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
common: pronotal sulci, open front coxal cavities, elongate antennae and lack of coxal lines on the first abdominal sternite. The tarsi may be tetrarmerous, 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


A single species is known.

**Bystodes paulus** Strohecker

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

This species is known only from the type series.

Genus **Parasymbius** Arrow

KEY TO SPECIES

Antennae with club shorter than stalk. \textit{philippinensis}
Antennae with club longer than stalk. \textit{macrocerus}

\textbf{Parasymbius philippinensis} Arrow


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.

\textbf{Parasymbius macrocerus} Strohecker


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

\textbf{Genus Idiophyes} Blackburn


\textbf{Idiophyes niponensis} (Gorham)


One specimen of undetermined sex, collected in Mindanao, has been compared with cotypes of Gorham’s \textit{S. niponensis}. I can find no difference worth remark.

\textbf{Subfamily TROCHOIDEINAE}

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

\textbf{Genus Trochoideus} Westwood


\textbf{KEY TO SPECIES}

Tarsi linear; front legs of male simple. \textit{desjardinsi}
Tarsi lobed; front legs of male specialized. \textit{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.


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.

![Figure 5](image)

**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 sub-angulate 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


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. basalts 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


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 chrysoplera, new sp.: a, dorsal view; b, club of antenna. c, C. angusticollis, new sp., club of antenna.](image)

**Fig. 6.** a, b, Chondria chrysoplera, 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. chrysoplera* 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 *chrysoplera* and is of coppery color. A notable difference between the present species and *chrysoplera* 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.

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

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


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

Chondria longicornis Arrow


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. \( \rightarrow \) philippinarum
    Last segment of antenna yellow. \( \rightarrow \) phillipinarum 10

10. Penultimate segment of antenna black. \( \rightarrow \) tabidus
    Penultimate segment of antenna yellow. \( \rightarrow \) leoninus

**Stenotarsus perforatus** Arrow


I have not recognized this species in the material studied.

**Stenotarsus flavoscapularis** Strohecker


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

**Stenotarsus flavomaculatus** Strohecker


Known to me only from the types.

**Stenotarsus atripennis** Strohecker


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.


Stenotarsus notaticollis Pic


I am unacquainted with this species.

Stenotarsus philippinarum Gorham


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


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

Stenotarsus leoninus Gorham


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.................................................*longidava*
   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


Specimens examined are from Luzon, Mindanao, and Mindoro.
Saula clavipes Arrow


Saula malleicornis Arrow


Saula longiclava Strohecker

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

Saula crassicornis Arrow


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

Saula curvipes Arrow


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

Genus Tragoscelis Strohecker


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)


_Tragoscelis philippinensis_ Strohecker, 1952, Gen. Insect., 210: 61, pi. 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**


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)

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)

States National Museum (Samar).

Beccariola cruciata (Arrow)

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)

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)


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


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

**Mycetina luzonica** Arrow


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


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


Specimens at hand are from Luzon and Mindanao.

Encymon valgus Strohecker


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


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*

![Figure 9. *Indalmus luzonicus* Gorham; aedeagus.](image)

*Indalmus luzonicus* Gorham. Figure 9.


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 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 sanguinolentus* (Gorham)


Genus *Eumorphus* Weber


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


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


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


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)


*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


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


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


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

Genus Spathomeles Gerstaecker


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 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


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.


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.](image)

![Fig. 13. Cyclotoma acleta, new sp.; aedeagus.](image)

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


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*

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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.

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


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.