A new species of Archiannelida, *Trilobodrilus nipponicus* n. sp.[1]

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(*With two Textfigures*)

The genus *Trilobodrilus* containing the single species *T. heideri*, was created by Remane[2] in 1925 for the reception of a peculiar Archiannelid worm found at Helgoland in the North Sea. He placed it in the Family Dinophiliidae in the consideration of the absence of the parapodia and setae, and of the presence of the apical tactile hairs, ciliary bands on the certain body segments and the neurotrochal ciliary band. So far as we know, the genus has never been reported since that date.

Among the sand on the coastal line near the high tide mark of Akkeshi Bay it forms a peculiar biotop represented by abundance of the Archiannelid, *Saccocirrus major*, the Rhabdocoelid Turbellarian, *Thylacorhynchus* sp. and some nemerteans. On close inspection of the fauna a small species of Archiannelida was commonly found creeping about a flat surface, moving by means of the ciliated ventral groove which extends along the ventral surface of the body. The Archiannelid is undoubtedly referable to a new species belonging to the genus *Trilobodrilus*. The Archiannelids hitherto recorded from the Japanese waters are the following three species, two belonging to the Polygordiidae and one to the Saccocirridae, i.e. *Polygordius ijimai*, *P. pacificus* and *Saccocirrus major*.

Trilobodrilus nipponicus nov. sp.

The worm is small, vermiform and thread-like, tapering slightly at both ends. The body, 1.0–1.7 mm long and 0.1 mm wide at the

1) Contributions to the Akkeshi Marine Biological Station, No. 40.
2) Zool. Anz. Jahrg. 65, S. 15, 1925.

broadest portion, is nearly colourless and transparent except the stomach region which is pale green or yellowish brown in colour on

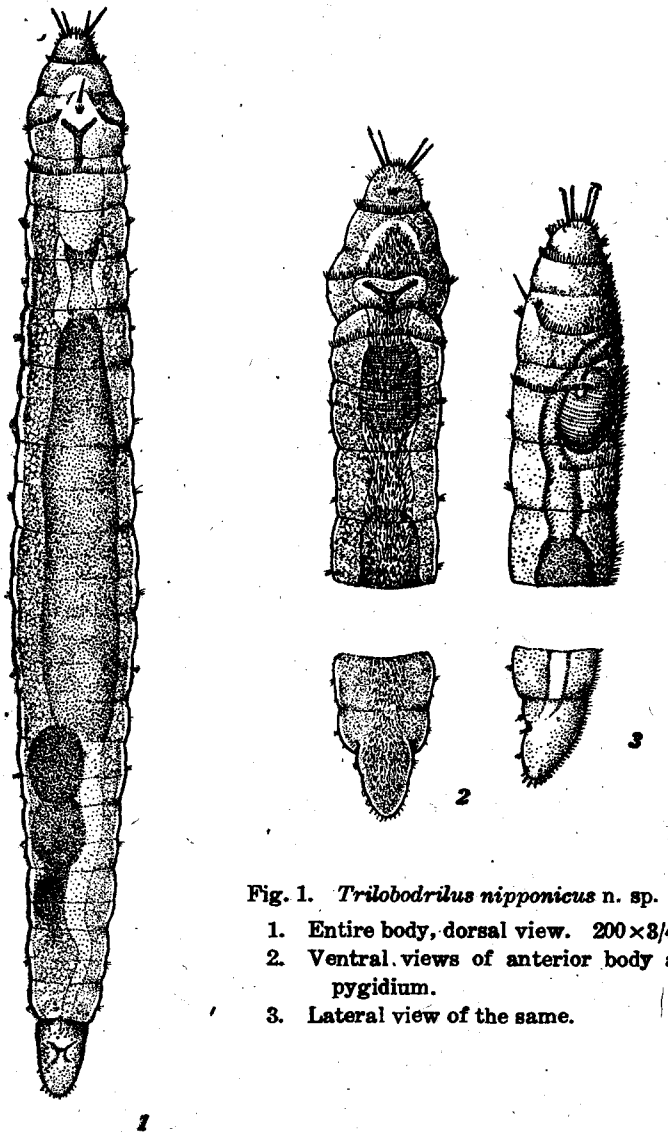

Fig. 1. *Trilobodrilus nipponicus* n. sp.
1. Entire body, dorsal view. 200×3/4
2. Ventral views of anterior body and pygidium.
3. Lateral view of the same.

account of its contents. The head is oval in front, bearing four rather long stiff tactile spines and a number of apical hairs. No eyes. The head is trilobate and divided into three portions by two lateral

furrows. In the second portion of the head is growing a single row of fine ciliary band completely surrounding the body. The second row of ciliary band occurs on the terminal portion of the head. It runs completely ventrally, but leaving a median gap on the dorsal surface. On the dorsal surface the ciliary band leads obliquely forwards along the lateral margin of the head forming a median folding. From the median gap of the ciliary band is arising a single rather stiff spine, behind which a tuft of fine tactile hairs is located. The occurrence of this single stiff spine on the median dorsal portion of the head is one of the striking features of this species. The first body segment bears a transverse row of fine ciliary band forming a continuous circle covering ventrally and dorsally. The second body segment bears also a row of extremely fine cilia which is interrupted by a broad dorsal gap. On the following segments there occurs no ciliary band as is shown in the genus *Dinophilus*, but a tuft of short tactile hairs is present on each segment. The pygidium is spoon-shaped, bearing a number of tactile hairs on the lateral border and a mass of fine cilia on the ventral surface. The epithelium of the pygidium contains a number of gland cells. As is often shown in the polychaete larvae the present worm bears also a median rather broad neurotrochal ciliary band. The segmentation of the body is more or less indistinct, as each segment of the posterior body is divided by one or two annuli. The body, however, consists seemingly of 13 segments excepting the head and pygidium.

The whole surface of the body is covered with very thin cuticle. Under the cuticle lies the epidermis cells universally single-layered. The ventral median furrow is formed of ciliated cells. Large gland cells are arranged in several rows on the anterior lobe of the head and on the ventral surface of the pygidium. The alimentary canal is straight and ciliated throughout. The vestilium is Y-shaped and leads into a ciliated oesophagus. A pharynx is a muscular protrusible organ which is oval in shape and is ventrally situated. The posterior end of the Y-shaped mouth extends to the anterior portion of the first body segment. The oesophagus stretchs backwards as far as the anterior border of the fourth body segment. The stomach is a large spacious sac occupying about six segments extending from the fourth to the ninth segment. The oesophagus and the stomach are in cross section wider than high. Immediately in front of the stomach lie a pair of large salivary glands. The intestine is narrower than

the stomach, nearly straight and ciliated, passing to the anus situated on the median dorsal surface of the pygidium. The cross section of the intestine is generally higher than wide. The nervous system consists of a brain and two longitudinal cords extending on either

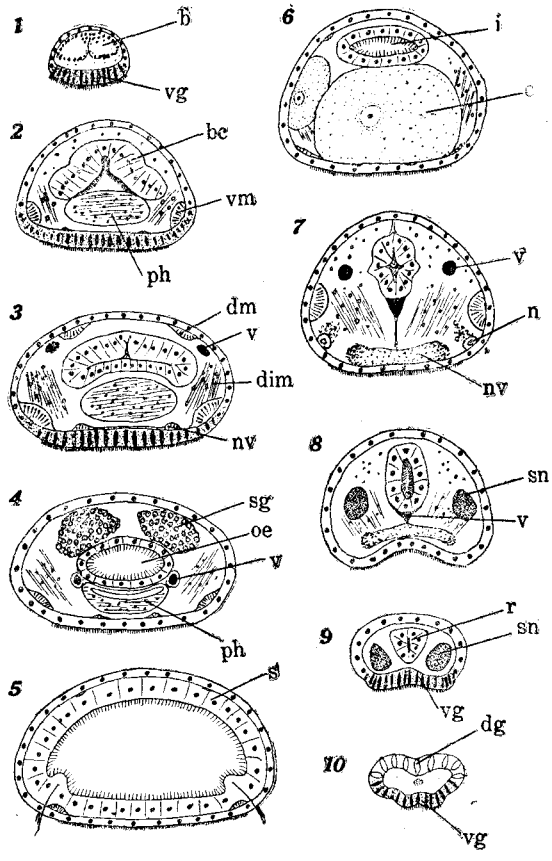

Fig. 2. Serial cross sections of *Trilobodrilus nipponicus* n. sp.; b brain, bc buccal cavity, dg dorsal glands, dim diagonal muscle, dm dorsal muscle, i intestine, n nephridium, nv nerve, o ovum, oe oesophagus, ph pharynx, r rectum, s stomach, sg salivary gland, sn sinus?, v vessel, vg ventral glands, vm ventral muscle.

side of the ventral portion. It adheres closely to the epidermis except the anterior portion. As the circulatory system a dorsal, a ventral and two lateral vessels are clearly observed. The four longitudinal muscles are prominent and attached to the epithelium in two

pairs, the dorsal being weaker than the ventral. The nephridia seem to be present at least in the first, seventh and ninth thoraxic segments. Sex separate. Two or three large ova are often found in the segments from about the ninth segment backwards. In these portions the alimentary canal is greatly suppressed by the ova. The larva develops directly from the egg and has no pelagic stage.

In the laboratory the worms creep actively on the bottom of the glass vessel as is shown in the turbellarians and they adhere to the bottom by their pygidium when a slight stimulus is given. It is easy to keep them alive in ordinary sea water for several days in a small peltri-dish.

Remarks: The present species is undoubtedly eligible for the genus *Trilobodrilus*. The occurrence of the ciliary band on the first and second body segment, the presence of an unique dorsal stiff spine on the head and the discontinuity of the second ciliary band on the head seem to be the important characteristics of the genus *Trilobodrilus*. The genus is sharply distinguished from *Dinophilus* in the shape of the head, in more number of segments and in the lack of eye-flecks and of ciliary girdles. Moreover, the present new form, when in locomotion, only creeps and never swims as *Dinophilus*.

The new form is easily distinguished from *T. heideri* in the possession of the solitary dorsal spine and of the ciliary bands on the thoraxic segments, and most distinctly in the form of the pygidium.