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SOME FUNGUS BEETLES OF THE FAMILY ENDOMYCHIDAE IN THE UNITED STATES NATIONAL MUSEUM, MOSTLY FROM LATIN AMERICA AND THE PHILIPPINE ISLANDS

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THROUGH the kindness of Dr. E. A. Chapin and other officials of the U. S. National Museum, I have had opportunity to study some of the endomychids in the collections of that institution. Although comparatively few in number, these have proved of considerable interest and include a number of new species. In addition, the following records are of note:

Eumorphus marginatus (Fabricius): A single male specimen from Baguio, Luzon, P. I.

Eumorphus tetraspilotus Hope: A male and a female from Palawan, P. I.

Cyclotoma pardalina (Gerstaecker): Eleven specimens from Mindanao, P. I. These are indistinguishable from specimens from Java, the type "locality."

Cyclotoma testudinaria Mulsant: Three specimens from Palawan. I suspect *pardalina* and *coccinellina* are color varieties of *testudinaria*.

Genus BECCARIA Gorham

BECCARIA SEPTEMGUTTATA, new species

FIGURE 12, k

Highly convex, black and shining, with the lateral portions of the pronotum, three rounded spots on each elytron, and a median spot common to both elytra reddish yellow. Head and antennae, except basal three or four joints, black. Under surface black except mesosternum and prothorax, which are yellow. Legs black with piceous tinge. Antennae half as long as body, joint 2 quadrate; joints 3 to

6 longer than wide; joints 7 and 8 stouter than preceding, quadrate; joint 9 as long as wide; joint 10 transverse; joint 11 oval, as long as 9 and 10 together. Pronotum three times as broad as long, finely, evenly, and not closely punctured, narrowly margined; basal foveae minute, very shallow; between these the pronotum is finely margined. Elytra sparsely and coarsely punctured, especially in the regions of the scutellum and humeri; the punctures finer toward apex.

Type.—U. S. N. M. No. 55878.

Type locality.—Surigao, Mindanao, P. I. (C. F. Baker). Possibly the same as *B. septemmaculata* Pic from Malacca but a little smaller and with the legs black. Length 3.5 mm., width 1.75 mm.

BECCARIA DENTICORNIS, new species

Generally similar to the preceding but differs in several features, including size. Antennae entirely black, joints 2 to 6 longer than wide; joints 9 and 10 triangularly acuminate internally; joint 11 oval. Head black. Pronotum three times as broad as long, finely margined at sides and base; basal foveae minute and shallow. The pronotum is black at base between the foveae and has a median black area extending anteriorly to the front margin, leaving the sides broadly yellow. The light spots of the elytra are arranged as in *B. septemguttata*, but the two anterior ones are quite elongate and the median common one is much smaller. The punctures of the elytra are very coarse in the humeral and scutellar regions. Legs, epipleurae, and the epimera and lateral area of metasternum sooty. Otherwise the under surface is dull yellow. The metasternum is very coarsely punctured toward the middle. Length 4.5 mm., width 3.5 mm.

Type.—U.S.N.M. No. 55879.

Type locality.—Island Samar, P. I. (C. F. Baker).

Genus MYCETINA Mulsant

MYCETINA CYANESCENS, new species

An elongate species having the general aspect of *Endomychus* but with an exceptionally developed stridulatory membrane on the front margin of the pronotum. Entirely black except the abdomen, which is reddish yellow, and the elytra, which are steel-blue. Each elytron bears, just behind the humeral callus, a transverse yellow bar, which closely approaches the lateral margin but is separated from the suture by about its own breadth. This bar is twice as wide as long. The antennae are half as long as the body, slender, joint 3 three times as long as joint 2 but not much longer than 4; joints 2 to 8 progressively shorter. Club distinct but gradually formed, not much longer than joints 6 to 8 together; joint 11 transverse, truncate. Head, thorax,

and elytra finely and sparsely punctured and finely alutaceous. Each puncture bears a minute seta. Thorax with sides almost straight, convergent from the acute hind angles to the acutely produced front angles, narrowly margined. Lateral sulci deep, curved, and reaching almost to middle of disk, basal sulcus broad, deep. There is a circular depression within the hind angle. Scutellum as long as broad, rounded behind. The elytra are slightly depressed at the scutellum, elongate, little wider at base than the pronotum but broadening gradually to posterior third, thence evenly convergent; tips separately rounded. Legs long and slender, femora subclavate. Length 4.75 mm., width 2.6 mm.

Type.—Female, U.S.N.M. No. 55880.

Type locality.—Tat-sien-lu, Szechwan, China (D. C. Graham).

A single male specimen, allotype (author's collection), closely resembles the type but is a little larger, has the sides of the pronotum straight, and the front tibia bears a low, blunt tubercle on its inner face at the distal third. Data same as for type. I have not used the male as the type because all its tarsi are damaged. This distinctive species is unusual for a *Mycetina*, but the mouth parts and triangular mesosternum lead me to refer it to that genus. It belongs to the section that includes *M. marginalis* (Gebler) [= *obliquesignata* Gorham] and the species that have been referred to *Phaeomychus*.

Genus ENGONIUS Gerstaecker

ENGONIUS EXCISIPES, new species

FIGURE 12, h

Highly convex for the genus, glabrous, moderately shining, of bronzy color, each elytron with a small yellow spot on the posterior part of the humeral callus and another of equal size at the same level and halfway between the callus and suture, and a yellow crossbar behind the middle. The crossbar is bidentate anteriorly and unidentate (internally) posteriorly and is equally removed from the lateral margin and suture. Antennae black, slender, joint 3 twice as long as 4, club broad, flattened but hardly compact. Antennal ridges of head very prominent. Pronotum strongly transverse, its front angles produced and acutely rounded, sides narrowly margined, rather deeply sinuate behind the middle, hind angles divergent and acute. Basal foveae very deep and short, basal sulcus fine and deep. Disk of pronotum finely, sparsely punctured, the punctures thicker and coarser at sides. The front margin has a very broad membrane. Elytra strongly elevated, markedly depressed around the scutellum and anterointernal to the humeral callus, rather coarsely and closely punc-

tured, narrowly margined. Mesosternum broadening anteriorly, subfoveate on each side. Prosternum hardly surpassing front coxae, broad, widely excised at tip. Legs long and slender, the last tarsal joint especially so; front tibia straight, middle tibia straight, toothed and excised internally beyond the middle; hind tibia slightly incurved near apex. Last ventral segment with its posterior margin undulate.

Type.—Male, U.S.N.M. No. 55881.

Type locality.—Szechwan, China (D. C. Graham).

Genus HELIOBLETUS Gorham

HELIOBLETUS PHILIPPINENSIS, new species

FIGURE 12, m, n

Characters of *Heliobletus* Gorham, ferruginous, clothed with sparse, tawny pubescence. Antennae more than half as long as body, ferruginous except for last four joints and apex of joint 7; joint 1 massive; joints 2 to 5 longer than broad, joints 6 and 7 quadrate, joint 8 beadlike, joint 9 globose, greatly swollen, rounded above, slightly concave below, joint 10 triangular and transverse, joint 11 oval. Pronotum a little broader than long, rather strongly but evenly convex, finely and closely punctured with a row of coarser punctures across the base. Front angles produced, acuminate. Sides finely margined, roundly contracted at middle, hind angles slightly divergent and acute. Scutellum transverse. Elytra decidedly but not much wider at base than pronotum, evenly, strongly convex, their lateral margins invisible from above, finely and closely punctured. Front tibia straight, simple; middle and hind tibiae enlarged in distal two-thirds, the middle one slightly incurved one-third the distance from apex. Length 3.6 mm., width 1.5 mm.

Type.—Male, U.S.N.M. No. 55882.

Type locality.—Zamboango, Minandao, P. I. (C. F. Baker).

The four species of *Heliobletus* hitherto known are all from Borneo and very similar. The specimen before me evidently does not belong to any of the three species described by Arrow. The possibility remains that it is the male of *H. servilis* described by Gorham from a single female specimen from Borneo.

Genus SAULA Gerstaecker

SAULA LOBATIPES, new species

FIGURE 12, l

Allied to *S. curvipes* Arrow but less convex and with slenderer antennae, which are, however, similar to those of *curvipes*; joint 1



FIGURE 12.—ENDOMYCHID BEETLES

- a-c*, *Trochoideus coelo-antennatus*, new species: *a*, Type; *b*, ventral view of antenna of type; *c*, antenna of allotype.
- d, e*, *Epopterus decoratus* Kirsch: *d*, Specimen from Peru; *e*, front tibia of male.
- f, g*, *Anidrytus pardalinus*, new species: *f*, Type; *g*, front tibia of type (male).
- h*, *Engonius excisipes*, new species: Middle tibia of type (male).
- i, j*, *Parasymbius macrocerus*, new species: *i*, Pronotum of type; *j*, antenna of type.
- k*, *Beccaria septemguttata*, new species: Type.
- l*, *Saula lobatipes*, new species: Front tibia of type (male).
- m, n*, *Heliobletus philippinensis*, new species: *m*, Middle tibia of type (male); *n*, kind tibia of type.
- o*, *Stenotarsus monrovius*, new species: Antenna of type (male).

stout, longer than broad, joint 2 half as long as 1, about quadrate, joint 3 half again as long as 2, slender, joint 4 equal to 2, joint 5 as long as 3 but stouter toward apex, joints 6 and 7 each a little shorter than 5, joint 8 equal to 4, joint 9 about as long as 3, a little longer than broad, joint 10 quadrate, joint 11 oval, as long as 9 and 10 together. Except for the outer eight joints of the antennae, which are black, the insect is entirely ferruginous. The most distinctive feature is the front tibia, which is feebly undulate and distally expanded on its inner face into a broadly triangular flange. Middle tibia straight, hind tibia very feebly incurved. Length 2.5 mm.

Type.—Male, U.S.N.M. No. 55883.

Type locality.—Cuernos Mountains, Negros, P. I.

Another specimen, a female, bearing the same data as the type, is very similar to the type except for the tibiae, which are all simple. Its length is 2.75 mm. I designate it the allotype.

Genus STENOTARSUS Partz

STENOTARSUS MONROVIUS, new species

FIGURE 12, o

General aspect of *S. guineensis* Gerstaecker but much smaller, shorter, and more convex. Ferruginous except apical joint of antennae, which is darker but hardly black. Antennae stout, scarcely longer than head and pronotum, joints 2 to 8 beadlike, transverse, joints 9 and 10 suddenly broadened, short and transverse, not flattened, joint 11 a little shorter than 9 and 10 together, flattened only toward the apex, which is truncate. Pronotum three times as broad as long (at middle), sides evenly rounded but much less so than in *guineensis*. The elevated margin is very broad and somewhat deflexed in front, narrowed posteriorly to half its anterior width. Hind angles right. Disk of pronotum evenly, not greatly convex, finely and fairly closely punctured. Elytra strongly convex, finely punctured and with widely spaced, coarse, shallow punctures. These larger punctures are especially coarse and numerous along the sides but are discernible to the apex whereas in *guineensis* they are evanescent behind the middle. Length 3 mm., width 2 mm.

Type.—Male, U.S.N.M. No. 55884.

Type locality.—Mount Coffee, Liberia (O. F. Cook).

Another male specimen identical with the type and bearing the same data is designated paratype and is in the author's collection.

STENOTARSUS ATRIPENNIS, new species

Elongate oval, moderately convex, ferruginous with antennae and most of elytra black. Antennae with joint 1 short, subglobose, joints 2 and 4 to 7 about as long as broad, joint 3 a little longer than broad,

joint 8 beadlike, joints 9 and 10 each about as broad as long, joint 11 oval, a little shorter than 9 and 10 together. Pronotum very transverse, its sides strongly rounded behind the front angles, parallel in posterior half; raised margin broad, narrowed posteriorly; basal foveae deep; basal sulcus broad and deep and continued obliquely to the hind angles. Disk of pronotum evenly, moderately convex, minutely and sparsely punctured, its pubescence sparse and erect. Scutellum transverse. Elytra three times as long as pronotum, as wide at base as pronotum, thence gently and slightly widened, gradually convergent to apex, moderately convex, coarsely, sparsely and shallowly punctured, pubescence sparse and semierect. The elytra are shining and black except a very narrow basal border, a wider sutural stripe and a still wider marginal stripe, which are red. The red areas are continuous with each other. Length 3 mm.

Type.—Male, U.S.N.M. No. 55885.

Type locality.—Ma-Ao, Occidental Negros, P. I., at light (W. Dwight Pierce).

An unusual type among the oriental species of *Stenotarsus*. Its general appearance is strikingly similar to that of *S. militaris* Gerstaecker from Mexico, except the new species lacks the black patch on the pronotum.

STENOTARSUS FLAVOMACULATUS, new species

Long-oval, strongly convex, black and moderately shining with the umbo, an anterior juxtasutural spot and a postmedian transverse bar on each elytron reddish yellow. Antennae a little longer than head and pronotum, black except for the first two joints and apical half of the last, which are piceous; joints 2 and 8 about as long as broad; joints 3 to 8 subequal in length but progressively stouter; joints 9 and (especially) 10 transverse, little flattened; joint 11 oval, about as wide as long. Head finely and sparsely punctured. Pronotum abruptly and strongly convex, finely and sparsely punctured with correspondingly sparse pubescence; raised margins moderately broad and much deflexed at the front angles; hind angles right; basal foveae very deep, grossly punctiform; basal sulcus shallow, marked by a row of coarse punctures close to base of pronotum. Scutellum oval, transverse. Elytra highly but not abruptly convex, rather coarsely and sparsely punctured, pubescence sparse; umbones inflated, entirely reddish yellow. The juxtasutural spot has vague outlines but is broadest internally and triangularly narrowed toward (or to ?) the umbo. The postmedian bar is concave anteriorly, convex posteriorly and extends from the lateral margin almost to the suture. Under surface, including legs and elytral epipleurae, pitchy red. The epipleurae are coarsely punctured. Length 2.5 mm., width 1.5 mm.

Type.—Male, U.S.N.M. No. 55886.

Type locality.—Cuernos Mountains, Negros, P. I. (C. F. Baker).

STENOTARSUS FLAVOSCAPULARIS, new species

Generally similar in markings to the preceding but easily distinguished by the much shorter and very convex form and the strongly shining elytra. Antennae half as long as body, first two joints pitchy red, remainder black except apical joint, which is reddish (probably yellow in life); joints 2 to 7 subequal in length, joint 8 a little shorter, joints 9 and 10 broadly obconical; the outer-apical border of joint 11 almost a semicircle, the inner border slightly convex; all three club joints very little flattened. Pronotum very much as in *S. flavomaculatus*, black, shining, very finely and sparsely punctured, each puncture bearing a fine, erect seta. Elytra highly elevated, black, shining, finely, sparsely punctured and with correspondingly sparse, erect pubescence; umbo moderately inflated, entirely gold-yellow. There is a broad bar of like color between the umbo and suture and another bar of similar shape and color between the middle and apex of each elytron. Under surface and legs black; tarsi and coxae pitchy red. Length 2 mm., width 1.25 mm.

Type.—Male, U.S.N.M. No. 55887.

Type locality.—Dapitan, Mindanao, P. I. (C. F. Baker).

Three specimens bearing the same data as the type are designated paratypes. On one of these the anterior elytral spot is small and rounded; on another it is confluent with the light color of the umbo; and on the third it is similar to that on the type, i. e., transversely rectangular. A specimen from St. Thomas, Luzon, is very similar to the type, while yet another, from Lamac, Luzon, has the elytra broadly yellow at the base and the postmedian mark is a bar extending from the suture to the lateral margin. This last specimen may represent still another species, since in addition to the differences in markings the punctures of the pronotum and elytra are coarser. In its markings and puncturation it resembles *S. flavomaculatus* but is identical in shape with the type of *S. flavoscapularis*, and the difference in this respect is too great to admit the hypothesis of intergradation. Both these species present striking divergences from other species of *Stenotarsus*, but there are no characters worthy of generic recognition.

Genus ANIDRYTUS Gerstaecker

ANIDRYTUS PARDALINUS, new species

FIGURE 12, *f, g*

Size large for the genus, strongly but evenly convex (section A of Gerstaecker). General color deep rust-red. Antennae with five basal

joints red; joints 6 to 10 black; joint 11 black, with its apical half red. The lateral sulci of the pronotum are shallow but sharply impressed and extend to the middle of the disk. Between these sulci and occupying most of this area is a pair of large, quadrate, black spots, narrowly separated from each other. On the elytra the basal third, including the humeri, black; internally this black area is continued as a narrow stripe along the suture, broadening a little on its apical third, thence becoming evanescent. At the middle of each elytron there is a large, rounded, black spot, laterally placed and behind this a similar but considerably smaller spot. The entire upper surface is clothed with a short, declivent, coppery pubescence. The puncturing is everywhere fine and sparse except at the sides of the pronotum, where it becomes a little denser and coarser. The front tibia bears a broad, sharp tooth internally at its distal third. Another feature, probably sexual, is a densely pubescent area of semicircular shape at the middle of the posterior margin of the first abdominal segment. Length 8 mm., width 4 mm.

Type.—Male, U.S.N.M. No. 55888.

Type locality.—Costa Rica (F. Nevermann).

Genus MILICHIUS Gemminger and Harold

MILICHIUS IMPRESSICOLLIS, new species

General aspect of *M. ampliatus* (Gorham). Ferruginous, the elytra with aeneous sheen. Antennae stout, joints 3 and 4 subequal, twice as long as broad; joints 5 to 7 little longer than broad; joint 8 quadrate; joints 9 and 10 cylindrical, each equal in length to joint 3 but stouter; joint 11 oval, three-fourths as long as 9 and 10 together and very little wider. Joints 1 to 5 ferruginous; joints 6 to 8 and 11 black; 9 and 10 light yellow. Pronotum transverse, front angles produced and acutely rounded, sides bisinuate and reflexed, forming a broad groove within the margin, disk coarsely, irregularly punctured (as is the head also), smoother along midline and with a deep, large impression on each side. Basal foveae short, linear; basal sulcus fairly deep, close to hind margin of pronotum. Elytra broader at base than pronotum, thence slightly widened, somewhat tapering posteriorly. Umbone elevated, subcarinate laterally. Disk of elytra very finely and sparsely punctured, the area around the umbo and posterior to it coarsely and confluent punctured. Prosternum broad, coarsely punctured. Under surface, including bases of femora ferruginous; apical half of femora and proximal half of tibiae infuscate; distal half of tibiae and the tarsi yellow. Length 3.75 mm. The yellow ninth and tenth antennal joints and bifoveate pronotal disk are distinctive.

Type.—U.S.N.M. No. 55889.

Type locality.—Mount Makiling, Luzon, P. I. (C. F. Baker).

Genus *ENDOMYCHUS* Panzer*ENDOMYCHUS FLAVUS*, new species

In shape this species resembles those referred to *Cyanauges* by Gorham. Antennae a little longer than head and pronotum, all its joints longer than broad, joints 9 and 10 obconical, joint 11 oval, scarcely longer than 10; these three joints form a distinct but little flattened club. Basal foveae of pronotum deep, continued anteriorly as curved grooves, which reach to middle of disk; basal sulcus broad and shallow; hind angles subacute; the sides of pronotum feebly sinuate in front of hind angles, convergent anteriorly; front angles a little produced, rounded. Elytra hardly wider at base than pronotum, rapidly broadened to middle, thence gradually convergent, the apical portion of the elytra subattenuate. Clear reddish yellow, with the clypeus, eyes, antennae, legs, and two small spots on each elytron black. The first elytral spot is placed behind the umbo and the second in the same longitudinal line. The distance between the first and second spots is about equal to that between the first spot and the base of elytron, and both spots are closer to the lateral margin than they are to the suture. Head finely and thickly, pronotum and elytra finely and very sparsely, punctured; entirely glabrous above. Under surface of same color as upper, finely pubescent. The maxillary palps are black, the last joint hatchet-shaped (*Endomychus* s. s.). Length 4.5 mm., width 2.5 mm.

Type.—U.S.N.M. No. 55890.

Type locality.—Near Mupin, Szechwan, China (D. C. Graham).

Genus *PARASYMBIUS* Arrow*PARASYMBIUS MACROCERUS*, new speciesFIGURE 12, *i, j*

Characters of the genus as defined by Arrow, tarsi long, filiform, quasi-3-jointed. Antennae with club joints greatly enlarged and elongated, joint 1 stout, curved, joint 2 longer than broad, joint 3 very slender, joints 4 to 7 progressively broader, joints 8 and 9 obconical, three times as long as broad, joint 10 about as long as 9, rounded at tip; the club joints (8 to 10) together are considerably longer than the footstalk of antenna (joints 1 to 7). Joints 5 to 10 black, others piceous. Pronotum transverse, rather broadly margined, narrowed before and behind, basal sulcus deep, curved, lateral impressions broad posteriorly, extending anteriorly to the middle of disk, which is finely and very sparsely punctured. Elytra roundly convex, as wide at base as pronotum, considerably widened at middle, roundly convergent behind, finely and sparsely punctured. The insect is entirely ferrugi-

nous (except for outer antennal joints) and the pubescence of the upper surface is erect and sparse, especially upon the pronotum. Length 1.5 mm. From the exposed sixth abdominal segment I judge the specimen to be a male.

Type.—Male?, U.S.N.M. No. 55891.

Type locality.—Mount Makiling, Luzon, P. I. (C. F. Baker).

The only other species of the genus known at present is the genotype, *P. philippinensis* Arrow, described from a single specimen, the sex of which was not noted. The insect before me meets all the generic requirements proposed by Arrow for *Parasymbius*. He makes no mention of the prosternum, but the present species has the prosternum roundly carinate before the front coxae, flattened between them and margined; posteriorly it is prolonged beyond the coxae, its tip a little deflexed and rounded. It differs from Arrow's species in its smaller size, greater length of antennal club, and sparser pubescence.

Genus TROCHOIDEUS Westwood

TROCHOIDEUS COELO-ANTENNATUS, new species

FIGURE 12, a-c

Slenderer and less densely pubescent than *T. americanus* Buquet and *T. desjardinsi* Guerin. Clypeus truncate anteriorly, the clypeo-frontal suture a broad, low arc. Front shallowly and broadly depressed on each side near the insertion of antennae. Eyes prominent and coarsely granulate. Antennae relatively shorter than in the two species referred to above, massive; joint 1 bulbous, joint 2 very small, narrow at base and rapidly expanded to its apex, joints 3 and 4 together forming a large bulb with nipplelike apex. There is no fifth joint apparent. On the under side these two joints are so deeply concave as to appear hollow; the margin of this concavity is auriculate. Mandibles with slender, aciculate apex. Labium, labial and maxillary palps as in *T. desjardinsi*. Pronotum almost twice as wide as long, front angles rounded, sides broadened before the middle, thence subsinuate narrowed to the slightly acute hind angles. The pronotum has a shallow, parabolic impression at the middle of its base and a transverse impression on either side of this. Scutellum transverse, rounded behind. Umbones of elytra prominent but not inflated. Elytra evenly and moderately convex, gently widened in anterior third, thence evenly rounded to the apices, which are subtruncate. The entire surface of the body is clothed with fine, declivent, gray hairs. Elytra brown with a pale, narrow sutural stripe but without a sutural stria. Head similar in color to elytra; pronotum, antennae, legs, and mouth parts yellow-umber. Length 3 mm.

Type.—Male, U.S.N.M. No. 55892.

Type locality.—El Quemado, Jujuy, Argentina (G. L. Harrington).

Allotype, female (U.S.N.M.), same data as type. Identical with type except for color and antennal structure. The antennae have the first and second joints as in the male, joint 3 three times as long as 2, as broad at its base as apex of joint 2, thence expanded to about twice its basal diameter. Joint 4 is about as long as 3, broadening toward its apex, which ends in a small nipplelike elevation. In figure 12, *c*, the third antennal is considerably foreshortened. The color of the allotype is darker and more uniform than that of the type, and the sutural stripe is scarcely evident. I am inclined to think that all the specimens are teneral and that the allotype more nearly represents the mature condition. Besides the type and allotype the U. S. National Museum collection contains an imperfect male paratype, and there is a male paratype in the author's collection; data same as for type.

Figure 12, *d, e*, was made from a specimen of *Epopteris* from Peru. Although it lacks the pronotal spots I consider it an individual of *E. decoratus* Kirsch.