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vertex as viewed from in front. Pronotum narrow, structure as described under the genus. Wings narrower but about as long as the elytra, which are apically broadly rounded, overlap dorsally and project beyond the pronotum about one-half the pronotal length. Legs of moderate length and size; posterior femora more than two times as thick basally as apically, the swelling confined to about the basal three-



FIG. 87.—*PLATYCLEIS FLETCHERI*. ADULT FEMALE.

fifths; anterior tibiae unarmed above on the inner side, on the outer side armed with three spines. Abdomen and genital characters as described under the genus.

Color dark reddish brown, the posterior tarsi and the sides of the vertex black and the disk and the central portions of the lateral lobes

of the pronotum nearly black, the latter bordered below and behind with yellowish.

Measurements.—Length, pronotum, 5.25 mm.; elytra, 2.5; posterior femora, 14.5; ovipositor, 14; width, pronotal disk at the posterior margin, 3.75; at the anterior margin, 2.75.

Type.—Cat. No. 10192, U. S. National Museum.

Specimens examined.—The type, one female (fig. 87), taken by Dr. James Fletcher at Calgary, Assiniboia, Canada, on July 31, 1904, and by him presented to the U. S. National Museum.

I take pleasure in naming this interesting insect in honor of its illustrious collector.

STEIROXYS Herman.

Steiroxys HERMAN, Verhandl. der k. k. Zool.-Bot. Gesellsch. Wien, XXIV, 1874, pp. 200, 207.—SCUDDER, Can. Ent., XXVI, 1894, pp. 179, 182; Guide N. A. Orth., 1897, p. 56; Cat. Orth. U. S., 1900, p. 78.—KIRBY, Syn. Cat. Orth., II, 1906, p. 194.

Description.—Head small, not prominent, deeply inserted into the pronotum; vertex moderately prominent and exceedingly broad, almost as broad as the interocular space; eyes small, scarcely prominent; basal segment of the antenna less than one-fourth as large as the vertex as viewed from in front. Pronotum of medium size, moderately produced posteriorly; lateral lobes well developed, nearly as deep as long, slightly declivent and somewhat sinuate posteriorly; lateral and median carinae distinct and persistent, the former subparallel, diverging slightly from in front backwards (fig. 89); disk nearly flat, subrectangular, subtruncate both in front and behind, about two or two and one times as long as broad and without conspicuous sulci, some-

times with a noticable V-shaped one near the center. Prosternum unarmed. Elytra of female short, rounded lateral pads, scarcely projecting beyond the posterior edge of the pronotum, of the male broad, overlapping dorsally and projecting beyond the pronotum a distance equal to about one-half the length of the pronotum. Legs long, the posterior femora two and one-half times to nearly four times as long as the pronotum, strongly expanded on the basal two-thirds and unarmed beneath or armed with a few small spines; anterior tibiæ armed above on the outer side only with three spines; abdomen moderately plump, scarcely carinate; subgenital plate of both sexes apically rectangularly incised, that of the male with moderately prominent styles at each side behind; supraanal plate small and apically triangular in both sexes, closely fitted between a pair of compressed infracercal plates, usually hidden beneath the last abdominal segment, which, in the male, is mesially incised; cerci of the female simple, cylindrical, pointed, of the male cylindrical with the apex sharp and tooth-like, bent inwards and furnished on the inner side with a sharp tooth; ovipositor very slightly curved upwards and of a length varying from distinctly shorter than the posterior femora to somewhat longer.

Type.—*Thamnotrizon trilineatus* Thomas.

The type of this genus was originally described as having the pronotum without carinæ but in the description of the genus *Steiroxys* Herman says that this was probably a clerical error. That this is probably the case is indicated by several facts. Specimens of the type species labelled in the handwriting of Thomas as type specimens are in the National Museum and they have the pronotum carinate. Glover has figured the species, presumably from authentic specimens from Thomas, and his illustration shows the pronotum to be carinate. Besides this Thomas himself practically admits the correctness of Herman's diagnosis as based on *trilineatus*.^a Thus *trilineatus* is seen to have a carinate pronotum and the statement to the contrary in the original description is to be attributed to a clerical error.

The classification of this genus is by far the least satisfactory of any of the group here treated. The cerci of the males are either unusually variable for this group or indicate several more species than I have recognized. That the cerci of the males, which are unvarying characters of such synoptic value in other genera of the group, should be so variable as to be useless as a differentiating character in this particular genus is, to say the least, odd. It may, however, eventually result that we have several more species than here considered but at this time I am unable to recognize such to be the case. The sexes are connected only by association with localities, none, so far as I know, having been taken in copulation. Color, so far as determinable from the material studied, is of little constancy. About fifty specimens of

^a Rept. U. S. Geol. Surv. W. 100 Mer., V, 1875, p. 906.

the genus have been studied but much more material and field observation is necessary to satisfactorily place the various forms. The genus is distinct and very well circumscribed but the species seem in a hopeless state of chaos. The females are, at the present state of our knowledge of the genus, practically inseparable. Scudder has, it is true, published a table of species based upon characters supposedly of synoptic value but a study of type material in his collection shows some of the characters used by him in his table to be inversely true. Thus the pronotal disk of *borealis* is more nearly twice as long as broad as is that of *pallidipalpis*. The length of the posterior femora varies as does the color. Therefore, I have made no attempt to synoptically separate the various forms, this being deemed impracticable at this time. The described species are as follows:

STEIROXYS TRILINEATA Thomas.

- Thamnotrizon trilineatus* THOMAS, Proc. Acad. Nat. Sci. Philad., 1870, p. 76; Ann. Rept. U. S. Geol. Surv. Terr., II, 1871, pp. 265, 268.—GLOVER, Ill. N. A. Ent., Orth., 1872, pl. VIII, fig. 5.—SCUDDER, Index N. A. Orth., 1901, p. 322.
- Decticus trilineatus* THOMAS, Ann. Rept. U. S. Geol. Surv. Terr., V, 1872, p. 443.—BRUNER, Bull. No. 27, Div. Ent. U. S. Dept. Agric., 1892, p. 31.—SCUDDER, Index N. A. Orth., 1901, p. 95.
- Dectes trilineatus* BRUNER, Publ. Nebr. Acad. Sci., III, 1893, p. 31.
- Steiroxys trilineata* HERMAN, Verhandl. der k. k. Zool.-Bot. Gesellsch. Wien., XXIV, 1874, p. 207, pl. v, figs. 64-69.—SCUDDER, Can. Ent., XXVI, 1894, pp. 182, 183; Cat. Orth. U. S., 1900, p. 79; Index N. A. Orth., 1901, p. 300.—SCUDDER and COCKERELL, Proc. Davenport Acad. Nat. Sci., IX, 1902, p. 55.—KIRBY, Syn. Cat. Orth., II, 1906, p. 194.

Description.—Head small and deeply inserted into the pronotum; vertex convex and moderately prominent, very broad, occupying practically all the interocular space; eyes of moderate size, rounded and not prominent. Pronotum and wings as described under the genus. Legs moderately long, the posterior femora about three times as long as the pronotum, swollen on the basal two-thirds and unarmed below; anterior tibiae armed above on the outer side only with three spines, rarely one of them missing. Abdomen plump, dorsally subcarinate; cerci of the female round, about four times as long as the basal width and tapering to a point, tapering mostly in the apical half; cerci of the male (fig. 91) cylindrical or somewhat flattened and tapering gradually to a point, curved downward and inward at the tip, and furnished on the inside about or just beyond the middle with a slightly recurved tooth cylindrical and shaped like the end of the main body; ovipositor about as long as the posterior femora and curved somewhat upward, the tip abruptly tapering to a point and roughened by minute serrations.

Color dark brown or yellowish, usually with some lighter markings down the dorsum, sometimes lighter with a row of conspicuous V-

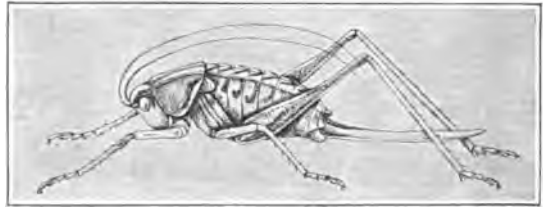
shaped black marks down the top of the abdomen and a row of oblique black dashes along the sides (fig. 88). The lateral lobes of the pronotum are generally bordered below and behind with yellowish, and next this yellow border behind is usually a piceous streak.

Measurements.—Length, pronotum, male, 5.5–6 mm., female, 4.5–6; posterior femora, male, 18–19, female, 15.5–19; elytra, male, 2–3, female, 5–1; ovipositor, 16–24; width, pronotum at posterior margin, male, 3–3.25, female, 2.5–3.

Type.—Apparently lost.

Specimens examined.—Material from Nebraska, Colorado, Montana, and Idaho.

The National Museum contains specimens labeled as types, but erroneously so, as the species was described from southeast Colorado, while these specimens are from South Pass, Wyoming; but they are doubtlessly authentic specimens, being labeled in the handwriting of Thomas. Besides these, the National Museum contains specimens, all females, from Nebraska, Colorado, Montana, and Idaho. Besides these localities the species has been recorded from Utah, Wyoming, and New Mexico.



88



89



90



91

FIGS. 88, 89, 90, 91.—*STEIROXYYS TRILINEATA*. 88, ADULT FEMALE. 89, PRONOTUM OF FEMALE FROM ABOVE. 90, CERCUS OF ADULT MALE. 91, CERCUS OF ADULT MALE.

The figure by Glover is not a good one, failing, as it does, to properly show the thoracic carinæ.

Besides the statement that the pronotum is without carinæ the original description contains some other minor points at variance with the characters of the specimens now considered as this species. But, as stated in the discussion under the genus, Herman's construction is accepted.

There is an immense amount of variation in color and general appearance of the specimens here referred to this species. Some specimens are light, with conspicuous abdominal markings and with short legs and ovipositors, as shown in fig. 88, and others are very uniformly brownish or greenish yellow, with long posterior femora and ovipositors, while still others have the conspicuous abdominal markings, but with long posterior femora and ovipositors. The cerci of the males sometimes have the tooth situated at the middle (fig. 91),

and sometimes much beyond the middle (fig. 90); in some specimens the location of the cercal tooth is intermediate between the two figured.

There may be more than one species represented among the specimens here referred to this species, but if so, I am unable to satisfactorily separate them.

STEIROXYS PALLIDIPALPUS Thomas.

Decticus pallidipalpus THOMAS, Ann. Rept. U. S. Geol. Surv. Terr., V., 1872, p. 442; Proc. Davenport Acad. Nat. Sci., I, 1876, p. 262.—SCUDDER, Index N. A. Orth., 1901, p. 95.

Steiroxys pallidipalpus SCUDDER, Can. Ent., XXVI, 1894, pp. 182-183; Cat. Orth. U. S. 1900, p. 78; Index N. A. Orth., 1901, p. 300.—REHN, Ent. News, XVII, 1906, p. 288.—KIRBY, Syn. Cat. Orth., II, 1906, p. 194.

Description.—Head medium in size, inserted into the pronotum a moderate depth; vertex broad, convex, much broader than the eye, which is considerably smaller in the female than in the male. Pronotum moderate in size and in posterior prolongation, the lateral lobes deep, almost vertical, with a slight posterior sinus; lateral carinæ prom-



FIG. 92.—*STEIROXYS PALLIDIPALPUS*.
CERCUS OF ADULT MALE.

inent, sharp, persistent, in both sexes diverging very slightly posteriorly. Pronotal disk nearly flat, slightly rising from the lateral carinæ to the distinct, persistent, median carina; the disk is truncate behind and in front, or very slightly rounded anteriorly, without sulci. Wings and legs as in *trilineata*, the posterior femora sometimes with a few small spines beneath. Abdomen as in *trilineata*. Cerci of the female about four times as long as the basal width, of the male heavy basally, tapering abruptly just beyond the inner tooth, which is situated at or before the middle, the apex sharp and bent inward (fig. 92). Ovipositor long, slightly curved upward and unarmed apically, curving somewhat more in the basal portion than that of the following species.

Color yellowish or light brown, the posterior femora mottled more or less with fuscous; lateral lobes of the pronotum in the male slightly infuscated posteriorly and with a yellow margin above the sinus, in the female about the same, but less distinct. Ovipositor dark reddish brown.

Measurements.—Length, pronotum, male, 6.75 mm., female, 7; posterior femora, male, 18.5-24.5, female, 19-20; elytra, male, 3.5, female, 1; ovipositor, 18.5-22; width, pronotum at posterior margin, male, 4.5, female, 4.

Type.—Apparently lost.

Specimens examined.—Specimens from Nevada, Oregon, Idaho, Wyoming, Washington, and California.

The above description, except the minimum measurements, which

are taken from Thomas's original description, was drawn up from a male in the Scudder collection from Ruby Valley, Nevada (Ridgeway), and a female in the Morse collection from Mary's Peak, Benton County, Oregon, September 16, 1897. This female may be wrongly associated but the male is very certainly properly placed. The species has also been recorded from Utah and Idaho.

The cerci of the male in this species seems to represent a type derived from that of *S. trilineata*, the inner tooth having become slightly smaller and moved back toward the base (fig. 93). The two forms of cerci are, however, quite distinct.

The National Museum contains one much shrivelled female from Idaho, evidently preserved in spirits and afterwards dried, which is labeled in the handwriting of Professor Thomas as questionably *S. pallidipalpus*. Also one female from Pocatello, Idaho, one without label and a male from east Washington. This male, which is referred here with some doubt, has the cerci shaped as shown in fig. 93, and the posterior femora measure 22 mm. in length. Bruner has a number of both sexes from Washington, Idaho, Wyoming, and California. Rehn records it from Utah.

The specimen figured by Glover^a as this species is very surely wrongly identified, probably belonging to the genus *Eremopedes* or *Stipator*.



FIG. 93.—STEIROXYS PALLIDIPALPUS. CERCUS OF ADULT MALE (VARIETY).

STEIROXYS BOREALIS Scudder.

Steiroxys borealis SCUDDER, Can. Ent., XXVI, 1894, p. 182; Index N. A. Orth., 1901, p. 300.—WOODWORTH, Bull., p. 142, Calif. Exp. Stat., 1902, p. 15.—KIRBY, Syn. Cat. Orth., II, 1906, p. 194.

Description.—Head and pronotum as in *S. trilineata*. Elytra of the male projecting scarcely one-half the length of the pronotum, broad, overlapping above, of the female slightly projecting lateral lobes. Legs moderately long; the posterior femora swollen on the basal two-thirds and unarmed beneath; anterior tibiae armed above on the outer side only with three spines. Abdomen moderately heavy, dorsally subcarinate; cerci of the female conical, variable in length, sometimes seemingly less than four times as long as the basal width while in some specimens referred here they are fully five times as long. The cerci of the male are strikingly different from those of either of the preceding species, being basally much compressed, no more than one-half as broad as deep and apically divided into two equal incurved hard black claws (fig. 94). Ovipositor moderately stout, scarcely as long as, or but little longer than, the posterior femora, slightly curved upward, apically pointed and unarmed.

^a Ill. N. A. Ent., Orth., 1872, pl. ix, fig. 8.

Color brown, usually with a pair of more or less distinct narrow pale subdorsal lines on the abdomen.

Measurements.—Length, pronotum, male and female, 6–7 mm.; posterior femora, male, 18–5, female, 17.5–20; elytra, male, 3, female, 0.5–1; ovipositor, 15–21; width, pronotum at posterior margin, male, 3.25, female, 3.5.

Type.—In the Scudder collection.

Specimens examined.—The types from northern California and specimens from Oregon, Washington, Wyoming, and British America.



FIG. 94.—STEIROXYS
BOREALIS. CERCUS
OF ADULT MALE.

The above description, with the exception of certain measurements, was drawn up from a male from northern California, from the old Uhler collection, and a female from Oregon, no locality given. These are Scudder's types. In the collection of the Museum of Comparative Zoology at Cambridge, Massachusetts, are a number of female specimens from Oregon in which the ovipositors are almost straight. The National Museum contains several specimens, all females, which are referred here. They are from Pullman, Washington, July and August; Jackson's Hole, Wyoming, August; Fort McLeod, British America, August and one without label. These specimens are referred here by locality rather than by any noticeable differences separating them from dark forms of *trilineata*.