

NOTES ON NORTH AMERICAN SPECIES OF *POLYDRUSUS* GERMAR

(COLEOPTERA: CURCULIONIDAE, BRACHYDERINAE)

17. A contribution to the knowledge of the Curculionoidea.

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The genus *Polydrusus* includes about 188 species, most of which are native to the palearctic region. The *Coleopterorum Catalogus* records only 21 species from the western hemisphere—11 from Mexico and Central America; 2 from South America; 2 from the West Indies (Guadeloupe); and 6 from North America (1 from lower California, 2 introduced European species, and 3 native to the United States).

In 1909, Pierce transferred the Lower Californian *Scythropus delicatulus* Horn to *Polydrusus*. This transfer is not recorded in the *Catalogus* but is noted in Blackwelder's 1947 list of Neotropical Coleoptera.

In 1950, Kuschel reviewed the Chilean forms, naming three new species. In listing the synonymies of Neotropical Curculionidae in 1955, he transferred *Phyllobius roseus* Blanchard to *Polydrusus*, thereby reducing his species *robiglio* to a synonym of the former. He also removed *morosus* Boheman from *Polydrusus* to *Anisactus* Kuschel and *P. vagabundus* Boheman to *Heteraclus* Kuschel of the Anyopactini.

These taxonomic changes bring the number of species recorded from the western hemisphere to 23 — 11 from Mexico and Central America; 3 from South America; 2 from the West Indies; and 7 from North America, 2 of the latter from lower California. To this list I am adding a new species from Arizona, bringing the total number of *Polydrusus* known from the western hemisphere to 24.

The species treated in this paper are as follows:

Native American Species

americanus Gyllenhal, 1834, p. 136; type locality, America borealis.

dorsalis Horn, 1876, p. 105; type locality, Missouri. Specimens of *americanus* have been compared with the type of *dorsalis* in the Museum of Comparative Zoology and this synonymy confirmed.

decoratus Woodruff, 1923, p. 155; type locality, Hazen, Alabama.

delicatulus (Horn), 1894, p. 444, (*Scythropus delicatulus*); type locality, El Taste, Lower California. *Polydrusus delicatulus* (Horn), Pierce, 1909, p. 363.

hassayampus, new species; type locality, Constellation, Arizona.

ochreus Fall, 1907, p. 264; type locality, Cloudcroft, New Mexico.

peninsularis Horn, 1894, p. 445; described from Coral de Piedre, El Taste, and San Jose del Cabo, Lower California.

Introduced European Species

impressifrons Gyllenhal, 1834, p. 140; described from Gallia and Germania. For references in the American Literature see Index of American Economic Entomology, vols 1, 2, 5 and 9.
sericeus (Schaller), 1783, p. 286, (*Curculio sericeus*); described from Europe. For American records see Britton, 1934, p. 474; Frost, 1946, p. 51.

Key to the North American Species of Polydrusus Germar

1. Mandibles with 3 or less setae each, no other vestiture present; scape not surpassing eye; dorsal scales green. 2
- 1'. Number of setae or setae and small scales, on each mandible, 5 or more (except *peninsularis* in which there are apparently 3 to 5 setae); color of dorsal scales differing with the species; striae on elytra not sharply defined, frequently interrupted here and there by the encroachment of the scales; elytral setae slanting, suberect and conspicuous in some species; eyes smaller and more strictly lateral (fig. 9), the interocular distance considerably more than the greatest diameter of eye (only slightly greater in *peninsularis*); antennal scape surpassing eye; scutellum usually densely scaly; last abdominal sternite of male not emarginate at apex, except in *impressifrons*; hind tibia of male without a brush of long, prominent setae. 3
2. Elytra with striae sharply defined, elytral setae short, prostrate, very inconspicuous; femora each with a small tooth; eyes large, partly dorsal (fig. 1), interocular distance equal to or less than the greatest diameter of eye; scales on pronotum elongate; usually transversely directed at least medially; scutellum not densely scaly; last abdominal sternite of male emarginate apically (fig. 5), lower face of hind tibia of male flattened in distal half, the anterior edge of which is set with a brush of long, prominent, erect setae (fig. 8). Length 5.3-6.8 mm., width 1.8-2.75 mm. *sericeus* (Schaller)
- 2'. Elytra with striae less sharply defined, elytral setae short, bristly, erect, and very prominent; femora without a tooth; eyes smaller, convex, and lateral (fig. 2), the interocular distance considerably more than the greatest diameter of the eye; scales on pronotum rounded and very closely placed; scutellum very densely scaly; last abdominal sternite of male not emarginate apically (fig. 6), hind tibia of male without a brush of long, prominent, erect setae (fig. 12). Length 2.4-3.6 mm., width 1.0-1.7 mm. *hassayampus*, new species
3. Body more slender; dorsal scales distinctly green; elytra at least 4 times as long as the prothorax, elytral setae fine, inconspicuous, and slanting; first funicular segment one-third, or less, longer than 2; antennal scrobe with posterior half scaly and much shallower than anterior half; frons and dorsum of rostrum flattened to broadly impressed (fig. 9); mandibles each with green scales and at least 3 setae; last abdominal sternite of male broadly impressed apically and with its apical edge broadly emarginate (fig. 4). Length 3.7-5.5 mm., width 1.3-2.2 mm. *impressifrons* Gyllenhal
- 3'. Body less slender; dorsal scales not distinctly green, except in *delicatulus* from Lower California, elytra distinctly less than 4 times as long as prothorax, elytral setae coarser and, when suberect or slanting, rather conspicuous; first funicular segment relatively longer, from nearly twice to nearly three times as long as second; antennal scrobe with posterior half narrower and more sharply defined than in *impressifrons*, and bare or with only a few scales; front and dorsum of rostrum variable; mandibles with setae but no scales; abdominal sternite 5 of male not impressed or emarginate apically. 4
4. Nasal plate bare, rather shining, triangular, and well defined, its apex produced a short distance up the dorsum of the rostrum in a fine carina; elytral setae very short and not conspicuous, almost prostrate or slanting, those on pronotum scarcely perceptible even in the lateral view; elytra lacking a distinct color pattern, at most (some specimens of *peninsularis*) with vague and often somewhat ill-defined dark spots. Lower California. 5
- 4'. Nasal plate variable, but not so well defined; elytral setae rather long, slanting, and conspicuous, some of those on pronotum, in lateral view, erect and bristling; dorsum of elytra (except *ochreus*) with a distinct color pattern. United States and Canada. . . . 6
5. Dorsal scales green, sometimes with a few intermixed golden scales; nasal plate narrower; mandibles with numerous setae; eye small, its greatest diameter less than distance between eye and anterior margin of prothorax; scutellum densely scaly. Length 3.6-4.7 mm., width 1.4-1.7 mm. *delicatulus* (Horn)
- 5'. Dorsal scales predominantly grayish white, more or less thickly intermixed with brownish scales, the latter usually prominent on the elytra forming vague dark patches basally and dark spots or irregular indefinite oblique bars posterior to middle; nasal plate wider; mandibles each with 3 to 5 very fine setae; eye large, its greatest diameter more than the distance from eye to anterior margin of prothorax; scutellum appearing bare, though actually with some very minute setiform scales. Length 3.0-3.6 mm., width 1.2-1.4 mm. *peninsularis* Horn

6. Each mandible with 3 long and usually 2 or 3 short setae; shortest distance between antennal scrobes, measured across dorsum of rostrum, about one-half the interocular distance; scales on dorsum nearly uniform yellow gray, sometimes with a faint greenish tinge, elytra without color pattern; scales along a narrow median line on pronotum abruptly narrower than adjacent scales and directed posteriorly in apical half to two-thirds (fig. 10). Length 3.0–4.0 mm., width 1.4–1.6 mm. *ochreus* Fall
- 6¹. Each mandible with approximately 7–9 setae; shortest distance, across dorsum of rostrum, between antennal scrobes noticeably greater than one-half the interocular distance (fig. 7); elytra with color pattern of which at least the broad posterior band (fig. 13) is nearly always evident; scales along midline of pronotum directed anteriorly (fig. 11). 7
7. First funicular segment scarcely twice as long as second; prothorax as long as wide or nearly so (relatively longer in male than in female); approximately 8 or 9 setae on each mandible; pronotum more convex at middle, disc of elytra with a vague, transverse flattening at basal fourth just behind humeri; elytral color pattern more sharply defined; scutellum usually bordered posteriorly by a line of contrastingly pale scales; abdominal sternite 5 of female tumid in apical half. Length 3.5–4.8 mm., width 1.5–2.0 mm *americanus* Gyllenhal
- 7¹. First funicular segment at least twice as long as second; prothorax transverse (about 10.0 to 8.0); about 7 or 8 setae on each mandible; pronotum usually not so convex at middle, elytra not flattened on disc toward base; elytral color pattern much as in *americanus* but not as strongly contrasting, the broad sutural stripe frequently reduced to a narrow sutural streak, the dark line near base of the fourth interval usually absent; scutellum not bordered by contrasting pale scales; abdominal sternite 5 of female rather flat to moderately convex, but not tumid in apical half. Length 3.0–4.0 mm., width 1.4–1.8 mm. *decoratus* Woodruff

The following data are limited almost wholly to distributional information, with the exception of that a more complete description is given for *P. hassayampus*, new species. The letters enclosed in parentheses indicate the collection in which the material examined is housed, as follows: National Museum (USNM); C. A. Frost (CAF); Entomological Collection, Department of Zoology and Entomology, The Ohio State University (OSU); E. L. Sleeper (ELS).

Polydrusus sericeus (Schaller)

Framingham and Natick, Mass., C. A. Frost, (CAF, USNM, ELS); Stamford, Conn., A. Estler, (USNM); Chittenango, N. Y., Dieke, (USNM); Brethier, Que., (W. J. Brown, in *litt.*); Ashtabula, Lake and Geauga Co., Ohio, N. J. & E. L. Sleeper, (ELS); Ashtabula Co., Ohio, L. W. & R. T. Everly, (OSU, ELS); near Indianapolis, Ind., Harold Morrison, teste Blatchley & Leng; Dunes St. Pk., Indiana, E. L. Sleeper, (ELS); East Lansing, Michigan (USNM).

Polydrusus hassayampus, new species

Male.—Elongate-oblong; dark reddish brown with legs and antennae pale reddish brown, the color of the legs concealed by the dense coat of scales; all but mandibles, nasal plate, antennae and tarsi densely clothed with rounded, overlapping metallic green scales and with coarse, erect, clavate white scales which, on the elytra, are uniserially arranged on the elytral intervals.

Rostrum as long as head; nasal plate broad, triangular, prominently defined by an elevated ridge; a broad groove behind the nasal plate on dorsum of rostrum, extending to near middle of frons. Mandibles lacking vestiture except for two or three long erect setae. Antennal insertion visible from above, scrobes strongly bent beneath some distance from the eye. Antennal scape small, scarcely attaining hind margin of eye; first funicular segment robust and elongate, second shorter, not as robust, slightly longer than third, fourth to seventh more or less moniliform. Club elongate, acuminate and densely pubescent. Eyes strongly convex, coarsely granulated, the smallest interocular distance one and three-fourths times longest diameter of the eye.

Prothorax one-fourth wider than long, almost parallel sided, the base slightly, if any, wider than the apex. Scutellum rounded, densely clothed with overlapping green scales.

Elytra wider at base than prothorax, the base slightly sinuate; sides gradually divergent to beyond middle then rounded to apex; striae feebly impressed, obscured by scales, striae punc-

tures large, deep, rounded and very close-set, but appear small and widely separated because of the overlapping scales; intervals flattened.

Ventral side densely clothed with rounded overlapping scales; the abdominal sternites, when denuded, very finely crenulate. Fifth sternite strongly rounded apically. Femora unarmed. Length 2.4 mm., width 1.0 mm.

Female.—Differing only from the male in that the first and second abdominal sternites are slightly more swollen. Length 3.4 mm., width 1.4 mm.

Type locality.—Constellation, Yavapai Co., Arizona (along Hassayampa Cr.).

Type material.—Holotype (#66), male, allotype, female, 4 male and 14 female paratypes all from the type locality, VIII-22-42, C. W. Jones, (ELS). Length of paratypes 2.5-3.6 mm., width 1.1-1.7 mm.

Of the North American species, *hassayampus* resembles *delicatulus* (Horn) very closely in form and color, but the latter lacks the very prominent erect setae over the whole of the body, and has the legs clothed with pink to reddish brown scales while in *hassayampus* the legs are clothed with green scales and are noticeably paler than the rest of the body. In *hassayampus* the rostrum is also much shorter and broader. It is apparently more closely related to *P. pallidisetis* Champion from Mexico, differing from that species in the coarser, erect setae on the elytra, the parallel-sided prothorax and the densely clothed legs. *P. pallidisetis* has the prothorax with sides feebly rounded, and the legs reddish brown, very sparsely clothed with greenish scales and erect whitish setae.

There are fifteen examples in (ELS) from Fortuna Mine, Arizona, VIII-13-42, C. W. Jones, which are probably this species, but differ in larger size and much paler vestiture. They are not included as a part of the type series.

***Polydrusus impressifrons* Gyllenhal**

New Haven, Conn.; Ithaca, Albany, Rochester, Seneca Falls, Geneva and Wyoming, N. Y., (USNM); Honeoye Falls, N. Y., (USNM, ELS); Perry (Lake Co.), Ohio, J. S. Houser, (USNM, ELS); Oakland Co., Mich., (USNM).

This species was found in small numbers on willow and Lombardy poplar in the company of *Phyllobius oblongus* (L.), at Perry, Ohio.

***Polydrusus delicatulus* (Horn)**

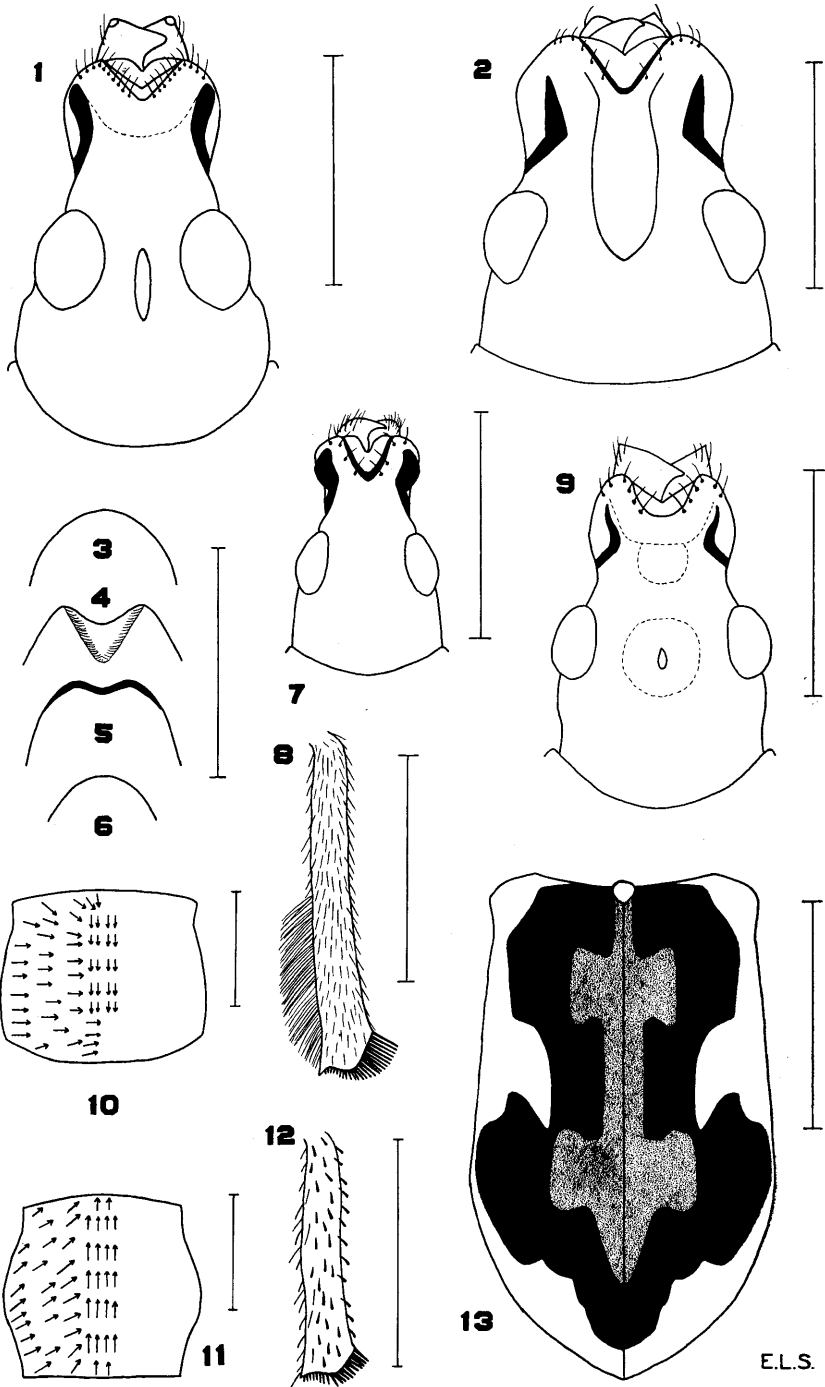
San Jose del Cabo, lower California, (USNM, Philadelphia Academy of Sciences), fifteen specimens.

EXPLANATION OF FIGURES IN PLATE

1. Outline of head and rostrum of *Polydrusus sericeus* (Schaller).
2. Same of *P. hassayampus*, new species.
3. Outline of apex of fifth abdominal sternite of *P. americanus* Gyllenhal.
4. Same of *P. impressifrons* Gyllenhal.
5. Same of *P. sericeus* (Schaller).
6. Same of *P. hassayampus*, new species.
7. Outline of head and rostrum of *P. americanus* Gyllenhal.
8. Hind tibiae of *P. sericeus* (Schaller), male.
9. Outline of head and rostrum of *P. impressifrons* Gyllenhal.
10. Outline of prothorax of *P. ochreus* Fall, arrows indicating direction of vestiture on surface.
11. Same of *P. americanus* Gyllenhal.
12. Hind tibiae of *P. hassayampus*, new species.
13. Outline of elytra showing color pattern of *P. americanus* Gyllenhal.

Figures 1, 3 to 9, and 13. Line = 1 mm.

Figures 2, 10 to 12. Line = 1/2 mm.



E.L.S.

***Polydrusus peninsularis* Horn**

Santa Rosa, lower California, (USNM); Santa Rosa, lower California, G. Beyer, (USNM, ELS); San Jose del Cabo, El Taste, Coral de Piedre, lower California, (Philadelphia Academy of Sciences).

***Polydrusus ochreus* Fall**

Cloudcroft, New Mexico, W. Knaus, (USNM), fifteen specimens.

***Polydrusus americanus* Gyllenhal**

Ithaca, Orangeburg, Buffalo, and Otsego Co., N. Y., (USNM); Albany, N. Y., (ELS); Harrisburg, Pa., (ELS); Oakland, Md., (USNM); Washington, D. C., (ELS); Fort Pendelton, W. Va., (USNM); Hamilton Co., Ohio, (Dury Collection); Greene and Franklin Co., O., (OSU, ELS); Ashland, Delaware, Geauga, Hocking, and Putnam Co., O., (ELS); Columbiana, O., (USNM); Athens Co., O., (Ohio University); Elizabeth, Ill., (Illinois St. Nat. Hist. Sur.) and Willow Springs, Ill., (USNM); Ann Arbor and Grand Ledge, Mich., (USNM); "Wisc.", (USNM); St. Louis, Mo., (ELS); Prince Edward Co., Ont., (USNM); Montreal and Quebec, Que., (USNM).

In Ohio this species has been beaten from oak, several species of maple, sycamore, hop-hornbeam, and blue beech.

***Polydrusus decoratus* Woodruff**

Hazen, Ala., (4 paratypes), (USNM); Cliff Cave (St. Louis), Mo., (USNM); Riley Co., and Topeka, Ks., (USNM); Weeping Water and Nebraska City, Nebr., (USNM).

The 4 paratype specimens from Alabama have the elytral setae slightly shorter and the nasal plate somewhat better defined than in the midwestern specimens, indicating possible geographic variation. Further conclusions in this regard will be dependent on more complete distributional information.

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