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STUDIES IN THE WEEVILS OF THE WESTERN UNITED STATES NO. V: A NEW SPECIES OF MILODEROIDES⁽¹⁾

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Miloderoides vandykei Tanner, new species

FEMALE: Body robust, oblong, black, antennae club golden brown, vibrissae and setae yellowish brown, imbricate scales, white, black and brown interspersed, without a sheen which gives the body a dull appearance. Head one third longer than the prothorax; rostrum broad, the width two thirds the length, flattened above, with parallel sides, pronounced basal constrictions and with a well defined median longitudinal groove which is not covered with scales. The rostral sulcus terminates in a well developed frontal fovea. The subapical area slightly depressed and angular; the scrobes deep, terminating below the eyes which are slightly ovalute, black and prominent, the scape reaches beyond the middle of the eye. The first joint of the funiculus is longer than the third and fourth joints; the club is received in the cupped seventh funicular segment. Prothorax wider than long, (2.1 mm. : 1.9 mm.), the greatest width near the apical region; postocular lobes absent, vibrissae long reaching the eye; dorsal area tuberculate covered with black scales and brownish yellow setae which arise from the tubercles, lateral portion with a whitish vittae of scales. The elytra widest just before the middle; the surface flat; the striation and punctation obscured by the imbricate scales; the setae are similar in color and length on the rostrum, head, prothorax and elytra. There are two rows of scales on each elytral interval, and these arise in very small punctures. When the scales are removed the surface is black and shining. The setae of some of the males are longer and more dense than that of the females. This along with the expanded third tarsal segment distinguishes the males from the females. The legs are whitish except for the corbel spinules and the ventral tarsal spines which are black and the distal tips of the femora which are covered with black scales. The spinules of the tibial comb are more closely set and slightly longer than in other species of this genus. Before the tibial spine on the anterior leg there are 13 to 17 spinules. All the tibiae are mucronate; the ventral surface of the tarsal segments are covered with black spines in the females while the pad on the third segment is slightly silvery in color. The fourth segment is as long as the other three; the claws are widely separated and long.

The female genitalia is distinctive. The valvifer and coxite are not clearly separated, however, the styli are small but distinct. The eighth sternite is a helpful character in practically all the species of this and related genera. The male genitalia differs from other species in this genus due to the size and shape of the median orifice (No. 2). Total length of the prothorax and elytra is 6.0 mm. to 7.4 mm.

(1) Contribution No. 99, Department of Zoology and Entomology, Brigham Young University

MALES: The male is similar to the female except the setae of the elytra are usually much longer and more dense, and the third tarsal segment is expanded and padded with a slightly silvery colored thick setae. The length of the males is 5.6 mm. to 7.0 mm.

TYPE LOCALITY: The Virgin River at St. George, Washington County, Utah. The holotype, allotype and four paratypes were collected in 1892 by C. J. Weidt on the Virgin River south of St. George; and four paratypes were collected by Angus M. Woodbury at St. George in 1923. One paratype is being sent to each of the following: Dr. E. C. Van Dyke of the California Academy of Sciences, Mr. P. C. Ting of San Francisco, California, and to Mr. L. L. Buchanan of the U. S. National Museum, Washington, D. C. The remaining seven specimens are in the author's collection at Brigham Young University. The specimens collected by C. J. Weidt were in the Charles Leng collection. I am pleased to name the species in honor of Dr. Van Dyke who has done so much to promote the study of Entomology and especially the study of the Coleoptera of the Western United States.

DISCUSSION: In the accompanying illustrations there are drawings of the corbel of the anterior leg of the three species of the genus *Miloderoides*. Number 3 shows the inner surface of the left corbel of *M. vandyki* with the tarsus removed. There are 13 to 17 spinules in the distal comb up to the tibial spine, then one or two spinule just below and a little in from the tibial spine, followed by a row of fine long setae and then 4 to 6 close set long spinules in the anterior comb. While the number of spinules are variable in the specimens of this species, there are more than in *maculatus*. In the two specimens of *maculatus* which I have examined the maximum number of spinules in the distal comb is 10 and in the anterior comb 3 to 4 (No. 5). In both of these species the spinules are black and long while in *cinereus* they are amber colored and most of the distal comb ones are short and blunt (No. 4).

In a previous paper⁽²⁾ a drawing of the female genitalia of *M. vandykei* was reported as *Cimbochera buchanani*, due to a mixing of specimens of these two species. This should have been avoided, however, since the genitalia of the two genera are fundamentally different. This has been pointed out by Mr. Ting in his useful paper.⁽³⁾ In order that I may correct this error a drawing of the genitalia of *buchanani* is included in this study. The genital structures of 4 speci-

(2) Tanner, Vasco M., 1941. Studies in the Weevils of the Western United States No. IV: A New Species of *Cimbochera*. Great Basin Nat. Vol. II, No. 1, pp. 29-32.

(3) Ting, P. C., 1940. Revisional Notes Concerned with *Cimbochera* and Related Genera. Bull. So. Calif. Acad. Sci., Vol. 39, Part 2, pp. 128-157.

mens have been studied. I now have 18 specimens of *buchanani* in the collection. These are from San Maroial, New Mexico (1 paratype from Mr. Ting); Santa Fe, New Mexico (1); El Paso, Texas (12 from the Charles Leng Collection); Peach Springs, Arizona (2 from Leng Collection); and Grand Junction, Colorado (2).

The structures which I have called the styli in *C. buchanaui* and *petersoni* are considered as extensions of the coxites by Ting. From my observation of these structures they seem to be movable distinct structural units. In *buchanaui* it appears that there is a baculum extending from the base of the stylus into the coxite. This in some specimens seems to be continuous with and a part of the coxite. By making a glycerine mount of these structures and studying them under a compound microscope these structures may be more readily observed. Here we have a different type of stylus to that found in

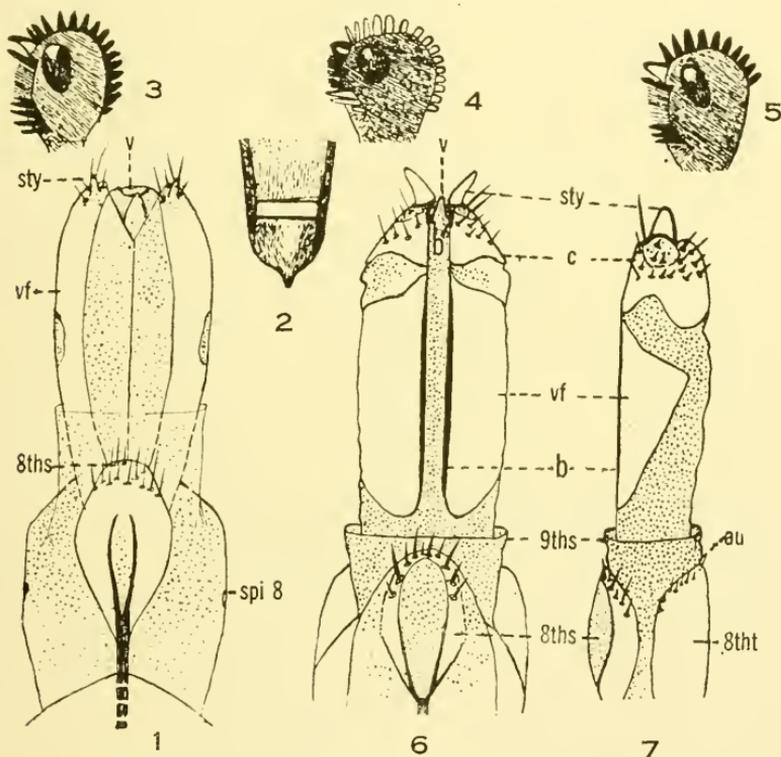


Figure I. (1) Ventral view of the female genitalia of *Miloderoides vandykei*; (2) Male genitalia of *M. vandykei*; (3) Anterior corbel showing spinules of the distal and anterior combs of *M. vandykei*; (4) spinules of the combs on the anterior tibia of *M. cinereus*; (5) some of *M. maculatus*; (6) and (7) ventral and lateral view of the female genitalia *Cimbochera buchanaui*. sty—stylus; vf—valvifer; 8ths—eighth sternite; spi 8—eighth spinacle; c—coxite; b—baculum; 9ths—ninth sternite; au—anus; v—vulva.

vandykei and many other weevils and families of Coleoptera. In some of the Cicindelidae and Carabidae the styli are similar to what we have in this case. The structures called the styli in *Cimbochera* are not setiferous as usual, but they are movable and surrounded by setae which arise in both the membranous and sclerotized surrounding coxite. The styli in *buchanani* are longer and stand more erect than in *petersoni*. On several of the specimens there is a ventral inner sclerotization of the valvifer which constitutes a baculum, this is as Ting observed not so pronounced as in *pauper*. The eighth sternite is different from other species of *Cimbochera* which I have studied. The genitalia of *buchanani* and *petersoni* are similar in many respects but distinctive in others which renders them useful in classification.

Three species are now ascribed to the genus *Miloderoides*. They may be separated as follows:

- (1) Rostrum without triangular shaped depression in subapical area. Corbel spinules black well spaced, 10 in distal comb; setae long, blackish and brownish on head, prothorax and elytra. Antenna club blackish, scales gray and dark brown mottled with a sheen; eighth sternite less sclerotized; size 5.7 mm. to 5.9 mm.
.....*maculatus* Van Dyke
- Corbel spinules black fairly closely set, 17 in the distal comb; setae short, and golden on head, prothorax and elytra. Antenna club golden brown; scales white, gray and black intermixed without a sheen given a dull lead color; eighth sternite more sclerotized. Size 7.0 mm. to 7.6 mm.*vandykei* new species
- (2) Rostrum with subapical area depressed, triangular shaped. Corbel spinules, blunt amber colored. 15 in distal comb; setae short and golden; scales gray and reddish with a distinct sheen. Size 7.2 mm.*cinereus* (Van Dyke)