

ESTONIAN ENCHYTRAEIDAE (OLIGOCHAETA)

1. Terrestrial Enchytraeidae from the Võrtsjärv Limnological Station and from Puurmani

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Abstract. This is the first survey of terrestrial Enchytraeidae in Estonia. At two localities, the Võrtsjärv Limnological Station and Puurmani, altogether 33 nominal species and several unidentified taxa were found. Among them, 30 nominal taxa are new for Estonia. One species, *Achaeta petseri* Dózsa-Farkas, is new for science. The description of *Fridericia reducata* Dózsa-Farkas, 1974, a species previously known only from Hungarian caves, is emended. A diverse fauna was collected in Puurmani and in the open landscape near the Võrtsjärv Limnological Station, while the acid soils of forest and bog sites at the latter locality were mostly inhabited by *Cognettia sphagnetorum* (Vejdovský, 1878).

Key words: Oligochaeta, Enchytraeidae, soil fauna, Estonia.

INTRODUCTION

The Enchytraeidae are a family of small annelid worms belonging to the class Clitellata, subclass Oligochaeta. They are common inhabitants of most types of soil in terrestrial habitats, as well as of the marine littoral, but are also found on the bottom of marine and fresh water bodies. More than 680 enchytraeid species are known world-wide, while the species number reported from some better-studied European countries can reach about one hundred; for example, at least 91 in Italy (Rota 1995) or 94 in Sweden (Erséus et al. in press; Rota & Healy in press; Rota et al. in press).

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The fauna of aquatic oligochaetes is well studied in Estonia (Timm 1970, 1987). Enchytraeids, being largely terrestrial and requiring different methods of collection and identification, have remained almost unknown. *Enchytraeus albidus* Henle, 1837 was cultivated as food for salmon fry in fish hatcheries around the former Soviet Union, including Estonian ones, for example, in Keila-Joa; the culture is also maintained at the Võrtsjärv Limnological Station. Timm (1965) misidentified (*sic!*) an unknown enchytraeid species (probably a *Lumbricillus* sp.) from the Baltic Sea as *Marionina spicula* (Leuckart, 1847). Later, *Marionina riparia* (Bretscher, 1899) was reported from the sandy bottom of Lake Peipsi and some other lakes (Timm 1979), *Mesenchytraeus armatus* (Levinsen, 1884) from the spring pool of Vetiku in North Estonia (Timm 1987), and *Cognettia sphagnetorum* (Vejdovský, 1878) from Lake Tānavjärv (Timm et al. 1997).

This paper is intended to be the first in a series dealing with the Estonian enchytraeid fauna.

MATERIAL AND METHODS

Two series of qualitative soil samples were collected by T. Timm at the Võrtsjärv Limnological Station and in Purmani in 1996. The two localities represent different landscapes and soil types.

The Limnological Station is situated on the eastern shore of Lake Võrtsjärv, about 50 km SW from the town of Tartu, in a moraine-covered sandstone area with acid soils characteristic of South Estonia; the ground is covered with seminatural mixed forests alternating with small cultivated plots. Ten triple samples, taken on 21 June 1996, were designated as follows:

- L-1. North of the main building of the Limnological Station, sparse *Betula verrucosa* forest on the upper lake terrace. *Pteridium*, *Galium*, *Oxalis*, *Majanthemum*.
- L-2. North of the main building, humid mixed forest of *Picea abies* and *Betula verrucosa*. *Oxalis*, *Asarum*.
- L-3. North of the main building, humid mixed forest of *Pinus sylvestris* and *Betula verrucosa*. Moss cover with hummocks, *Myrtillus*, *Melampyrum*, *Pteridium*.
- L-4. East of the main building, mixed forest of *Picea abies*, *Pinus sylvestris*, and *Betula verrucosa* on a drumlin (moraine ridge). Various grasses, *Fragaria*, *Convallaria*, *Majanthemum*, *Oxalis*, *Rubus*, *Melampyrum*.
- L-5. 2 km east of the Limnological Station, *Pinus sylvestris* forest on ancient dunes. Sparse moss and lichen cover, *Vaccinium vitis-idaea*, *Melampyrum*.
- L-6. 2 km east of the Limnological Station, bog forest of *Pinus sylvestris* with hummocky *Sphagnum* cover. *Ledum*, *Vaccinium vitis-idaea*, *Empetrum*, *Chaemadaphne*, *Calluna*, *Rubus*.

- L-7. 1 km south of the Limnological Station, abandoned field on a drumlin. Grasses, *Silene*, *Potentilla*, *Galega*, *Artemisia*.
- L-8. At dwelling houses of the Limnological Station in the former Petseri farm, small moist meadow between young birch trees. Grasses, *Cirsium*, *Crepis*, *Filipendula*, *Taraxacum*, *Ranunculus*, *Galium*, *Lychnis*.
- L-9. Low, moist lake terrace at the former Petseri farm, with a strip of *Alnus glutinosa* forest. *Filipendula*, *Urtica*, *Lysimachia*.
- L-10. Orchard at the former Petseri farm, lawn. Grasses, *Taraxacum*, *Trifolium*, *Alchemilla*.

The other locality, Puurmani, is a large village about 40 km northwest of Tartu, on the Tallinn–Tartu highway and along the banks of the Pedja River, surrounded by mixed forests. The soils are rich in alluvial clays and carbonate, as is characteristic of the limestone areas of North Estonia. Ten triple samples were taken also here on 30 August 1996, and designated as follows:

- P-1. 1 km northwest of Puurmani, mixed forest of *Picea abies*, *Alnus incana*, and *Betula verrucosa* near the highway. Mosses, *Oxalis*.
- P-2. Near the former sampling site, unmown meadow shaded by a forest edge. Grasses, *Carex*, *Filipendula*, *Cirsium*, *Geranium*.
- P-3. Near the former sites, moist sloping bank of a drained, intermittent forest brook under *Prunus padus*, *Tilia cordata*, and *Ulmus laevis*. Sparse mosses, *Aegopodium*, *Geum*.
- P-4. East of Kaave Stream, dry ditch in a cattle paddock with *Alnus incana*. Abundant twigs, *Myosotis*, *Lysimachia*, *Caltha*.
- P-5. Very moist bank of Kaave Stream, with tussocks of *Carex*. *Equisetum*, *Phalaris*, *Galium*.
- P-6. Moist bank of a small artificial pond near a petrol station, grazed by cattle. Grasses, *Carex*, *Potentilla*.
- P-7. Old manor park with *Ulmus scabra*, *Acer platanoides*, *Tilia cordata*. Sparse mown cover of grasses, *Aegopodium*, *Cirsium*, *Oxalis*, *Lysimachia*.
- P-8. 0.5 km southwest of the village, alluvial grazed meadow on the bank of the Pedja River. Unmown grasses, *Cirsium*, *Alchemilla*, *Achillea*.
- P-9. Near the former sampling site but on the bottom of a dry oxbow bend overgrown with brushwood of *Alnus incana* and *Prunus padus*, without herbs.
- P-10. Near the former two but on the moist sloping river bank. *Acorus*, *Phalaris*, *Carex*, *Sium*.

The samples were taken with a small spade from the upper 10–15 cm of soil, every replica of a triple sample containing about 100–500 cm³ of soil and litter. The samples were put into small plastic bags. In the lab, the bags were maintained (open for access of air, and slightly sprinkled with water) in a refrigerator at about 5°C until the extraction of worms. The series from the Limnological Station,

altogether 814 specimens, were treated and identified by Klara Dózsa-Farkas in the Department of Systematic Zoology and Ecology of the Eötvös Lorand University, Budapest, October 1996–October 1997. The material from Puurmani was treated and identified, without any counting of separate individuals, by Brenda Healy and Emilia Rota in the Swedish Museum of Natural History, Stockholm, September 1996; further taxonomic studies were carried out later at the Department of Evolutionary Biology, University of Siena, Italy.

The wet funnel method (O'Connor 1955) was used for the extraction of the worms. Identification and descriptions were made originally on living individuals but later also on mounted material to confirm identifications, under a light microscope. Voucher specimens mounted in Canada balsam are maintained in the Eötvös Lorand University, Budapest, at the Vörtsjärv Limnological Station, and in E. Rota's personal collection. Descriptions of one new genus and species found in this material were earlier published by Dózsa-Farkas (1997).

RESULTS

Species list with localities

- Achaeta eiseni* Vejdovský, 1878. P-7.
A. petseri Dózsa-Farkas, n. sp. L-9, L-10.
Bryodrilus divarticulatus Cernosvitov, 1929. L-9.
Bryodrilus sp. juv. L-10.
Buchholzia appendiculata (Buchholz, 1862). L-8, L-10, P-1, P-6, P-8.
Buchholzia sp. juv. L-1, L-2, L-4, L-7, L-8, L-9, L-10.
Cognettia glandulosa (Michaelsen, 1888). L-8, L-9, P-2, P-4, P-9.
Cognettia sphagnetorum (Vejdovský, 1878). L-1, L-2, L-3, L-4, L-5, L-6, P-1, P-3.
Enchytraeus buchholzi Vejdovský, 1878 s.l. L-2, L-4, L-7, L-8, L-9, L-10, P-6, P-8, P-10.
E. bulbosus Nielsen et Christensen, 1963. L-10, P-7.
E. christenseni Dózsa-Farkas, 1992 (= *E. minutus* Nielsen et Christensen, 1961). L-7, L-8, L-9, L-10, P-1, P-6, P-10.
Enchytraeus sp. juv. L-7, L-8, L-9.
Enchytronia parva Nielsen et Christensen, 1959. L-9, L-10, P-6.
Fridericia bisetosa (Levinsen, 1884). L-4, L-8, L-10, P-7.
F. bulboides Nielsen et Christensen, 1959. L-7, L-9, L-10, P-1, P-2, P-6, P-7, P-9, P-10.
F. bulbosa (Rosa, 1887). L-7, L-8, L-9, L-10, P-2.
F. connata Bretscher, 1902. L-10, P-7.
F. galba (Hoffmeister, 1843). L-8, L-9, P-7, P-8, P-9, P-10.
F. isseli Rota, 1994. P-3.
F. nemoralis Nurminen, 1970. L-8.

- F. paroniana* Issel, 1904. L-8, L-10, P-8.
F. perrieri (Vejdovský, 1878). P-2, P-9.
F. ratzeli (Eisen, 1872) s.l. L-1, L-4, L-8, L-9, L-10, P-5, P-6, P-8, P-9.
F. reducata Dózsa-Farkas, 1974. P-7, P-8.
Fridericia sacculata Bell, 1936 (?). L-2, L-4, L-8.
Fridericia sp. 1. L-8, L-10.
Fridericia sp. 2. L-8.
Fridericia sp. 3. P-7.
Fridericia sp. 4. P-8.
Fridericia sp. juv. L-1, L-4, L-8, L-9, L-10.
Hemifridericia parva Nielsen et Christensen, 1959. P-8.
Henlea glandulifera Nurminen, 1970. L-9.
H. nasuta Eisen, 1878. P-5.
H. perpusilla Friend, 1911. L-9, L-10, P-2, P-6.
H. ventriculosa (Udekem, 1854). L-9, L-10, P-6.
Marionina argentea (Michaelsen, 1889). L-9, P-2, P-4, P-5, P-6, P-10.
M. communis Nielsen et Christensen, 1959. P-8.
M. riparia (Bretscher, 1899). P-4, P-5, P-10.
Marionina sp. (cf. *argentea*). P-2.
Marionina sp. (cf. *communis*). L-10.
Marionina sp. juv. L-9.
Mesenchytraeus armatus (Levinsen, 1884). P-6, P-7.
Stercutus niveus Michaelsen, 1888. P-7.
Timmodrilus oligoseta Dózsa-Farkas, 1997. L-8, L-9, L-10.

Systematic descriptions and notes

Achaeta petseri Dózsa-Farkas, n. sp. (Fig. 1)

Holotype. A.1 in K. Dózsa-Farkas's collection, Department of Systematic Zoology and Ecology, Eötvös Lorand University, Budapest. Whole-mounted specimen.

Type locality. The Vörtsjärv Limnological Station, lawn in the first orchard near the former Petseri farm, sample L-10.

Paratypes, all whole-mounted specimens from the type locality. P.38 in K. Dózsa-Farkas's collection, one specimen; 26.1 (one specimen) and 26.2 (three specimens on one slide) in the collection of the Vörtsjärv Limnological Station, Rannu, Estonia.

Etymology. Named after the type locality.

Description. Small species, length 3–4 mm, diameter at VIII 0.14–0.17 mm when alive. 23–27 segments. Colour whitish. Head pore at the tip of prostomium.

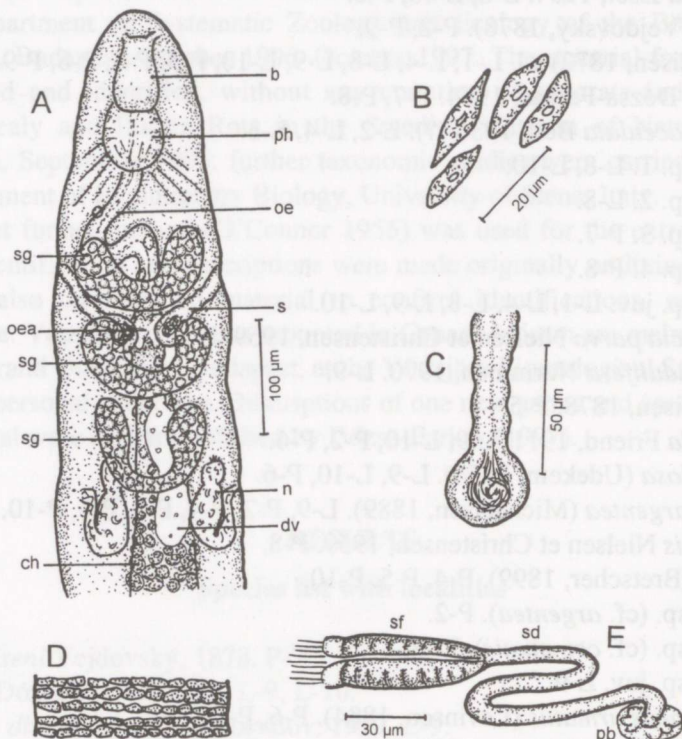


Fig. 1. *Achaeta petseri* Dózsa-Farkas, n. sp. from the Vörtsjärv Limnological Station. A, anterior segments (0–VIII) in dorsal view; B, coelomocytes; C, spermatheca; D, gland cells of the clitellum; E, male duct; b, brain; ch, chloragogen tissue; dv, dorsal vessel; n, first nephridium; oe, oesophagus; oea, oesophageal appendage; pb, penial bulb; ph, pharynx; s, spermatheca; sd, sperm duct; sf, sperm funnel; sg, pharyngeal (septal) gland.

Chaetae and chaetal follicles absent. Inconspicuous, lens-shaped, glandular epithelial cells observed dorsolaterally. Clitellum in XII, transparent, with transverse rows of glandular cells (Fig. 1D). Septa poorly developed. Three pairs of pharyngeal (septal) glands all connected dorsally (Fig. 1A). No secondary pharyngeal glands. Oesophagus forming a conspicuous loop in IV and with a small appendage in V (Fig. 1A). Chloragogen cells present from IV, densely from 6/7. Coelomocytes (Fig. 1B) elongate oval, 16–24 μm long. Nephridia of the usual *Achaeta* type, three preclitellar pairs at 6/7–8/9. Dorsal vessel originates in VII, with large dilatations in VII and VI; blood colourless. Seminal vesicle small or absent. Sperm funnels (Fig. 1E) 1.5–2.5 times longer than wide, 40–60 μm long, approximately $\frac{1}{4}$ – $\frac{1}{3}$ diameter of the worm. Their distinct collars have the same width as the funnel itself. Sperm ducts not wound into a spiral. Male pores in XII,

each surrounded by some glands representing an indistinct penial bulb (Fig. 1E). Spermathecae (Fig. 1C) free, confined in V. Their elongated ectal portions widen at the ectal pores, which are located laterally. No glands at the spermathecal pores. Ampullae spherical, containing sperm. Spermathecal ducts 1.6 times longer than the ampullae.

Remarks. *Achaeta petseri* belongs to the *Achaeta* group devoid of chaetal follicles and with spermathecae restricted to V. It is clearly distinguished from *A. camerani* (Cognetti, 1899) by the different origin of its dorsal vessel (in VIII in *A. camerani*) and the lack of longitudinal rows of enlarged clear glands in the clitellum. It also differs from it, as well as from all other members of the group (*A. brevivasa* Graefe, 1980; *A. iberica* Graefe, 1989; *A. pannonica* Graefe, 1989; *A. etrusca* Rota, 1995; and *A. afolliculata* Sesma et Dózsa-Farkas, 1993), by the absence of secondary pharyngeal glands.

Fridericia reducata Dózsa-Farkas, 1974 (Fig. 2)

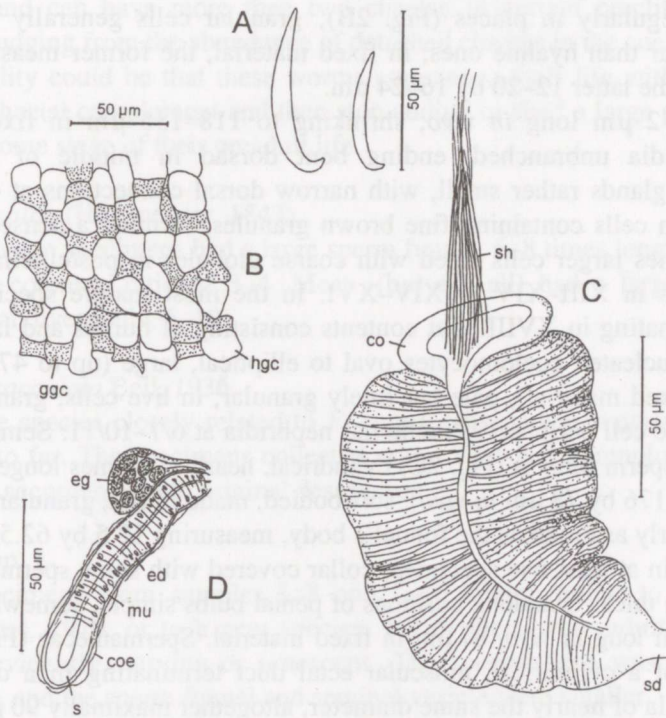


Fig. 2. *Fridericia reducata* Dózsa-Farkas, 1974 from Puurmani. A, ventral chaetae from X (left) and XXIV (right); B, dorsolateral view of the clitellar gland cells in XIII, next to the border with segment XII (right), and above the line of the lateral chaetae (bottom); C, sperm funnel; D, spermatheca; co, collar; coe, coelothelium; ed, ectal duct; eg, ectal gland; ggc, granular gland cell; hgc, hyaline gland cell; mu, muscular coat; s, spermathecal ampulla; sh, spermatozoal heads; sd, sperm duct.

This species was known so far in a Hungarian cave only (Dózsa-Farkas 1974). The following emended description was compiled by E. Rota from specimens collected at Puurmani (samples P-7 and P-8).

Description. Body covered with a thick cuticle. Length 10–15 mm, width at clitellum about 0.3 mm when alive. Fixed dimensions: length 8–12.5 mm, width at V 0.250–0.276 mm, at clitellum 0.288–0.324 mm. 42–54 segments ($n=6$). Chaetae with distinct ental hooks (Fig. 2A), mostly 1,2–(2),1 : 2,(1)–2,1, but in one specimen 3 in the right lateral bundles of VI and VII, and 3–4 in the ventral bundles of VII and IX. No more than one chaeta per bundle posterior to XXII. A few empty locations probably due to damage during manipulation. Chaetae stoutest at preclitellar and midbody-through-caudal locations, especially ventrally (up to 6 μm thick, 53 and 50 μm long, respectively). In XVI–XXVI their size reduces to 27 by 4 μm . Parcels of chaetae in the cavity of VII–IX, but single detached chaetae in nearly all regions of the body. 2–3 rows of cutaneous gland cells in each preclitellar segment. Dorsal pores commencing in VII. Clitellum over XII– $\frac{1}{2}$ XIII, interrupted midventrally; gland cells arranged in 26 transverse rows, slightly irregularly in places (Fig. 2B); granular cells generally smaller and more angular than hyaline ones; in fixed material, the former measure 8–16 by 12–16 μm , the latter 12–20 by 16–24 μm .

Brain 172 μm long *in vivo*, shrinking to 118–136 μm in fixed material. Peptonephridia unbranched, ending bent dorsad in middle of V (a-type). Pharyngeal glands rather small, with narrow dorsal connections at 4/5 and 5/6. Chloragogen cells containing fine brown granules, forming a dense tissue from VI; sometimes larger cells filled with coarse globules in postclitellar segments. Chylus cells in XIII–XIV or XIV–XVI. In the most mature specimen, dorsal vessel originating in XVIII. Gut contents consisting of humus and large mineral particles. Nucleated coelomocytes oval to elliptical, large (up to 47 μm *in vivo*, 33 μm in fixed material), pale but finely granular; in live cells, granules located mainly at the cell periphery. Preclitellar nephridia at 6/7–10/11. Seminal material free in XI. Sperm funnels (Fig. 2C) cylindrical, nearly 2.5 times longer than broad (maximally 176 by 78 μm *in vivo*), soft-bodied, made of flat, granular cells; collar hyaline, nearly as broad as the funnel's body, measuring 12.5 by 62.5 μm in fixed specimens; in at least one specimen, collar covered with some sperm. Live sperm ducts 10 μm thick. Glandular cushions of penial bulbs simple, somewhat depleted, oval, 150 μm long *in vivo*, 87 μm in fixed material. Spermathecae (Fig. 2D) free, consisting of a cylindrical, muscular ectal duct terminating in a drop-shaped, blind ampulla of nearly the same diameter, altogether maximally 90 μm long, the ampulla representing $\frac{1}{4}$ to $\frac{1}{3}$ of the total length. Both duct and ampulla covered with a muscular coat. A stalked, rugose gland, 42.5 μm long, opens on the anterior side of the spermathecal pore. No specimen had sperm in its spermathecae.

Remarks. Besides the reduction of spermathecae resulting in the absence of ental ducts, this species is easily recognized by the low number and characteristic size

distribution of chaetae. Segment number, extension of the dorsal blood vessel, and proportions of the sperm funnels correspond perfectly to the original description (Dózsa-Farkas 1974). However, chaetae occur here at all locations and their size is generally larger, while the dorsal coelomic pores occur from VII (as is normal in the genus).

This is to date the only *Fridericia* species in Europe known to have free spermathecae. These are evidently rudimentary but still equipped with a well developed ectal gland, and are occasionally filled with sperm (see Dózsa-Farkas 1974). Thus, parthenogenesis may be not the only method of reproduction in this species.

The chaetal distribution pattern encountered in *F. reducata* is rare in *Fridericia* (observed also in *F. semisetosa* Dózsa-Farkas, 1970, and *F. renatae* Möller, 1971). The advantage deriving from it is not immediately understood. In this regard, it could be informative to follow the ontogenetic development of the chaetal pattern through laboratory cultures. Unlike the Hungarian material, the Estonian specimens develop (or maintain) at least one chaeta at all postclitellar locations, and can have more than two chaetae in certain preclitellar ventral locations. Judging from the abundance of detached chaetae in the coelomic cavity, one possibility could be that these worms commence their life with a complete (juvenile) chaetal complement and then stop adding or shed a large proportion of chaetae at some stage of their preadult life.

Fridericia galba (Hoffmeister, 1843)

The Estonian specimens had a large sperm funnel, 6–8 times longer than wide, instead the common ratio of 3–4. Most (but not all) had a large number of spermathecal diverticula, 6–10.

Fridericia sacculata Bell, 1936

This rare species closely related to *F. ratzeli* (Eisen) was reported only from California so far. The specimens collected at the Vörtsjärvi Limnological Station are in good accordance with original description.

Fridericia sp. 1

The specimens from samples L-8 and L-10 belong either to *F. tubulosa* Dózsa-Farkas, 1970, or to a new species. All of them were adult but without any eggs, evidently starving or senescent. The spermatheca was untypical of *F. tubulosa*, and the sperm funnel and seminal vesicle were smaller.

Fridericia sp. 2 (Fig. 3)

Sample L-8. Small species, length 6–8 mm, diameter 0.24–0.31 mm. 39–41 segments. Colour whitish. Head pore at 0/I. Chaetae: 3,4,5–2:3,4,5–2 (3). Clitellum at XII–½XIII, well developed; gland cells small, irregularly arranged. Peptonephridia (Fig. 3C) with 4–5 short terminal branches. Dorsal vessel arising

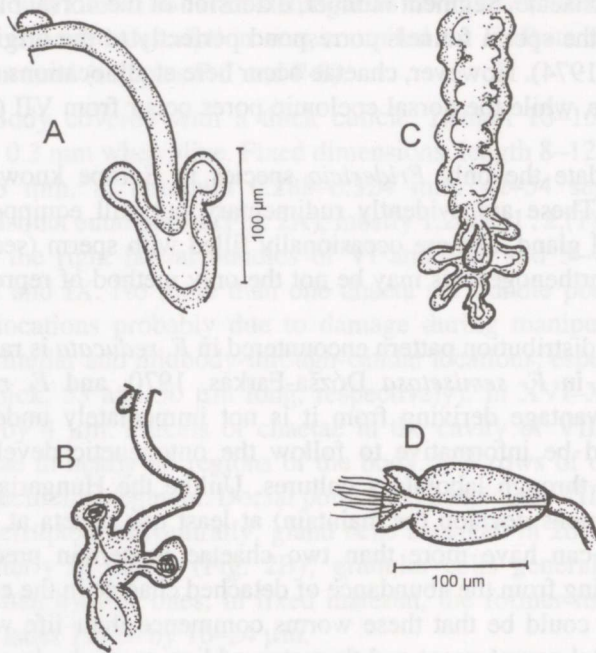


Fig. 3. *Fridericia* sp. 2 from the Vörtsjärv Limnological Station. A and B, spermatheca; C, peptonephridium; D, sperm funnel.

from XVIII–XIX. Nucleated coelomocytes elliptical, non-granular (a-type according to Möller 1971); anucleated corpuscles much smaller. Seminal vesicle absent or small. Sperm funnels (Fig. 3D) pear-shaped, 1.5–2 times longer than wide (80–115 μm long), approximately $\frac{1}{3}$ – $\frac{1}{2}$ the diameter of the worm. Collars distinct, of same width as the funnel itself. Sperm ducts long, 10 μm wide. Penial bulbs large. Spermathecal ampullae each with 2 sphaerical diverticula; each ectal duct about 2 times longer than the ampulla, with one gland at the orifice (Fig. 3A, B).

Remarks. *Fridericia* sp. 2 is similar to *F. perrieri* (Vejdovský), which, however, is longer, has stalked spermathecal diverticula and peptonephridia of the c-type; to *F. isseli* Rota, which has coelomocytes of the b-type and the dorsal vessel originating much more anteriorly (in XIII–XV); and to *F. viridula* Issel, 1904 (em. Rota 1995), which is bigger and has more chaetae. *Fridericia* sp. 2 can be formally described as a new species after obtaining some additional material.

Fridericia spp. 3 and 4

Both taxa (from samples P-7 and P-8, respectively), possibly new, remain undescribed due to the scarcity of material.

Marionina sp. (cf. *communis*)

Specimens from sample L-10 had slightly different chaetal formula: 3-2:3,4-3, compared with 2,3-2,3:3-2,3 in the typical *M. communis* (Nielsen et Christensen, 1959).

Marionina sp. (cf. *argentea*)

From sample P-2. Probably a new species formerly found also in Italy and Sweden. The species will be described elsewhere by E. Rota.

Timmodrilus oligoseta Dózsa-Farkas, 1997

The species was described by Dózsa-Farkas (1997) as representing a new genus resembling *Fridericia* in type of peptonephridia, chaetae, lymphocytes, and spermathecae, but lacking the dorsal pores. Known from the Võrtsjärv Limnological Station only, samples L-8, L-9, and L-10.

CONCLUSIONS

Thirty-three nominal species of terrestrial Enchytraeidae, 30 of them new for Estonia, were found in the 20 samples taken from two localities only. Two of them, *Timmodrilus oligoseta* and *Achaeta petseri*, have not been found elsewhere. *Fridericia reducata*, previously known from Hungarian caves only, was redescribed from the Estonian material. Several more taxa remain unidentified or unnamed due to scarce or unsuitable material. In all probability, the recorded taxa represent but a small fraction of the actual fauna of Estonian enchytraeids. Twenty-nine of these nominal species are also found in Sweden (Erséus et al. in press, Rota et al. in press).

Of the total of 33 species 20 were found both near the Võrtsjärv Limnological Station and at Puurmani. Five species were limited to the Limnological Station, and eight to Puurmani. This evidently reflects the stronger anthropogenic variability and enrichment of habitats, maybe also the higher alkalinity and fertility of soils, in the latter locality. Near the Limnological Station, the cultivated sites near the former Petseri farm also revealed a more diverse fauna in comparison with the forests, and especially with the pine forests on sandy dunes and a peat bog, where only *Cognettia sphagnetorum* was found.

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EESTI VALGELIIMUKLASED (ENCHYTRAEIDAE, OLIGOCHAETA)

1. Mulla valgeliimuklased Võrtsjärve Limnoloogiajaamast ja Puurmanist

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Tegu on esimese ülevaatega selle sugukonna faunast Eestis. Kahest uuritud piirkonnast leiti 33 nominaalset liiki, sealhulgas 30 esmasleidu Eestist, lisaks liigini määramata vorme. On antud teadusele uue liigi *Achaeta petseri* Dózsa-Farkas esmakirjeldus ning varem vaid ühest Ungari koopast tuntud *Fridericia reducata* Dózsa-Farkas, 1974 taaskirjeldus siinse materjali põhjal. Liigirikkamad olid Puurmani ümbrus ja Võrtsjärve Limnoloogiajaama elamute lähedased punktid; männi- ja segametsi ning raba asustas peamiselt üksainus liik, *Cognettia sphagnetorum* (Vejdovský, 1878).