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***Fridericia christiani* sp.n. – a new enchytraeid species from a pasture in Salzburg (Austria)**

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A b s t r a c t : In the course of faunistic studies, a new enchytraeid species was found to be abundant in a pasture in St. Koloman (near Hallein, Salzburg). *Fridericia christiani* sp.n. is characterized by distinct green cutaneous glands.

K e y w o r d s : Oligochaeta, Enchytraeidae, new species, pasture, Austria

Introduction

Faunistic and taxonomic data on potworms (Oligochaeta; Enchytraeidae) in Austria are scarce. Recent investigations have shown that most of the occurring species are euryoecious and very widespread, but a few species are characteristic of distinct biotopes and regularly found in alpine regions, caves etc. (BAUER 1996, 1997).

Because of the ecological importance of enchytraeids within the decomposer food web in the soil, and their sensitivity to chemical and microbial changes, the composition of the enchytraeid fauna together with the lumbricid fauna has been used for bioindication and environmental monitoring (GRAEFE 1993; BEYLICH et al. 1995). In the course of an ecological-faunistic study of the annelid fauna of a pasture in St. Koloman, Salzburg, we found a new *Fridericia*-species which occurred in the top 2.5 cm soil layer.

***Fridericia christiani* sp.n.**

T y p e m a t e r i a l : Holotype and 3 paratypes in 70% alcohol, labelled "St. Koloman, Salzburg, 1005 m a.s.l., leg. R. Bauer, 5.10.1996" (Biologiezentrum des OÖ. Landesmuseums Linz).
L o c u s t y p i c u s : Austria. Pasture in St. Koloman, Salzburg. 1005 m a.s.l., 47° 39' N/ 13° 13' E.

D i a g n o s i s : Small, greenish worms. 44-52 segments. Body length of living, adult worms 8.8 ± 1.9 mm ($n = 5$), width 340 ± 32 μ m at the clitellum and 282 ± 19 μ m at segment IX. Distinct green cutaneous glands are arranged in six rows on each body segment (Fig. 1a). Septal glands, head pore and dorsal pores are present and of the usual *Fridericia*-type. Setae straight: 2, 4 - 2, 3, 4 : 2, 3, 4, 5 - 2, 3, 4. The length of the outer setae within a bundle is approx. 45 μ m, of the innermost setae approx. 29 μ m. The slightly elevated clitellum extends over segments XII-1/2 XIII and is slightly elevated. The gland cells are arranged in distinct rows (Fig. 1b).

Peptonephridia are of medium length, slender and unbranched, belonging to type *a* according to NIELSEN & CHRISTENSEN (1959) (Fig. 1c). The coelomic fluid contains nucleate lymphocytes and anucleate corpuscles (Fig. 1d: type *c* according to MÖLLER 1971). Nephridia are present from segment VII/VIII on backwards. The ectal duct of the

nephridia arises mid-ventrally on the postseptale. The dorsal vessel arises in segments XIX/XX.

The vesicula seminalis is well developed, extending to segment IX. Penial bulbs are round and compact (2a). The cylindrical seminal funnels are 3-4 times longer than wide (Fig. 1e, 2b).

Spermatheca with cylindrical ampulla, each carrying two globular, sessile diverticula. The ectal ducts are of medium length, without any gland at their ectal orifice. The short, stout ental ducts from either ampulla merge and communicate jointly in the middorsal region (Fig. 1f, 2c).

D i f f e r e n t i a l d i a g n o s i s : The distinct green cutaneous glands distinguish *F. christiani* clearly from all other *Fridericia*-species. *F. viridula* ISSEL 1904 has green coelomocytes, but the colour of the cutaneous glands is whitish (ROTA 1995).

Other *Fridericia*-species with two diverticula at the spermatheca and with merging ental ducts differ from *F. christiani* in the following features: *F. baskini* CERNOSVITOV 1937 has 4-7 setae within the preclitellar bundles; *F. connata* BRETSCHER 1902 possesses one small, sessile gland at the orifice of the ectal duct; *F. gamotheca* ISSEL 1906 is much smaller, the dorsal vessel arises at segments XIV - XVII, and the vesicula seminalis is small; *F. holmesa* SPRINGETT 1971 has very long, curled peptonenephridia; *F. kalffi* NURMINEN 1973 possesses a spermatheca with two long-stalked diverticula and one gland at the orifice of the ectal ducts, the dorsal vessel arises at XVI-XVII, and the vesicula seminalis is absent; *F. monochaeta* ROTA 1995 has only one seta per bundle and the vesicula seminalis is absent or small.

D e r i v a t i o n o m i n i s : The new species is dedicated to Prof. Dr. Erhard Christian, in appreciation of his comprehensive experience with soil- and cave-dwelling animals and their ecology.

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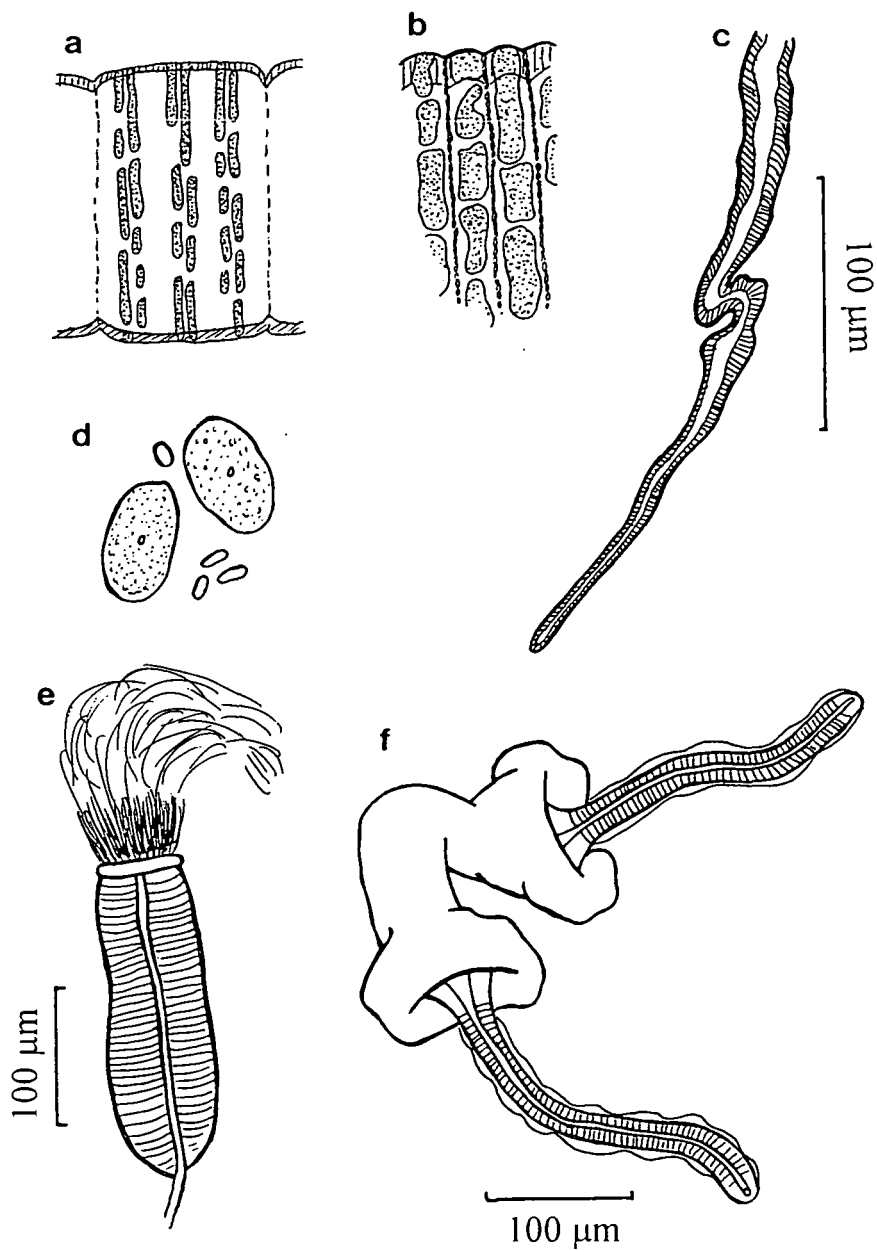


Fig. 1: *Fridericia christiani* sp.n. a – green cutaneous glands, arranged in six rows on each body segment; b – clitellum gland cells; c – peptonephridia; d – lymphocytes; e – seminal funnel; f – spermatheca.

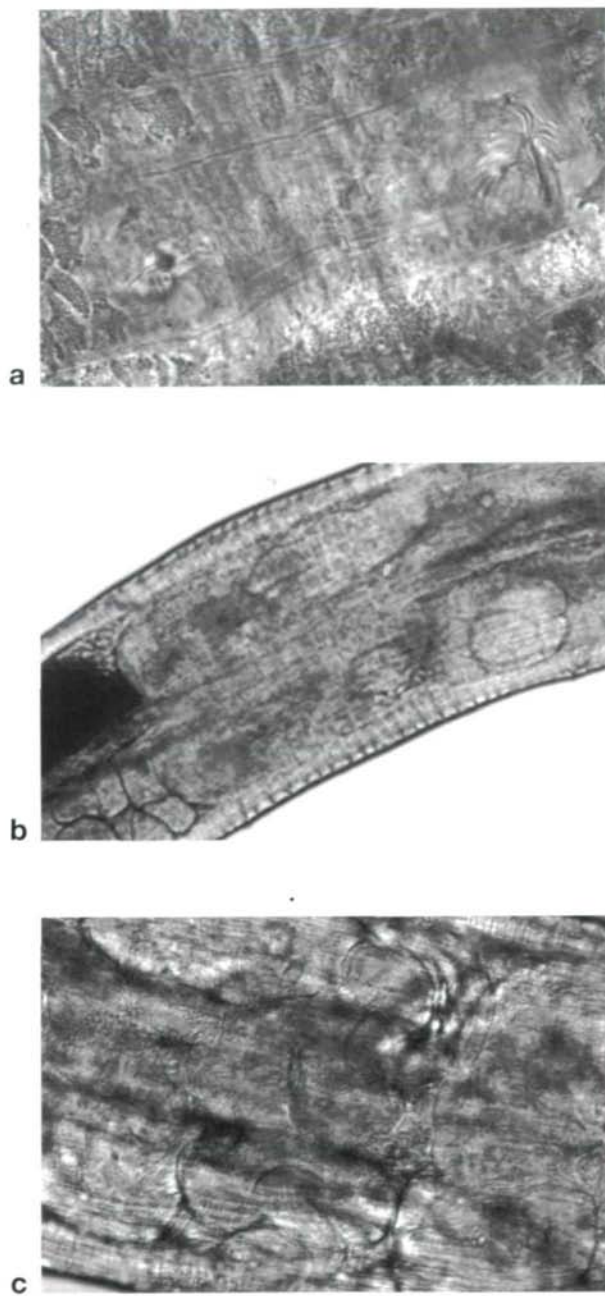


Fig. 2: *Fridericia christiani* sp.n. **a** – penial bulbs; **b** – vesicula seminalis and seminal funnels; **c** – spermatheca with merging ental ducts.

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