

sante, para possibilitar-nos a solução definitiva dos problemas taxonômicos aqui abordados.

Podemos acrescentar às localidades típicas das duas espécies mais algumas outras; aumentando deste modo os nossos conhecimentos sobre a distribuição geográfica dos tisanuros.

*Trichatelura borgmeieri* Silvestri, 1933

Campinas, Goiás, Schwarzmaier leg.; com *Eciton crassicornis*; com *Eciton diana*, 12-1-943 (no. 24); com *Eciton dulcius*, 2-8-934; com *Eciton minense*, 8-3-933.

*Trichatelura manni* (Caudell), 1925

Campinas, Goiás, com *Eciton coëcum*, 1-1934, Schwarzmaier leg.; Lages, Goiás, com *Eciton dulcius*, 28-1-1934, Schwarzmaier leg.; Costa Rica, com *Eciton hamatum*, 13-5-939 (no. 5628), Nevermann leg.; Costa Rica, com *Eciton burchelli*, 1-11-934, Nevermann leg.

*Trichatelura* spec. indet.

Bela Vista, Goiás, 26-12-934 (no. 553), com *Eciton crassicornis*, Schwarzmaier leg.; Itatiaia, com *Eciton praedator*, 5-2-933, Zikán leg.

Bibliografia citada

- Caudell, A new species of myrmecophilous Thysanura from Bolivia. — Proc. Ent. Soc. Wash., vol. 27, 1925, pgs. 43-45.  
 Silvestri, Descrizione di un nuovo genere ecitofilo di Lepismidae (Insecta, Thysanura). — Revista de Entomologia, vol. 2, 1932, pgs. 133-138.

Sixteen new Mexican Scarab beetles of the genus *Phyllophaga*

by Lawrence W. Saylor, Washington, D. C.

*Phyllophaga (Phyllophaga) arribans*, n. sp.

Male. — Slender, small, color piceocastaneous, shining, the thorax somewhat darker; above with scattered hair. Clypeus very short and transverse, the entire central-base of disc very convex and extremely rugose and with long erect hairs; clypeus nearly trapezoidal in shape, the sides straight, the angles narrowly rounded and the apex entire, subtruncate, and a little reflexed; disc

along apical and side margins rather smooth. Front very coarsely, cribrately, rugosely punctate and with long erect hair; vertex with a faint, very obtuse transverse, smooth ridge. Antennae 10-segmented, rufotestaceous; club very small and ovate, equal to segments 4-7 combined. Thorax with sides distinctly dilated, coarsely crenate, ciliate, the margins straight behind of and faintly sinuate in front of, the dilation; front angles very small, acute, very little produced, hind angles very obtuse; disc with sparse and irregularly-placed, very coarse, umbilicate punctures separated by one and a half to twice their diameters on disc, the punctures slightly denser and noticeably smaller at sides, all punctures with long erect hairs; disc with a large smooth area on each side of the disc running from the basal margin just inside of the hind angles forward to about half the length of the thorax. Scutellum punctate. Elytra ecostate other than sutural, disc rugose, with fine umbilicate punctures separated from each other by once to twice their diameters, with very sparse, short hairs and a little longer hair along sutures and base. Pygidium subpruinose and slightly convex, basal three fourths very densely finely punctate, with short suberect hairs; discal area along side and apical areas polished and semismooth; apex thickened, ciliate and slightly reflexed. Abdomen convex but flattened, very highly polished and longitudinally impressed at middle, the disc very finely and very sparsely punctate, without hairs except at sides; 5th sternite strongly declivous behind, middle practically smooth and impunctate, sides very densely, finely punctate; 6th sternite slightly longer than 5th, strongly transversely impressed, the disc finely rugose, and with very short hairs, sides with long hairs; basal margin 6th sternite carinate and thickened at each side only, very widely interrupted at middle, the apical margin carinate and very narrowly interrupted at middle. First two hind tarsal segments subequal. Claw widely cleft, the basal tooth broader and shorter than apical and the apex obliquely rounded; if the main axis of each tooth is considered, the teeth are practically parallel; claw base very obtusely, roundly dilated. Genitalia bilaterally symmetrical, apices of lateral lobes parallel and touching but free; in enface view the lower tip of each lateral lobe is very narrow and bluntly acute, while just before the tip a large spoon-shaped structure is directed upwards and this latter is nearly the length of the lateral lobe. The genitales are similar to those of *P. gravidula* Moser but the tips of each lobe are much more slender and the upper base of the lobes is much broader. Labrum is very

widely though shallowly emarginate, the entire structure being unusually flat, wide, and smooth.

**Female.** — Antennal club a little smaller; front thoracic angles are a little less acute; pygidium more flattened, and narrower apically, a small median area adjoining apex highly polished and faintly gibbose; central part abdomen polished, punctured and impressed as in male, the 5th and 6th sternites sparsely and finely punctate, otherwise similar to male. Length 13-14 mm.

The Holotype male and Allotype female in the Saylor Collection are from "Real de Arriba, Temascaltepec, Mexico, H. E. Hinton and R. L. Usinger Collectors." The species is related to *P. collaris* Moser but is larger, the front thoracic angles are acute and the disc is more densely punctate, and the scutellum is not smooth.

*Phyllophaga (Phyllophaga) tejulpicas*, n. sp.

**Male.** — Oblong-ovate, slightly wider behind, color rufotestaceous and highly polished, thorax and head rufous, above sparsely haired. Clypeus moderately long, apex hardly reflexed and but very faintly sinuate, angles broadly rounded, disc coarsely, densely, rugosely punctate, with short erect hair. Front very coarsely, rugosely punctate with moderately long erect hair. Antennae 10-segmented, rufous; club ovate, hardly as long as or slightly shorter than segments 3-7 combined. Thorax with sides roundly but distinctly dilated, ciliate, slightly crenate, the sides fairly straight each side of dilation; front angles small and usually sharp, but subrectangular, hind angles very obtusely angulate; entire disc (except for smooth areas at each lateral dilation and a small basal area each side near hind angles) with very coarse and dense punctures of varying size, those of central disc contiguous or very nearly so, those at sides and front angles smaller and closer, all with long erect hair. Scutellum moderately densely punctate. Elytra ecostate other than the sutural, disc with very fine sparse, hardly noticeable punctures, with sparse short hairs mostly in the basal area. Pygidium slightly convex, very finely and quite densely punctate, with short subprocumbent hairs and sparse much longer hairs intermixed; discal area before apex smooth and impunctate; apex broad and slightly reflexed. Abdomen highly polished, very smooth and hardly punctate at center; 5th sternite slightly declivous at apex and with a transverse apical

bordering line of fine dense punctures, the basal three fourths of the sternite smooth and impunctate; 6th sternite as long as 5th, transversely flattened, disc finely and densely granulate and with very short erect hairs; apical margin 6th sternite carinate and narrowly interrupted at middle, basal margin thickened and carinate only at sides. First segment hind tarsus subequal in length to second; spurs free. Claws widely and deeply cleft, the basal and apical tooth subequal in size and length, the basal tooth quite long and the outer apex obliquely subtruncate; claw base obtusely dilated. Genitalia bilaterally symmetrical, of the *gravidula* type, differing only in that the upper, central base, in enface view, is about twice as wide, and the tips of the lateral lobes are wider. Length 14-16.5 mm.

The male Holotype and 3 male paratypes are from "Tejulpilco, Mexico, D. F., July 1932, altitude 3960 feet, H. E. Hinton collector." Seven additional male paratypes are from "Real de Arriba, Temascaltepec, Mexico, D. F., H. E. Hinton." One male paratype is labeled "Poterillos, Panama" but I suspect this is an error. All types are in the Saylor collection. The species is near *P. hirticollis* Moser but the elytral puncturation is much less coarse, and the pygidial puncturation and the size are different.

*Phyllophaga (Phyllophaga) sinicollis*, n. sp.

**Male.** — Oblong, color shining rufotestaceous, head and thorax rufous; above sparsely and irregularly hairy. Clypeus short and transverse, the apex hardly reflexed and narrowly sinuate at middle, the angles very broadly rounded; disc somewhat convex, the surface coarsely and very rugosely punctate at middle and with moderately long erect hairs, the outer discal areas more vaguely punctate. Front grossly, scabrosely, confluent punctate, the punctures very vague in outline and with fairly long erect hairs. Antennae 10-segmented, rufous; club small and ovate, equal to segments 4-7 in length. Thorax with sides distinctly dilated, entire except for the cilia and usually noticeably sinuate both before and behind the dilation; angles sharp but obtuse, at times the front angles subrectangular; disc with sparse, coarse, variolate punctures separated by twice or more times their diameters and with very few to rather dense very small, non-hair-bearing punctures scattered irregularly over the disc, (see remarks at end description), the large punctures usually with short to long erect hairs. Scutellum impunctate to sparsely punctate. Elytra ecostate except for sutural

stria; disc subrugose with very fine punctures separated by at least twice their diameters, either nude or with sparse scattered hairs. Pygidium polished and convex, with five punctures separated by twice or more times their diameters and with short fine hairs; apex subrounded, reflexed and ciliate. Abdomen highly polished, strongly convex (especially apically) and middle nude and with sparse, very fine punctures; 5th sternite hardly different from 4th, slightly declivous and somewhat densely punctate at apex, the basal half smooth or sparsely punctate; 6th sternite greatly flattened, and the apical margin carinate, ciliate and narrowly interrupted at the middle; disc of 6th subrugose and with small, fine, scattered tubercles and short erect hairs. First two segments hind tarsus subequal; spurs free. Claw short and robust; basal tooth median in position, slightly wider than and usually as long as the apical tooth or nearly so; outer apex of basal tooth obliquely subtruncate; claw base angularly dilated, rectangularly so in fore and mid claws but a little more rounded on hind claws. Genitalia as pictured by Sanderson for *perita* but the upper base wider here and each of the perpendicular apical structures with a sharp outer, triangular tooth at the middle.

**Female.** — Antennal club a little shorter. Pygidium usually a little flattened, a little more coarsely punctured than male, and the disc just before apex slightly transversely raised (This is rather variable in series at hand, all apparently the same species: disc varies from convex and hardly flattened in three specimens to distinctly flattened; in some the disc is almost subdensely punctate, though the average specimen has the pygidium flattened, highly polished, and sparsely, rather finely punctate). Abdomen with 6th sternite slightly convex and densely punctate. Front angles of thorax a little more obvious, in some cases subacute. Otherwise as in male. Length 13-17 mm.

The *Holotype* male and *Allotype* female in the Saylor Collection are from "Real de Arriba, Temascaltepec, Mexico, D. F., H. E. Hinton Collector." Other paratypes are from the same locality, as well as: "Temascaltepec, April, 1931, Mexico, D. F.," and "Tejulpilco, Mexico, D. F., altitude 3960 feet, July 1932." The puncturation of the thorax varies a good deal in both sexes; it may be as described above or with the large and very small punctures much sparser or even very dense. The striation of the elytra in most specimens is absent, but in some is noticeable, though never at all prominently so.

The species is nearest to *P. hintonella* Saylor from the same locality but the very different color and quite different male genitalia will readily separate the two species.

*Phyllophaga (Phyllophaga) brama*, n. sp.

**Male.** — Robust-oval; color rufocastaneous and shining, above hairy. Clypeus long and narrowly semicircular in outline, the apex strongly reflexed and entire; disc with small and very dense punctures and very short hair. Front with small, rugose, contiguous punctures and long erect hair. Antennae 9-segmented, rufous, the stem very short; club testaceous and long and subequal to entire stem. Thorax with sides dilated, ciliate, subcrenate, straight before and straight and subparallel behind the dilation; angles blunt and obtuse, disc with fine, dense punctures separated by once or more their diameters and close at sides, all with very long and erect golden hair. Elytra ecostate other than sutural; disc finely punctate, the punctures separated by twice or more their diameters, with short to minute procumbent hair, and some long and very long hairs in basal area. Pygidium hardly convex, polished; disc with fine and very dense punctures, with short erect hairs and much longer hairs; apex narrowly rounded. Abdomen flattened, polished, the middle slightly longitudinally impressed and with fine, sparse punctures and very short hair; 5th sternite transversely depressed at middle apex only, basal three fourths with a large triangular spot of very dense transverse granules; 6th nearly as long as 5th, basal margin much thickened, and apical margin carinate and ciliate, both margins very slightly interrupted at the middle; disc of 6th slightly transversely concave and with fine, sparse punctures and short erect hairs. First segment hind tarsus distinctly shorter than second; spurs free. Labrum very widely and very shallowly concave. Entire disc of hind femur with sparse and fine setigerous punctures. Claw long and slender, the basal tooth subbasal in position and very short and triangular; claw base scarcely dilated. Genitalia as in *misteca* Bates. Length 16 mm.

The unique male *Holotype* in the Saylor Collection is from "Real de Arriba, Temascaltepec, Mexico, D. F., H. E. Hinton." The species differs from *P. misteca* Bates in the length of the antennal and the thoracic hair, and in the abdominal characters.

*Phyllophaga (Phyllophaga) gestis*, n. sp.

**Male.** — Small, robust-oval, color shining castaneous; elytra apparently glabrous. Clypeus short, transverse, flat; apex

widely and shallowly sinuate, the angles broadly rounded and not reflexed; disc coarsely and densely punctate, with short erect hair. Front convex, with dense, coarse, nearly contiguous punctures and short erect hair; vertex impunctate. Antennae 10-segmented, rufous; club as long as funicle. Thorax with sides dilated, subcrenulate and ciliate, very faintly sinuate before and behind the rounded dilation; fore and hind angles obtuse; disc with coarse, sparse, irregularly-placed punctures, these separated by one to three times their diameters at middle, and with very short procumbent hairs. Scutellum finely punctate. Elytra finely, densely, rugosely punctate; with one weak discal costa besides the sutural. Pygidium convex, shining, very rugosely wrinkled and finely, somewhat densely punctate, with very short hairs; apex very narrowly rounded, noticeably reflexed and ciliate. Abdomen polished, convex, the middle slightly longitudinally impressed; disc hardly noticeably punctate at middle and apparently subglabrous; 5th sternite declivous behind, the declivity smooth and finely and very sparsely punctate, with very short hairs; 6th sternite a little shorter than 5th, the apex carinate and interrupted at middle; disc of 6th faintly convex right at middle and slightly foveate each side of the convexity, the surface minutely rugulose and finely and sparsely punctate. First segment hind tarsus shorter than second; spurs free. Claws lacking in this specimen but apparently of the widely-cleft type, judging from all other external characters. Mentum concave. Genitalia bilaterally symmetrical, the lateral lobes rather widely separated; in lateral view each lateral lobe is strongly triangularly and outwardly dilated before the apex, the latter being a long and slender process. Length 11 mm.

The unique male Holotype in the Saylor Collection is from "Mexico". The species belongs in the *P. crabricollis* group and may be separated from *P. collaris* Moser by the non-ovate antennal club and thoracic puncturation, and from *P. plairi* Saylor in the different genitalia.

*Phyllophaga (Phyllophaga) ar dara*, n. sp.

Male. — Robust-oval; color shining castaneous and hairy above. Clypeus short and transverse; apex slightly reflexed, and middle slightly sinuate, the sides strongly convergent apically; disc with somewhat coarse, very dense and contiguous punctures, with very short hair. Front convex with coarse, rugose, contiguous punctures and long erect hair; vertex impunctate. Antennae 10-segmented, testaceous, club usually subequal to funicle or a

little shorter. Thorax with sides dilated, nearly straight, ciliate and crenate; angles sharp but obtuse; disc with fine punctures separated by twice or more times their diameters on disc and closer at sides, with very short and some longer hairs intermixed. Elytra punctured as thorax, the punctures a little finer and more regularly placed, with very short suberect hair and a few long hairs at base. Pygidium convex, subpruinose, finely and densely punctate, with very short, short and very long hairs intermixed; apex narrowed, subtruncate, reflexed. Abdomen flattened, polished at middle and slightly and longitudinally impressed; disc nearly glabrous and very finely and sparsely punctate; 5th sternite somewhat declivous and slightly transversely impressed at middle apex, the basal three-fourths with a large triangular patch of very close transverse granules; 6th sternite a little shorter than 5th, the base much thickened, raised and at middle base the smooth thickened margin is incised and produced apically so that it forms two broad, smooth, flat and triangular teeth, which are separated from each other by a narrow triangular notch; disc of 6th transversely concave, smooth, finely and sparsely punctate and with hair, the apical margin carinate and faintly interrupted at middle. First segment hind tarsus shorter than second; spurs free. Mentum flat. Labrum very widely and somewhat shallowly emarginate. Claw long and slender the basal tooth subbasal in position and short and triangular; claw base faintly dilated and separated from basal tooth by a very slight emargination. Genitalia nearly as in *misteca* Bates. Front tarsal segments slightly spined at inner apex of each.

Female. — Antennal club smaller. Clypeus a little more reflexed and longer. Elytra with some very long and coarse hairs along suture. Pygidium more narrowed and slightly rugose apically. Abdomen flattened, 5th and 6th sparsely and finely punctate. Otherwise as in male. Length 17-18 mm.

The Holotype male, Allotype female and paratype male in the Saylor Collection are from "San Miguel, Hidalgo, Mexico". The species is nearest *P. misteca* Bates but differs in the antennal and abdominal characters as well as the genitalia.

*Phyllophaga (Phyllophaga) babis*, n. sp.

Male. — Oblong-ovate; color rufocastaneous and highly polished, thorax rufous, above with sparse scattered hair. Clypeus short and transverse, apex widely and shallowly sinuate, not reflexed, the angles very broadly rounded; disc with coarse, vague,

moderately dense punctures, the center base vaguely and transversely convex. Front with coarse, moderately-dense punctures of varying size, with short erect hair; entire upper front and vertex impunctate. Antennae 10-segmented, rufotestaceous; club small and ovate, subequal in length to segments 3-7 combined. Thorax with sides dilated, ciliate, entire, the angles obvious but obtusely angulate; disc with coarse, scattered, umbilicate punctures of varying size, which are separated on central disc by once to twice their diameters, and are much less dense at hind angles and along base. Scutellum punctate. Elytra ecostate other than the strong sutural stria; disc coarsely and densely, umbilicately punctate, the punctures separated by once to twice their diameters but more regularly placed than thoracic punctures. Pygidium polished, slightly convex, somewhat densely and hardly coarsely punctate, the punctures a little vague and with very sparse, scattered short hairs; apex widely rounded and ciliate. Abdomen evenly convex and highly polished; disc very sparsely punctate and nude at middle; 5th sternite no different from 4th but faintly declivous apically; 6th sternite as long as 5th and widely, transversely flattened, the disc opaque, minutely rugose and sparsely and finely punctate, with short erect hairs; apex of 6th sternite carinate, and ciliate, with a faint indication of an interruption at the middle. First two segments hind tarsus subequal; spurs long, free, and rather broad. Claw very short, and very widely cleft, the basal tooth a bit wider than, and as long as the apical tooth; basal tooth median in position, apex very sharply acute, the tooth broadest at middle and faintly narrower at base, and very narrowly separated from the obtusely dilated claw base. Length 13 mm.

The unique male Holotype in the Saylor Collection is from "Guerrero, Mexico". The species is in the *cribricollis* Blandard group, and is nearest *P. parumpunctata* Bates from which it may be separated by the different color, hairy upper surface and the different tarsal claws.

*Phyllophaga (Phyllophaga) hidalgoana*, n. sp.

Male. — Robust-oval; color rufocastaneous, strongly shining, the head and thorax rufous; above with elytra partially hairy and thorax obviously so. Clypeus short and transverse, the apex slightly reflexed, widely and shallow emarginate, the angles very broadly rounded; disc very rugosely, coarsely, contiguously punctate, with very short erect hairs. Front punctured as clypeus but a little more

coarsely so and the hairs much longer. Antennae 10-segmented, rufous; club small and ovate, about equal to segments 4-7 combined. Thorax distinctly dilated at sides, ciliate, and nearly entire, the margins distinctly sinuate before and behind the median dilation; hind angles distinct but obtuse, front angles rectangular and slightly produced; disc with somewhat dense, very coarse and shallow punctures which are separated by one half to once their diameters at middle and are finer and denser laterally, with long erect hair; disc also with sparse, very small non-hair-bearing punctures intermixed, and with the area at base near and around the hind angles impunctate. Scutellum punctate. Elytra ecostate other than the sutural; disc with very fine punctures separated by twice or more their diameters and with a very few short, scattered hairs. Pygidium somewhat shining, smooth, the punctures very fine and moderately dense, with short to long suberect hairs; apex narrowly rounded, reflexed and ciliate. Abdomen convex; middle polished and very sparsely punctate, glabrous, and slightly, longitudinally impressed; 5th sternite gradually or suddenly declivous apically, the basal third impunctate, apical portion densely punctate and rugosely wrinkled; 6th sternite as long as 5th, flat, the apex carinate, ciliate and narrowly interrupted at middle; disc of 6th minutely rugulose, with dense, fine granules and short erect hair. First two segments hind tarsus subequal in length. Claw short and widely cleft at apex, the basal tooth with its main axis parallel to that of the apical and a very little thicker than and slightly shorter than the latter; claw base distinctly, nearly rectangularly dilated but separated from the basal tooth by a moderately wide cleft. Genitalia same as those of *P. pachuca* Saylor but the outer subapical angulation on the parallel, perpendicular structures is here much reduced and represented by only a very small, acute tooth.

Female. — Antennal club ovate and equal to segments 4-7 combined. Thorax a little more coarsely punctate. Pygidium smaller than male; disc distinctly, narrowly and transversely raised just before apex and then drops perpendicularly to the narrowly rounded apex. Abdominal sternites 2-5 evenly rounded, 5th a little more densely punctate, the 6th subconvex, and strongly setigerously punctate. Hind tarsi distinctly shorter than their tibiae; the mid tarsi subequal to the tibiae. Otherwise similar to male. Length 14-15 mm.

The Holotype male from "San Miguel, Hidalgo, Mexico", and the Allotype female and paratype male from "Guerrero Mills,

Hidalgo, Mexico" are in the Saylor Collection. The species is near *P. sinicollis* Saylor and the genitalia are alike except for a slightly different aedeagus; the pygidium in *hidalgoana* however is much less densely punctate and more convex, the thorax is not so dilated and is much less densely punctate and less hairy, and the claw is different. *P. hidalgoana* is also near *pachuca* Saylor but the male genitalia are slightly different and the antennal club in the latter is much longer.

*Phyllophaga (Phyllophaga) pachuca*, n. sp.

Male. — Robust-oval; color shining rufotestaceous, the head and thorax rufous, above with the elytra apparently glabrous. Clypeus moderately long and transverse, the apex slightly reflexed and very slightly and widely emarginate at middle, the angles broadly rounded; disc very rugosely, coarsely, densely punctate, especially so at middle base, and with very short erect hair. Front punctured as clypeus but a little more coarsely so, and with moderately long erect hair; vertex impunctate. Antennae 10-segmented, rufous; the club moderately elongate and faintly longer than funicle. Thorax dilated at sides, entire, ciliate, the margins faintly sinuate to straight before and behind the dilation; hind angles obtusely angulate, front angles slightly produced and rectangular; disc with moderately dense, coarse, variolate punctures separated by one-half of twice their diameters, and with long erect hairs; disc also with few to many very small non-hair bearing punctures intermixed, and a moderate to large impunctate area each side at base-hind angle area. Scutellum punctate. Elytra hardly costate other than the sutural; disc rugose, punctures fine and not dense and not very obvious in places due to the rugose surface, usually glabrous. Pygidium convex and highly polished; disc rather smooth, very finely and sparsely punctate with scattered short to long, erect hairs; apex narrowly rounded, reflexed, ciliate. Abdomen convex (especially apically), highly polished and very sparsely punctate at middle and slightly, longitudinally sulcate; sternites 2-4, very faintly gibbose each side of the slight median sulcus; 5th sternite either gradually or very suddenly declivous behind, the basal half smooth, the apical half rugosely wrinkled and with very small granulate punctures; 6th sternite as long as 5th and strongly transversely flattened, the apex carinate, ciliate and interrupted at the middle; disc of 6th faintly convex at middle, the entire surface dull, minutely rugose and with very small granulate punctures, and a little short, erect hair. First two

segments hind tarsus subequal; spurs free. Claw short and almost widely cleft; the basal tooth nearly median in position, shorter and blunter than the apical tooth, with the base very narrowly separated from the strong, rectangularly-dilated claw base. The genitalia are very similar to those pictured for *pepita* Sanderson but the upper base of the lobes is broader and the two perpendicular parallel apical structures each have the outer edge sharply and triangularly expanded just before, and continuing to, the apex.

Female. — Antennal club ovate and nearly equal to segments 4-7 combined. Pygidium highly polished, the disc convex but flattened, the puncturation so fine and so sparse so to be almost not discernible, with sparse hairs; disc somewhat convex just before apex, the latter rounded, reflexed, and ciliate. Abdomen highly polished, nearly nude, 5th sternite same as 4th in characters; 6th sternite flat and sparsely and freely punctate. Otherwise similar to male. Length 13-14 mm.

The Holotype male, Allotype female in the Saylor Collection are from "Pachuco, Hidalgo, Mexico, collected by Mr. Melton Embury in July 18, 1933". Four male paratypes are from the same locality, three with the same data and one collected for me in July of 1937 by Messrs. Embury and Meade. The species belongs in the *P. crivicollis* Blanchard group but the male genitalia, thoracic structure and antennal length will separate it from all the described members of this complex.

*Phyllophaga (Phyllophaga) colima*, n. sp.

Male. — Oblong-ovate, rufobrunneous, shining. Head with front very grossly cribrately punctured, transverse frontal carina evident but not well defined, with short erect hair; front behind middle of clypeal suture slightly tumid, the suture not impressed; clypeus short, apex and sides broadly arcuately rounded and entire, slightly reflexed, surface densely punctured like the front, with smaller erect hairs. Antennae 9-jointed, rufotestaceous; the club testaceous and robust, about one-fourth longer than the funicle. Thorax with sides noticeably dilated; straight behind and slightly sinuate in front of the dilation; disc very coarsely densely umbilicately punctured, with short erect hairs, more closely so along apical margin and front angles, sides coarsely crenulate, front angles rectangular, basal angles distinct but very obtusely rounded, basal margin interrupted at middle, front margin straight. Scutellum coarsely sparsely setigerously punctured. Elytra ecostate other than sutural, three times longer than thorax; disc moderately

finely densely and regularly punctured, glabrous except for a few fine hairs along margin and apex, and several long hairs near the basal margin. Pygidium moderately convex, very densely and somewhat coarsely punctured, with dense short yellowish hair and long erect hair intermixed; apex narrowed and reflexed. Abdomen flattened, and slightly longitudinally impressed; the disc setigerously punctured at centre; fifth sternite with longer hairs and denser punctures at center, apical margin depressed; sixth sternite strongly punctured and fimbriate, transversely impressed, apical and basal margins carinate and basal interrupted at middle, basal margin thickened. Posterior tibial spurs spiniform, curved, one three-fourths the length of the other. First two segments hind tarsus subequal in length. Claws with submedian tooth, the latter short and triangular, claw from base to median tooth wide, sides parallel, minutely serrate. Genitalia bilaterally symmetrical, of the complete ring shaped type; in enface view the lateral teeth are well separated at center base and the teeth are short and triangular, and the median underpiece consists of two short teeth.

*Female*. — Antennal club shorter than funicle, pygidium flatter than in male, apex hind tibiae wider, fifth abdominal segment almost as wide as 3rd and 4th joined, flat, very coarsely punctured in apical half, sixth segment convex, basal half impunctate, depressed, apical half strongly setigerously punctured; basal claw tooth slightly more apical in position. Otherwise similar to male. Length 13-16 mm. Width 7-9 mm.

*Holotype*, Allotype and 9 paratypes (1 male, 8 females) are from Colima, Vulcan, Mexico (L. Conrad Collector). The species is related to *P. yucateca* Bates in type of genitalia but the thoracic and other characters are quite different. *P. colima*, *P. salvadora* Saylor and *P. disca* Saylor are all fairly closely related.

*Phyllophaga (Phyllophaga) disca*, n. sp.

*Male*. — Small, oblong-ovate; color testaceous and shining; head and thorax rufous; elytra with very minute hair on disc, otherwise noticeably hairy above. Clypeus subarcuately rounded, the apex entire, slightly reflexed; disc with dense punctures in basal half, sparser apically. Front coarsely, rugosely, cribrately punctate, with long erect hair. Antennae 9-segmented, rufous; club testaceous, small but subequal to funicle. Thorax long, sides dilated, ciliate and crenate, the margins straight behind and slightly sinuate in front of the dilation; front angles subacute, hind angles

very obtusely rounded; base with complete marginal line; disc with dense and somewhat coarse punctures separated by once or more their diameters, with rather short erect hairs and sparse, much longer, hairs. Scutellum punctate at sides. Elytra ecostate other than sutural; disc rugose, with dense punctures separated by slightly more than once their diameters, with very minute hair and some very sparse longer hairs at base. Pygidium slightly convex, with very dense and somewhat coarse punctures, and with short suberect hair and sparse, very long, erect hair; apex narrow and truncate. Abdomen polished, subconvex, very sparsely, finely and setigerously punctate at middle; 5th sternite declivous behind, and rather densely and setigerously punctate; 6th sternite two-fifths length of 5th and slightly transversely impressed, the base and apex carinate and hardly interrupted, and the disc finely and sparsely punctate, with long erect hair. First two segments hind tarsi subequal; spurs free. Claws long and slender, and with the basal tooth very short and triangular and median in position; claw base thickened, hardly dilated and very faintly crenulate. Genitalia as described for *P. colima* Saylor. Length 11.5 mm.

The unique male *Holotype* in the Saylor Collection is from "Mexico". It is nearest *P. colima* Saylor but the thoracic puncturation is quite different.

*Phyllophaga (Phyllophaga) durangosa*, n. sp.

*Male*. — Elongate-ovate; color rufotestaceous and shining, head and thorax rufous; very sparsely haired above. Clypeus fairly long, apex not reflexed and narrowly emarginate, angles strongly rounded; disc with dense and coarse punctures and short erect hair. Front grossly, densely punctate, with short stubby bristles. Antennae 10-segmented, rufous; club moderately slender and subequal to funicle. Thorax with sides dilated, ciliate, and slightly sinuate each side of dilation; angles sharp but obtuse; disc with very coarse rather dense punctures, most of them nearly touching and with short erect hairs; disc also with sparsely scattered, very small, non-pilose punctures, and with a smooth central area and a smooth area each side of base adjoining the hind angles. Scutellum impunctate. Elytra with extremely fine and sparse punctures and faintly rugulose, with a few scattered short hairs near base; costae other than the weakly-indicated sutural costa obsolete. Pygidium convex, dull, the surface very finely and densely granulately punctate, with short erect hair of one length;

disc adjoining apical margin impunctate; apex reflexed. Abdomen polished, flattened, slightly longitudinally impressed; 4th sternite with a faint wheal each side of middle; 5th sternite strongly and gradually declivous in apical three-fifths, the declivity with a dense patch of fine granules and very short hairs and the basal area with a small wheal each side of middle; 6th sternite longer than 5th, strongly transversely impressed and faintly longitudinally sulcate, the disc finely, densely granulately punctate, with short erect hairs, the apical margin carinate and very narrowly interrupted at the middle. First two segments hind tarsus equal in length; spurs free and the largest subspatulate. Claw widely cleft, the base tooth median, a little shorter than, and much wider than, the apical tooth, and the apex obliquely rounded; claw base obtusely dilated. Genitalia exactly the same as *verruciventris* Moser but in lateral view the strong structure rising before the apex of, and standing perpendicular to, each lateral lobe is here reduced to a mere carina and the aedeagus is also smaller and of slightly different form. Length 14 mm.

The unique male Holotype in the Saylor Collection from "Durango, Mexico" was sent me in a series of specimens identified by Moser as his *P. verruciventris*; the genitalia of the present species are, however, quite different and will allow of ready separation of the species.

*Phyllophaga (Phyllophaga) chiapas*, n. sp.

Male. — Oblong, subparallel, color ferruginous, slightly shining; above completely haired. Clypeus broad, rather long; the apex narrowly sinuate and but little reflexed; disc very densely and coarsely punctate, with very short erect hairs. Front grossly, confluent punctate, with long erect hair. Antennae 10-segmented, rufous; club long and subequal to entire stem; segments 4-5 slightly spined within, and segments 6 and 7 very transverse and spined within. Thorax with sides roundly dilated, ciliate, straight and entire in front of, and faintly sinuate and crenulate behind of, the dilation; front and hind angles slightly obtuse; disc with very dense and fine punctures which are separated by once their diameters, or less, on the disc and are nearly contiguous at sides; disc with a faint longitudinal median carina running the entire length of the thorax, and all punctures with dense, short, suberect brownish hairs as well as more coarse, longer, erect hairs. Elytra with costae other than sutural obsolete; disc with coarse dense

punctures separated by once their diameters or less, with short, suberect hairs and a very few somewhat longer hairs near base. Pygidium slightly convex, polished; disc with fine and very dense punctures, with short fine, suberect hair and longer erect hair; the disc nearly smooth just before apex. Abdomen flattened, middle slightly and longitudinally impressed, the disc with fine dense punctures and short procumbent hair; 5th sternite nearly flat at middle and with a small patch of granulate punctures and short erect hair; 6th sternite a little shorter than 5th, basal margin somewhat thickened though slightly evanescent at middle; the disc of 6th sternite smooth at center, somewhat transversely flattened, and finely punctate each side of the median smooth area, the punctures with long and fine erect hairs. First segment hind tarsus shorter than second; spurs free. Claw moderately long, the basal tooth submedian in position and a little shorter than the apical one; claw base obtusely dilated. Genitalia bilaterally symmetrical, of the complete ring-shaped type.

Female. — Antennal club lacking in this specimen; longitudinal carina of thorax evident only on central part of disc; pygidium flattened, apical fourth entirely smooth, remainder very densely punctate, the hairs short and of one length; pygidial apex narrowly rounded; abdomen with 5th and 6th sternite plane, and densely, finely punctate. Otherwise similar to male. Length 16.5-18 mm.

The *Holotype* and *Paratype*, both males, and the *Allotype* female, all in the Saylor Collection, are from "Chiapas, Mexico". The species is nearest *P. magnicornis* Moser but the thoracic and abdominal characters are different.

*Phyllophaga (Phyllophaga) eniba*, n. sp.

Male. — Oblong-oval, wider behind; piceocastaneous, rather feebly shining, elytra subpruinose; dorsal surface sparsely haired. Clypeus fairly long, apex subtruncate, entire, angles rounded, hardly reflexed; disc with very fine and dense punctures. Front grossly, scabrosely punctate, with short erect hairs. Antennae 9-segmented, rufotestaceous; club testaceous, slightly longer than funicle. Thorax long and narrow, not twice wider than long, with sides noticeably dilated, crenate and ciliate, straight in front of dilation and sinuate behind; front angles acute and prolonged, hind angles obtusely angulate; disc sparsely and irregularly punctate, the punctures at median base and sides small and scattered, those



of median discal and apical area much larger, the center disc with a small, irregular impunctate area; entire disc with short erect, and much longer erect, hairy bristles. Scutellum punctate. Elytra ecostate other than sutural; disc with small punctures separated by once to twice their diameters and sparse short subprocumbent hairs, those near suture a little longer. Pygidium a little convex, pruinose; disc with dense, moderately-coarse variolate punctures, with short erect hairs and very long hairs intercalated. Abdomen flattened, middle slightly longitudinally impressed, with a transverse band of fine setigerous punctures across sternites 3 and 4; 5th sternite flat, rather densely punctate and with long and short subprocumbent hair mixed; 6th half as long as 5th, the basal and apical margins subcarinate and very narrowly interrupted at middle, the middle faintly longitudinally sulcate, the disc punctured as the preceding segment. First segment hind tarsus shorter than second; spurs free. Claw long, the basal tooth slightly basad of middle in position and short and triangular; the base broad and no emargination evident between the claw base and the basal tooth. Genitalia bilaterally symmetrical and of the complete ring-shaped type; in enface view the lateral angles are very small blunt teeth which are widely separated and the median underprocess consists of two small, triangular but acute teeth which are separated by about their own width. Length 14 mm.

The unique male Holotype in the Saylor Collection is from "San Bernardo, Rio Mayo, Sonora, Mexico, June 29, 1935", collected for me by Mr. Howard Gentry. This species is very near *P. porodera* Bates but has an entirely different 6th abdominal sternite and is much more northern in distribution. The genitalia here are almost identical with those of *P. duenas* Saylor from Guatemala but the external differences are quite marked.

*Phyllophaga (Phyllophaga) mitlana*, n. sp.

Male. — Oblong-oval; color rufo-testaceo-castaneous, the elytra pruinose; above completely haired. Clypeus short and transverse, nearly semicircular in outline, the apex a little reflexed, entire; disc densely and coarsely punctured. Front very grossly scabrose, with long erect hair. Antennae 9-segmented, testaceous; club nearly one-third longer than funicle but a little shorter than the entire stem. Thorax with sides dilated, ciliate, slightly sinuate and crenulate in front of dilation and straight and crenate behind; front angles nearly rectangular, hind angles obtusely angulate; disc with moderately dense, not coarse punctures, these separated

by more than once their diameters or disc and finer and much closer at sides, all with suberect hair of moderate length, and very long, erect hair over the entire disc. Elytra with fine punctures separated by two to three times their diameters, and with short suberect hair and some much longer, erect, though very fine, hairs at base. Pygidium polished, slightly convex, faintly pruinose at base, disc with small dense punctures which are much denser at base and sides, all with very short suberect pile and also very long erect hairs; apex narrow and subtruncate. Abdomen flattened, slightly pruinose, faintly longitudinally impressed and very finely and moderately densely punctate, 5th sternite flat and with a small median patch of granules; 6th a little shorter than 5th and with the basal margin carinate and the center base reflexed apically into a short but broad, smooth lobe, the apex of which is very slightly bidentate; apical margin slightly carinate and ciliate; disc of 6th sternite transversely impressed and sparsely punctate, with long erect hairs. First segment hind tarsus shorter than second; spurs free. Claw long and slender, the basal tooth short and triangular and nearly median in position; claw base very obtusely dilated. Genitalia bilaterally symmetrical, of the complete ring-shaped type; in enface view the lateral angles are blunt, short, and widely separated, and the median underpiece is composed of two moderately short teeth. Length 14 mm.

The unique male Holotype in the Saylor Collection is from "Mitla, Mexico". The species is related to *P. rubella* Bates from which it differs in the 9-segmented antennae, and abdominal and genitalia characters. From *P. antennalis* Moser, *P. mitlana* differs in the 9-segmented antennae, smaller size, and less-developed 6th abdominal sternite.

*Phyllophaga (Phyllophaga) necaxa*, n. sp.

Male. — Oblong, subparallel; color rufo-piceocastaneous, strongly shining; entirely nude above. Clypeus fairly long, transverse; apex reflexed, the center very narrowly but very distinctly emarginate, angles very broadly rounded, disc with very fine and dense punctures except for a small central impunctate area. Front convex, densely, finely and variolately punctate, a small triangular area just behind the middle of the clypeal suture impunctate; vertex and all the area behind and imaginary line drawn over the front and bisecting the eyes highly polished and completely impunctate. Antennae 10-segmented, rufous; club rufotestaceous, somewhat robust and subequal to funicle in

length. Labrum long, very narrowly and completely, triangularly incised to the base, thus being strongly bilobate. Thorax with sides hardly dilated, subrounded, entire, non-ciliate, and not at all sinuate before or behind the middle; fore and hind angles blunt and obtuse; disc other than a smooth median area with fine and moderately dense umbilicate punctures, these separated by one to three times their diameters on the disc and hardly more dense at sides; discal area also with sparse, irregularly-scattered, very tiny punctures intermixed with the larger ones; base margined except at middle; front margin entire and strong. Scutellum punctate along each side; middle smooth. Elytra with sutural and first and second discal striae distinct, narrow, smooth; third discal striae obsolete and submarginal costa distinct; sutural and first discal striae slightly broadened apically; disc with umbilicate punctures separated by two and three times their diameters. Pygidium convex; disc rugosely punctate, the punctures separated by once to twice their diameters and with minute erect hairs; apex thickened, subrounded, hardly reflexed, and ciliate. Abdomen highly polished and moderately convex, the middle sparsely and very finely punctate, the punctures glabrous and with minute hair; 5th sternite apically declivous and transversely impressed at apical margin, the disc with a large, irregular shaped patch of transverse granules and a few sparse hairs, the sides somewhat densely punctured; 6th sternite half the length of the 5th, the disc quite flat and subrugose, very sparsely and finely punctate; basal margin of 6th sternite slightly thickened though widely interrupted at the middle. First two hind tarsal segments nearly subequal, the first being faintly longer than the second; spurs free and extremely slender. Claws moderately long, the short, triangular basal tooth submedian in position and shorter than the slender apical tooth; claw base obtusely dilated. Mentum widely, longitudinally sulcate. Genitalia bilaterally symmetrical; in enface view the lateral lobes are quite slender, and after approaching each other apically lie narrowly-separated and subparallel, while the middle of the top is prolonged and overhanging the lateral lobes in a lobe which is divided for half its length and the two divisions of which are parallel, though separated by nearly twice their width; this latter upper and median lobe does not reach more than three-fifths of the way to the apex of the lateral lobes. Length 17 mm.

The unique male Holotype in the Saylor Collection is from "Necaxa, Puebla, Mexico". The species is closely related to the

United States *P. psiloptera* Sanderson, but differs in the male genitalia and other lesser characters. Dr. Sanderson has kindly compared the Holotype with his species. From *P. subrugosa* Møser, *P. necaxa* differs in its nude surface, noncrenate lateral thoracic margins, color, and size.

### New South American *Oxybelus* (Hymenoptera: Sphecidae)

by V. S. L. Pate, Cornell University, Ithaca, N. Y.

Descriptions of the following new and distinctive Neotropical species of *Oxybelus* are presented here in order that the names may be available in connection with other investigations. The types are preserved at present in my own collection.

#### *Oxybelus callani*<sup>1</sup>, new species

The present species superficially resembles *argentinum* Bréthes from which, however, *callani* is readily distinguished by the markedly different conformation of the clypeus and the simple, unforked lateral propodeal carinae.

Type. — Female; Talparo, Trinidad, British West Indies. December 25, 1941. (E. McC. Callan).

Female 4 mm. long. Black; the following deep stramineous: mandibles except red apices, scapes anteriorly, pedicel, pronotum dorsally to and including the tubercles, axillary sclerites, scutellum, postscutellum, fore and middle femora beneath, fore and middle tibiae entirely, hind tibiae broadly annulate at base, first abdominal tergite with a large spot laterally on each side and second with a smaller linear one. Flagellum obscure fulvous apically. Tegulae and fore and middle tarsi fulvous. Last abdominal segment ferruginous. Wings clear hyaline, iridescent; veins and stigma light brunnescens.

Head suborbicular in anterior aspect; fulgid; with a moderate vestiture of hair which is silvery and appressed on clypeus, lower front, and temples, and aeneous and suberect on upper front and vertex. Front gently convex except for a shallowly concave area below behind scapes, with moderately fine and close punctures, width at distal end of scapes three-fifths the vertical eye length;

<sup>1</sup> Dedicated to Dr. E. McC. Callan of the Imperial College of Tropical Agriculture, Trinidad, B. W. I.