthus ligatus Candèze, 1878, *Ann. Mus. Civ. St. Nat. Genova* 12 : 124 (Borneo).

Megapenthes ligatus : Candèze, 1894, *Ann. Mus. Civ. St. Nat. Genova* (2) 14 : 489 (Sumatra).

Procaerus ligatus : Fleutiaux, 1947, *Notes d'Ent. Chinoise* 11(8) : 395.

SPECIMENS EXAMINED : SARAWAK : 1 ex, Bau Dist., Pangkalan Tebang, 300-450 m, 6. IX.1958, T. C. Maa ; 1 ex, Gunong Matang, 1200 m, 14.IX.1958, J. L. Gressitt. SABAH : 1 ex, Kalabakan, 10-19.XI.1958, T. C. Maa ; 1 ex, Liawan, 14-17.I.1959, T. C. Maa ; 1 ex, Tawau, Quoin Hill, 8-14.VII.1962, H. Holtmann ; 1 ex, Ranau, 22-25.II.1959, T. C. Maa ; 1 ex, Forest Camp, 19 km N of Kalabakan, 31.XI.1962, K. J. Kuncheria.

DISTRIBUTION : Southeast Asia.

Procaerus variegatus (Candèze, 1878)

Ludius variegatus Candèze, 1878, *Ann. Mus. Civ. St. Nat. Genova* 12 : 138 (Aru I.).

Megapenthes brunniventris Candèze, 1892, *Ann. Mus. Civ. St. Nat. Genova* (2) 12 : 804 (New Guinea).

Megapenthes variatus Candèze, 1896 *Notes Leyden Mus.* 18 : 141 (Bintang I.).

Megapenthes bakeri Fleutiaux, 1934, *Bull. & Ann. Soc. Ent. Belg.* 74 : 368 (Philippines).

Megapenthes usingeri Van Zwaluwenburg, 1948, *Proc. Hawaii. Ent. Soc.* 13 (2) : 272 (Guam I.).

Procaerus kadesanus Ôhira, 1969, *Bull. Japan Ent. Academy* 4 (6) : 30 (Ryukyus).

SPECIMENS EXAMINED : SABAH : 2 exs, Tawau Town at Beach, 9.XI.1958, T. C. Maa ; 1 ex, Jesselton, 30.XII.1962, Y. Hirashima.

DISTRIBUTION : Micronesia, Melanesia, Southeast Asia.

Subfamily ADRASTINAE Fleutiaux, 1940

Glyphonyx bauensis Ôhira, new species Fig. 6 N.

♂. Length 3mm, width 0.7mm. Body small, moderately elongate and subparallel-sided. Surface rather shining, black to blackish brown except at anterior and posterior angles of pronotum and most parts of undersides of body dusky brown, antennae castaneous and legs yellow-brown ; vestiture pale yellow all over surface.

Fig. 6. A-V. Adults in dorsal aspect.

A, *Melanotus (Spheniscosomus) cuneolus* Candèze, 1860 ; body length 15 mm. B, *Melanotus (Spheniscosomus) elongatus* (Schwarz, 1902) ; 16 mm. C, *Anchastus ferrugineipennis* Candèze, 1900 ; 6 mm. D, *Anchastus nitidus* Candèze, 1878 ; 6 mm. E, *Anchastus venustus* Candèze, 1865 ; 5 mm. F, *Anchastus simulans* Candèze, 1883 ; 6 mm. G, *Abelater bivittatus* (Candèze, 1878) ; 4 mm. H, *Abelater cruciellus* (Candèze, 1894) ; 3.5 mm. I, *Chiagosnius flavofasciatus* (Schwarz, 1902) ; 6 mm. J, *Ganaxanthus virgatus* Candèze, 1892 ; 7 mm. K, *Glyphonyx ranauensis* n. sp. (Paratype) ; 5 mm. L, *Glyphonyx pallidulus* Candèze, 1863 ; 2.5 mm. M, *Glyphonyx tenompokensis* n. sp. (Paratype) ; 3.5 mm. N, *Glyphonyx bauensis* n. sp. (Paratype) ; 3 mm. O, *Lanecarus sarawakensis* n. sp. (Paratype) ; 3.5 mm. P, *Neosilesis borneoensis* n. sp. (Paratype) ; 3 mm. Q, *Glyphonyx zonatus* Candèze, 1878 ; 3.5 mm. R, *Lanecarus gressitti* n. sp. (Paratype) ; 5 mm. S, *Glyphonyx variatus* Candèze, 1894 ; 4.5 mm. T, *Silesis accentus* Candèze, 1896 ; 4.5 mm. U, *Glyphonyx maai* n. sp. (Paratype) ; 3 mm. V, *Hemiops crassa* (Gyllenhal, 1817) ; 14 mm.

Head gently convex between eyes, flattened on vertical portion between antennae; surface moderately densely and evenly punctate, each puncture umbilicate; clypeal margin nearly transverse but obtusely angulated at middle. Antenna extending beyond posterior angle of pronotum by apical segment at least; basal segment elongate and subcylindrical; 2nd segment small and subcylindrical and a little longer than 3rd which is subconic, these together nearly as long as 4th, 4th to 10th segments moderately serrate. Pronotum subquadrate, clearly wider than long (length and width measured at median points), sides nearly parallel on basal 1/3, then arcuated and tapering towards anterior angles; disc moderately convex, moderately densely punctate, but punctures becoming sparser and finer posteriorly; posterior angles not divergent, each bears a prominent carina above, which extends nearly to anterior margin. Scutellum oblong-ovate, flattened and rounded apically. Elytra about $2.3\times$ as long as basal width, sides nearly parallel on basal 1/4, then gradually tapering towards apices; striae well defined, but 1st to 3rd striae shallowly defined; intervals flattened and punctulate.

♀. Very similar to ♂, but antennae a little shorter.

Holotype ♂ (BISHOP 6866), SARAWAK: Bau District, Lake Area, 30.VIII.1958, T. C. Maa. Paratypes: 14 exs, same data as holotype.

This new species is somewhat allied to the mentioned in the latter one (*G. maai* n. sp.), but can be distinguished from the latter by the black elytra, and by the obtusely angulated clypeal margin.

Glyphonyx carinifrons Candèze, 1893

Glyphonyx carinifrons Candèze, 1893, Élat. Nouveaux 5: 65 (Pèrak). — Candèze, 1894, *Ann. Mus. Civ. St. Nat. Genova* (2) 14: 501 (Sumatra). — Ôhira, 1971, *Bull. Aichi Univ. of Education* (Nat. Sci.) 20: 232, pl. 1, f. A, B, D; pl. 2, f. B (Malay Pen., Borneo).

SPECIMENS EXAMINED: SARAWAK: 4 exs, Kapit Dist. Merirai Valley, 28–31.VII. 1958, T. C. Maa; 9 exs, Bau Dist., Bidi, 90–240 m, 2.IX.1958, T. C. Maa. SABAH: 3 exs, Ranau, 500 m, 8–18.X.1958, L. W. Quate; 9 exs, Gomantong Caves, 22–26.X.1958, T. C. Maa; 2 exs, Sandakan Bay (SW) Sapagaya Lumber Camp, 2–20 m, 4.XI.1957, J. L. Gressitt; 5 exs, Forest Camp, 10 km SW of Tenom, 21.XII.1962, K. J. Kuncheria.

DISTRIBUTION: Malay Pen., Sumatra, Borneo.

Glyphonyx gunonganus Ôhira, new species

♂. Length 4 mm, width about 1mm. Body broad and oblong-ovate, sides subparallel and gently convex above. Surface rather shining black except prothorax, antennae and legs castaneous-brown. Body clothed with pale yellow pubescence all over, but anterior 1/2 of elytra provided with fulvous setae.

Head gently convex between eyes, surface moderately densely and evenly punctate, each puncture umbilicate; clypeal margin V-shaped, but only obtusely angulated at middle. Antenna rather short, nearly as long as posterior angle of pronotum; basal segment cylindrical; 2nd segment small and subcylindrical and nearly as long as 3rd which is subclavate, these two together clearly longer than 4th; 4th to 10th segments moderately serrate. Pronotum subquadrate, about $1.4\times$ as wide as long (length and width measured at median points; sides nearly parallel on basal 2/3, then rounded and gradually tapering towards anterior angles; disc gently convex, moderately densely and evenly punctate, but punctures becoming finer and sparser posteriorly, denser and coarser laterally; posterior angles divergent, each bears a long

carina above, which is extending anteriorly near anterior margin. Scutellum subovate, flattened and rounded apically. Elytra about $1.7\times$ as long as basal width, sides nearly parallel on basal $1/4$, then rounded and gradually tapering towards apices; striae well defined but 1st to 3rd striae finely defined, minutely punctate and finely rugose.

♀. Very similar to ♂, but antennae a little shorter.

Holotype ♂ (BISHOP 9867), SARAWAK : Gunong Matang, 120 m, 13.IX.1958, T. C. Maa. Paratypes : 2 exs, same data as holotype.

This new species is somewhat allied to the above-mentioned one (*G. bauensis* n. sp.), but can be distinguished from the latter by the broader and stouter body, by the reddish pronotum, and by the fulvous setae on anterior $1/2$ of elytra.

Glyphonyx maai Ôhira, new species Fig. 6 U.

♂. Length 3 mm, width about 0.8 mm. Body small, elongate, sides subparallel and moderately convex above. Surface moderately shiny, dusky brown to yellow-brown except head, pronotum, scutellum and sutural, 2nd and 3rd intervals of elytra blackish brown; vestiture golden yellow; antennae castaneous and legs yellow-brown.

Head gently convex between eyes, flattened on vertical portion between antennae; surface coarsely and umbilicately punctate; clypeal margin well ridged and weakly expanded outwardly, obtusely angulated at middle. Antenna slender, extending at least apical 2 segments beyond posterior angle of pronotum; basal segment elongate and subcylindrical; 2nd short and subcylindrical, only a little longer than its width; 3rd shortest and subglobose, these two together nearly as long as 4th; 4th to 10th segments moderately serrate. Pronotum subquadrate, clearly wider than its length (length and width measured at median points), sides nearly parallel on basal $2/3$, then rounded and gradually tapering towards extremities; disc dome-like, moderately densely and evenly punctate, but punctures becoming sparser and minuter posteriorly, denser and coarser laterally, each puncture umbilicate and smaller than those of head; posterior angles not divergent, each bears a distinct carina above, which extends anteriorly along lateral margin nearly to anterior margin. Scutellum flattened and tongue-shaped. Elytra about $2.3\times$ as long as its basal width; sides nearly parallel on basal $1/4$, then gradually tapering towards extremities; striae defined, deeply and regularly punctate, with exception of sutural striae deeply and coarsely punctate on posterior $1/2$; intervals flattened, punctulate, weakly and irregularly rugose.

♀. Very similar to ♂, but antennae a little shorter.

Holotype ♂ (BISHOP 9868), SABAH : Ranau, 22-25.II.1959, T. C. Maa. Paratypes : 6 exs, same data as holotype.

DISTRIBUTION : Borneo.

This new species is somewhat allied to *Glyphonyx accedens* Candèze, 1894 from Java, but can be distinguished from the latter by the smaller and robuster body, by the shorter antennae, and by having umbilical punctures on the disc of head and pronotum.

Glyphonyx minicollis Ôhira, new species

Length 2 mm, width about 0.6 mm. Body small, and elongate and nearly parallel-sided. Surface rather shining, black except elytra blackish brown, antennae and legs castaneous-brown to yellow-brown; vestiture pale yellow all over surface.

Head gently convex between eyes; surface sparsely and evenly punctate, each puncture

umbilicate; clypeal margin V-shaped and acutely angulate at middle. Antenna elongate, extending beyond posterior angle of pronotum by apical-most segment at least; basal segment small and subcylindrical; 2nd segment small and subcylindrical; 3rd smallest and globose, these two together clearly longer than 4th. Pronotum subquadrate, slightly wider than its length (length and width measured at median points); sides nearly parallel on posterior 2/3, then rounded and tapering towards anterior angles; disc moderately convex, moderately densely and evenly punctate; posterior angles projected behind, each bears a distinct carina above, which extends anteriorly almost 1/2 length of pronotum. Scutellum oblong-ovate, flattened and rounded apically. Elytra about 2.2× as long as wide; sides nearly parallel on basal 1/2, then gradually tapering towards apices; striae well defined, deeply and regularly punctate; intervals elevated, punctulate, finely and irregularly rugose.

♀. Very similar to ♂, but antennae a little shorter.

Holotype ♂ (BISHOP 9869), SABAH: Tenompok, 13.II.1959, T. C. Maa. Paratypes: 5 exs, same data as holotype.

DISTRIBUTION: Borneo.

This new species is somewhat allied to *Glyphonyx carinifrons* Candèze, 1893 from Borneo, but can be distinguished from the latter by the absence of longitudinal carina on the middle of head.

***Glyphonyx pallidulus* Candèze, 1863** Fig. 6 L.

Glyphonyx pallidulus Candèze, 1863, Mon. Élatérides 4: 457 (Sarawak).

SPECIMENS EXAMINED: SARAWAK: 1 ex, Kapit Dist., Merirai Valley, 28-31.VII.1958, T. C. Maa; 1 ex, Ranau, 22-25.II.1959, T. C. Maa; 1 ex, Ranau, Quoin Hill, 8-14.VII.1962, H. Hoffmann.

DISTRIBUTION: Borneo.

***Glyphonyx ranauensis* Ôhira, new species** Fig. 3 F, 6 K.

♂. Length 5 mm, width about 1.5 mm. Body elongate, sides subparallel and moderately convex above. Surface shining, castaneous-brown entirely except at sides of basal 1/2 of elytra black to blackish brown; vestiture brownish yellow all over surface.

Head gently convex between eyes, flattened on vertical portion between antennae; surface coarsely and umbilicately punctate; clypeal margin well ridged, V-shaped and acutely angulated at middle. Antenna rather short, extending apical-most segment beyond posterior angle of pronotum; 2nd segment small and subcylindrical; 3rd subclavate and a little shorter than 2nd and these two together slightly longer than 4th; 4th to 10th segments moderately serrate. Pronotum trapezoid, clearly wider than its length (length and width measured at median points); sides slightly sinuate just before posterior angles, nearly parallel on posterior 4/5, then rounded and gradually tapering towards anterior angles; disc moderately convex, but depressed at posterior angles, moderately densely punctate, but punctures becoming minuter and sparser than those of head; posterior angles divergent, each bears a long, distinct carina above, which extends anteriorly along lateral margin nearly to anterior margin. Scutellum tongue-shaped, weakly impressed at middle, pubescent and punctulate. Elytra about 2.4 × as long as basal width; sides nearly parallel on basal 1/4, then gradually tapering towards apices; striae well defined, regularly punctate in striae; intervals elevated, punctulate, finely and irregularly rugose. Fourth segment of tarsi definitely membranous lobed beneath, claws pectinate.

♀. Very similar to ♂, but antennae a little shorter.

Holotype ♂ (BISHOP 9370), SABAH : Ranau, 22-25.II.1959, T. C. Maa. Paratypes : 5 exs, same data as holotype ; 1 ex, Tenompok, 10-14.II.1959, T. C. Maa ; 1 ex, Bundu Tukan, 18.II.1969, T. C. Maa.

DISTRIBUTION : Borneo.

This new species is somewhat allied to *Glyphonyx rubricus* Candèze, 1863 from Sarawak, but can be distinguished from the latter in having the black patches at sides on basal 1/2 of elytra.

Glyphonyx sarikeiensis Ôhira, new species Fig. 3 C.

Length 4.5 mm, width about 1.2 mm. Body moderately elongate and subparallel-sided. Surface rather shining, castaneous-brown entirely except head and pronotum slightly darker; antennae and legs brown to brownish yellow ; vestiture fulvous over all surfaces.

Head gently convex between eyes, flattened on vertical portion between antennae ; surface moderately densely and evenly punctate, each puncture umbilicate, clypeal margin well ridged, V-shaped and obtusely angulated at middle. Antenna rather short, nearly as long as posterior angle of pronotum ; basal segment elongate and subcylindrical ; 2nd segment short and cylindrical and a little shorter than 3rd which is subconic, these two together slightly longer than 4th ; 4th to 10th segments moderately serrate. Pronotum subquadrate, nearly as long as wide (length and width measured at median points) ; sides nearly parallel on posterior 2/3, then rounded and tapering towards anterior angles ; disc dome-like, moderately densely and evenly punctate, but punctures becoming coarser laterally but not finer and sparser posteriorly ; posterior angles projected behind and slightly divergent, each bears a distinct carina above which extends anteriorly nearly to anterior margin. Scutellum oblong-ovate, flattened and rounded apically. Elytra about 2.2× as long as basal width, sides nearly parallel on basal 1/4, then rounded and gradually tapering towards apices; striae well defined, deeply and regularly punctate ; intervals slightly elevated, punctulate, finely and irregularly rugose.

♀. Very similar to ♂, but antennae a little shorter.

Holotype ♂ (BISHOP 9871), SARAWAK : Sarikei Dist., Rejang Delta, 15-25.VII.1958, T. C. Maa. Paratypes : 3 exs, same data as holotype.

This new species somewhat resembles *Glyphonyx rubricus* Candèze, 1863 from Sarawak, but can be distinguished from the latter by the robuster body, by having the long carina of each posterior angle of pronotum.

Glyphonyx tenompokensis Ôhira, new species Fig. 6 M.

♂. Length 3.5 mm, width about 1 mm. Body moderately elongate, sides subparallel and gently convex above. Surface rather shining, yellow-brown to slighty castaneous-brown entirely except elytra, antennae and legs paler and yellow-brown, basal area and sutural intervals and at sides of median portion of elytra having black spots (the spots variable and sometimes obliterated) ; vestiture pale yellow all over surface.

Head gently convex between eyes, flattened and weakly impressed between antennae; surface moderately densely and evenly punctate, each puncture umbilicate ; clypeal margin well ridged, V-shaped and obtusely angulated at middle ; eyes large and prominent. Antenna rather short, extending at least apical 2 segment beyond posterior angle of pronotum ; 2nd segment subcylindrical and a little longer than 3rd which is subclavate, these two together clearly longer than

4th; 4th to 10th segments moderately serrate. Pronotum subquadrate, clearly longer than its width (length and width measured at median points); sides nearly parallel on basal 1/2, then rounded and gradually tapering towards anterior angles; disc dome-like, moderately densely punctate, but punctures becoming sparser and minuter posteriorly, denser and coarser laterally; posterior angles not divergent, each bears a long, distinct carina above, which extends anteriorly nearly to anterior margin. Scutellum flattened, tongue-shaped. Elytra about $2.3 \times$ as long as basal width; sides nearly parallel on basal 1/3, then gradually tapering towards extremities; striae well defined, regularly and deeply punctate; intervals slightly elevated, finely punctulate.

♀. Very similar to ♂, but antennae short, extending beyond posterior angles of pronotum by apical-most segment at least.

Holotype ♂ (BISHOP 9872), SABAH: Ranau, 28-30.IX.1958, L. W. Quate. Paratypes: 2 exs, same data as holotype; 2 exs, ditto, 22-25.II.1959, T. C. Maa; 2 exs, Tenompok, 10-14.II.1959, T. C. Maa.

DISTRIBUTION: Borneo.

This new species is very closely allied to the above-mentioned one (*G. ranauensis* n. sp.), but can be distinguished from the latter by the smaller body, and by having the black patches at sides of the middle part of elytra.

Glyphonyx variatus Candèze, 1894 Fig. 6 S.

Glyphonyx variatus Candèze, 1894, *Ann. Mus. Civ. St. Nat. Genova* (2) 14: 20 (Sumatra).

Length 4mm. Body broad and oblong-ovate; surface black and shining except antennae and legs reddish brown to dark brown, clothed with cinereous setae, anterior 1/2 of elytra provided with black setae. This species is recorded here from Borneo for the first time.

SPECIMENS EXAMINED: SABAH: 1 ex, Tenompok, 1460 m, 48 km E of Mt Kina-balu, 26-31.I.1959, T. C. Maa; 1 ex, ditto, 10-14, II.1959, T. C. Maa; 2 exs. Ranau, 22-25. II.1959, T. C. Maa.

DISTRIBUTION: Sumatra, Borneo.

Glyphonyx zonatus Candèze, 1878 Fig. 6 Q.

Glyphonyx zonatus Candèze, 1878, *Ann. Mus. Civ. St. Nat. Genova* 12: 139 (Sarawak).—Ôhira, 1971, *Bull. Aichi Univ. of Education (Nat. Sci.)* 20: 232, pl. 2, f. A (Borneo).

SPECIMENS EXAMINED: SABAH: 1 ex, Sandakan Bay (SW), Sapagaya Lumber Camp, 2-20 m, 4.XI.1957, J. L. Gressitt; 1 ex, Kalabakan, 10-19.XI.1958, T. C. Maa; 1 ex, Tawau Dist., Kalabakan, Primary Forest, 8-15.XI.1958, L. W. Quate; 4 exs, Gomantong Caves, 22-26.XI.1958, T. C. Maa; 4 exs. Quoin Hill, Forest Camp, 1.3-5 km WSW of Cocoa Res. Sta., 9-20.VII.1962, Y. Hirashima.

DISTRIBUTION: Borneo.

Silesis? accentus Candèze, 1896 Fig. 6 T.

Silesis accentus Candèze, 1896, *Élat. Nouveaux* 6: 80 (Borneo).

All the specimens from Borneo which I have examined in this study correspond very

well to the original description. The clypeal margin of this species is nearly transverse and weakly and obtusely angulated at middle, and nasal area has a longitudinal ridge in middle. Perhaps this species should be placed in the genus *Glyphonyx*.

SPECIMENS EXAMINED: SABAH: 1 ex, Sandakan Bay (NW) Sepilok For. Res., 1-10 m, 26.X.1957, J. L. Gressitt; 1 ex, Forest Camp, 19 km N of Kalabakan, 60 m, 14.X.1962, K. J. Kuncheria. SARAWAK: 1 ex, Gunong Matang, 120 m, 15.IX.1958, J. L. Gressitt.

DISTRIBUTION: Borneo.

Genus *Neosilesis* Ôhira, new genus

Type-species: *Neosilesis borneoensis* sp. nov.

This new genus is closely allied to the genus *Silesis* Candèze, 1863 (Type-species: *Silesis hilaris* Candèze, 1863), but can be distinguished from the latter by the following points: body elongate and subcylindrical; clypeal margin U-shaped, but each lateral rim not touching anterior rim; apical segment of maxillary palpi obconic and pointed apically; antennae serrate from 4th segment, 2nd and 3rd segments small and nearly globose to each other; prosternal sutures each simple, straight and only slightly divergent at anterior portion; prosternal process not excavated behind procoxae; sides of mesosternal groove clearly sloping anteriorly; basal plates only gradually narrowing outwardly, but not angulated at posterior margin; 4th segment of tarsi of legs carrying a long membranous lobe beneath, claws pectinate.

Neosilesis borneoensis Ôhira, new species Fig. 6 P.

♂. Length 2.7 mm, width about 0.7 mm. Body elongate, sides nearly parallel and moderately convex above. Surface a little shining, black to blackish brown entirely except antennae and legs of body dark brownish yellow to dusky brown, clothed with pale yellow pubescence all over.

Head gently convex between eyes, impressed and vertical portion between antennae; surface deeply and coarsely punctate; clypeal margin U-shaped, with each lateral rim oblique and well ridged, but not touching anterior rim; eyes large and prominent; apical segment of maxillary palpi obconic and pointed apically; antenna rather short, slightly beyond posterior angle of pronotum; basal segment robust and cylindrical; 2nd segment small and subcylindrical and nearly as long as 3rd which is subconic; these two together distinctly longer than 4th; 4th to 10th segments clearly serrate. Pronotum subquadrate, a little wider than long (length and width measured at median points); sides nearly parallel on basal 4/5, then rounded and tapering towards anterior angles; disc dome-like, deeply, regularly and rather densely punctate, but punctures becoming deeper and coarser laterally; posterior angles projected behind and not divergent, each bears a long, distinct carina above, which extends anteriorly almost 2/3 length of pronotum. Scutellum longer than wide, flattened and rounded apically; surface finely and sparsely punctate. Elytra about 2.5 × as long as basal width; sides nearly parallel on basal 2/3, then rounded and tapering towards apices; striae well defined, deeply punctate in striae; intervals slightly elevated, punctulate, irregularly and transversely rugose.

♀. Very similar to ♂, but body larger (length 3 mm) and antennae a little shorter (not reaching posterior angles of pronotum).

Holotype ♂ (BISHOP 9873), SABAH: Paring, Ranau, 23.I.1958, T. C. Maa. Paratypes: 3 exs, same data as holotype.

DISTRIBUTION : Borneo.

This new species is very distinct from other all known species of *Silesis* and *Ctenoplus* from Borneo by the simple prosternal suture, and by the narrow and cylindrical body.

Lanecarus gressitti Ôhira, new species Fig. 3 E, 6 R.

Length 5 mm, width about 1 mm. Body elongate, sides nearly parallel and moderately convex above. Surface a little shining, black to blackish brown entirely except at anterior and posterior angles of pronotum dark reddish brown, antennae castaneous-brown and legs yellow-brown, clothed with golden yellow pubescence all over.

Head gently convex between eyes; surface shallowly and longitudinally impressed at middle of frons, moderately densely and evenly punctate with two kinds of punctures, larger between small ones; clypeal margin U-shaped, but each lateral rim not touching anterior rim. Antenna slender, extending beyond posterior angles of pronotum by apical 2 segments at least; basal segment subcylindrical; 2nd segment small and subcylindrical; 3rd segment slightly longer than 2nd and subclavate; 4th to 10th segments moderately serrate. Pronotum subcylindrical, nearly as long as wide (length and width measured at median points); sides nearly parallel on basal 1/2, then rounded and gradually tapering towards anterior angles; disc moderately convex, scattered with two kinds of punctures as those of head; posterior angles projected behind and not divergent, each bears a distinct, short carina above. Scutellum subquadrate, flattened and obtusely rounded apically. Elytra about 2.4× as long as basal width; sides nearly parallel on basal 2/3, then rounded and gradually tapering towards apices; striae well defined, deeply punctate; intervals slightly elevated, punctulate and minutely scabrous. Third segment of tarsi of legs with definite membranous lobe beneath, claws pectinate.

♀. unknown.

Holotype ♂ (BISHOP 9874), SABAH: Sandakan Bay (SW), Sapagaya Lumber Camp, 2-20 m, 1.XI.1957, J. L. Gressitt. Paratypes: 2 exs, same data as holotype.

This new species is somewhat allied to *Lanecarus ihai* Ôhira, 1962 from Japan, but can be distinguished from the latter by the narrower and more slender body.

Lanecarus sarawakensis Ôhira, new species Fig. 6 O.

♂. Length 3.5 mm, width about 0.7 mm. Body small, elongate and subparallel-sided. Surface rather shining, yellow-brown to dark brown entirely except head, pronotum and scutellum more or less darker and dusky brown, sutural intervals and median transverse band of elytra dark brown, antennae and legs yellow-brown, clothed with pale yellow pubescence all over.

Head gently convex between eyes; surface deeply, coarsely and unevenly punctate; clypeal margin U-shaped, but each lateral rim not touching anterior rim. Antenna slender, extending beyond posterior angle of pronotum by apical 2 segments at least; basal segment subcylindrical; 2nd segment small and subglobose; 3rd segment as long as 2nd and subconic, these two together clearly longer than 4th; 4th to 10th segments moderately serrate. Pronotum subquadrate, nearly as long as wide (length and width measured at median points); sides nearly parallel on basal 1/2, then rounded and gradually tapering towards anterior angles; disc gently convex, moderately densely and evenly clothed with 2 kinds of punctures, minute punctures between larger ones; posterior angles projected behind and slightly divergent, each bears a distinct carina above. Scutellum tongue-shaped, flattened and obtusely angulated apically. Elytra about 2.3 × as long as basal width, sides nearly parallel from base to apical 1/2, then rounded and gradually tapering towards apices; striae well defined, punctate in striae; intervals slightly elevated, punctulate and weakly rugose.

♀. Very similar to ♂, but antennae a little shorter.

Holotype ♂ (BISHOP 9875), SARAWAK : Kapit Dist., Merirai Vallay, 28-31.VII.1958, T. C. Maa. Paratypes : 3 exs, same data as holotype.

This new species resembles closely the above-mentioned one (*L. gressitti* n. sp.), but can be distinguished from the latter by the smaller body, and by the yellow-brown elytra which have blackish patches.

Subfamily HEMIOPSINAE Fleutiaux, 1947

Hemiops crassa (Gyllenhal, 1817) Fig. 6 V.

Elater crassus Gyllenhal, 1817, in Schönh. Syn. Ins, 3, Append : 135 (Indes Orientales).

Hemiops crassa : Fleutiaux, 1902, *Ann. Soc. Ent. Fr.* 71 : 580.

Hemiops nigricollis Candèze, 1863, Mon. Élatérides 4 : 496 (Malay, Borneo).— Candèze, 1878, *Ann. Mus. Civ. St. Nat. Genova* 12 : 140 (Borneo).— Candèze, 1894, *Ann. Mus. Civ. St. Nat. Genova* (2) 14 : 502 (Sumatra).

SPECIMENS EXAMINED : SABAH : 1 ♂ 2 ♀, Forest Camp, 9.8 km SW of Tenom, 19.XII. 1962, Y. Hirashima et K. J. Kuncheria.

DISTRIBUTION : Malay, Sumatra, Borneo.