

A STUDY OF THE FAMILY SYCHNOTYLENCHIDAE  
PARAMONOV, 1967 N. C.

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A. A. Paramonov (1) has described the family Sychnotylenchidae on the basis of the anatomic-morphological and bioecological characteristics of the genera Sychnotylenchus and Neoditylenchus. The author has noted that in his work he does not examine Sychnotylenchidae in detail as they are the object of entomohelminthology. We have described a new species of nematode from the family Sychnotylenchidae and, furthermore, utilizing material from our own research and available data from the literature, we have decided to describe the family mentioned anew.

We listed all measurements in microns.

Neoditylenchus dalei nov. sp. (Fig. 1) ♂ [sic] n = 5; L = 1020 (1020-1140); D = 31 (31-33); OS = 220 (220-230); CD = 72 (72-80); K-V = 840 (840-920); a = 32.93 (32.93-33.10); b = 4.63 (4.63-5.00); c = 14.16 (13.89-14.16); V% = 83.33. ♀ [sic], n = 3; L = 980 (980-1004); D = 24 (24-26); OS = 198 (198-210); CD = 24 (24-27); Sp = 20 (20-23); gub = 8 (8-9); a = 40.71 (38.98-40.71); b = 4.94 (3.89-4.94); c = 40.71 (40.71-80).

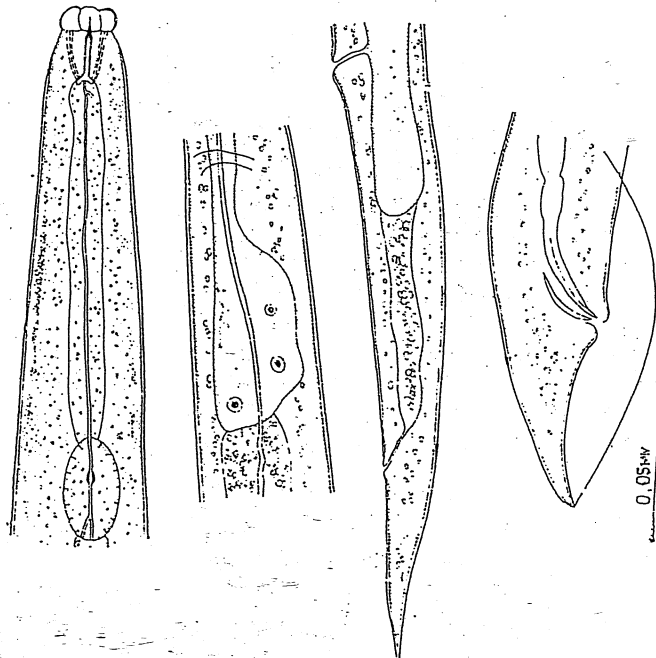


Figure 1. Neoditylenchus dalei nov. sp.

1 - Anterior part of body; 2 - Glandular bulb; 3 - Tail end of male [sic];  
4 - Tail end of female [sic].

Sexually mature [individuals]. Body covered with a cuticle of annulated structure. Six head tubercles identical in dimensions and form; slightly flattened, and noticeably separated from the body; stylet (11-13) compact and wide; lumen narrow; basal thickenings flat and elongated and noticeably separated from one another; dorsal gland duct opens into lumen of procorpus at stylet level; procorpus long and narrow; fibrillar bulb oval; subventral gland duct opens in the lower half of the fibrillar bulb. Nerve ring located at the beginning of the cardial bulb at the end of the isthmus; excretory pore located next to nerve ring; isthmus short and wide, smaller than procorpus.

Females. Ovary oligopropagatory, and reaching almost to the esophagus; vulva located in the lower part of body, its lips hardly prominent; posterior uterus less than V-A; tail wedge-shaped and pointed. They are viviparous.

Males. Tail curved, pointed, and enveloped with a peloderan bursa; paired spicula long and pointed; gubernaculum narrow and bent along its length. Latent larvae are attached under the elytra of the great capricorn beetle (Cerambyx cerdo acuminatus). The capricorn beetle is established in the oak (Quercus iberica Stev.).

Differential diagnosis. The species described by us, Neoditylenchus dalei nov. sp., is similar to Neoditylenchus panurgus (Rühm, 1956) Meyl, 1960, but is distinguished by the following characteristics: (1) the tail in the female of Neoditylenchus dalei nov. sp. is more pointed, is wedge-shaped, and has a long tip while in Neoditylenchus panurgus it is shorter, bluntly rounded, and dome-shaped; (2) the basal thickening of the stylet in the new species are larger and well separated; (3) the ratios of de Man's formula a, b, and c in the given species are sharply different and (4) these species have been registered in hosts that are systematically remote.

On the basis of the foregoing criteria we have taken the species described by us to be a new one and we have given it the name Neoditylenchus dalei nov. sp. in honor of the New Zealand entomohelminthologist. The material is kept at the Institute of Zoology, Georgian SSR Academy of Sciences (No. 327).

Family Sychnotylenchidae Paramonov, 1967 n. c.

Diagnosis. Tylenchoidea. Six labiotuberculae of the cephalic capsule equal in dimensions and form; stylet with wide (sometimes narrow) knobs; basal thickenings flat and separated or not separated from each other; stylet length varies within the limits 10-14; diameter of procorpus irregular. Procorpus constricted in front of the metacorpul bulb; isthmus long and wider or narrower than the diameter of the procorpus; nerve ring located in the lower part of the isthmus; excretory pore at the level of the nerve ring; fibrillar metacorpul bulb oval in form; cardial bulb developed and with large exoenzymatic or dorsal glands; dorsal gland duct opens into the lumen of the esophagus at varied distances within the

procorpus; vulva situated in posterior half of body; ovary oligopropagatory and reaching the esophagus. The length of the posterior uterus does not exceed V-A; females tail conical, and pointed or bluntly rounded. They are viviparous; male's tail pointed; gonads flexed at the end; tail of the latent larvae sharply conical. The latent larvae are attached under the elytra and between the segments of bark beetles and capricorn beetles.

Subfamily Sychnotylenchinae sub. f. n.

Diagnosis. Sychnotylenchidae. Six labiotuberculae of the cephalic capsule equal [sic]; the lateral ones are significantly narrower than the subventral ones; labiotuberculae noticeably separated from each other; fibrillar metacorporeal bulb greatly developed; cardial bulb weakly developed; isthmus narrow and is shorter than the procorpus. The type genus is Sychnotylenchus Rühm, 1956.

Genus Sychnotylenchus Rühm, 1956

Diagnosis. Sychnotylenchinae. Cephalic capsule smooth; six labiotuberculae of the cephalic capsule equal [sic]. The lateral tubercles are narrower than the subventral ones; tubercles separated from the body; stylet compact and with symmetrical knobs; lumen narrow; stylet length in females, 11-12; in males, 10-12; basal thickenings elongated; dorsal gland duct opening near the stylet; procorpus constricted in front of the metacorporeal bulb. The latter is oval with strong crushing plates; excretory pore located above the bulb; nerve ring at the end of isthmus; cardial bulb weakly developed. The type species is Sychnotylenchus intricati, Rühm, 1956.

Subfamily Neoditylenchinae sub. f. n.

Diagnosis. Neoditylenchidae. The body cuticle has a weakly expressed annular structure. Six labiotuberculae of identical size and clearly offset from body; excretory pore situated at level of nerve ring; cardial bulb strongly developed and with large exoenzymatic glands; isthmus wide and shorter than procorpus; fibrillar bulb weakly developed. The type genus is Neoditylenchus Meyl, 1960.

Genus Neoditylenchus Meyl, 1960

Diagnosis. Neoditylenchinae. Labiotuberculae identical in dimensions and form; procorpus constricted in front of metacorporeal bulb; cardial bulb strongly developed; dorsal gland duct heterotropically displaced within the procorpus of esophagus at a distance not exceeding 25-50 of the stylet length; ovary oligopropagatory and can reach the esophagus; posterior uterus developed. Female tail bluntly rounded; males with peloderal caudal alae. Sexually mature individuals are saproxylobionts which settle in the tunnels of bark beetles and capricorn beetles. Latent larvae by means of the sharp tip of the tail become localized under the elytra of the insects mentioned. The type species is Neoditylenchus panurgus (Rühm, 1956) Meyl, 1960.

Bases for differentiation of subfamilies.

We took the digestive system as a base for differentiation. In Neoditylenchinae the cardial bulb is more strongly developed than in Sychntylenchinae. In Sychnotylenchinae the metacorpul bulb is more strongly developed than in Neoditylenchinae. The procorpus in Neoditylenchinae is narrow, and the isthmus wide and short. In Sychnotylenchinae the procorpus is wide and the isthmus is narrow.

The foregoing taxonomical differences served as the basis for the separation from the family Sychnotylenchidae of two subfamilies, Neoditylenchinae sub. f. n. and Sychnotylenchinae sub. f. n.

Identification key of subfamilies  
of the family Sychnotylenchidae  
Paramonov, 1967

1 (2) Cardial bulb strongly developed, isthmus wide and smaller than than procorpus--Neoditylenchinae sub. f. n.

2 (1) Cardial bulb weakly developed, isthmus narrow and smaller than the procorpus--Sychnotylenchinae sub. f. n.

Identification key of genera of the  
family Sychnotylenchidae  
Paramonov, 1967

1 (2) All six labiotuberculae of the cephalic capsule equal among themselves in dimensions and form--Neoditylenchus Meyl, 1960.

2 (1) Lateral labiotuberculae narrower than the subventral ones--Sychnotylenchus Ruhm, 1956.

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ON THE STUDY OF SYCHNOTYLENCHIDAE PARAMONOV,  
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Summary

A new species of nematode *Neoditylenchus dalei* nov. sp. is described. The family *Sychnotylenchidae* has been revised and two new suborders: *Sychnotylenchinae* sub. f. n. and *Neoditylenchinae* sub. f. n. have been set up.

#### REFERENCES

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\*: The correct reference is: Paramonov, A. A., 1967. [A critical review of the suborder Tylenchina) Filip'ev, 1934) (Nematoda: Secernentea)]. Trudy Gel'mint Lab. 18:78-101. - Editor.