Gonionchus heipi *sp.n. (Figs. 1–3 A–C)*

Material

Type specimens. Holotype male σ_1 (slide no. 731) and paratype female φ_1 (slide no. 732) in the Nematode Collection of the Instituut voor Dierkunde, Gent, Belgium. Other paratypes (5 males, 5 females and 10 juveniles) in the same collection.

Type locality. Station M25 (52°26′30″N–03°09′15″E) in the Southern Bight of the North Sea. Collected 27 June 1972. Fine-medium sand with median particle diameter of the sand fraction = 260 μm; silt-clay fraction <1%; no gravel. Depth = 31 m.

Other localities. Twenty-three in total are shown on Fig. 1.

Etymology

The species is dedicated to Dr. C. Heip, head of the Marine Biology Section in the Institute of Zoology, Gent.

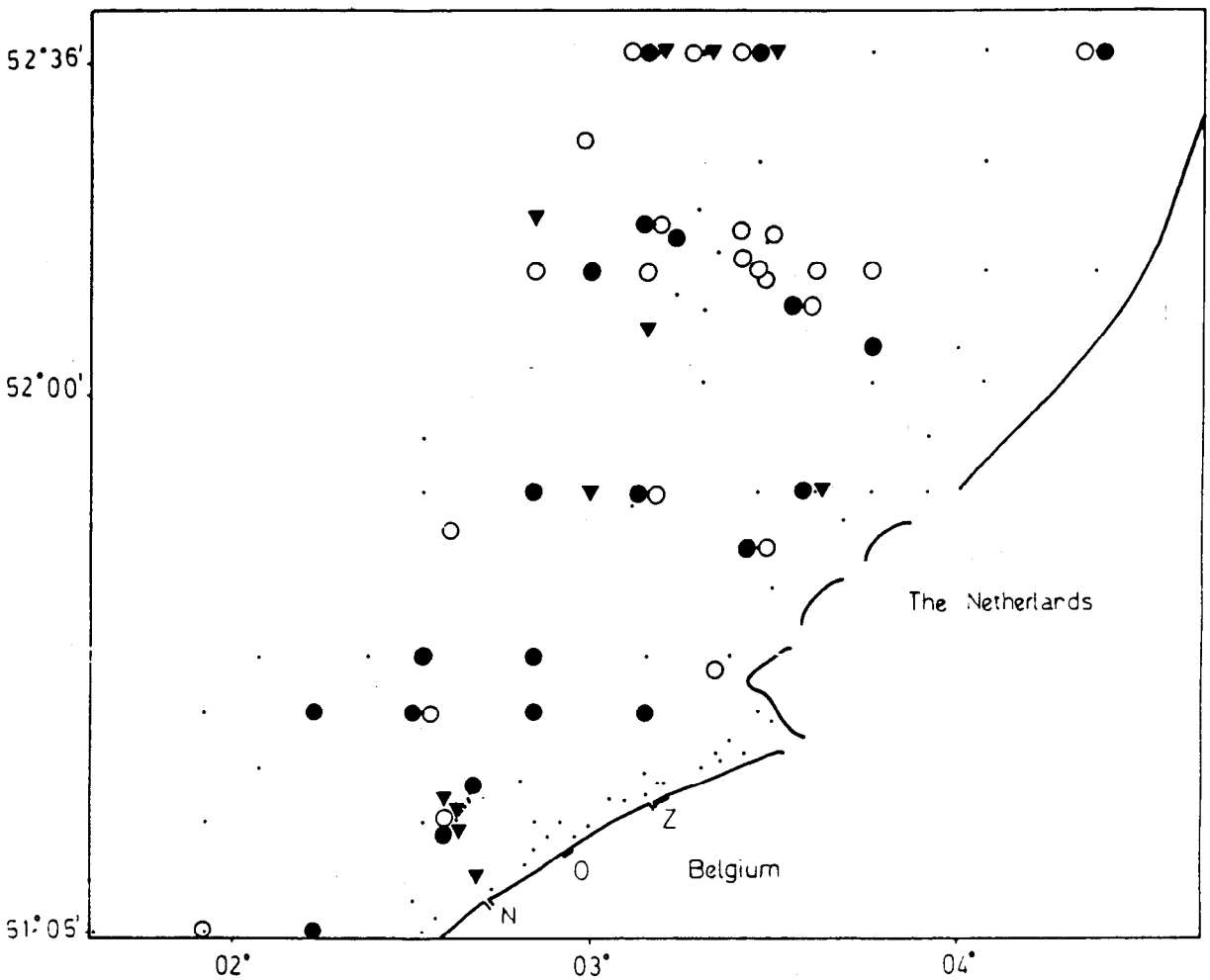

Fig. 1. Distribution of *Gonionchus longicaudatus* (▼), *G. villosus* (●) and *G. heipi* (○) in the Southern Bight of the North Sea.

Measurements

Holotype (σ_1): $\frac{- \quad 85 \quad 290 \quad M \quad 1227}{17 \quad 23 \quad 24 \quad 25 \quad 23}$ 1390

a = 55.6 b = 4.8 c = 8.5 c′ = 7.0 spic = 47 μm

Paratype (φ_1): $\frac{- \quad 131 \quad 437 \quad 1193 \quad 1342}{24 \quad 31 \quad 33 \quad 39 \quad 31}$ 1570

a = 40.3 b = 3.6 c = 6.9 c′ = 7.4 V = 76.0%

Other paratypes:

	Males (n = 5)	Females (n = 5)
L	1260 – 1490 μm	1370 – 1590 μm
a	43.5 – 55.6	40.2 – 45.6
b	3.8 – 4.8	3.6 – 3.9
c	7.9 – 8.8	6.9 – 7.3
c′	6.7 – 7.0	7.3 – 8.7
spic	41 – 48 μm	V: 74 – 76%

Description

Males. Body elongated and cylindrical; tail tapering with cylindrical end part. Cuticle prominently annulated; annules about 3 μm broad. The cervical annules have anterior sections which cover the posterior border of the preceding annule. Longitudinal ornamentation starts at irregular levels in the cervical region; about 12 ridges of longitudinal bars pass into about 20 rows which consist of rectangular projections. The cylindrical part of the tail is annulated but lacks the longitudinal ornamentations.

The six lips are very high and weakly cuticularized. Each lip consists of a basal part which is separated from an apical part by a rather well pronounced boundary. The apical part ends in a flap-like protrusion.

Six internal labial sensillae (3 μm) project from the outer anterior wall of the basal part of the lips. Latter separated from the head region by an outer, folded ring which borders the head capsule anteriorly. This ring has six blunt protrusions and is continuous with an internal cephalic capsule, which is itself continuous with the wall of the buccal cavity. A second folded ornamentation in the cuticle of the head capsule is present between the anterior folded ring and the external labial and cephalic setae.

The six external labial setae (22 μm) are three-segmented; the four cephalic setae (7 μm) are at the same level of the former and are not segmented. Subcephalic setae absent. Somatic setae scarce and very short (5 μm).

Amphideal fovea circular (diameter 7 μm or 30% of the c.b.d.), situated between the fifth and sixth body ring in examined males.

Buccal cavity large and conical with strongly cuticularized walls; two ventrosublateral tooth-like protrusions are obvious but weakly sclerotized in σ_1. In the other males, the tooth-like structures are not obvious, perhaps due to fixation conditions.

Pharynx cylindrical and muscular throughout its length; the lumen is well cuticularized. Cardia is 10 μm long. The wall of the intestine is composed of large cells which show a certain polarity: the outer part, which contains the nucleus, is heavily granulated in comparison with the translucent inner part.

Nerve ring at 30% of the pharyngeal length.

Ventral gland and pore not observed.

Other internal structures are not well preserved in the specimens examined.

Males diorchic; anterior testis on the left side of the intestine; posterior testis on the right side of the intestine. Spicules equal, regularly curved with bifid distal end (not always obvious) (cfr. Fig. 2F). The spicular retractor extends from the proximal end of the spicule to the lateral body wall; the protractor consists of two parts: a dorsal part extending from the dorsal side of the capitulum to the dorsal part of the gubernaculum and a ventral part between the ventral side of the capitulum and the lateral part of the gubernaculum. A rotator muscle extends from halfway the shaft of the spicule (dorsal side?) to the subventral body wall. Gubernaculum paired with a common median part; each lateral part is 16 μm long, weakly sclerotized and with a small dorso-caudal apophysis; the distal part shows a thickening with an internal opening. The protractor of the gubernaculum extends from the caudal part of the apophysis to the subventral body wall. Retractor of the gubernaculum not obvious.

There are probably five pairs of ejaculatory gland cells, situated at both sides of the vas deferens.

Tail conical in its first part, then cylindrical. Three caudal glands have separate outlets. No terminal setae.

Females. External morphology similar to the males.

Amphideal fovea with coiled corpus gelatum (not seen in the males because of fixation?) and situated between fourth and fifth body annule.

Reproductive system monodelphic with outstretched anterior ovary situated at the left side of the intestine. Top of the ovary extends to the level of the pharynx. One egg is found in uterus of $♀_1$, preceeded by a group of sperm cells. Three prominent post-vaginal gland cells.

Diagnosis

Gonionchus heipi sp.n. is characterized by the anterior protrusions of the cervical body annules; longitudinal ornamentation (as rod-like structures) starting at irregular levels in the cervical region and continueing as rectangular protrusions which extend as longitudinal crests throughout the body (except for the cylindrical part of the tail); lack of subcephalic setae; equal spicules.

Discussion

Gonionchus heipi sp.n. is distinguished from all known *Gonionchus*-species by its typical cuticular ornamentation in the cervical region.

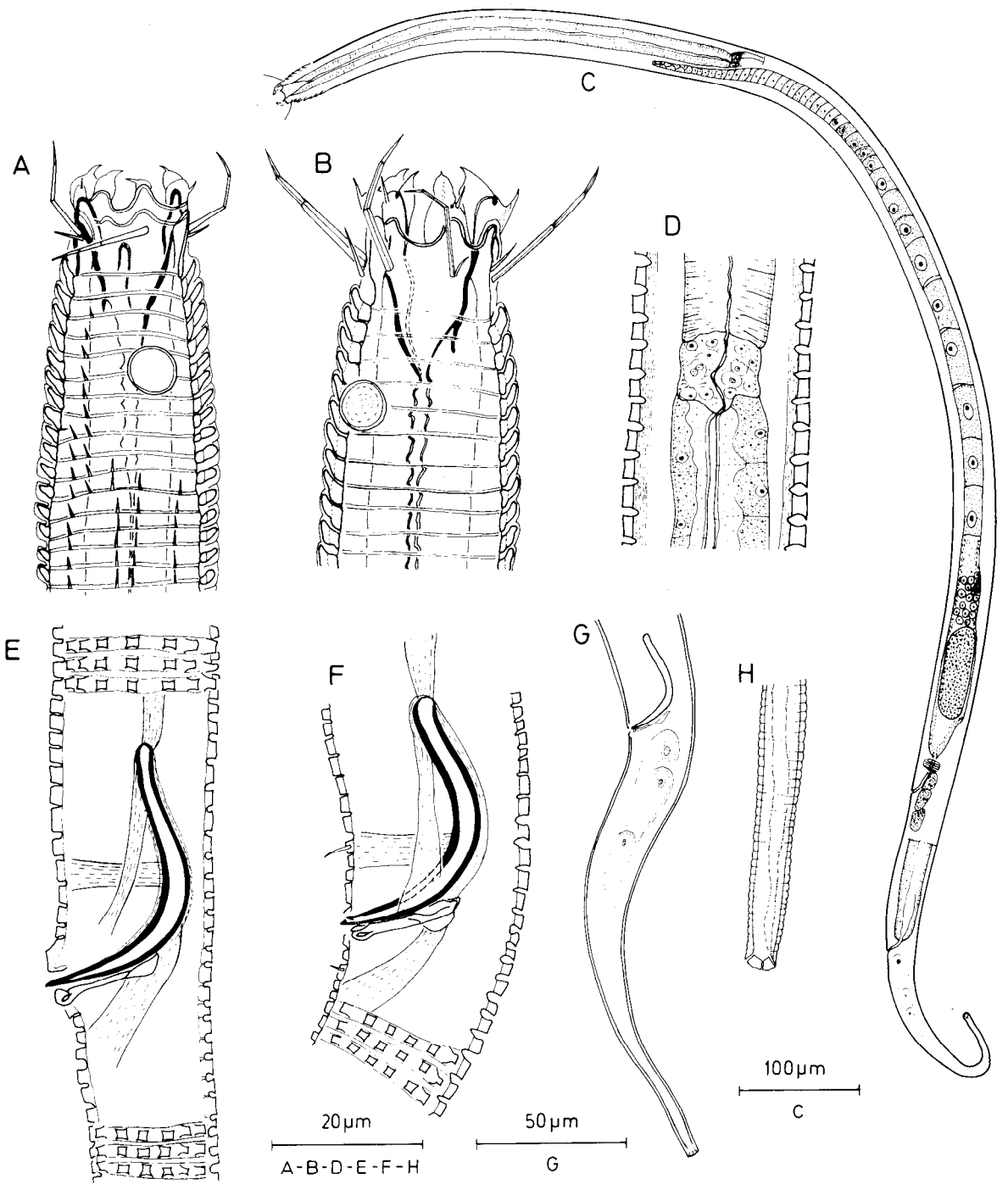

Fig. 2. Gonionchus heipi sp.n. A. Head end σ_1; B. Head end φ_1; C. Total view φ_1; D. Cardial region σ_1; E. Copulatory apparatus σ_1; F. Copulatory apparatus σ_2; G. Tail σ_2; H. Tail tip σ_2.

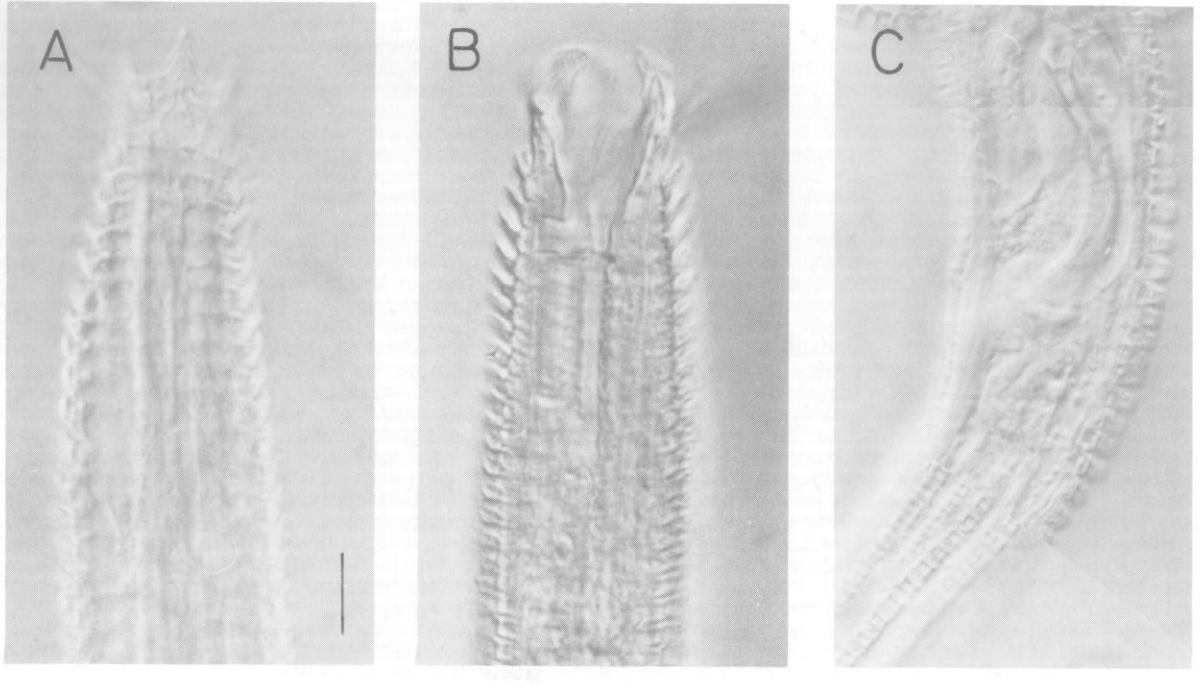

Fig. 3. Gonionchus heipi sp.n.: A. Head end ♂$_1$; B. Buccal cavity ♂$_1$; C. Spicule and cuticular pattern ♂$_1$. (Scale bar is 10 μm).