

Sphenophorus distichlidis, n. sp.

Similar to *mormon* with which it agrees in the structure of the rostrum and, nearly, in the sculpture of the elytra. It averages a little smaller, with the entire surface subopaque, and with the legs and less frequently the elytra and thorax rufous or piceous. The punctuation is feeble, not so strong on the thorax, metasternum or abdominal segments as in *simplex*. The tibiæ are less angulate and more finely fimbriate, and the anterior tibiæ are normally without inside serration.

Male.—First and second abdominal segments moderately distinct; posterior tibiæ more strongly angulate and fimbriate.

Female.—First and second abdominal segments connate or nearly so at the middle; posterior tibiæ feebly angulate and finely and sparsely fimbriate.

Length 8.5-11.5 mm; width 3.2-4.0 mm.

Amedee, Cal., 4,200 ft., July 11-28, 1903. Collected by Mr. H. F. Wickham—who has kindly presented a good series to the National Museum—on *Distichlidis spicata*, a maritime grass which grows in salt marshes and saline spots.

Type.—No. 7878, U. S. National Museum.

Sphenophorus simplex LeConte.

In this species the normal shining jet black color is varied by individuals with more or less rufous legs, and the elytra are frequently piceous in evidently fully developed specimens. One otherwise deep black individual with velvety elytra has the base of the elytra and the legs bright rufous. In the smallest individuals there are fewer rows of punctulations in the elytral intervals than in the larger ones, and in the specimen last mentioned they are so minute as to be almost indistinguishable.

The following is added to the recorded locality list:

In California: Palm Springs, February 2, 17 (H. G. Hubbard), Los Angeles (D. W. Coquillett), Panamint Valley, April 19 (A. Koebele), Harold, March 31 (A. B. Eells), San Diego (G. H. Field). In Utah: Salt Lake City (H. Soltau), Salt Lake, June 14 (Hubbard and Schwarz).

ON THE SPECIES OF SPHENOPHORUS HITHERTO CONSIDERED AS PLACIDUS SAY.

By F. H. CHITTENDEN.

When Thomas Say in his "Descriptions of North American Curculionides," etc.,* described *Rhynchophorus placidus* with

* Complete Writings, Thomas Say, etc., Lec. Ed., 1859, 1, p. 290

the type locality "United States" he little guessed the trouble that this and other *Sphenophori* described at the same time would cause to the Coleopterist of the future. This was in 1831. When Horn, in 1873, in his Contributions to a Knowledge of the Curculionidæ of the United States* brought together under *Sphenophorus placidus* no less than seven other names as synonyms, this merely added to the trouble. By careful study of many specimens, described and undescribed, that might possibly be attributed to Say's *rectus* or *immunis*, I am unable to find any which fits either description. The characterizations of Gyllenhal and Boheman in Schoenherr's work on the Curculionidæ are equally difficult of elucidation, and from all the circumstances in the case I feel convinced that only two species of this group can rightfully retain the older names, namely, *venatus* Say and *reticulaticollis* Boheman. The latter is described from "California" which, at the time of its description, included a much larger territory than at present, and this locality and the description might very well be perpetuated for a species which I have assigned to that name. Several species have been present for years in collections under the name of *placidus*, in accordance with Horn's definition, which is, in brief, all *Sphenophori* of our fauna having a "slight fossa at the anterior median portion of the thorax immediately behind the apical constriction." The writer has been able to bring under this character seven species which cannot be placed elsewhere. All appear to be quite distinct, with the possible exception of *vestitus*, which is very different from *venatus* when we compare specimens of the former from Florida and of the latter from New England or Long Island. There is a possibility of gradation in an intermediate locality, but this has not been discovered.

Still an eighth species which has been very generally included under *placidus* has been studied, and this proves to belong to an entirely different group. It may be distinguished from any species of the *venatus* group by its naked body, much longer, perfectly cylindrical rostrum with rounded apex, longer legs, thorax more narrowed anteriorly, broader thoracic vittæ, divided apical fossa, and punctuation, which will be defined in the specific description, as well as sexual characters. It is peculiar to the Gulf region. The following brief analysis of the *venatus* group follows:

VENATUS group.

Rostrum short, strongly and uniformly compressed, moderately or strongly arcuate; apex subtruncate, produced in acute point posteriorly (sometimes abraded).

* Proc. Am. Phil. Soc., p. 426, 1873.

Thorax with distinct apical fossa not divided in the middle; more or less trivittate, vittæ half or less the length of thorax; median vitta usually Y-shaped, either enclosing the apical fossa or appearing as a tubercle behind it; lateral vittæ oblique, divergent toward base of thorax.

Vestiture alutaceous, profuse or scant.

Third joint tarsi: anterior, $\frac{1}{4} +$; middle, $\frac{1}{4}$; posterior, $\frac{1}{4} -$ wider than first joint.

A synoptic table of the seven species which belong to this group follows:

a Thoracic vittæ and apical fossa well defined.

b Rostrum moderately arcuate and compressed, distinctly canaliculate at base. Coating scant and easily abraded, not covering lower surface or sides.

c Dorsal surface strongly and coarsely punctate. Elytral surface normally without inequalities; intervals alternately strongly and less strongly elevated. Medio-basal portion of thorax coarsely, moderately confluent. Lower surface finely, sparsely punctate. N. E. to Tex..... *venatus* Say

cc Dorsal surface more coarsely punctate, usually strongly confluent. Elytral surface very unequal, interrupting striæ and intervals. Lower surface less finely punctate. Oregon.

confuens, n. sp.

bb Rostrum shorter, more arcuate and compressed, at base coated. Thoracic vittæ narrow. Coating thin, velvety, covering most of the body. Lower surface coarsely punctate. Thorax strongly convex. Vittæ with shallow punctures, much finer than on interspaces. Fla., La... .. *vestitus*, n. sp.

bbb Rostrum not coated. Thoracic vittæ wide, black.

c Mostly black but with patches on base of rostrum, thorax and elytra often piceous. Thoracic vittæ broad, punctures deeper, scarcely finer on vittæ than on interspaces and elsewhere. N. M. *neomexicanus*, n. sp.

cc Thorax variable, red, brown or black, elytra rufous or light dull brown. Thoracic vittæ still wider, finely punctate. Ariz., Cal. *phænicensis*, n. sp.

aa Thoracic vittæ usually feebly developed.

b Reddish, surface coating moderately dense, gray or red, thin or velvety. Scutellum shining black. Pygidium ♀ moderately narrowed to apex. First abdominal segment ♂ distinctly concave. Cal., N. M., D. C., Tex. *reticulaticollis* Boheman

bb Black, surface coating gray or brown, thick and felt-like, covering nearly the entire body. Scutellum coated. Pygidium ♀ strongly narrowed to apex. First abdominal segment ♂ flat or scarcely concave. Tex. *coactorum*, n. sp.

Sphenophorus venatus Say.

Rhynchophorus venatus Say, Descr. N. A. Curculionides, p. 22, 1831; Compl. Writings, Lec. Ed., 1, p. 290, 1859

Sphenophorus placidus Say, Descr. N. A. Curc., p. 23, 1831; Lec. Ed., p. 290, 1859; Horn, Proc. Am. Phil. Soc., XIII, p. 426, 1873; Forbes, 16th Rept. St. Ent. Ills., f. 1887-'88 (1890), pp. 62, 65, 70; 22d Rept. St. Ent. Ills., p. 8, 1903.

Rhynchophorus rectus Say, Descr. N. A. Curc., p. 22, 1831; Compl. Writings, Lec. Ed., 1, p. 290, 1859.

Rhynchophorus immunitis Say, l. c., p. 23; p. 290.

Sphenophorus confusus Gyllenhal, Schönherr, Gen. Curc., IV, p. 944, 1837 (fide Horn).

Sphenophorus fallax Boheman, l. c., VIII, No. 2, p. 256, 1845 (fide Horn).

The distribution as well as salient characters are furnished in the table. Even with these synonyms and others eliminated it is still a very variable form.

Sphenophorus confluens, n. sp.

Form and size of *venatus*, from which and all others of this group it differs by the entire surface being more coarsely and strongly punctate, and by other characters which will be enumerated. Black, with dark brown pruinose coating evident at the sides and mostly abraded on the dorsum. Rostrum short, strongly compressed, obliquely truncate and produced in acute point posteriorly as in *vestitus*. Base very strongly and coarsely punctate, with interocular puncture in the form of a very irregular variable fossa, terminating anteriorly before or a little beyond the dilated portion above the scrobes in a broad ill-defined acuminate channel. Thoracic vittæ, owing to strong and coarse punctuation, are feebly defined, the space between foveate-punctate and strongly confluent. Elytral punctures so strong as to be subconfluent and often confluent transversely, producing with a natural uneven surface of the intervals a decided inequality of the entire surface. Sutural and third intervals with strong tendency to a double series of fine punctures most evident at the base.

Portland, Oregon (1 ♂, H. F. Wickham); Corvallis, Oregon, April 25, May 2, June 9, Oct. (A. B. Cordley); "Oregon" (H. Ulke).

Type.—No. 7908, U. S. National Museum.

The large deep punctures of the entire dorsal surface, and particularly of the elytra, produce an unevenness which impart to this insect an appearance quite different from all others in our fauna.

It is probably quite common in Oregon, although not well distributed in collections.

Sphenophorus vestitus, n. sp.

Closely related to *venatus*, more robust; surface with a dense, rather thin, more or less olive-tinted or brown alutaceous coating, which normally completely covers the entire dorsal surface except the thoracic vittæ, rostrum, head, and portions of the legs, the lower surface except the middle of the metasternum, and the first and last abdominal segments, the excepted portions being polished black. Rostrum more arcuate and compressed, with the basal dilated portion normally coated. Thorax scarcely longer than wide, punctures between vittæ frequently confluent. Lower surface moderately coarsely and densely punctate. First abdominal segment ♂ distinctly narrowly concave at middle, leaving an elevated portion each side; last segment with punctures forming a shallow fossa at apex.

Length 9-10 mm; width 3.3-4.3 mm.

Sebastian, March 7, Capron, March 22, Enterprise, May 9, 23, and Indian River, Fla. (Hubbard and Schwarz); Jacksonville, Fla., March 30 to May 23 (Wm. H. Ashmead); Gulf View and Biloxi, Miss., Oct. 9 (H. Soltau); Savannah, Ga. (Hubbard and Schwarz); New Orleans, La., March 14, Oct. 26 (H. Soltau); "La."

Type.—No. 7903, U. S. National Museum.

The Florida specimens are typical of the description furnished, as are also the specimens from Mississippi and a portion from Louisiana. Some of the remainder show a tendency toward *venatus*.

Sphenophorus neomexicanus, n. sp.

Of similar form to *venatus* but considerably smaller, black, with base of rostrum, thorax and elytra frequently reddish. Surface coating velvety gray or brown, scarcely covering half the body. Rostrum with shallow fossa at base not coated. Thorax feebly convex, subquadrate with apical fossa deep, vittæ elevated, broad and shining, a little more finely and deeply punctate than interspaces and sides which are covered with coating. Scutellum black, shining, concave or divided at middle. Elytra partially covered with coating, leaving sutural, and base of third, fourth and fifth intervals, a large humeral and subapical spot black and shining; striæ rather fine; interval punctures distinct, large, round and remotely placed (except sutural). Lower surface with sparse coating on sides; sometimes bare, abdominal segments nearly uniformly, finely and somewhat densely punctate. Ventral concavity ♂ very shallow, scarcely deeper at middle of first abdominal. Pygidial characters as in *reticulaticollis*.

Length 6.0-7.5 mm.; width 2.2-3.0 mm.

Albuquerque, N. M., Feb. 12, 16 (H. Soltau).

Type.—No. 7904, U. S. National Museum.

It will be noticed that the above described species was col-

lected in the same locality and on the same days as *reticulaticollis*, but the two species have a distinct habitus and may be easily separated, there being no intergradation in the large series examined.

Sphenophorus phœniciensis, n. sp.

Form similar to *vestitus*, smaller, ventral surface, head and rostrum shining black, antennæ and tarsi piceous; thorax variable, red, brown, or black, usually brighter on the sides of episterna; vittæ shining black; elytra rufous or dull light brown. Dorsal surface and sides covered with alutaceous coating, entirely gray or yellowish gray on sides, and pale reddish on elytra.

Rostrum half as long as thorax, moderately arcuate and compressed, surface rather strongly and finely punctate, especially at base; base strongly dilated, suddenly above scrobes, where it is acutely angled; interocular fossa pyriform; no channel; but a short impressed line extending in front of dilated portion. Apex divided anteriorly by a slightly elevated line, posteriorly strongly and acutely produced.

Thorax with constriction nearly as wide as long; apical constriction strong; posterior three-fifths of remainder subparallel or slightly arcuate; pattern of surface similar to *venatus*, apical fossa deep. Vittæ very wide, occupying fully half the disc of thorax, shining black, slightly elevated, somewhat finely and sparsely punctate, lateral confluent with median just in front of middle. Interspaces coarsely, rather sparsely and irregularly punctate, sides near lateral vittæ also sparsely but more finely punctate, on lateral margin becoming more dense. Scutellum flat, shining, declivous at base.

Elytra one-fifth wider than thorax, one-fourth longer than wide, rather strongly acuminate to apex. Striæ fine, finely and remotely punctate. Intervals unequal in width, subequal in convexity; 3 widest and most elevated, biserially punctate; the remainder uniserially punctate; 1 very finely, punctures closely placed; humeral and subapical callosities small and smoothly shining. Lower surface somewhat densely coated, but not more than half covered at the sides; abdominal segments nearly uniformly, finely and somewhat densely punctate, a little more finely than at the sides. Legs finely and sparsely punctate. Tibiæ sparsely and feebly fimbriate on inner surface; anterior tibiæ with outer angle slightly prolonged, others obliquely truncate, with inner angle acutely produced into a long spur; subapical spur distinct but only about one-fourth as long. Pygidium with coarse, shallow punctures, somewhat densely placed, coated with very short silvery hairs, with minute tufts each side of apex, which is moderately narrowed and rounded.

As the above description was drawn entirely from female examples, and the male, which has been recently received, is represented by a single specimen, the sexual differences may be found less striking with more material for comparison.

Male.—Lower surface more strongly punctate; especially in ventral concavity which is moderately deep, strongly sloping toward the center, especially in the metasternum; pygidium subpentagonal with rounded base.

Female.—Pygidium narrower, base less broadly rounded.

Length 7.0-7.2 mm; width 2.5-2.9 mm.

Phœnix, Ariz., and "Arizona" (1 ♂, 3 ♀♀, Colls. H. C. Fall and Chas. Palm); Fresno, Cal., May 21 (1 ♀, Hubbard and Schwarz).

Type.—No. 7905, U. S. National Museum.

Although closely resembling in a superficial manner others of the *venatus* group, this species has very pronounced characters, showing some affiliation to *neomexicanus*. From the latter it is separable by its finer punctuation alone, besides being more robust, its proportions resembling those of *vestitus*. It is not improbable that the coloration of the species may vary still more, since none of the specimens examined are true to any type; and it is also probable that the same species extends into Mexico.

Sphenophorus reticulaticollis Boheman.

Of the same form as *venatus*, a little smaller; body dull red, rostrum (except fossa at base), femora, tibiæ and occiput black; surface with a soft velvety natural alutaceous coating, mostly red on the dorsal surface and gray on the sides, completely covering the dorsal surface, except portions of the thoracic vittæ, the scutellum, humeral, and subapical callosities, not covering the metasternum and middle of abdomen. Punctuation of entire surface of body distinct and rather dense; on thorax, which is feebly convex, nearly uniform and but little finer on the feebly elevated and very narrow vittæ; on elytra stria punctures large, interval punctures very fine and obscure, on sutural intervals minute and very closely placed. Metasternum and first abdominal segment nearly uniformly sparsely foveate-punctate, second abdominal but little coarser than third and fourth. In ♂ the ventral concavity is shallow but moderately deep in the middle of the first abdominal, and the pygidium is subquadrangular with apex rounded. In ♀ pygidium is somewhat pentagonal with minute lateral tufts.

Length 7.5-9.5 mm; width 2.8-3.6 mm.

Palm Springs, Cal., July 2 (Hubbard and Schwarz); Los Angeles Co., Cal. (D. W. Coquillett); Albuquerque, N. M., Feb. 12, 16 (H. Soltau); Del Rio, Tex., July 23, 24, 955 ft. (H. F. Wickham); Washington, D. C., August 9, 1881 (Th. Pergande).

Sphenophorus coactorum, n. sp.

Form similar to *venatus*, black, with thick pale gray or brown natural coating, felt-like and persistent, almost completely covering the surface, including the head and base of the rostrum, femora, most of the tibiæ and

the entire dorsal surface, the thorax except a small black patch on the proepimera, another on the middle of the metathorax, the abdomen except those small black areas on the middle of the first and last segments and the anterior half of the second. It partially obscures the elytral punctuation but not the thoracic. Thorax nearly uniformly punctate, lateral vittæ indistinct, apex of median sometimes exposed, apical fossa more or less indistinct. Scutellum coated. Pygidium ♂ subquadrate, rounded each side of apex, of ♀ subtriangular, about one-fourth longer than wide. Metasternum very coarsely sparsely foveate-punctate, remainder of ventral surface rather coarsely sparsely punctate, very sparse on second, third and fourth abdominal. Ventral concavity ♂ very shallow, scarcely different from ♀.

Length 7.0-9.5 mm; width 2.5-3.8 mm.

Edinburg, Texas (Coll. Chittenden); Brownsville, Texas, July (H. F. Wickham); "Tex."

Type.—No. 7906, U. S. National Museum.

No other species known to the writer as inhabiting the United States is provided with such a dense felt-like covering.

NEW DIPTERA FROM INDIA AND AUSTRALIA.

By D. W. COQUILLET.

Mr. George Compere, a native of this country and for several years an inspector of fruit pests at Los Angeles, California, but at present the government entomologist of West Australia, recently transmitted to Dr. L. O. Howard, for naming, an interesting series of bred insects from that country and India, the Diptera of which were assigned to the writer for study and report. An extended search through the literature of these and the neighboring regions has failed to reveal any descriptions applicable to five of the species, and in the belief that they are as yet undescribed, they are duly characterized herewith:

Family TACHINIDÆ.

Tachina psychidivora, n. sp.

Black, the face, cheeks, palpi, scutellum, and front angles of the second and third segments of the abdomen, yellow. Vertex nearly as wide as either eye, sides of front yellowish gray pruinose, the face and cheeks white, no orbital bristles, frontals descending on sides of face half way to the vibrissæ, the latter situated distinctly above the front edge of the oral margin, ridges bristly half way to the lowest frontal bristle, cheeks more than one-fourth as wide as the eye height; antennæ three-fourths as long as the face, the third joint broad, nearly three times as long as the sec-