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On *Aeolosoma hemprichi* Ehrenberg, Obtained from Subterranean Water in Japan

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(With 1 Text-figure)

Recently a rich material of a minute aquatic oligochaete were sent in living state from Mr. S. Uéno in Kyoto University for identification. According to him, the material has been collected by Mr. S. Morimoto from a well at Hamasaki in Hyogo Prefecture. On examination the material seems to me to be identical with *Aeolosoma hemprichi* Ehrenberg, which has been first described in Europe and has been recorded from Africa, India¹⁾, North America, South America and Japan. In Japan, Kondo (1936) recorded it, but he gave no description except a brier note and rough sketches. It seems, therefore, to be necessary to describe my findings on the Japanese material examined by me. The findings are as follows.

Body, about 0.7–0.9 mm long in extended state in individuals which do not show any trace of a budding zone, and 1.0–1.5 mm long in those which ready to divide asexually. The former is provided segmentary with 7–9 sets of setal bundles, while the latter shows 6–9 (usually 6) sets of those in the anterior zoid and 2–7 sets in the posterior zoid. From the fact, it seems to be N=Segment VII–X. A setal bundle consists of 2–6 capillary setae which are distinguishable into long and short one. The both are mostly straight, having slight sigmoid curve. A long seta of a bundle was measured 90 μ long, while a short one in the same bundle was 50 μ long. In a bundle, both the long and short setae are more or less regularly situated, as a rule the long and short are to be alternate in position. Prostomium flat and broader than the succeeding segments. Its outline is circular or rounded triangular in the dorsal aspect. Ciliated pits are present, having a circular outline and about 10 μ in diameter. They are located at lateral sides and just closely behind the furrow which marks the posterior border of the prostomium. Oil-droplets, reddish orange in colour, usually spherical in shape and about 5–6 μ in diameter. They are present all over the body wall, being evenly distributed, except the ventral surface of the prostomium and the portion near the posterior end of the body. In the former, they are not distributed, while

1) Though some Indian specimens had been identified with the species by Stephenson (1909), they were referred to *A. kashyapi* as a new species by the same author in 1923.

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Fig. 1. *Aeolosoma hemprichi* Ehrenberg. Photograph of the anterior zoid of a living individual. ca. $\times 125$.

they are more or less accumulated in the latter, having larger diameter (reached to about 10μ). Cerebral ganglion, indented shallowly in front and deeply behind. Dilute portion of intestine begins in front of the third setal bundle, occupying Segments IV–VI. Nephridia begin to appear in the space between the second and third setal bundles. No. genital organs could not be observed.

As clear from this description, my specimens seem to be referable to *A. hemprichi* Ehrenberg, in comparison with the diagnosis of the species given by Michaelsen (1900), though the body length of my individuals is much smaller than that in Michaelsen's diagnosis. On the other hand, most of characteristics of my specimens agree closely with Marcus' (1944) *A. hemprichi* Ehrenberg. According to him, his specimens of Brasil is considerably smaller than the European ones.

A remarkable characteristic of *A. hemprichi* is the possession of reddish orange coloured oil-droplets. So far as I am aware, red to orange coloured oil-droplets are also present in *A. quaternarium* Ehrenberg, *A. kashyapi* Stephenson, *A. evelinae* Marcus (1944) and *A. japonica* Yamaguchi (1953). The present species seems to be easily distinguishable from *quaternarium* by the possession of long and short capillary setae, and from *kashyapi* by the presence of ciliated pits.¹⁾ On the other hand, *evelinae* has needles which are restricted to the

ventral bundles, while *japonica* is provided with special sigmoid setae with teathed distal end in the posterior part near the end of the body. Neither characteristic is present in the present species.

1) According to Marcus (1944), *A. kashyapi* is destitute of ciliated pits.

According to Kondo (1936), his Japanese specimens referred to the present species were found in all the course of water-works system and filtered water at Osaka city, while my specimens were collected from a well in Hyogo Prefecture. These habitats of the present species in Japan may be interesting to compare with the fact that this species has been known in subterranean water in Europe as reported by Cernovitov (1939).

In 1918, Kawamura gave figures of a Japanese worm, as *Aeolosoma* sp., without any description, which obtained from a filter pond in some water-works. According to his figures, there are long and short capillary setae, a budding zone is located behind Segment XVIII, and oil-droplets are present as usual in the genus but colouration of them is not shown. It is difficult, at present, to identify his worm, but it seems to be probable to be different from all the known species in Japan¹⁾. For this problem, further studies are required.

Finally, I wish to express my cordial thanks to Mr. S. Uéno and Mr. S. Morimoto for material, and to Prof. Tohru Uchida for his continuous guidance and criticism.

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1) *A. hemprichi* Ehrenberg, *A. niveum* Leidig, *A. bengalense* Stephenson and *A. japonica* Yamaguchi.