

Timmodrilus gen. n., a new genus from the family Enchytraeidae (Oligochaeta)

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Abstract. *Timmodrilus* gen. nov. and its type species, *T. oligoseta* sp. nov. are described from Estonia. The species *Enchytraeus christofferseni* RIGHI, 1975 is also placed in the new genus *Timmodrilus*, the main characteristics of which are: dorsal pores absent, brain convex anteriorly and slightly incised posteriorly. Setae and peptonephridia are of *Fridericia*-type. Anteseptale of nephridia consisting of funnel and a few canals, efferent duct arising ventrally, posteroventrally or terminally. Lymphocytes of two types. Spermatheca entally connecting with the oesophagus. The main characteristics of the new species are: the absence of the dorsal setae still the last 18-19 segments; the spermatheca has two sessile diverticulae.

In the year 1996 I got some soil samples from Estonia from Professor T. TIMM. During the study of the material a new species was found which belonged to an unknown genus named here *Timmodrilus*. The species *Enchytraeus christofferseni* RIGHI, 1975 is transferred to this genus. In the present paper the new genus and the new species are described.

Material and methods

Enchytraeid worms were collected from Estonia, Tartu County (Tartumaa), near the Vortsjarv Limnological Station, narrow flood-forest strip of *Alnus glutinosa* on the lowest lake terrace.

Two specimens have been examined, the description is based on the examination of live material and the living animals were recorded on videotape too (Sony CCD-IRIS, DXC 107 p colour video camera with Zeiss microscope). The worms were fixed in bouin and stored in 70 % ethanol. Measurements were taken on living worms.

Timmodrilus gen. nov.

Setae straight with ental hook, without nodulus. If the number of setae more than 2, the innermost setae of the bundles pairwise shorter than the outer ones. Headpore at 0/I, dorsal pores absent. Gradual transition between oesophagus and intestine. Oesophageal appendages and intestinal diverticula absent. Peptonephridia present. Blood colourless, dorsal vessel arising in the postclitellar region. Two types of lymphocytes present: oval large, nucleate cells and smaller, hyaline, anucleate ones. Anteseptal part of nephridia consists of funnel and coils of nephridial canal, postseptale oval, the efferent duct arising mid- and posteroventrally or terminally. Interstitial tissue of nephridia well-developed.

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Seminal vesicle may be present. Sperm funnel cylindrical. Penial bulb present. The spermathecae with or without diverticulae. The ectal duct long and well demarcated. Ental ducts communicate with the oesophagus.

The new genus shows similarities to *Fridericia* in type of peptonephridia, setae, lymphocytes and spermatheca, but differs from it in the absence of dorsal pores. *Timmodrilus* resembles *Enchytraeus*, too, but differs from it in the type of peptonephridia, the disposition of setae, the two types of lymphocytes and the form of spermatheca.

Type species. *Timmodrilus oligoseta* sp. n.

Two species belong to the genus:

T. christofferseni (RIGHI, 1975) comb. nov.

Syn. *Enchytraeus christofferseni* RIGHI, 1975

T. oligoseta sp. n.

***Timmodrilus oligoseta* sp. n.**

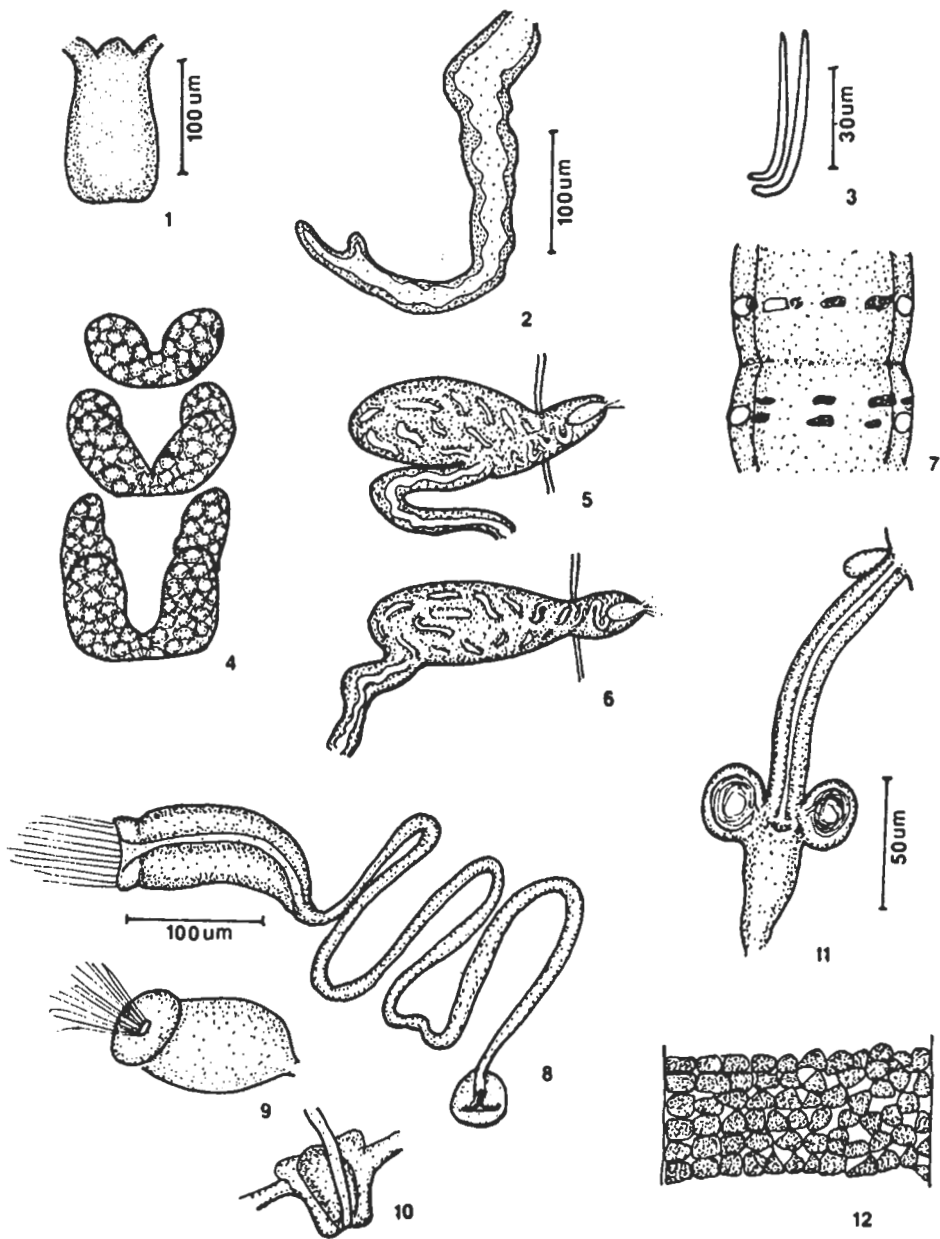
(Figs. 1-12)

External characters. Medium-sized species. Holotype: segments 39, length 10.1 mm, the diameter at segment VIII is 0.29 mm, and at the clitellum 0.35. Paratype: segments 36, length 7.8 mm and 0.25/0.28 mm in width. Colour whitish. The worms are rather stiff and tolerate even the pressure of a larger cover slip well. Setae straight with ental hook (Fig 3). All setal bundles contain 2 setae, but the dorsal bundles absent in II - XX or XXV. Both dorsal and ventral bundles absent on XII. Setal formula: 0 - 0, 2 : 2 - 2. Length of praecitellar setae 28-36 μm , on the posterior segments 45-49 μm . Head pore at 0/I, dorsal pores absent. Cutaneous glands arranged in 1-2 transverse rows of big (14 μm) transparent and brown cells (Fig. 7). Clitellum on segments XII-1/2 XIII, well developed, with large gland cells close together ventrally but irregularly arranged dorsally (Fig. 12).

Internal characters. Brain (Fig. 1) twice as long as wide, the posterior end slightly incised and anteriorly convex. Peptonephridia (Fig. 2) long, extending backwards to VI, unbranched or with 1-2 short terminal branches. Gradual transition between oesophagus and intestine. Chloragogen cells present from VI, their size 16-40 μm , with refractive globules, forming a thin layer on gut. Three pairs of primary septal glands all of them united dorsally, on septa IV/V-VI/VII and the second and third pairs have ventral lobes (Fig. 4). Secunder septal glands absent.

The blood is colourless, the dorsal vessel arises in segment XVII. The first nephridia in VI/VII. The anteseptal section of nephridia consists of a funnel and some nephridial canals, the postseptale section is about 2 times longer than the preseptale, the efferent duct arising mid-ventrally (Fig. 5) and in the posterior segments of body postero-ventrally (Fig 6). Lymphocytes are nucleated, transparent, elongate oval and granulated (16-32 μm long), 1-2 very small (3-6 μm) anucleated hyalin corpuscles can be found in coelom too. The low number of these small corpuscles makes it uncertain to consider them as lymphocytes. In future the study of a greater material could solve this problem.

Seminal vesicle small. Sperm funnel (Fig. 8, 9) cylindrical, about 2 times longer than wide (120-150 μm long and 52-88 μm wide), the distinct collar slightly narrower than the funnel itself. The duct is not too long, irregularly coiled in XII, diameter 5-7 μm (Fig. 8). Penial bulb small, poorly developed (Fig. 10). Two mature eggs present at a time. The ampulla of spermatheca small, with two distinct globular sessile diverticula. Ental duct opening separately, but near together into the oesophagus. Ectal duct long (125-160 μm



Figs. 1–12. *Timmodrilus oligoseta* sp. n. 1: brain, 2: peptonephridia, 3: setae, 4: septal glands, 5: nephridium in preclitellar segments, 6: nephridium in postclitellar segments, 7: cutaneous glands, 8: sperm funnel with the sperm duct, 9: sperm funnel, 10: penial bulb, 11: spermatheca, 12: gland cells of clitellum, lateral view (d: dorsal side, v: ventral side)

long and about 20 μm wide), well demarcated. One sessile ectal gland (24 μm long) present at the orifice (Fig. 11).

Discussion. The new species is similar to *T. christofferseni* (RIGHI, 1975) in the long tubular peptonephridia (but the latest forms a coil), in the spermatheca: both have a long, demarcated ectal duct (but the spermatheca of *T. christofferseni* has not diverticula, and the ental ducts merging before the connection with oesophagus). In addition, *T. oligoseta* differs from *T. christofferseni* in the number of setae, and in the types of lymphocytes. The new species has very few anucleated hyalin corpuscles.

Type-locality. Estonia, Tartu County (Tartumaa), the former Petseri Farm near the Vortsjarv Limnological Station, eastern shore of Lake Vortsjarv, narrow flood-forest strip of *Alnus glutinosa* on the lowest lake terrace, with scarce *Filipendula*, *Urtica* and *Lysimachia*.

Holotype. T.1, in ethanol, leg.: 21.06.1996. Dr. T. TIMM. Det. 2.03.1997. Paratype: P. 37, one specimen in ethanol, leg.: 21.06.1996. Dr. T. TIMM. Det. 16.10.1996. Type material is deposited in the collection of the author, Department of Systematic Zoology and Ecology, Loránd Eötvös University, Budapest.

Derivatio nominis. The genus is named in honour of Professor TARMO TIMM, who collected the material. The specific name "*oligoseta*" refers to the absence resp. lower number of setae; *oligoseta* (Latin) = a few setae.

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