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A SYNOPSIS OF PHILIPPINE ENDOMYCHIDAE (COLEOPTERA)

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The tropical region of Asia and its adjacent islands harbor an assemblage of endomychid genera and species unapproached elsewhere in the world. In any direction outward from this center the representation of the family declines rapidly; for example, it is richly developed in Borneo, but the Philippine Islands, even though tropical, contain a relatively restricted endomychid fauna. Quite certainly our knowledge of it is incomplete, but enough material has come to light to indicate the paucity of the endomychids in the Philippines as compared with the number in Borneo or Indochina.

The following synopsis, which includes 67 species, is based largely on my own collection, that of Chicago Natural History Museum and a lot of specimens in the United States National Museum (USNM) reported on by me in 1943. Additional material was lent to me by the Bernice P. Bishop Museum (BPBM) and the California Academy of Sciences (CAS). Fifteen species and subspecies are described as new. Of these, eleven were obtained by the Chicago Natural History Museum Philippine Zoological Expedition (1946–47). They were collected by Harry Hoogstraal, Floyd G. Werner, and Donald Heyneman.

The name Endomychidae is here used in its broader sense to include the mycetaeids and trochoideids. Possibly the group is polyphyletic but its members do possess a number of characters in

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common: pronotal sulci, open front coxal cavities, elongate antennae and lack of coxal lines on the first abdominal sternite. The tarsi may be tetramerous, pseudotrimerous or trimerous; the first of these is apparently the most primitive, and from it the other two types have been derived.

The keys are entirely practical and can be used only for Philippine specimens. Since the original descriptions are in publications which are accessible in many libraries, I have considered it unnecessary to repeat them.

KEY TO SUBFAMILIES

1. Tarsi plainly 4-segmented, or 3-segmented and linear 2
   Tarsi apparently 3-segmented with the second segment lobed 3
2. Tarsi 3-segmented; antennae 10- or 11-segmented ..... Mycetaeinae
   Tarsi 4-segmented; antennae massive, 4- or 5-segmented ..... Trochoideinae
3. Upper surface setose or densely pubescent ..... Stenotarsinae
   Upper surface glabrous 4
4. Mesosternum pentagonal ..... Eumorphinae (genus *Beccariola*)
   Mesosternum not exactly pentagonal 5
5. Front margin of pronotum indented at middle ..... Eumorphinae
   Front margin of pronotum even ..... Endomychinae

Subfamily **MYCETAEINAE**

KEY TO GENERA

1. Pronotum with basal lobe ..... *Bystodes*
   Base of pronotum not lobed 2
2. Elytra with scattered punctures ..... *Parasymbius*
   Elytra seriately punctured ..... *Idiophyes*

Genus **Bystodes** Strohecker

Bystodes Strohecker, 1952, Gen. Insect., **210**: 19.

A single species is known.

Bystodes paulus Strohecker

Bystodes paulus Strohecker, 1952, Gen. Insect., **210**: 19, 20, 4 figs.—Chicago Natural History Museum (Burungkôt, Upi, Cotabato Province, Mindanao).

This species is known only from the type series.

Genus **Parasymbius** Arrow

Parasymbius Arrow, 1920, Trans. Ent. Soc. London, **1920**: 80.

KEY TO SPECIES

Antennae with club shorter than stalk ..... *philippinensis*
Antennae with club longer than stalk ..... *macrocerus*

Parasymbius philippinensis Arrow

Parasymbius philippinensis Arrow, 1920, Trans. Ent. Soc. London, **1920:** 81—British Museum (Natural History) (Isabela, Philippine Islands).

A small, pubescent beetle of short-oval form. The pronotum has a broad, V-shaped sulcus on each side of the base, the two sulci connected by a deeply inscribed transverse sulcus which follows the basal margin.

Parasymbius macrocerus Strohecker

Parasymbius macrocerus Strohecker, 1943, Proc. U. S. Nat. Mus., **93:** 390, fig. 12, *i*, *j*—United States National Museum (Mount Makiling, Luzon); 1952, Gen. Insect., **210:** 28, 1 fig.

The specific difference cited in the key is possibly a sexual difference within one species. *P. macrocerus* is smaller (1.5 mm.) than *P. philippinensis* (2.5 mm.).

Genus **Idiophyes** Blackburn

Idiophyes Blackburn, 1895, Trans. Roy. Soc. S. Austr., **19:** 234.

Idiophyes niponensis (Gorham)

Symbiotes niponensis Gorham, 1874, Ent. Month. Mag., **10:** 225—British Museum (Natural History) (Nagasaki, Japan).

One specimen of undetermined sex, collected in Mindanao, has been compared with cotypes of Gorham's *S. niponensis*. I can find no difference worth remark.

Subfamily **TROCHOIDEINAE**

One of the three known genera is represented in the Philippines by two species.

Genus **Trochoideus** Westwood

Trochoideus Westwood, 1833, Trans. Linn. Soc. London, **16:** 673.
Pseudopaussus Schulze, 1916, Philip. Jour. Sci., **11:** 292.

KEY TO SPECIES

Tarsi linear; front legs of male simple ..... *desjardinsi*
Tarsi lobed; front legs of male specialized ..... *mirabilis*

Trochoideus desjardinsi Guérin

Trochoideus desjardinsi Guérin, 1838, Rev. Mag. Zool., **1838**: 22—British Museum (Natural History) (Mauritius); Arrow, 1925, Fauna Brit. Ind., Col. Clav., p. 402, fig. 76.

Pseudopaussus monstrosus Schultze, 1916, Philip. Jour. Sci., **11**: 292—collection of W. Schultze (Montalban, Rizal, Luzon).

Arrow (loc. cit.) has reviewed the synonymy of this widespread species that is found throughout the Old World tropics. Specimens at hand show that it occurs on Luzon, Basilan, Palawan, Leyte and Bucas, but it undoubtedly is to be found throughout the archipelago.

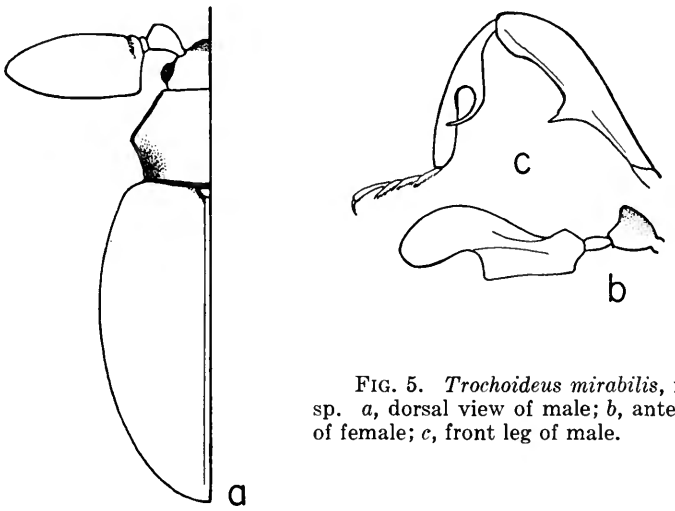

FIG. 5. *Trochoideus mirabilis*, new sp. *a*, dorsal view of male; *b*, antenna of female; *c*, front leg of male.

Trochoideus mirabilis, new species. Figure 5.

Very similar in basic structure to *T. desjardinsi*, and apparently identical with it in structure of mouth parts and prosternum, but possessing strongly divergent features in the distinct lobing of the second and third tarsal segments and in the spectacular armament of the front legs of the male. The unusual features are illustrated in the figures.

Black, clothed with a moderately dense, short pubescence. Pronotum subangulate at the sides and equally narrowed in front and behind.

Length, 4 mm.

Holotype.—A male from Todaya, east slope of Mount Apo, Davao Province, Mindanao, altitude 2,800 feet. Collected from under young bamboo sheaths, November, 1946, by H. Hoogstraal. In the collection of Chicago Natural History Museum.

Allotype.—A female, same data as the holotype.

Paratypes.—Six males and ten females from the east slope of Mount Apo, at Todaya (altitude 2,800 feet), and Mainit (altitude 4,300 feet). Collected November 16, 1946, by H. Hoogstraal and F. G. Werner. In the collections of Chicago Natural History Museum and H. F. Strohecker.

Subfamily **STENOTARSINAE**

In this subfamily and those following, the tarsi are apparently 3-segmented, but high magnification reveals a minute segment fused to the base of the ultimate one. This small segment is usually concealed by the lobe that is present on the second segment, but in the genus *Chondria* the tarsal lobes are feeble. The ligula is transverse, the last segment of the labial palpus sub-acuminate. Typically the surface of pronotum and elytra is densely pubescent but in two species which I have placed in the genus *Stenotarsus* the pubescence is sparse, albeit rather long.

KEY TO GENERA

1. Pronotum with broad, raised margins.....2
   Pronotum with narrow margins.....4
2. Antennal segments 9 and 10 internally produced.....*Ectomychus*
   Antennal segments 9 and 10 symmetrical.....3
3. Mesosternum narrow, finely margined at sides.....*Chondria*
   Mesosternum transverse, anteriorly excavated.....*Stenotarsus*
4. Front angles of pronotum bluntly rounded.....*Saula*
   Front angles of pronotum acute.....*Tragoscelis*

Genus **Ectomychus** Gorham

Ectomychus Gorham, 1887, Proc. Zool. Soc. London, **1887**: 646.

Except for the triangular lateral production of the first two segments of the antennal club there seems little to differentiate this genus from *Stenotarsus*. Too little material of any of the species of *Ectomychus* is known to permit extended study of structural features.

Ectomychus werneri, new species

Similar in form (long-oval) and size to *E. basalis* Gorham of Japan, but with the raised pronotal borders narrower and the antennae 10-segmented.

Entirely castaneous except for the eyes and antennae; first two antennal segments pale. Antennal segment 1 very stout, segment 2 quadrate and much smaller

than segment 1, 3 narrower than 2 and about twice as long as wide, segment 4 similar to 3, segments 5 and 6 hardly longer than broad, segment 7 globose, segments 8 and 9 triangularly produced internally, segment 10 oval. Lateral pronotal sulci very short, transverse sulcus absent. Pronotal punctures coarse, sparse upon the disk, more closely placed laterally. Elytra long-oval, parallel for most of their length.

Length, 2.9 mm.

Holotype.—A unique specimen of undetermined sex from the east slope of Mount McKinley, Davao Province, Mindanao, altitude 3,300 feet. Collected November 7–8, 1946, by F. G. Werner. In the collection of Chicago Natural History Museum.

Genus **Chondria** Gorham

Chondria Gorham, 1887, Proc. Zool. Soc. London, 1887: 651.

KEY TO SPECIES

1. Upper surface maculate 2
   Upper surface not maculate 3
2. Last antennal segment twice as long as wide ..... *plagiata*
   Last antennal segment not twice as long as wide ..... *mimica*
3. Pronotum black, elytra gold-yellow ..... *chrysoptera*
   Pronotum and elytra concolorous 4
4. Umbones of elytra very prominent, prolonged ..... *humeralis*
   Umbones short, moderately elevated 5
5. Elytra abruptly broader at base than pronotum ..... *angusticollis*
   Elytra and pronotum equal in width at base 6
6. Form long-oval; last antennal segment dark ..... *parallela*
   Form short-oval; last antennal segment entirely pale 7
7. Antennal segments 9 and 10 transverse ..... *apicalis*
   Antennal segments 9 and 10 longer than broad ..... *longicornis*

Chondria plagiata, new species

Closely related to *C. mimica,* new sp., and distinguished from it by the characters given in the key.

Long-oval in form, testaceous; a median, round spot on pronotum, a large rectangular area on each elytron and antennal segments 6–10 black. Apical antennal segment yellow. The stalk segments of the antennae are subequal to each other in length but progressively broader distad, with segment 8 globose. Of the three club segments the last is twice as long as broad and as long as the first two combined. Raised borders of pronotum broad but somewhat narrowed posteriorly. The basal, transverse sulcus of the pronotum is deeply impressed and ends in a deep pit on each side. Elytra but little wider at base than pronotum, subparallel for most of their length, each with nine rows of punctures, which are traceable almost to the apex. Elytral intervals finely punctured.

Length, 4.6 mm.

Holotype.—A female, labeled "Philippines (Semper)." In the collection of H. F. Strohecker.

Remarks.—Evidently the specimen has been much abraded and shows only traces of pubescence above.

Chondria mimica, new species

Similar to the preceding species but much smaller and with the terminal antennal segment less than twice as long as wide.

Pronotal sides gradually narrowed anteriorly, less rounded to front angles than in *C. plagiata,* the basal sulcus traceable laterally to the hind angles. The black area of each elytron is a median, transverse, oval patch. Elytra clothed with a dense pubescence, each elytron with nine rows of punctures traceable almost to the apex.

Length, 3.3 mm.

Holotype.—A specimen of undetermined sex from Baclayan, east slope of Mount Apo, Davao Province, Mindanao, altitude 6,500 feet. Collected November 13, 1946, in ravine forest, by H. Hoogstraal. In the collection of Chicago Natural History Museum.

Remarks.—This species closely resembles a small specimen of *Stenotarsus nobilis,* but its narrow mesosternum and feeble tarsal lobes refer it to the genus *Chondria.*

Chondria chrysoptera, new species. Figure 6, *a, b.*

Form long-oval. Head, pronotum, antennal segments 9 and 10 and basal two-thirds of 11 black. Elytra golden with dense pubescence of similar color. Under surface and legs testaceous, the prosternum infuscate. Antennal segments 3–6 each about as broad as long, 7 and 8 bead-like, 9 and 10 each about as broad as long, 11 oval and about equal in length to 9 and 10 together. Pronotum with lateral borders moderately broad, a little narrowed behind, and shallowly sulcate; the lateral edges are finely crenulate, the disc is finely punctured and shining, with a thick clothing of tawny hairs; the lateral sulci are foveiform, the basal sulcus plainly impressed. Elytra abruptly broader than pronotum but not greatly so, with 10 rows of punctures, which are evanescent at distal third.

Length, 3 mm.

Holotype.—A specimen of undetermined sex from the east slope of Mount McKinley, Davao Province, Mindanao, altitude 6,400 feet. Collected September 14, 1946, by F. G. Werner. In the collection of Chicago Natural History Museum.

Chondria humeralis, new species. Figure 7.

Form short-oval, broad. Color mahogany with moderately dense clothing of coppery pubescence. Antennal stalk stout, the segments quadrate, 9 and 10 trans-

verse; 11 subequal in length to 9 and 10 together, its apex oblique. Raised margins of pronotum very broad, its base deeply notched on each side, its transverse sulcus deep. Umbones of elytra strongly raised and continued as a broad ridge for a third or more of the length of elytra. Lateral to the umbo the elytron is deeply grooved, the groove with a row of coarse punctures.

Length, 3 mm.

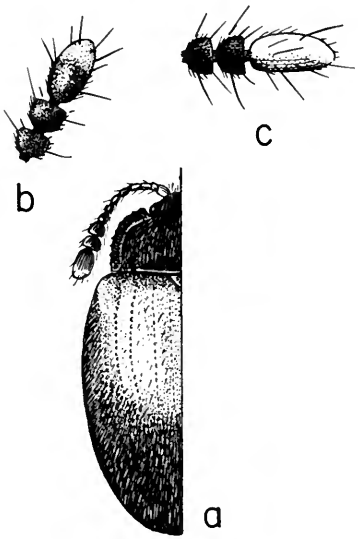

FIG. 6. *a*, *b*, *Chondria chrysoptera*, new sp.: *a*, dorsal view; *b*, club of antenna. *c*, *C. angusticollis*, new sp., club of antenna.

FIG. 7. *Chondria humeralis*, new sp.

Holotype.—A specimen of undetermined sex from east slope of Mount McKinley, Davao Province, Mindanao, altitude 3,300 feet. Collected in second growth forest, October 1, 1946, by H. Hoogstraal. In the collection of Chicago Natural History Museum.

Chondria angusticollis, new species. Figure 6, *c*.

Ferrugineous, with eyes and antennal segments 8–10 black. The last antennal segment is yellow in its distal half, dark basally. Very similar to *C. chrysoptera* in size and form and in possessing crenulate pronotal sides. The elytra, however, are narrower and more rounded at the humeri. The elytral pubescence is much more sparse than in *chrysoptera* and is of coppery color. A notable difference between the present species and *chrysoptera* is shown by the last antennal segment, which in *angusticollis* is one third longer than 9 and 10 combined.

Length, 3 mm.

Holotype.—A male from east slope of Mount McKinley, Davao Province, Mindanao, altitude 3,300 feet. Collected by beating vegetation in second growth forest, September 7–8, 1946, by F. G. Werner. In the collection of Chicago Natural History Museum.

Paratypes.—Three specimens of undetermined sex, same data as the holotype. In the collections of Chicago Natural History Museum and H. F. Strohecker.

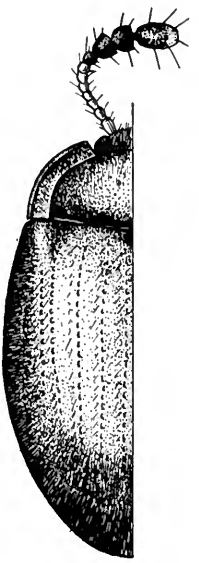

FIG. 8. *Chondria parallela*, new sp.

Chondria parallela, new species. Figure 8.

Related to *C. apicalis* and *longicornis* and distinguished from them by the characters given in the key.

Regularly long-oval, about equally narrowed before and behind. Ferrugineous, the last four antennal segments blackish. Antennae short, the stalk segments bead-like, segments 9 and 10 transverse, 11 ovoid. Pronotum with very broad margins, its hind edge notched on each side near hind angles, its lateral sulci punctiform, its transverse sulcus linear. Elytra as wide at base as pronotum, each with eight rows of punctures and clothed with a moderately dense pile of short, straight hairs.

Length, 2.8 mm.

Holotype.—A female(?) from the east slope of Mount McKinley, Davao Province, Mindanao, altitude 3,300 feet. Collected "beating

vegetation, second growth forest," September 7–8, 1946, by F. G. Werner. In the collection of Chicago Natural History Museum.

Paratypes.—Four specimens of undetermined sex, same data as the holotype. In the collections of Chicago Natural History Museum and H. F. Strohecker.

Remarks.—One of the paratypes is entirely pale yellow and undoubtedly teneral.

Chondria apicalis Arrow

Chondria apicalis Arrow, 1923, Trans. Ent. Soc. London, **1922:** 492—British Museum (Natural History) (Butuan, Mindanao); Strohecker, 1952, Gen. Insect., **210**, pl. 3, fig. 23.

The single specimen I have seen of this species was collected on Mount Makiling, Luzon (USNM).

Chondria longicornis Arrow

Chondria longicornis Arrow, 1923, Trans. Ent. Soc. London, **1922:** 491—British Museum (Natural History) (Surigao, Mindanao).

I have seen no specimens of this species.

Genus **Stenotarsus** Perty

Stenotarsus Perty, 1832, Dilect. Anim. Artic., p. 112.

Ten species and one subspecies of this widely distributed genus are found in the Philippines. Undoubtedly more remain to be discovered.

KEY TO SPECIES

1. Hind margin of pronotum deeply notched on each side near hind angles. ..... *perforatus*
   Hind margin of pronotum at most weakly excised 2
2. Elytra shining black with yellow markings 3
   Elytra not as above 4
3. Subhemispherical; elytra very finely punctured ..... *flavoscapularis*
   Oval; elytra distinctly punctured ..... *flavomaculatus*
4. Elytra black; suture, base and margin red ..... *atripennis*
   Elytra not as above 5
5. Upper surface red with black spots 6
   Upper surface unicolorous 9
6. Last segment of antenna pale yellow 7
   Last segment of antenna dark 8
7. Pronotum with a median black area ..... *nobilis lucifer*
   Pronotum unicolorous ..... *ferruginatus*
8. Each elytron with median and subapical spot ..... *nobilis nobilis*
   Each elytron with median spot only ..... *notaticollis*

9. Last segment of antenna black ..... *philippinarum*
   Last segment of antenna yellow 10
10. Penultimate segment of antenna black ..... *tabidus*
    Penultimate segment of antenna yellow ..... *leoninus*

Stenotarsus perforatus Arrow

Stenotarsus perforatus Arrow, 1923, Trans. Ent. Soc. London, **1922**: 490—British Museum (Natural History) (Philippine Islands).

I have not recognized this species in the material studied.

Stenotarsus flavoscapularis Strohecker

Stenotarsus flavoscapularis Strohecker, 1943, Proc. U. S. Nat. Mus., **93**: 388—United States National Museum (Dapitan, Mindanao).

No additional material of this species has come to my attention.

Stenotarsus flavomaculatus Strohecker

Stenotarsus flavomaculatus Strohecker, 1943, Proc. U. S. Nat. Mus., **93**: 387—United States National Museum (Cuernos Mountains, Negros).

Known to me only from the types.

Stenotarsus atripennis Strohecker

Stenotarsus atripennis Strohecker, 1943, Proc. U. S. Nat. Mus., **93**: 386—United States National Museum (Ma-Ao, Negros Occidental).

I have seen an additional specimen collected by E. S. Ross at San José, Mindoro (CAS).

Stenotarsus nobilis nobilis Gerstaecker

Stenotarsus nobilis Gerstaecker, 1858, Monogr. Endom., p. 338—Universitetets Zoologisk Museum, Copenhagen ("Pulo Penang").

Specimens from Palawan in my collection are indistinguishable from Sumatran material determined by Gilbert Arrow.

Stenotarsus nobilis lucifer, new subspecies

Rust-red in color, with antennal segments 6–10, a large median pronotal patch and a broad, transverse bar at middle of each elytron black. The stalk segments of the antennae are bead-like, segments 9 and 10 transverse, 11 ovoid, subtruncate at apex, half again as long as broad. Pronotum with side margins narrowed from the base forward and only slightly rounded, the raised margins broad and flat, the lateral sulci punctiform, the basal sulcus finely inscribed and very close to hind edge of pronotum. Elytra oval, each with eight rows of punctures, which are evanescent on the distal third of elytron.

Length, 4.7 mm.

Holotype.—A male from Caburan, Davao Province, Mindanao, at sea level. Collected from under bark, in ravine forest, January 15, 1947, by H. Hoogstraal. In the collection of Chicago Natural History Museum.

Allotype.—A female, same data and repository as the holotype.

Paratypes.—Thirteen specimens, same data as the holotype. In the collections of Chicago Natural History Museum and H. F. Strohecker.

Stenotarsus ferruginatus, new species

Very much like the preceding in general appearance, but differing by the characters indicated in the key.

General color deep rust-red; each elytron with a large black oval patch at base and a black rounded lateral spot at mid-length. Antennal segments 8–10 black. The antennae have bead-like stalk segments with the terminal segment yellow and about one and one-half times as long as broad. Pronotum with sides slightly rounded anteriorly, the raised margins narrower than in *nobilis*, the transverse sulcus broad and deep. Elytra each with seven rows of punctures, which disappear at mid-length.

Length, 7 mm.

Holotype.—A female from Momungan, Mindanao. In the collection of H. F. Strohecker.

Paratypes.—A specimen of undetermined sex from east slope of Mount McKinley, Davao Province, Mindanao. Collected September, 1946, by H. Hoogstraal and F. G. Werner. A specimen of undetermined sex from Burungkôt, Upi, Cotabato Province, altitude 1,500 feet. Collected January 1–6, 1947, by F. G. Werner. In the collection of Chicago Natural History Museum.

Stenotarsus notaticollis Pic

Stenotarsus notaticollis Pic, 1922, Mél. Exot.-Ent., **36**: 9—collection of Maurice Pic (Philippine Islands).

I am unacquainted with this species.

Stenotarsus philippinarum Gorham

Stenotarsus philippinarum Gorham, 1874, Trans. Ent. Soc. London, **1874**: 444—British Museum (Natural History) (Philippine Islands).

The only specimen of this species seen by me is without locality label and was determined by Gorham. It came to me in the collection of the late O. E. Janson and was probably from the original material on which the description was based.

Stenotarsus tabidus Gorham

Stenotarsus tabidus Gorham, 1874, Trans. Ent. Soc. London, **1874:** 445—British Museum (Natural History) (Philippine Islands).

Two specimens are in my collection (ex coll. Janson), one of which bears Gorham's determination.

Stenotarsus leoninus Gorham

Stenotarsus leoninus Gorham, 1874, Trans. Ent. Soc. London, **1874:** 444—British Museum (Natural History) (Philippine Islands).

Specimens in my collection are from Mindanao.

Genus **Saula** Gerstaecker

Saula Gerstaecker, 1858, Monogr. Endom., p. 223.

Ten specific names have been proposed for the Philippine forms of this genus, but two of these names are quite certainly synonyms. Females may not always be identifiable but males possess either minute or very distinctive characters which permit determination. One must resort to these male characters in order to construct a key to all of the species.

KEY TO SPECIES

1. Segments 3–8 of antennae each much longer than broad....2
   At least one of these segments subquadrate....3
2. Male with front tibiae curved....*filicornis*
   Male with hind tibiae much enlarged apically....*clavipes*
3. Last segment of antennae transverse....*malleicornis*
   Last segment of antennae at least as long as broad....4
4. First segment of antennal club longer than broad....*longiclava*
   First segment of antennal club not longer than broad....5
5. Male with front tibiae greatly enlarged apically....*crassicornis*
   Front tibiae of male not greatly enlarged....6
6. Front tibiae of male straight, dentate near middle....*dentipes*
   Front tibiae of male curved....7
7. Front tibiae of male widened near tip....*lobatipes*
   Front tibiae of male subangulately curved near tip....*curvipes*

Saula filicornis Arrow (=*Saula elongata* Heller), new synonymy

Saula filicornis Arrow, 1923, Trans. Ent. Soc. London, **1922:** 495, fig. 3—British Museum (Natural History) (Los Baños, Luzon).

Saula elongata Heller, 1923, Stett. Ent. Zeit., **84:** 7—collection of Karl M. Heller, Jr., Dresden? (Luzon).

Specimens examined are from Luzon, Mindanao, and Mindoro.

Saula clavipes Arrow

Saula clavipes Arrow, 1923, Trans. Ent. Soc. London, **1922**: 497, fig. 8—British Museum (Natural History) (Baguio, Luzon).

Saula malleicornis Arrow

Saula malleicornis Arrow, 1923, Trans. Ent. Soc. London, **1922**: 500, fig. 9—British Museum (Natural History) (Surigao, Mindanao).

Saula longiclava Strohecker

Saula longiclava Strohecker, 1951, Pan-Pacif. Ent., **27**: 165, fig. 10, *a*, *b*—collection of H. F. Strohecker (Dapa, Siargao) (Surigao *per lapsus* in original citation).

Saula crassicornis Arrow

Saula crassicornis Arrow, 1923, Trans. Ent. Soc. London, **1922**: 499, figs. 5, 10—British Museum (Natural History) (Bukidnon, Mindanao).

The few specimens in my collection are from Mindanao.

Saula dentipes Strohecker

Saula dentipes Strohecker, 1951, Pan-Pacif. Ent., **27**: 164, fig. 9, *a*, *b*—collection of H. F. Strohecker (Cabugao, northern Luzon).

Saula lobatipes Strohecker (=*Saula luzonica* Strohecker), new synonymy

Saula lobatipes Strohecker, 1943, Proc. U. S. Nat. Mus., **93**: 384, fig. 12, *l*—United States National Museum (Cuernos Mountains, Negros).

Saula luzonica Strohecker, 1951, Pan-Pacif. Ent., **27**: 165, fig. 8, *a*, *b*—collection of H. F. Strohecker (Manila, Luzon).

Saula curvipes Arrow

Saula curvipes Arrow, 1923, Trans. Ent. Soc. London, **1922**: 496, fig. 2—British Museum (Natural History) (Puerto Princesa, Palawan).

I have seen one topotypic male in the course of this study.

Genus Tragoscelis Strohecker

Tragoscelis Strohecker, 1952, Gen. Insect., **210**: 61.

Heliobletus Gorham, 1873, Endom. Recit., p. 41 (nec Reichenbach, 1853).

Very similar to the preceding genus but with the front angles of the pronotum acute and the stalk segments of the antennae stout and quadrate. In the males the first club segment of the antennae is globosely swollen above, slightly concave beneath.

Tragoscelis philippinensis (Strohecker)

Heliobletus philippinensis Strohecker, 1943, Proc. U. S. Nat. Mus., **93:** 384, fig. 12, *m*, *n*—United States National Museum (Zamboanga, Mindanao).

Tragoscelis philippinensis Strohecker, 1952, Gen. Insect., **210:** 61, pl. 3, fig. 29.

Of the six described species of *Tragoscelis*, this is the only one that is known from the Philippines. I have seen no specimens but the unique type.

Subfamily **EUMORPHINAE**

In the insects of this subfamily the occiput is minutely, transversely grooved, forming a tiny file which appears under moderate magnification as an iridescent area. Except in the genus *Beccariola*, the front margin of the pronotum is minutely sinuate at the middle and extended a little over the occiput as a thin flange. The Eumorphinae are highly characteristic endomychids of the Oriental region.

KEY TO GENERA

1. Mesosternum flat and pentagonal; form coccinelloid ..... *Beccariola*
   Mesosternum not as above 2
2. Mesosternum triangular, narrowed anteriorly ..... *Mycetina*
   Mesosternum not triangular 3
3. Pronotum narrowed behind; apex of mandible prolonged and with an internal tooth ..... *Encymon*
   Pronotum not narrowed posteriorly 4
4. Prosternum narrow, not prolonged behind coxae 5
   Prosternum broader, surpassing coxae posteriorly 6
5. Front coxae separated; mandibles with internal tooth ..... *Indalmus*
   Front coxae contiguous; mandibles without tooth ..... *Ancylopus*
6. Mesosternum decidedly transverse ..... *Spathomeles*
   Mesosternum no broader than long 7
7. Mandible with an internal tooth ..... *Engonius*
   Mandible without an internal tooth ..... *Eumorphus*

Genus **Beccariola** Arrow

Beccaria Gorham, 1885, Ann. Mus. Civ. Stor. Nat. Genova, **22:** 521 (nec Trichense, 1870).

Beccariola Arrow, 1943, Ann. Mag. Nat. Hist., (11), **10:** 129.

The beetles of this genus, because of their strongly convex and round form, are sometimes mistaken for coccinellids but their structure is endomychid. Seven nominal species, all based on single specimens, are reported for the Philippines.

KEY TO SPECIES

1. Elytra mostly orange or red 2
   Elytra mostly black but with orange or red markings 3
2. Elytra orange-yellow with black side margin and suture ..... *suturalis*
   Elytral disc with narrow transverse band ..... *cruciata*
3. Each elytron with humeral and apical spot ..... *ovata*
   Each elytron with three or four pale spots 4
4. Elytron with three orange-yellow markings ..... *bakeri*
   Elytron with four pale areas 5
5. Legs and antennae (except club) pale ..... *philippinica*
   Legs and antennae (except basal segments) black 6
6. Antennae pale at base ..... *septemguttata*
   Antennae entirely dark ..... *denticornis*

Beccariola philippinica (Arrow)

Beccaria philippinica Arrow, 1920, Trans. Ent. Soc. London, **1920:** 75—British Museum (Natural History) (Philippine Islands).

Beccariola septemguttata (Strohecker)

Beccaria septemguttata Strohecker, 1943, Proc. U. S. Nat. Mus., **93:** 381, fig. 12, *k*—United States National Museum (Surigao, Mindanao).

It is possible that this name is a synonym of the preceding. The description of Arrow indicates that the type of *philippinica* was teneral.

Beccariola denticornis (Strohecker)

Beccaria denticornis Strohecker, 1943, Proc. U. S. Nat. Mus., **93:** 382—United States National Museum (Samar).

Beccariola cruciata (Arrow)

Beccaria cruciata Arrow, 1923, Trans. Ent. Soc. London, **1922:** 488—British Museum (Natural History) (Surigao, Mindanao).

The pale areas of the elytra of this species are so extensive that the dark parts appear as a narrow cross on the closed elytra.

Beccariola ovata (Arrow)

Beccaria ovata Arrow, 1923, Trans. Ent. Soc. London, **1922:** 489—British Museum (Natural History) (Iligan, Mindanao).

I do not know this species. Its great size (8 mm.) and elongate form should permit quick identification.

Beccariola suturalis (Heller)

Beccaria suturalis Heller, 1923, Stett. Ent. Zeit., **84:** 6—collection of Karl M. Heller, Jr., Dresden? (Surigao, Mindanao).

This species is apparently similar to *cruciata* but has the pronotum black and lacks the dark cross-bar on the elytra.

Beccariola bakeri (Heller)

Beccaria bakeri Heller, 1923, Stett. Ent. Zeit., **84**: 7—collection of Karl M. Heller, Jr., Dresden? (Surigao, Mindanao).

From the description this appears to be a very distinctive species, having black elytra, each of which has two anterior yellow cross-bands and a yellow pre-apical spot.

Genus **Mycetina** Mulsant

Mycetina Mulsant, 1846, Hist. Nat. Col. Fr., Part 4, Sulcic., p. 15.

Although numerous species of *Mycetina* are found in adjacent islands, only one species, *luzonica*, is known from the Philippines.

Mycetina luzonica Arrow

Mycetina luzonica Arrow, 1920, Trans. Ent. Soc. London, **1920**: 29—British Museum (Natural History) (Mount Makiling, Luzon).

Many specimens of *luzonica* have been examined by me. These were from Luzon, Mindanao, Palawan, and Basilan, and it seems probable that the species ranges throughout the archipelago.

Genus **Encymon** Gerstaecker

Encymon Gerstaecker, 1857, Arch. Naturg., **23**: 232.

In this genus the prosternum is typically very narrow, the front coxae almost contiguous, the elytra strongly elevated and subglobose, and the pronotum decidedly narrowed behind. The largest species, *E. regalis*, has the front coxae separated, the elytra somewhat elongate, and the pronotum only slightly narrowed posteriorly. The mandibles of *regalis* are attenuate and each has a small tooth close to the apex.

KEY TO SPECIES

1. Front angles of pronotum short and blunt 2
   Front angles of pronotum produced and acutely rounded 3
2. Head and pronotum red ..... *truncaticollis*
   Head and pronotum black ..... *truncaticollis atriceps*
3. Size large (10–11 mm.); elytra with red spots ..... *regalis*
   Smaller (7–8 mm.); elytra unicolorous blue or black 4
4. Lateral sulci of pronotum reaching to mid-length ..... *valgus*
   Lateral sulci short; pronotum very broad ..... *neugebaueri*

Encymon truncaticollis truncaticollis Strohecker

Encymon truncaticollis Strohecker, 1951, Pan-Pacif. Ent., **27**: 161, fig. 6, *a*, *b*—California Academy of Sciences (Mount Makiling, Luzon).

This species is easily distinguished by the rounded front angles of the pronotum.

Encymon truncaticollis atriceps, new subspecies

Identical in structure with the preceding, but with the head and pronotum black instead of red. The aedeagus seems to be a little more attenuate than in the nominate form.

Holotype.—A male from Bugasan, Parang, Cotabato Province, Mindanao, near sea level. Collected December, 1946, by F. G. Werner. In the collection of Chicago Natural History Museum.

Encymon regalis Gorham

Encymon regalis Gorham, 1874, Trans. Ent. Soc. London, **1874**: 440—British Museum (Natural History) (Philippine Islands).

Specimens at hand are from Luzon and Mindanao.

Encymon valgus Strohecker

Encymon valgus Strohecker, 1951, Pan-Pacif. Ent., **27**: 161, fig. 7—collection of H. F. Strohecker (Balbalan, Luzon).

I am uncertain as to the color of the pronotum of *valgus* in life. The five specimens examined have the pronotum reddish-black but the dark coloration may be due to post-mortem changes, or the specimens may not have attained full coloration before death. The male sexual characters are distinctive.

Encymon neugebaueri Mader

Encymon neugebaueri Mader, 1936, Ent. Rundschau, **54**: 63—collection of L. Mader, Munich (Mindanao).

The pronotum in this species is strongly transverse and convex. The head and pronotum are black, the elytra dark blue. Mader reported no special features of the male, but the secondary characters of that sex are identical with those of *E. ferialis* Gorham from Borneo. In fact I can find no means for separating the two species, since the aedeagi also appear identical. Externally the male of *neugebaueri* is characterized by having the middle tibiae strongly bowed and the middle femora fringed with long hairs. Another species showing this same feature is *E. maderi* Strohecker (*E. ruficollis* Gorham), which occurs in New Guinea and the Solomons.

Genus **Indalmus** Gerstaecker

Indalmus Gerstaecker, 1858, Monogr. Endom., p. 185.

KEY TO SPECIES

Pronotum red (Luzon)..... *luzonicus*
Pronotum black (Mindanao)..... *inermipes*

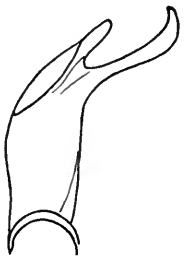

FIG. 9. *Indalmus luzonicus* Gorham; aedeagus.

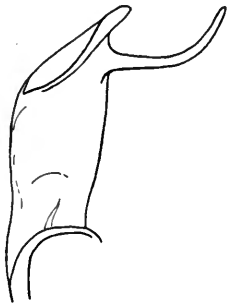

FIG. 10. *Indalmus inermipes*, new sp.; aedeagus.

Indalmus luzonicus Gorham. Figure 9.

Indalmus luzonicus Gorham, 1897, Proc. Zool. Soc. London, 1897: 462, pl. 32, fig. 7—British Museum (Natural History) (Luzon).

The accurate figure given by Gorham permits ready identification of this species.

Indalmus inermipes, new species. Figure 10.

Similar in appearance to *I. luzonicus* but of narrower form and with the pronotum and abdominal sternites black. These are red in *luzonicus*. As in *luzonicus*, the mesosternum of *inermipes* is sharply elevated along its front edge and the front tibia of the male is abruptly widened in its distal third.

Black, each elytron with two large, rounded, yellow spots, one humeral, the other pre-apical.

Length, 5.6 mm.

Holotype.—A male from Sitio Taglawig, Maco, Tagum, Davao Province, Mindanao. Collected near sea level in original dipterocarp forest, October, 1946, by H. Hoogstraal and D. Heyneman. In the collection of Chicago Natural History Museum.

Genus **Ancylopus** Costa

Ancylopus Costa, 1854, Fauna del Regno di Napoli, Coleott., Part I, p. 14.

Ancylopus melanocephalus (Olivier)

Endomychus melanocephalus Olivier, 1808, Entomologie, **6**: 1073, no. 3, pl. 1, fig. 3—type repository unknown (Italy).

Arrow illustrated this species and listed its synonymy in the Fauna of British India (1925, p. 334). In its wide geographic range, from Italy to New Guinea and Japan, *melanocephalus* shows color varieties and some variations in the male aedeagus. Intensive study may reveal a number of actual races within this species.

Genus **Engonius** Gerstaecker

Engonius Gerstaecker, 1857, Arch. Naturg., **23**: 220.

Engonius sanguinolentus (Gorham)

Amphisternus sanguinolentus Gorham, 1875, Trans. Ent. Soc. London, **1875**: 311—British Museum (Natural History) (Philippine Islands, probably Mindanao).

Amphisternus sexplagiatus Heller, 1923, Stett. Ent. Zeit., **84**: 6—collection of Karl M. Heller, Jr., Dresden? (Mindanao).

Genus **Eumorphus** Weber

Eumorphus Weber, 1801, Observ. Ent., p. 31.

This group of endomychids is richly developed in Asia, more than fifty species having been described. While nine species are treated below, only four can be ascribed with certainty to the Philippine fauna.

KEY TO SPECIES

1. Elytra with narrow margins 2
   Elytra margins wide and flat 4
2. Femora largely red or yellow ..... *murrayi*
   Femora dark 3
3. Umbones of elytra subcarinate; surface opaque ..... *assamensis*
   Umbones normal; surface shining ..... *convexicollis*
4. Elytra suborbicular, their margins very wide ..... *marginatus*
   Elytra oval, their margins moderately wide 5
5. Color of dorsal surface violet ..... *tetraspilotus*
   Color of dorsal surface blue-black 6
6. Pronotum coarsely and thickly punctured (Luzon) ..... *thomsoni*
   Pronotum very finely punctured, strongly shining 7
7. Anterior elytral spot touching base of elytron ..... *staudingeri*
   Anterior spot remote from base of elytron 8
8. Elytra with a small tubercle near scutellum ..... *productus*
   Elytra with a short carina near scutellum ..... *cyanescens*

Eumorphus murrayi Gorham

Eumorphus murrayi Gorham, 1874, Trans. Ent. Soc. London, **1874**: 437—British Museum (Natural History) (Philippine Islands, probably in error).

After citing the Philippines as the locality of collection of the original type of *murrayi*, Gorham questioned the correctness of the record and used the name for specimens of *Eumorphus* collected in Burma by Fea. Arrow attributed these Burmese specimens to *Eumorphus sanguinipes* Guérin and stated that there was no reason to doubt the Philippine origin of *murrayi*. Three of the Fea specimens are in my collection, one bearing Arrow's label "*Eumorphus sanguinipes* Guérin." This led to my re-describing the real *sanguinipes* as *E. rejectus*, the synonymy having been communicated to me personally by Arrow after comparison of a paratype with the Guérin type of *sanguinipes*.

Although I have seen a large number of Philippine *Eumorphus*, no specimen to which Gorham's description of *murrayi* could apply has been noted. The Fea specimens from Burma, however, agree very well with Gorham's description and it appears certain that *murrayi* Gorham is a Burmese rather than a Philippine species.

Eumorphus assamensis Gerstaecker

Eumorphus assamensis Gerstaecker, 1857, Arch. Naturg., **23**: 229—British Museum (Natural History) (Assam); Arrow, 1925, Fauna Brit. Ind., Coleop. Clav., p. 300.

Eumorphus subguttatus Gerstaecker, loc. cit.—Zoologisches Museum der Humboldt-Universität, Berlin ("Java, Singapore").

Eumorphus subsinuatus Pic, 1927, Mélanges Exot.-Ent., **50**: 2—collection of Maurice Pic (Philippine Islands).

The small size and opaque, unpunctured surface of this species enable rapid identification. On the basis of slight differences in the male aedeagus and the size of the elytral spots, the names *subguttatus* and *subsinuatus* may be used as trinomials for Malayan and Philippine races respectively.

Eumorphus convexicollis Gerstaecker

Eumorphus convexicollis Gerstaecker, 1857, Arch. Naturg., **23**: 228—Zoologisches Museum der Humboldt-Universität, Berlin (Philippine Islands).

My collection contains a considerable series of this species and many more have come to my attention in collections sent to me for study. Specimen labels show its occurrence on Palawan, Leyte, Luzon and Mindanao; hence it is probably generally distributed in the

islands. In the absence of locality labels I think it would not be distinguishable with certainty from the Indo-Malayan *E. quadriguttatus* (Illiger). It is my opinion that *convexicollis* is no more than a poorly defined subspecies of *quadriguttatus*.

Eumorphus marginatus Fabricius

Eumorphus marginatus Fabricius, 1801, Syst. Eleuth., **2**: 12—type unknown (Java?); Arrow, 1925, Fauna Brit. Ind., Coleop. Clav., p. 296, fig. 53; Strohecker, 1953, Gen. Insect., **210**: 104, pl. 5, fig. 44.

This species is included in the present synopsis on the basis of a deformed male (USNM) that is labeled as collected at Baguio.

Eumorphus tetraspilotus Hope

Eumorphus tetraspilotus Hope, 1832, Griffith's Anim. Kingd., **15**: 787, pl. 60, fig. 6, pl. 75, fig. 6—British Museum (Natural History) (Penang); Arrow, 1925, Fauna Brit. Ind., Coleop. Clav., p. 299, pl. 1, fig. 2.

Two specimens of this beautiful species, labeled as coming from Palawan, are in the United States National Museum.

Eumorphus thomsoni (Guérin)

Enaismus thomsoni Guérin, 1858, Rev. Mag. Zool., (3), **1**: 16—British Museum (Natural History) (type locality unknown).

Eumorphus thomsoni Gorham, 1873, Endom. Recit., p. 35; Arrow, 1920, Trans. Ent. Soc. London, **1920**: 17.

Eumorphus expatriatus Gorham, loc. cit.—British Museum (Natural History) (type locality unknown); Arrow, loc. cit.

This species and those which follow are very similar in structure and appearance. The male aedeagi are very much alike. All the specimens of *thomsoni* which I have seen are from Luzon. It may be a northern race of *cyanescens*.

Eumorphus staudingeri Mader

Eumorphus staudingeri Mader, 1936, Ent. Rundschau, **54**: 61—collection of L. Mader, Munich (Mindanao and Basilan cited by Mader).

The only good character for separating this form from *cyanescens* has been given in the key. My collection contains small series from the Staudinger collection, from which Mader's type series came. These and material collected by the Philippine Zoological Expedition seem to show that *staudingeri* exists as definite populations, but its differentiation from *cyanescens* is slight.

Eumorphus productus Arrow

Eumorphus productus Arrow, 1920, Trans. Ent. Soc. London, **1920**: 17—British Museum (Natural History) (Philippine Islands).

Arrow distinguished this form from *cyanescens* on the basis of its having a small tubercle instead of a short carina near the scutellum, and having the elytral apices more produced. I have seen specimens to which this description applies, but regard them only as variants of *E. cyanescens*.

Eumorphus cyanescens Gerstaecker

Eumorphus cyanescens Gerstaecker, 1857, Arch. Naturg., **23**: 226—Zoologisches Museum der Humboldt-Universität, Berlin (Philippine Islands); 1858, Monogr. Endom., p. 101, pl. 2, fig. 5.

Specimens examined in the present study have been from Samar, Panaon, Mindanao and Siargao.

Genus **Spathomeles** Gerstaecker

Spathomeles Gerstaecker, 1857, Arch. Naturg., **23**: 218; Strohecker, 1949, Proc. Haw. Ent. Soc., **13**: 437.

Males of the genus *Spathomeles* are remarkable in having each elytron armed with a recurved spine near mid-length. The function of these spines is unknown. The hind tibiae of males may be equipped with flanges or teeth. Two species, one of which is here described for the first time, are known from the Philippines.

KEY TO SPECIES

Smaller (12–14 mm.); front angles of pronotum obtuse..... *darwinista*
Larger (18 mm.); front angles of pronotum acutely rounded..... *moloch*

Spathomeles darwinista Dohrn

Spathomeles darwinista Dohrn, 1873, Stett. Ent. Zeit., **34**: 322—Museum für Naturkunde, Stettin (Philippine Islands); Strohecker, 1949, Proc. Haw. Ent. Soc., **13**: 442, figs. 9–11.

Spathomeles pyramidalis Gorham, 1873, Endom. Recit., p. 31—British Museum (Natural History) (Philippine Islands).

All the definitely labeled specimens which I have seen are from Mindanao or Leyte.

Spathomeles moloch, new species. Figure 11.

Differing from *S. darwinista* by the characters given in the key. While referable without question to *Spathomeles*, this new species is

far removed from any others of the genus known at present. It agrees with the apparently more primitive species—*turritus* Gerstaecker, *retiarius* Strohecker, *elegans* Gorham, and *dohrnii* Gerstaecker—in lacking a metasternal pit, and it agrees with the first two species in having the front angles of the pronotum acutely rounded.

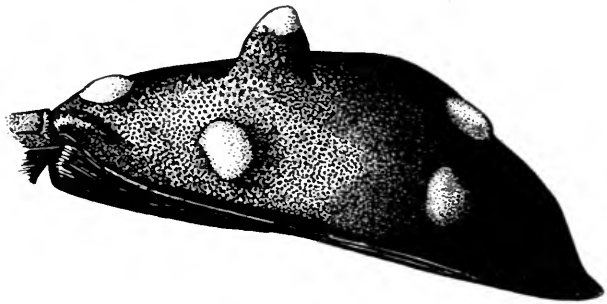

FIG. 11. *Spathomeles moloch*, new sp.; left elytron of female.

Size very large for the genus and family. Color black, subopaque, each elytron with five orange-yellow calluses, of which one is borne at the summit of a high tubercle.

Head broad, with the clypeus and front densely punctured and with a pair of broad, shallow impressions between the eyes; postocular areas smooth. Antennae normal for the genus, rather stout, with a broad, flattened club. Pronotum about one-third broader than its median length, the front angles produced and acutely rounded, the hind ones forming right angles, the basal sulcus and lateral sulci sharply impressed. The pronotum also has a shallow longitudinal groove. Stridulatory membrane at middle of front margin poorly developed but evident. Pronotal surface closely punctured.

Scutellum transversely oval, closely punctured. Elytra abruptly broader than base of pronotum, the umbones prominent. The elytral surface closely punctured, the punctures immediately behind the scutellum connected by fine grooves. The elytra, while appearing opaque black, show a purplish color under strong illumination. Each elytron bears a high, rounded tubercle situated just in front of mid-length and at the beginning of the lateral slope.

Intercoxal process of prosternum broad between the coxae, its apex truncate. Mesosternum transverse. Metasternum with a few low, transverse ridges near the middle of its front margin but without a deep pit, its surface shining, its punctures fine and sparse. Abdominal sternites finely, thickly punctured, subrugose at sides. Femora strongly clavate. Tibiae broad and much compressed.

Length, 17 mm.

Holotype.—A female from Todaya, east slope of Mount Apo, Davao Province, Mindanao, at 2,800 feet altitude. Collected November, 1946, by H. Hoogstraal. In the collection of Chicago Natural History Museum.

Paratype.—A female, same data as the holotype. In the collection of H. F. Strohecker.

Subfamily **ENDOMYCHINAE**

The outstanding feature of this subfamily is the form of the ligula, which is quadrate to elongate rather than laterally produced as in the other subfamilies. Two of the five recognized genera are represented in the Philippines.

KEY TO GENERA

Prosternum posteriorly prolonged and rounded ..... *Cyclotoma*
Prosternum very broad, posteriorly truncate ..... *Meilichius*

Genus **Cyclotoma** Mulsant

Cyclotoma Mulsant, 1851, Mem. Acad. Lyon, (2), **1**: 71.

Panomoea Gerstaecker, 1857, Arch. Naturg., **23**: 241.

Niteta Weise, 1890, Deutsche Ent. Zeitschr., **1890**: 21.

The species of *Cyclotoma* are almost hemispherical in shape and are often mistaken for coccinellids. Their structure is endomychid but nothing is known of their feeding habits. Differentiation of species has been made largely on the basis of color, which is very similar throughout the genus. Material at hand shows that two species occur in the Philippines, but distinction can be made with certainty only by study of the male aedeagus.

Cyclotoma coccinellina (Gerstaecker). Figure 12.

Panomoea coccinellina Gerstaecker, 1857, Arch. Naturg., **23**: 242—Zoologisches Museum der Humboldt-Universität, Berlin (Philippine Islands); 1858, Monogr. Endom., p. 366, pl. 3, fig. 8.

Niteta 14-punctata Weise, 1890, Deutsche Ent. Zeitschr., **1890**: 22—Zoologisches Museum der Humboldt-Universität, Berlin (Manila).

Upper surface red, the elytra each with seven, rounded, black spots. The antennal club is also black. In some females the base of the pronotum bears a quadrate, black spot.

I have questioned whether *coccinellina* could be distinguished from the Javanese *C. testudinaria* Mulsant. Certainly the external aspect of the two species is identical but the Philippine form is somewhat larger and the male aedeagi show recognizable but not wide differences. Specimens at hand are from Luzon and Mindanao.

Cyclotoma acleta, new species. Figure 13.

Cyclotoma coccinellina Strohecker, 1953, Gen. Insect., **210**, pl. 5, fig. 50 (nec Gerstaecker, 1857).

Direct comparison of this species with *coccinellina* shows that the elytral margins are broader in the former, but this difference was noticed by me only after study of the aedeagi. Except for the broader elytral margins and average larger size of the elytral spots, *acleta* is similar externally to the Gerstaecker species.

Oddly, the aedeagus of *acleta* is most like that of *C. borneensis* (Gorham) while that of *coccinellina* bears closest resemblance to *C. testudinaria*. Possibly the Philippine forms are subspecies of the Bornean and Javanese species.

FIG. 12. *Cyclotoma coccinellina* (Gerstaecker); aedeagus.

FIG. 13. *Cyclotoma acleta*, new sp.; aedeagus.

Holotype.—A male from Binaluan, northern Palawan. Collected November to December, 1913, by G. Boettcher. In the collection of H. F. Strohecker.

Allotype.—A female from Palawan, same repository as the holotype.

Paratype.—A male, same data as the holotype. To be deposited in the collection of Chicago Natural History Museum.

Genus **Meilichius** Gerstaecker

Meilichius Gerstaecker, 1857, Arch. Naturg., **23**: 240.

Milichius Gemminger and Harold, 1876, Cat. Coleop., **12**: 3737.

Thelgetrum Gorham, 1875, Trans. Ent. Soc. London, **1875**: 314.

The very broad prosternum and short, broad mesosternum offer characters for easy recognition of this genus. Three species are now known from the Philippines.

KEY TO SPECIES

1. Elytra with black spots ..... *geminatus*
   Elytra unicolorous 2
2. Pronotum finely punctured, its surface even ..... *ampliatus*
   Pronotum coarsely punctured, bifoveate ..... *impressicollis*

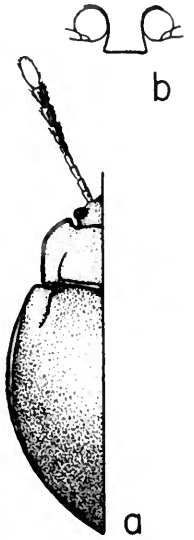

FIG. 14. *Meilichius ampliatus* (Gorham). *a*, dorsal view; *b*, prosternum.

Meilichius geminatus, new species

In size and form this insect is very similar to *M. ampliatus*. Reddish-yellow above and below, with the antennae mostly black and with the tips of the femora also dark. Each elytron has two pairs of oval, black spots, the anterior pair just in front of the middle and the posterior a little behind the middle.

The antennae are stout but with segments 3 and 4 each about twice as long as broad, segments 6–8 quadrate, the club formed gradually and flattened only at the tip. Pronotum finely punctured, more coarsely at the sides, its margins narrowly reflexed, its lateral sulci distinct. Elytra gibbous, much broader than pronotum, thickly and conspicuously punctured.

Length, 3.5 mm.

Holotype.—A specimen of undetermined sex from Luzon. In the collection of the Zoologisches Museum der Humboldt-Universität, Berlin.

Meilichius ampliatus (Gorham). Figure 14.

Thelgetrum ampliatum Gorham, 1875, Trans. Ent. Soc. London, **1875**: 314—British Museum (Natural History) (Philippine Islands).

While probably described from Luzon specimens, this species also occurs on Mindanao, as shown by a series collected by the Philippine Zoological Expedition.

Meilichius impressicollis Strohecker

Meilichius impressicollis Strohecker, 1943, Proc. U. S. Nat. Mus., **93**: 389—United States National Museum (Mount Makiling, Luzon, Philippine Islands).

The outstanding difference between this and the preceding species has been noted in the key. In *impressicollis* the ninth and tenth antennal segments are yellow; in *ampliatus* only the last segment is yellow; in *geminatus* all these segments are black.

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EDITOR'S NOTE

The types of Heller have been indicated as being in the collection of Karl M. Heller, Jr., presumably in Dresden, perhaps in the Museum für Naturkunde. However, the types may actually be in the C. F. Baker Collection in the United States National Museum. Dr. O. L. Cartwright, Associate Curator of Insects in that museum, writes that specimens of most of the endomychid species described by Heller from Baker's Philippine material are in the Baker Collection, and that some of these specimens carry the same numbers as those listed by Heller for the types of his new species. These numbers may simply be the species numbers, and hence the specimens may be duplicates that were returned by Heller to Baker. They may also be examples that were retained by Baker and given the same number as those sent to Heller so that an association with determinations could be made from the list of determinations supplied by Heller. There is, however, the possibility that these are actually the types.