

1947

## Paraperanema longicauda, n. g., n. sp. (Protozoa; Euglenida; Peranemidae)

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### Recommended Citation

Shawhan, Fae. M. and Jahn, Theodore L. (1947) "Paraperanema longicauda, n. g., n. sp. (Protozoa; Euglenida; Peranemidae)," *Proceedings of the Iowa Academy of Science*, 54(1), 369-371.  
Available at: <https://scholarworks.uni.edu/pias/vol54/iss1/57>

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## ***Paraperanema longicauda*, n. g., n. sp. (Protozoa; Euglenida; Peranemidae)**

FAE M. SHAWHAN AND THEODORE L. JAHN

The flagellate family Peranemidae contains a number of genera which are characterized by the fact that in locomotion the flagellum is held straight anteriorly for about two-thirds of its length and beats only near the tip, thereby giving rise to a smooth "gliding" or "creeping" motion of the organism without rotation or gyration. This type of locomotion is readily noted in the common type genus *Peranema*. Other characteristics of the genera ordinarily placed in the family are varied (review, Jahn, 1946). Some genera have a rigid body; others are plastic. Some have one or more rod-like structures, the so-called "pharyngeal rods" in the region of the gullet; others do not. Some are holozoic; others are saprozoic. There are even two genera (*Distigma* and *Sphenomonas*) ordinarily placed in the family in which the flagellum is not held directly anterior during locomotion. However, this type of flagellar activity has not been described in other orders of flagellates, and any flagellate possessing such activity may, at least for the present, be assigned to the family.

During the summer of 1943 the present authors observed a long thin flagellate with a long flagellum which was held anteriorly during locomotion. These flagellates were never found in large numbers but were present in material from the bottom of a putrid plant infusion for a period of several weeks. Usually not more than one (and sometimes none) was present in each fresh microscopic preparation. Therefore, our observations are not nearly so complete as we would like to have them. However, since the flagellate does not fit into the description of any of the known genera or species of the Peranemidae, the present description is offered as a matter of record.

### *Paraperanema longicauda*, n. g., n. sp.

Body very long and fusiform, much narrowed anteriorly, with posterior end gradually tapered into a long tail-like process which is not vibratile. Pellicle fairly rigid, the cell maintaining its shape during locomotion. This pellicle, although firm, is apparently very fragile, as several times individuals have been seen to burst when hit by another protozoan. They also give evidence that they cannot withstand pressure that does not seriously affect other protozoans. Movement smooth, flagellum extended as in *Peranema*. During locomotion there is a pronounced vibratory movement of the entire anterior end produced by the flagellar activity. Frequently rapid lashing of the flagellum pulls the body into rapid snake-like contortions which may persist for a number of minutes. The organism has the ability to turn upon itself in a very small area, rapidly bending almost double and frequently turning at right angles by bending of

the anterior end. It was never observed to swim freely; locomotion by "gliding" movement only.

The animal has a clear transparent appearance but very small granules are present in the cytoplasm. Paramylum bodies are both round and ovoid, but they vary in size, in the same and in different individuals. The larger paramylum bodies are 6-7 $\mu$  in diameter. The nucleus has been observed as a relatively clear object in the median central area. No pharyngeal rods.

No evidence of holozoic nutrition has been observed in any of the individuals studied. Therefore, it is presumed that nutrition is primarily saprozoic. More than is customary of most protozoa, this species seeks out, and will bury itself and remain for long periods of time under any debris available on the slide. Unusual size variation, from 35 to 125 $\mu$ . Habitat: fresh water with much vegetation taken from a pond near Iowa City, Iowa.

Individuals with all the characteristics described, except the long tail, were observed. In general appearance these resembled *Peranema*, but details of structure and behavior were similar to the other individuals described above. The figures on the plate show the great variation in form and size.

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*Literature Cited*

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