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**A NEW SPECIES OF *NEELIDES* (COLLEMBOLA: NEELIDAE)
FROM THE UNITED STATES¹**Ernest C. Bernard²

This paper is comprised of the description of a new species of *Neelides* *Caroli* (1912) recovered from moss. It becomes only the third described species of the genus. Specimens were recovered by a sugar flotation-centrifugation method (Jenkins, 1964), mounted, and characterized with the aid of a camera lucida. The holotype, some paratypes, and five specimens in 95% ethyl alcohol will be deposited in the Entomology Museum, Michigan State University, East Lansing, Michigan, 48824.

Neelides snideri, new species

Coloration.—Specimens in alcohol white with a varying amount of black speckling on the head, thorax, and abdomen (Fig. 1), thus giving them a grayish appearance. Speckles generally absent from the appendages. The speckles of specimens treated with NaOH disperse to give a lavender color. Specimens observed under dark-field illumination appear to have brick-red speckling.

Morphological Description.—Length 176 to 277 μm with a mean of 234 μm ($n = 15$).

Head hypognathous, eyes absent. Antennae only about half the length of the head, the ratio of segments I:II:III:IV as 10:11:17:15. Ant. III with subapical sensory area composed of a pair of ovate sense rods flanked on either side by a long sensilla (Fig. 6). Ventrad of the outer sensilla is a tiny spine set in a shallow depression. Ant. IV with four sensory setae, one of these slightly thicker than the others; two thin subterminal sensillae present; no terminal sense organ or papilla seen.

Labrum (Fig. 2) quadrate with three or four apparently flattened and furcate setae; subapically, labrum with a transverse dorsal row of extremely fine filaments extending forward and curving ventrally. Proximally, labrum with a median seta, and on either side, four setae on an irregular tubercle.

Mandible (Fig. 3) with strong molar area and five to seven apical teeth, the proximal tooth on the shaft sometimes bifurcate. Maxilla (Fig. 4) well-developed, elongate, with five recurved teeth on the inner edge and a long lamellar structure with about eight ridges running proximally with the fifth inner tooth at its apex; dorsally, a five-toothed process; ventrally, two large transversely ridged teeth; apical part of maxilla with two comb-like rows of fine setae, a dorsal subapical row recurved ventrally, and an apical row recurved dorsally.

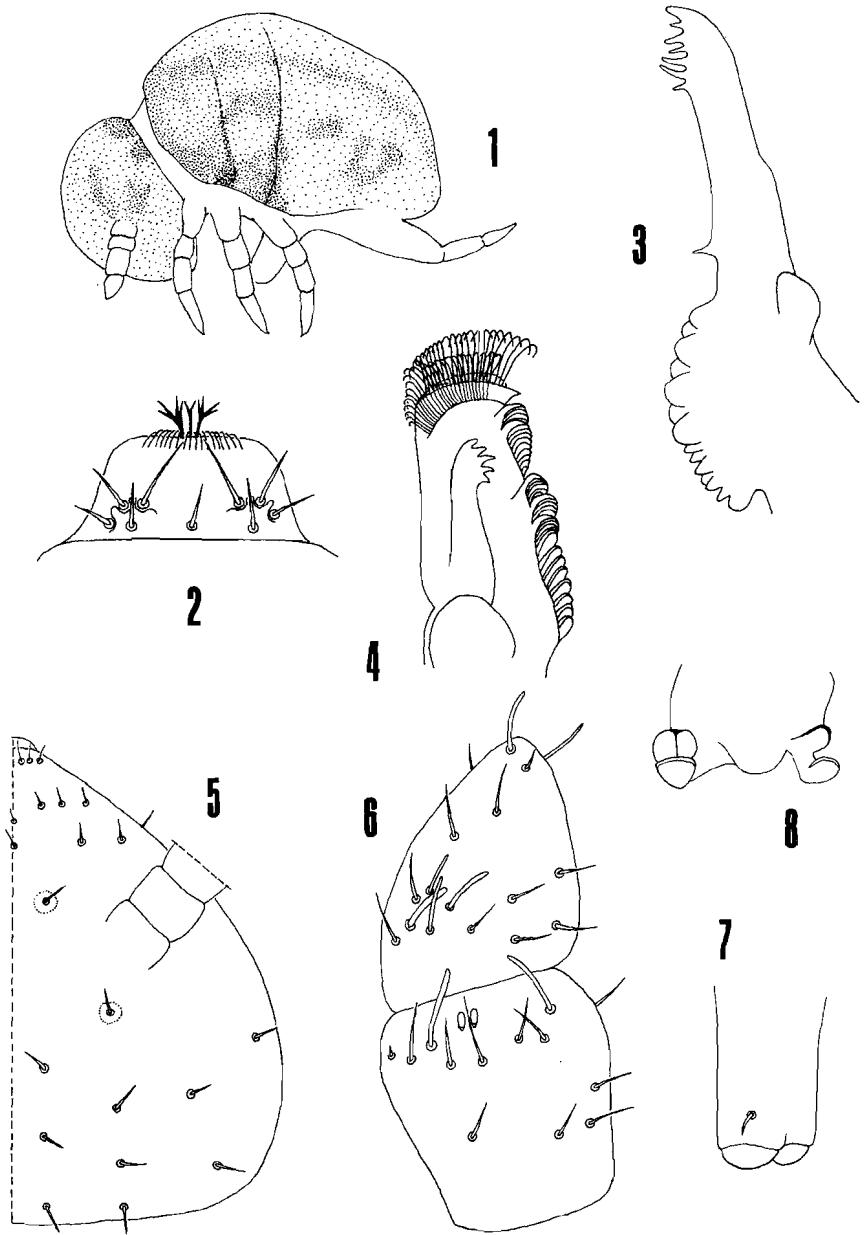
Prothorax reduced. Femur of front leg with a short, thick, curving seta on the inner side. Tenent hairs absent. Ungues of front and middle legs (Fig. 9) long and fairly thin, with two basal lateral teeth, and usually without an inner tooth; when present, inner tooth very small and difficult to see. Unguiculi of the fore- and middle legs only half the length of the unguis, with a broad inner lamella, untoothed. Unguis of the hind leg (Fig. 10) shorter and wider, with two basal lateral teeth but always without an inner tooth. Hind unguiculus lanceolate, nearly as large as unguis, very broad and without teeth.

Ventral tube cylindrical (Fig. 7), the short vesicles smooth, body of the tube with 1 + 1 or 2 + 2 setae. Retinaculum without setae, the rami bidentate (Fig. 8).

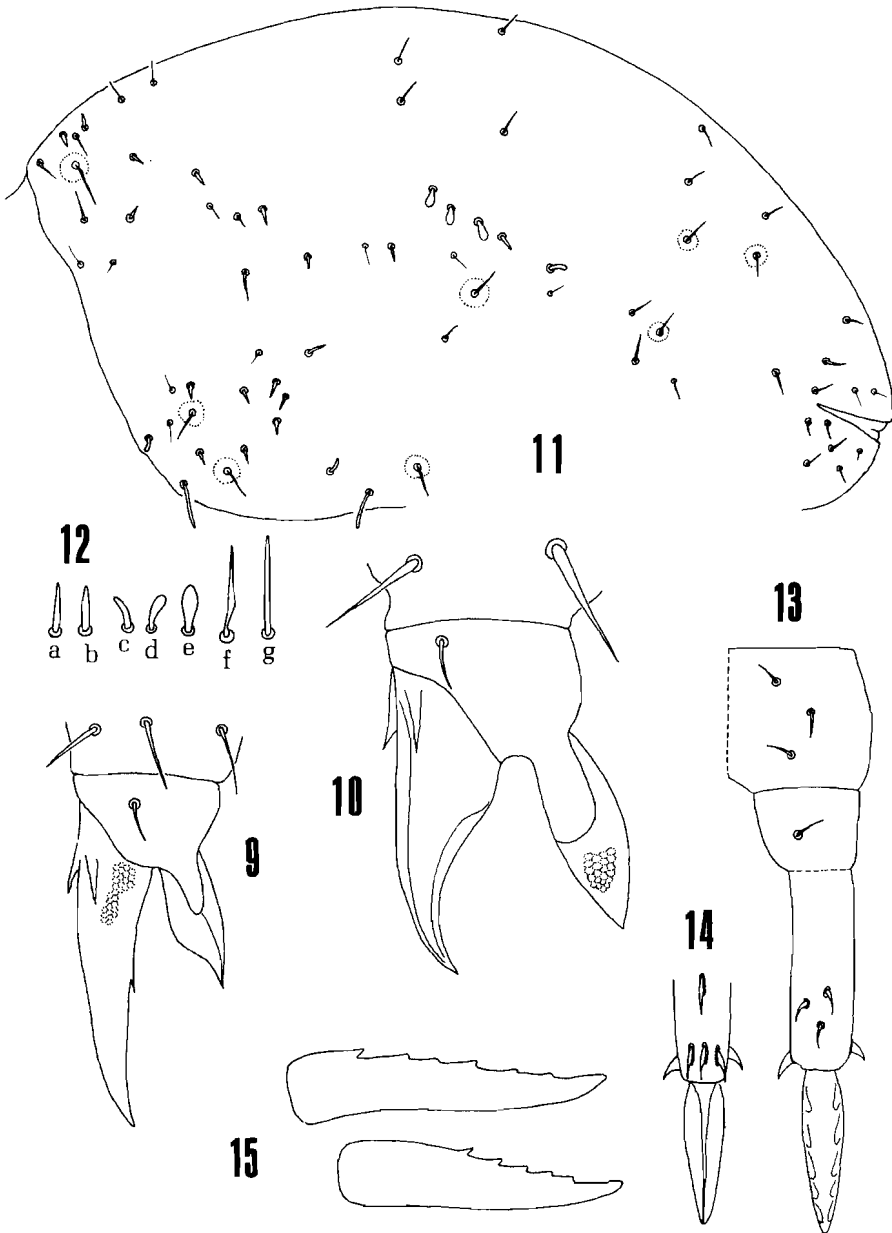
Furcula (Fig. 13) about one-third the length of the body without head. Ratio of the manubrium:dens:muco as 8:13:8. Manubrium broader than long, with 3 + 3 setae dorsally. Dens divided into a short proximal part and a longer, thinner distal part;

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Figs. 1-8. *Neelides snideri*, n.sp. Fig. 1. Lateral view. Fig. 2. Dorsal view of labrum. Fig. 3. Mandible. Fig. 4. Maxilla, dorsal view. Fig. 5. Chaetotaxy of head, dorsal view, right side. Fig. 6. Antennal segments III-IV. Fig. 7. Ventral tube. Fig. 8. Retinaculum.



Figs. 9-15. *Neelides snideri*, n.sp. Fig. 9. Claw of front leg. Fig. 10. Claw of hind leg. Fig. 11. Chaetotaxy of left side. Fig. 12. Forms of sensillae: a-d. body sensillae; e. clavate sensilla from Abd. 1; f. quill-like sensilla of sensory areas; g. subventral sensilla from near coxal bases. Fig. 13. Right half of furcula, dorsal view. Fig. 14. Distal portion of mucrodens, ventral view. Fig. 15. Lateral profiles of mucrones.

proximal part with one dorsal seta; distal part with two dorsal fanera-like setae and one ventral fanera medially; one dorsal seta subapically; two lateral and three ventral fanerae apically; proximal fanera-like seta absent. Mucro (Fig. 13-15) tapering, both dorsal edges toothed, with 5-9 teeth.

Sensory areas rudimentary, distinguishable by a weak circle around the seta, caused by a disruption of the cuticular granulation. Sensory areas present in the following places: on the head, anteromedially and behind the antennae (Fig. 5); on Th. II, dorsomedially, sublaterally above the coxa; on Th. III, subventrally above the coxa; Abd. I, laterally; and Abd. III-IV, three laterally, arranged in a triangle (Fig. 11).

Setae and sensillae sparse and short (Fig. 11); prothorax naked. Th. II-III and the abdomen with variously modified sensillae (Fig. 12), the most prominent of these being the three clavate sensillae of Abd. I, the relatively long sensillae near the coxae, and the quill-like sensillae of the sensory areas.

Diagnosis.—*N. snideri*, n.sp., is similar in general characteristics to the other species of the genus, *N. minutus* (Folsom, 1901) and *N. folsomi* Caroli, 1912, but differs on a number of points: size minute, 176-277 μm [*N. minutus*, 269-640 μm (Bonet, 1947); *N. folsomi*, 400 μm]; hind unguiculus large (not so in the other species); mucro with 5-9 teeth (*N. minutus*, 10-12; *N. folsomi*, 10); proximal fanera-like seta of the dens absent (present in the other species).

It is my pleasure to name this new species after the North American collembolist Dr. R. J. Snider.

Collection Data.—April 13, 1974, the holotype and nine paratypes, and May 19, 1974, 19 additional specimens, all collected at Monahan Lake, Livingston County, Michigan, from various species of moss growing on soil or dead stumps, E. Bernard, collector.

LITERATURE CITED

- Bonet, F. 1947. Monografia de la familia Neelidae (Collembola). Rev. Soc. Mex. Hist. Nat. 8:131-192.
- Caroli, E. 1912. Collembola. 1. Su di un nuovo genere di Neelidae. Annuario Musee. Zool. della R. Univ. Napoli (N.S.) Suppl. Fauna degli Astroni. No. 4, p. 1-5.
- Folsom, J. W. 1901. Review of the Collembola genus *Neelus* and description of *N. minutus* n.sp. Psyche 9:219-222.
- Jenkins, W. R. 1964. A rapid centrifugal-flotation technique for separating nematodes from soil. Plant Dis. Rep. 48:692.