

DESCRIPTION OF THE FREELIVING MARINE NEMATODE
***DRACOGNOMUS TINAE* N. SP.**
(DRACONEMATOIDEA: PROCHAETOSOMATIDAE).

by

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Résumé

Description du nématode libre marin *Dracognomus tinae* n. sp. (Draconematoidea: Prochaetosomatidae).

Une nouvelle espèce de nématode libre marin, découverte sur les côtes de Belgique, est décrite : *Dracognomus tinae* n. sp. Ses caractéristiques en microscopie optique sont présentées et ses caractères différentiels sont discutés. La présence d'une rangée ventrale de soies en forme d'épine, sur la moitié postérieure du corps, se révèle un caractère générique intéressant.

Ce nématode constitue une forme atypique, par son corps en forme de "S" et par ses tubes somatiques fortement différenciés dont la fonction présumée est de sécréter une substance (en même temps que les cellules des glandes caudales) qui attache les tubes et le bout de la queue au substrat en permettant à l'animal de se mouvoir à la façon d'une chenille arpeuteuse.

Introduction

The *Dracognomus tinae* n. sp. herein described is the most abundant species among the Draconemalids found in sublittoral fine sand in the North Sea off the Belgian Coast (Jensen, 1974). Here it occurs in Van Veen grab-samples together with, at least, three other Draconemalids *Perepsilonema crassum* Jensen (1976) and *Metepsilonema* spp.

Present description gives a new morphological character of *Dracognomus* Allen and Noffsinger, 1978 so as its differentiating characters to the three other known species of the genus is pointed out.

Material and methods

The specimens derive from a locality in the North Sea off the Belgian Coast "M 14" (51°50'50" N; 02°51'08"), 32-40m deep sand medium diameter 300-350µm) with only 0.25 percent or less silt-clay fractions; collected 8-11 January 1973.

The specimens were fixed in 4 percent formalin and mounted in glycerol. All the specimens are deposited in Instituut voor Dierkunde, Rijksuniversiteit, Gent, België.

Terminology as in Allen and Noffsinger (1978) and Jensen (1979).

Description

DRACOGNOMUS TINAE n. sp.

(Fig. 1-10)

Material

20 males (♂, holotype, slide no. 431), 14 females (♀, paratype, slide no. 432) and 12 juveniles.

Males (Figures in parentheses refer to range within the species): Body 384 μ m long ((362-406 μ m)), "S"-shaped with greatest body width in oesophageal region and at midbody (junction between testis and vas deferens) (Fig. I, 1). Head ventrally directed, dorsal oblique in different degrees depending on its protruded or retracted condition

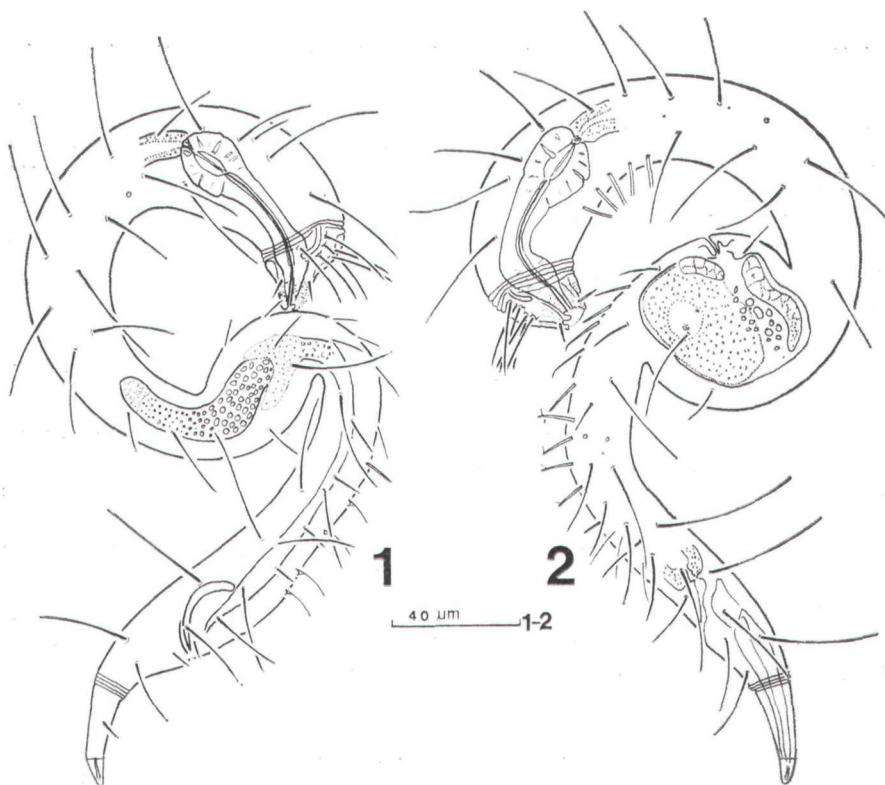


FIG. I

Dracognomus tinae n. sp. adults, full length (cuticular ornamentation of body only partly depicted).

1; male (holotype) in right lateral view; 2: female (paratype) in left lateral view.

(Fig. II, 3); some individuals have cuticular ornamentation in the form of minute rod-shaped epibionts (Fig. II, 3). Entire body annulated, except the cephalic helmet; subcuticular vacuoles present (Fig. II, 3). Tail bent ventrally into annulated and non-annulated regions; the non-annulated region is divided into a punctated portion and a non-punctated outermost tip (Fig. II, 9).

Four cephalic sensory setae, 7 μ m long (5-7 μ m), located 8 μ m (2-8 μ m) from the anterior end depending on its pro- or retracted condition (Fig. II, 3). Five pairs (5-6 pairs) of cephalic adhesion tubes present on posterior half of the helmet on the dorsal sector, 17 μ m long (15-20 μ m). One pair of slender setae insert the posterior half of the helmet in dorso-sublateral position, 20 μ m long (18-23 μ m). Somatic setae in four sublateral rows, to 30 μ m long (Fig. I, 1). From mid-body and posteriorly, a single ventral row of 14 μ m (11-15 μ m) slender spine-like setae insert; they are posteriorly directed. They are followed by a single subventral pair or rather stout setae, 10 μ m long and followed up by two subventral rows of four slender tubes (4-5), each with a triangular socket at the base, 12 μ m long; between the latter rows and the ventro-sublateral rows of somatic setae, a row of seven (6-8) slender setae insert the cuticle, 3-4 μ m long, posterior-most one at the posterior cloacal lip (Fig. I, 1; II, 6).

Amphids located dorso-laterally at posterior half of the head extending through body first annules; amphideal groove tubular (Fig. II, 3).

Buccal cavity with six lips provided with stiffening ribs; vestibulum invaginated or protruded; buccal cavity cylindrical with distinct sclerotized walls, 8-11 μ m deep, anteriormost provided with one dorsal tooth and two smaller subventral teeth (Fig. II, 3). Oesophageal musculature surrounds the buccal cavity, median oesophageal swelling present, posteriormost portion enlarged to a bulb; oesophageal lumen prominently sclerotized with valve in the posteriormost bulb (Fig. I, 1). Nerve ring and excretory system not observed.

Gonad with a single testis, anteriorly directed and outstretched; vas deferens enlarged at the junction to the testis (Fig. I, 1). Copulatory apparatus with a pair of undifferentiated spicules, bent, 29 μ m long around the arc (26-31 μ m), 21 μ m (19-23 μ m) from tip to tip; gubernaculum as a slender rod located posterior to the spicules (Fig. II, 8).

Females: in many respects similar to males (Fig. II, 4-5). Somatic setae up to 40 μ m long, ventro-sublateral setae in posterior half of the body smallest, 12 μ m long. Paravular setae present, 10 μ m long. Five pairs of subventral modified tubes present in the region of the oesophageal-intestinal junction (Fig. I, 2). Five pairs of subventral tubes present in posterior half of the body; irregular shaped at the base and subterminally with a flagellum-like structure directed anteriorly (? exudate from the tubes) (Fig. I, 2; II, 7).

Amphids slightly smaller than in males.

Gonads with two ovaries, opposite and mostly reflexed, but a dorso-ventral location is sometimes present; spermathecae present (Fig. I, 2); vulva at mid-body.

Discussion

D. tinae n. sp. differs from the other three known species of the genus (*D. marioni*, *D. simplex* and *D. notohalensis*) in the actual dimension and shape of the amphids and in the presence of a row of

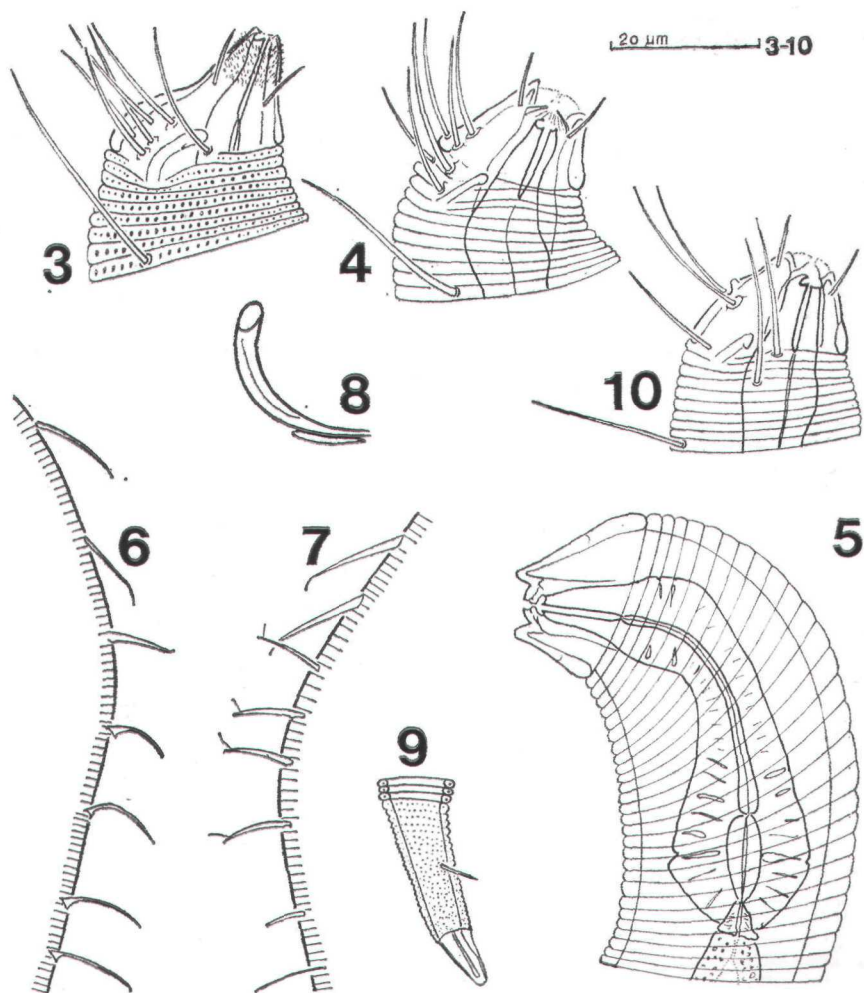


FIG. II

Dracognomus tinae n. sp. lateral views, right: 3-4, 6, 8-10; left: 5, 7.
3: head of male; 4: head of female; 5: oesophageal region of female (external cuticular structures not depicted); 6: subventral border of posterior half of the body in male; 7: subventral border of posterior half of the body in female; 8: copulatory apparatus; 9: tail tip of male; 10: head of juvenile.

six to eight setae between the ventro-sublateral row of somatic setae and the subventral row of slender tubes with triangular sockets at the base. The presence of a ventral row of spine-like setae in the posterior body half in *D. tinae* seems not to be a specific feature but

more a generic character since I also find such setae in the reexamined specimens of *D. marioni* (type species); they are also present in the two other species.

It differs from *D. marioni* in the number of cephalic adhesion tubes and in lacking protuberants on the non-annulated tail region in males. The females are distinguished from *D. simplex* in the distribution of the subventral rows of tubes in the region of the oesophageal-intestinal junction. Finally, *D. tinae* differs from *D. nothoalensis* in the absence of modified adhesion tubes in the posterior half of the body in males.

Some of the herein described animals had epibionts on the head (Fig. I, 1; II, 3); it is most likely bacteria and rather similar to the phenomenon described as a fortuitous association in other nematodes Jensen (1979).

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Summary

A new freeliving marine nematode is described: *Dracognomus tinae* n. sp. from the Belgian Coast. Its light microscopical characters are described and figured and its differential characters discussed. The presence of one ventral row of spine-like setae on the posterior half of the body turned out to be a generic feature.

It is an atypical nematode having an "S"-shaped body and strongly differentiated somatic tubes presumed functioning partly to secrete a material (together with caudal gland cells) that attaches the tubes and the tail tip to the substrate allowing the animal to move in an inchworm-like manner.

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