

DASYDYTES MONILE, A NEW SPECIES OF GASTROTRICH FROM ILLINOIS

Ronald G. Horlick
Department of Oceanography, The Florida State University
Tallahassee, Florida

ABSTRACT

A new species of gastrotrich from a small glacial remnant pond in north-eastern Illinois is reported.

INTRODUCTION

The genus Dasydytes was created by Gosse (1851) to include two species that he believed to be rotifers. Stokes (1887), however, recognized that the two species of Dasydytes described by Gosse, as well as one described by himself, belonged to the phylum Gastrotricha rather than the phylum Rotifera. Only two of the dozen or so described species in the genus Dasydytes, D. saltitans Stokes (1887) and D. oöeides Brunson (1950), have been previously reported from the United States. Besides these two formally named species, Krivanek and Krivanek (1960) reported the discovery of one or more new species of Dasydytes from Louisiana.

METHODS AND MATERIALS

Water, detritus, vegetation and sediment samples were taken from a small eutrophic, glacial remnant pond in north-eastern Illinois. In the laboratory, the samples were transferred from wide mouthed pint collecting jars to glass stacking dishes. The samples were observed using a dissecting microscope at 40 X. Gastrotrichs were extracted from the samples using a Pasteur pipette with a finely drawn tip. Anesthetization was accomplished by placing the animal in a small drop of water on a glass microscope slide along with a small amount of crystalline cocaine hydrochloride (Robbins, 1965). The gastrotrichs were fixed by inverting the slide over a bottle that contained a 2% solution of osmic acid (in water) for a period of ten seconds (Brunson, 1950). Permanent mounts were made using a variation of the glycerine jelly mounting method described by Pennak (1953). In using this method, glycerine jelly was heated to 45°C to liquify it. A small amount of the liquified jelly was transferred to a microscope slide that had been placed on a hotplate set at 45°C. A fixed gastrotrich was picked up, using an Irwin loop, and submerged into the liquified glycerine jelly. A cover slip

was placed on the drop and by the time the liquified jelly had spread out under the coverslip, the animal was completely perfused. This mounting method preserved gastrotrichs in a condition comparable to the more time consuming method of Pennak (op. cit.).

Measurements were made using a binocular microscope at 430 X and 1000 X with the aid of an ocular micrometer. The drawing was made freehand and verified with photographic evidence.

Dasydytes monile, Sp. Nov.

Definition: Total length 242 u; body length 138 u; pharynx length 41 u; head length 28 u; neck length 35 u; body width 30 u; head width 23 u; neck width 14 u; neck spine length 10 u - 15 u; body spine length 69 u - 115 u; caudal spines (or tactile bristles) length 18 u; head five lobed; anterior lobe of head extended forward; two pairs of tactile bristles on head; corona of long cephalic cilia; double ring of singularly bifurcate spines, of five spines each, equally placed along lateral margins of body; two additional long pairs of doubly bifurcate spines on posterior end; two pairs of non-bifurcate caudal spines (or tactile bristles).

Types: The holotype specimen and four paratype specimens are now in the author's collection. The holotype specimen is to be deposited in the United States National Museum, Washington, D.C. at a later date.

Type Locality: The holotype and paratype specimens were collected on November 19, 1968 at Swallow Cliff Pond (T. 37 N. - R. 12 E. - S. 8 - 1/4 S.E.) from a sample of surface water.

Discussion: Dasydytes monile Sp. Nov. was observed to use its trunk spines in maneuvering. The spines were extended out laterally from the sides of the body so as to slow the animal down and to act as a pivot when it changed direction. Dasydytes monile Sp. Nov. seemed quite at home when swimming and its long moveable spines are probably an adaptation for a pelagic mode of existence. This same type of swimming behavior was noticed by Stokes (1887) in his studies of Dasydytes saltitans and by Brunson (1950) in his observations of D. oöeides.

Dasydytes monile Sp. Nov. most closely resembles D. goniathrix Gosse (1851). The most noticeable features which differentiate D. monile Sp. Nov. from D. goniathrix are; the double ring of spines on the neck, the two pairs of crossed caudal spines (or tactile bristles) and the lack of long cephalic spines.

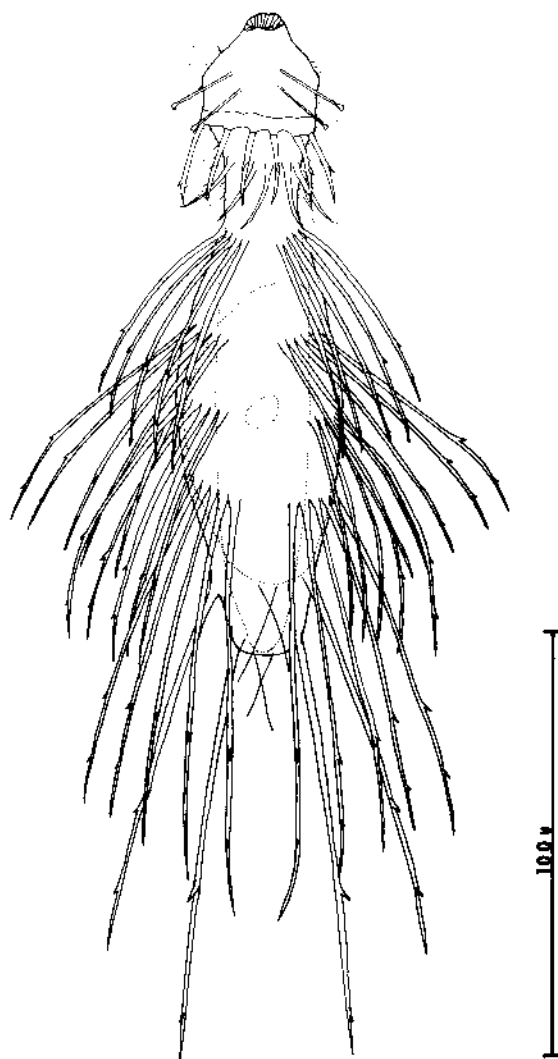


Fig. 1. Dasydytes monile, Sp. Nov.

ACKNOWLEDGEMENTS

This paper was taken from a thesis submitted to Loyola University, Chicago, Illinois in partial fulfillment of the requirements for the degree of Master of Science. I wish to thank Dr. Clyde Robbins for his direction and assistance of my thesis.

LITERATURE CITED

- Brunson, R.B. 1950. An Introduction to the Taxonomy of the Gastrotricha with a Study of Eighteen Species from Michigan. Trans. Am. Microscope Soc., 69: 325-352.
- Gosse, P. 1851. A Catalogue of Rotifera Found in Britain; with Descriptions of Five New Genera and Thirty-Two New Species. Ann. and Mag. Nat. Hist., 8 (2nd Ser.): 197-203.
- Krivanek, R.C. and J.O. Krivanek. 1960. Gastrotricha of the New Orleans Area. (Abstr.). Assoc. Southeastern Biol. Bull., 7(2): 32.
- Pennak, R.W. 1953. Fresh-Water Invertebrates of the United States. Roland Press Co., N.Y., p. 738.
- Robbins, C.E. 1965. Two Species of Gastrotricha (Aschelminthes) from Illinois. Trans. Amer Microscope Soc., 84(2): 260-263.
- Stokes, A.C. 1887. Observations on a New Dasydytes and a New Chaetonotus. Microscope, The., 7: 261-265.