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Two New Species of *Microturbellaria* of the Genera *Stenostomum* O. Schmidt and *Macrostomum* O. Schmidt

by

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Summary. Two new species of *Turbellaria*, *Stenostomum occultum* sp. n. and *Macrostomum inductum* sp. n. from Poland are described.

Stenostomum occultum sp. n. (Fig. 1 *A—F*)

Length of specimens of two zooids 900—1,100 μ. Biggest length of specimens of three zooids about 1,400 μ. Body width about 70 μ; largest on the hight of the pharynx. Animals of more than three zooids have not been observed. Prostomium in front forming a pointed arch, sometimes rounded, widest in front of the comparatively long ciliated pits. It shows two narrowings: on the hight of the ciliated pits and just before the mouth. Behind the prostomium the body evenly narrow, the back rounded. On the front of the prostomium 2—10 long cilia. Laterally such cilia occur singly, in some specimens they are lacking completely. On posterior body end long cilia were observed only in two specimens. Small rhabdites sticking in the epidermis on the whole surface. Protonephridium opening terminally, sometimes subterminally. Its first loop situated on the hight the first brain lobe and its walls without granulation. About 12 septa in front of the brain. Brain formed of three groups of lobes. The anterior lobes even numbered, in front cut straight by the first septum. The central lobes not even numbered and the posterior mostly composed of two bigger and some smaller ones, the number of which varies from one to three. Mouth always considerably lengthened and nearly as long as the remaining pharynx and sometimes even longer. Surrounded radially by strong bundles of muscles. Pharynx at most twice as long as wide, mostly 1.5 times longer, considerably creased and without visible transversal bundles of muscles. On its whole surface more or less numerous small spherical glands. Retractors to the pharynx directed obliquely backwards. The farthest of these attached to the outer body wall on the hight of the intestine (Fig. 1 *C*). Agglomeration of granular secretions above the intestine poorly developed and faintly visible.

Stenostomum occultum sp. n. is most similar to *S. bryophilum* Luther, 1960, *S. glandulosum* Kepner and Carter, 1931 and *S. anatirostrum* Marcus, 1945. It differs from the first one by the presence of rhabdites and by the size and from the second one by the lack of light refracting bodies. The new species differs from the most resembling *S. anatirostrum* Marc. by the formation of the mouth, of the pharynx, by the location of the anterior protonephridium loop and by the length of the ciliated pits. In *S. anatirostrum* Marc. the ciliated pits are longer, the protonephridium loop reaches at least to half of the prostomium section before the anterior brain lobe. The mouth is never so much elongated nor muscled, the pharynx has visible inner

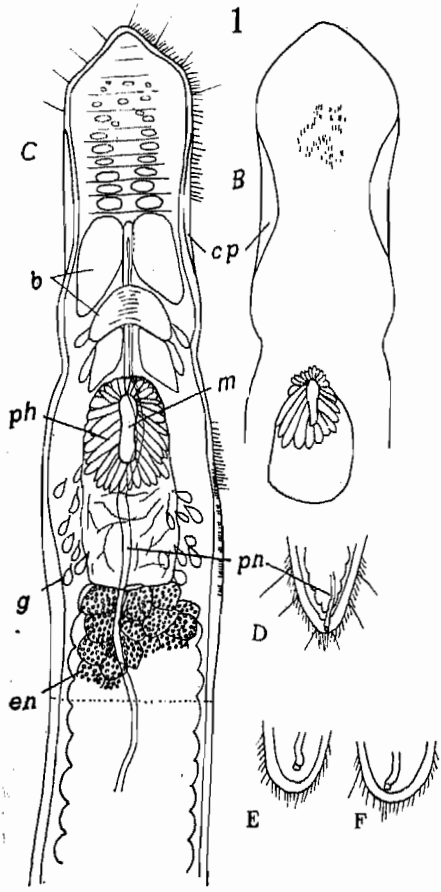

Fig. 1. *Stenostomum occultum* sp. n.

A — typical specimen, *B* — typical prostomium shape, *C* — specimen with nontypical prostomium shape, *D*—*F* — rear body part of three different specimens (*D* — typical)

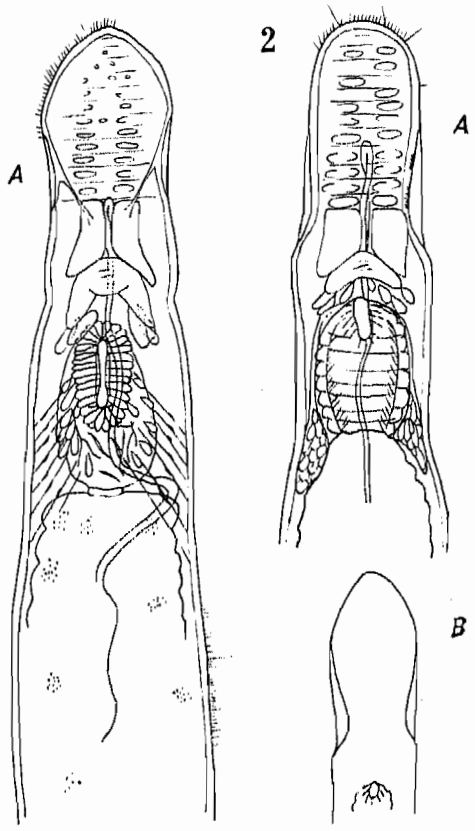

Fig. 2. *Stenostomum anatirostrum* Marc.

A — front of body, *B* — prostomium shape, typical for numerous specimens
b — brain, *cp* — ciliated pits, *en* — intestine, *g* — gland, *m* — mouth, *ph* — pharynx, *pn* — protonephridium

cilia and transversal muscles. The differences in pharynx and mouth structure are the biggest and the most essential ones. This refers as well to *S. bryophilium* Luth and *S. glandulosum* K. and C. There is also a distinct difference in the distribution

and appearance of pharynx glands which in *S. anatirostrum* Marc. reach between the walls of the intestine and body and are considerably lengthened as well. In specimens of this species which I have observed the pharynx glands were collected in a compact group with one efferent duct (Fig. 2 *A*). The rosette-like glands of the epidermis seem not to be characteristic for *S. glandulosum* K. and C. only, I have observed them twice in other species.

In a culture of *S. occultum* sp. n. carried out during three weeks I have obtained a little smaller specimens, the structure of which did not differ from those from the natural locality. The culture has been conducted in a darkened glass vessel. To tap water some leaves have been added from a spring where this species occurs. The temperature of the culture was about 20°C.

Locus typicus: A spring near the Malta Lake in Poznań. Fallen wet leaves, water, silt. Water temperature in the spring 8°C. Leg. J. Kolasa, March 25, 1971; A. Bednarek, April 4, 1971. Scores of specimens. In samples with *S. occultum* sp. n. the following species of Microtubellaria have been found: *Stenostomum bryophilum* *) Luth., *S. constrictum* Luth., *Acrochordonoposthia conica* Reis., and *Stenostomum anatirostrum* *) Marc. These occurred also in the spring *Stenostomum leucops* (Dug.) and *Macrostomum karlingi* *) Papi.

Other localities. A pond on the slopes of the Mount Ślęża (Sobótka). Sphagnum sp. Leg. C. Błaszak, April 23, 1971. One specimen. Accompanying species: *Suomina turgida* *) Zach., *Stenostomum constrictum* Luth., *S. leucops* (Dug.), *S. saliens* *) K. and C., *S. anatirostrum* *) Marc., *Myostenostomum tauricum* *) (Nas.), *Gyratrix hermaphroditus* Ehrgb., *Rhynchomesostoma rostratum* (Müll.), *Prorhynchus stagnalis* M. Schul., *Microdalyellia microphtalma* (Vejd.), *Macrostomum obtusus* *) (Vejd.).

Macrostomum inductum sp. n. (Fig. 3 *A—G*)

Body length 1.2—1.3 mm, 6—7 times bigger than the width. The front rounded. On the hight of the pharynx the body widens and then becomes very slightly narrower towards the back. The narrowest part behind the female gonopore. Tail part wider, pointed with edges cut out irregulary. Black eyes about 17 μ in diameter, situated in front of pharynx. On the edges of the whole body tufts of 40 μ long sensory hairs visible. Rhabdites spindle-shaped in packets of seven (sometimes of nine). Their length reaches 16 μ, mostly 10—14 μ. The oval, lengthened, flaky, slightly cut out ovaria situated laterally along the posterior part of the intestine. The oviducts opening with one canal into a fleshy, markedly ciliated copulatory atrium. Numerous rhabdite-like, about 5 μ long formations, rounded on both sides, radially arranged round the female gonopore. Pseudothabdites more or less numerous on posterior body end, about 14 μ long. The lengthened testicles with slightly creased walls situated in front of the ovaria. Efferent ducts of the testicles opening separately into a lumpy vesicula seminalis, variable in shape, on one side lengthening suddenly and connected in this place by a quite long ductus intervesicularis with the spherical vesicula granulorum. In the place of junction of the ducts intervesi-

*) Species which were not known till now from freshwater natural localities in Poland.

cularis with the vesicula granulorum open into it secretory glands which fill it out, as well as the proximal part of the penis stylet with packets of granules. Penis stylet very slightly spiraly coiled, 90—120 μ long and about 28 μ wide at its base.

It gets evenly narrower to a distinct bend, from where its edges run parallel. In all specimens the shape of the penis is almost identical. The first part of the bow is always accompanied by a more or less visible lamella. Penis opening situated subterminally, or sometimes very near the stylet's denticle. Penis stylet ending with a short denticle, laterally concentrically bent. situated nearer the inner side of the penis stylet arch.

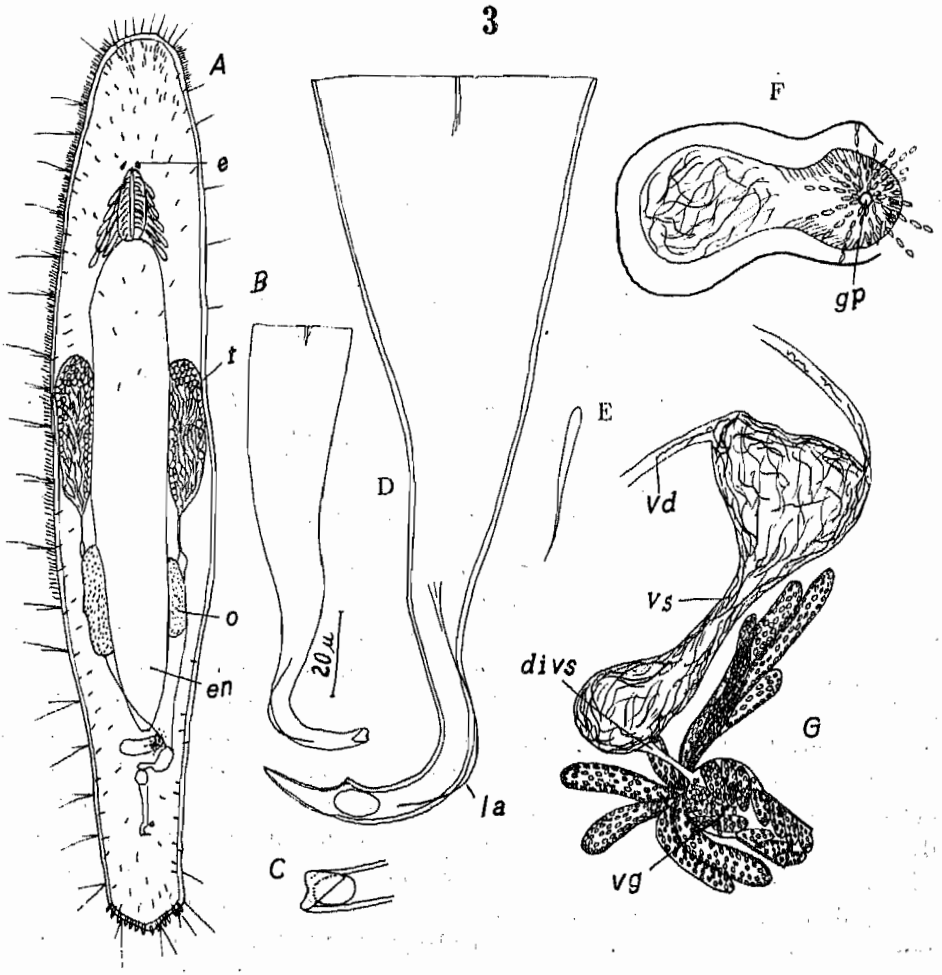

Fig. 3. *Macrostomum inductum* sp. n.

A — general view, *B* — penis stylet before squeezing, *C* — end of penis stylet before squeezing, *D* — squeezed penis stylet, *E* — one rhabdite, *F* — copulatory atrium, *G* — part of male reproductive system

divs — ductus intervesicularis, *e* — eye, *en* — intestine, *gp* — gonopore, *la* — lamella, *o* — ovary, *t* — testicle, *vd* — vas deferens, *vg* — vesicula granulorum, *vs* — vesicula seminalis

Up to now two species nearing *Macrostomum inductum* sp. n. have been described: *Macrostomum sajfunicum* Nasonov, 1929, and *M. clavistylum* Beklemischev, 1951. The first one differs distinctly from the new species by the straight end and walls of the penis stylet. The second has a more massive penis stylet, a slanting basal edge, differently curved walls and a different position and direction of the hook. It differs besides by the red colour of the eyes and a stocky body tructure.

Macrostomum clavistylum Belk., *M. inductum* sp. n. and *M. sajfunicum* Nas. form probably a closely related group of species. This is indicated by a similar shape of the penis stylet and by the presence of lamellae near its end.

Locus typicus: Palmhouse in Poznań, big basin. Sand, water plants. Aquarium: deposit of algae. Water temperature in the basin about 25°C. Leg. J. Kolasa, Febr. 10, 1970 and March 15, 1971. Scores of specimens.

All figures are free-hand drawings.

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REFERENCES

[1] V. Beklemishev, *O vidach roda Macrostomum (Turbellaria, Rhabdoecoela) SSSR*, Bull. Soc. Nat., Moskva, **56** (1951), 31—40.

[2] A. Luther, *Die Turbellarien Ostfennoskandiens. I*, Fauna Fenn., Helsinki, **7** (1960), 1—155.

[3] E. Marcus, *Sobre Microturbellarios do Brasil*, Comm. Mus. (Nat. Hist.), Montevideo, **1** (1945), No. 26, 1—74.

[4] N. Nasonov, *Zur Fauna der Turbellaria rhabdocoelida der japanischen Süsswasserbecken*, C. R. Acad. Sc. URSS, Moskva, 1929 (1929), 423—428.

E. Коляса, **Два новых вида ресничных червей из родов** *Stenostomum* O. Schmidt **и** *Macrostomum* O. Schmidt

Содержание. Дается описание двух новых видов ресничных червей из Польши: один из рода *Stenostomum* Schm., а второй из рода *Macrostomum* Schm.