

Paraxiphidorus michelluci n.g., n.sp. from Argentina (Nematoda : Longidoridae)

August COOMANS* and Eliseo CHAVES**

* *Instituut voor Dierkunde, Universiteit Gent, K. L. Ledeganckstraat 35, 9000 Gent, Belgium and*
** *INTA-Estación Experimental de Balcarce, 7620 Balcarce, Argentina.*

Accepted for publication 28 September 1994.

Summary – *Paraxiphidorus michelluci* n.g. n.sp. is described based on three specimens from uncultivated soil in Argentina. The new genus is characterized by an expanded, offset lip region; stirrup-shaped amphids with wide aperture; odontostyle with forked base, odontophore weakly flanged; guiding ring far posterior; ventromedian supplements outside range of spicules and convex-conoid tail. It resembles *Xiphidorus* Monteiro, 1976 and *Paralongidorus* Siddiqi, Hooper & Khan, 1963 but differs from the former in amphid structure and from the latter in stylet structure, position of guiding ring and in number and position of the supplements in the male.

Résumé – *Paraxiphidorus michelluci* n.g., n.sp. provenant d'Argentine (Nematoda : Longidoridae) – *Paraxiphidorus michelluci* n.g., n.sp. est décrit sur trois spécimens provenant de sol non cultivé d'Argentine. Ce nouveau genre est caractérisé par : région labiale en relief; amphides en étrier à ouverture large; odontostyle à base fourchue; odontophore à ailettes faiblement développées; guide du stylet en position postérieure; suppléments ventromédians dépassant le niveau des spicules; queue convexe-conoïde. Il ressemble à *Xiphidorus* Monteiro, 1976 et *Paralongidorus* Siddiqi, Hooper & Khan, 1963 mais diffère du premier par la structure de l'amphide et du second par celle du stylet, la position du guide du stylet, ainsi que par le nombre et la disposition des suppléments ventro-médians.

Key-words : Longidoridae, nematodes, *Paraxiphidorus*.

During a survey of the nematofauna from several regions in Argentina in 1984, three specimens were found of a hitherto unknown longidorid which upon closer examination appeared to represent a new genus. Despite repeated attempts to collect more specimens none were found. In view of the fact that this genus seems to occupy an interesting position in the family, we decided to describe it based on the two males and one last stage juvenile.

The specimens were fixed with hot 4 % formaldehyde, extracted by centrifugation-flotation and mounted in pure dehydrated glycerine using a modified Seinhorst's (1959) method.

Paraxiphidorus n.g.

DIAGNOSIS

Lip region expanded and well offset. Amphids with wide stirrup-shaped fovea and wide aperture. Base of odontostyle forked. Odontophore with weakly developed basal flanges. Cheilostome long; guiding ring around the posterior third of the odontostyle in resting position. No *dilatatores buccae* (= cheilostome retractors). No compensation sacs. Stylet retractors and pharyngeal retractors present. Pharyngeal gland pattern with small DN far behind corresponding outlet (DO-DN = 14 % of bulb length); SN larger than DN. Males with posterior ventromedian supplements outside the range of the spicules. Tail convex-conoid with broadly rounded terminus.

TYPE AND ONLY SPECIES

P. michelluci n.g., n.sp.

RELATIONSHIPS

The new genus resembles *Paralongidorus* Siddiqi, Hooper & Khan, 1963, especially those *Paralongidorus* species with expanded lip region and wide amphidial fovea. However, the new genus differs in the following aspects: *i*) clearly forked base of the odontostyle; *ii*) weakly flanged odontophore; *iii*) far posteriorly situated guiding ring; *iv*) smaller number of ventromedian supplements with the posteriormost one well in front of the spicules.

The new genus resembles *Xiphidorus* Monteiro, 1976 in the structure of the stylet and guiding apparatus, in the position of the guiding ring and in number and position of the male supplements, but it differs in the shape and aperture of the amphidial fovea.

Paraxiphidorus michelluci n.g., n.sp.

MEASUREMENTS

see Table 1

DESCRIPTION

Male : Body long and slender, more or less spiral upon fixation. Lip region hemispherical, offset by a marked constriction. Body cuticle behind constriction bulging

Table 1. Measurements of type specimens of *Paraxiphidorus michelluci* n.g., n.sp. (all absolute measurements in μm , except L in mm).

	Male		Juvenile
	Holotype	Paratype	
L	5.91	4.75	4.52
a	118	116	113
b	14.9	14.9	14.7
c	164	140	139
c'	1.03	1.14	1.05
T	54	48	—
Lip region width	14	12	12
Lip region height	5	5	5
Amphid aperture	12	—	10
Odontostyle	123	128.5	108.5
Odontophore	52	43	43
Replacement odontostyle	—	—	130.5
Guiding ring	115	113	97
Pharynx :			
– slender part	152	140	193
– bulb (length \times width)	87 \times 19	—	71 \times 15
Hemizonid	190	191	—
Nerve ring	204	201	198
Neck length	396	317	307
Body diameter :			
– at cardia	43	37.5	34.5
– at midbody	50	41	40
– at anus (cloacal opening)	37	38.5	34
Prerectum	384	366	370
Tail	36	34	32.5
Spicule left	57	55	—
Spicule right	56	54	—
Lateral guiding piece left	13	14	—
Lateral guiding piece right	12	14	—
Supplements from cloacal opening :			
– paired papilla	18	19	—
– pap. 1	92	78.5	—
– pap. 2	96	92	—
– pap. 3	107	107	—
– pap. 4	124	127	—
– pap. 5	138	148	—
– pap. 6	154	172	—
– pap. 7	173	—	—

outward due to local thickening of median layer. Anterior sensilla with typical 6 + 10 arrangement. Amphids with stirrup-shaped fovea and wide slit-like aperture occupying 9/10th of the width at the constriction. Lateral

body pores numerous, but dorsal and ventral body pores few. Neck region with 9–10 (paratype) to 13–17 (holotype) lateral, 1 (holotype) or 2 (paratype) dorsal and 4 (holotype) or 5 (paratype) ventral body pores. Odontostyle long and slender, with forked base. Guiding apparatus as in *Xiphidorus*, i.e. with single guiding ring located far backward and without compensation sacs. Odontophore also comparable to *Xiphidorus*, but flanges somewhat less developed. Stylet retractors present but weakly developed, their nature (double or single) cannot be determined on the available material. Pharyngeal retractors as in *Xiphinema* and *Xiphidorus*. Slender part of pharynx not offset from enlarged part. Latter at first conical, then cylindrical. Dorsal gland nucleus smaller than ventrosublateral ones. Positions of outlets and nuclei as percentage of bulb length (holotype) : DO : 11, DN : 25, RSN : 48.5, LSN : 52, SO : 85. Pharyngo-intestinal junction wide and flattened, with conoid central valve. Intestine with thin wall, three or four cells in circumference. Prerectum about twice as long as the region of copulatory muscles. Tail dorsally convex-conoid with broadly rounded terminus, with 2–3 caudal pores. Reproductive system confined to posterior body half, short in paratype, but longer in holotype due to large number of spermatozoa. Both testes 520 μm long or 11 % of the body length in the paratype and 1040 μm long or 17.6 % of the body length in the holotype. Spermatozoa 5.8 μm ($n = 10$) long. *Vas deferens* in the holotype packed with small, highly refractive granules till opposite the anteriormost copulatory muscles, then finely granular till it merges with the very short rectum to form the cloaca. In the paratype the *vas deferens* is filled with the refractive granules throughout its length. There are 32 (holotype) to 37 copulatory muscles and four or five pairs of ejaculatory glands in the posterior body region. Behind the last copulatory muscle three smaller muscles running inward at each side from the latero-dorsal body wall along the middle part of the spicule and bending towards the ventral side of the spicule. In the tail there are 4–5 caudal copulatory muscles. In addition to the paired genital papilla opposite the level of the middle of the spicules, there are seven (holotype) or six ventromedian supplements. The anteriormost of these is less developed and anterior to the first copulatory muscles; the posteriormost ventromedian supplement occurs at about two spicule lengths in front of the cloacal opening. There are five subventral body pores in the region of the copulatory muscles. Spicules stout, L-shaped with posterior dorsal thickening.

Juvenile : Agreeing in most aspects with the males, except for genital structures. Tail conoid-rounded with three caudal pores. Judging from its size, length of replacement odontostyle and development of genital primordium (61 \times 9 μm) and lack of a spicular primordium it seems to be a young preadult female (or J 4) stage.

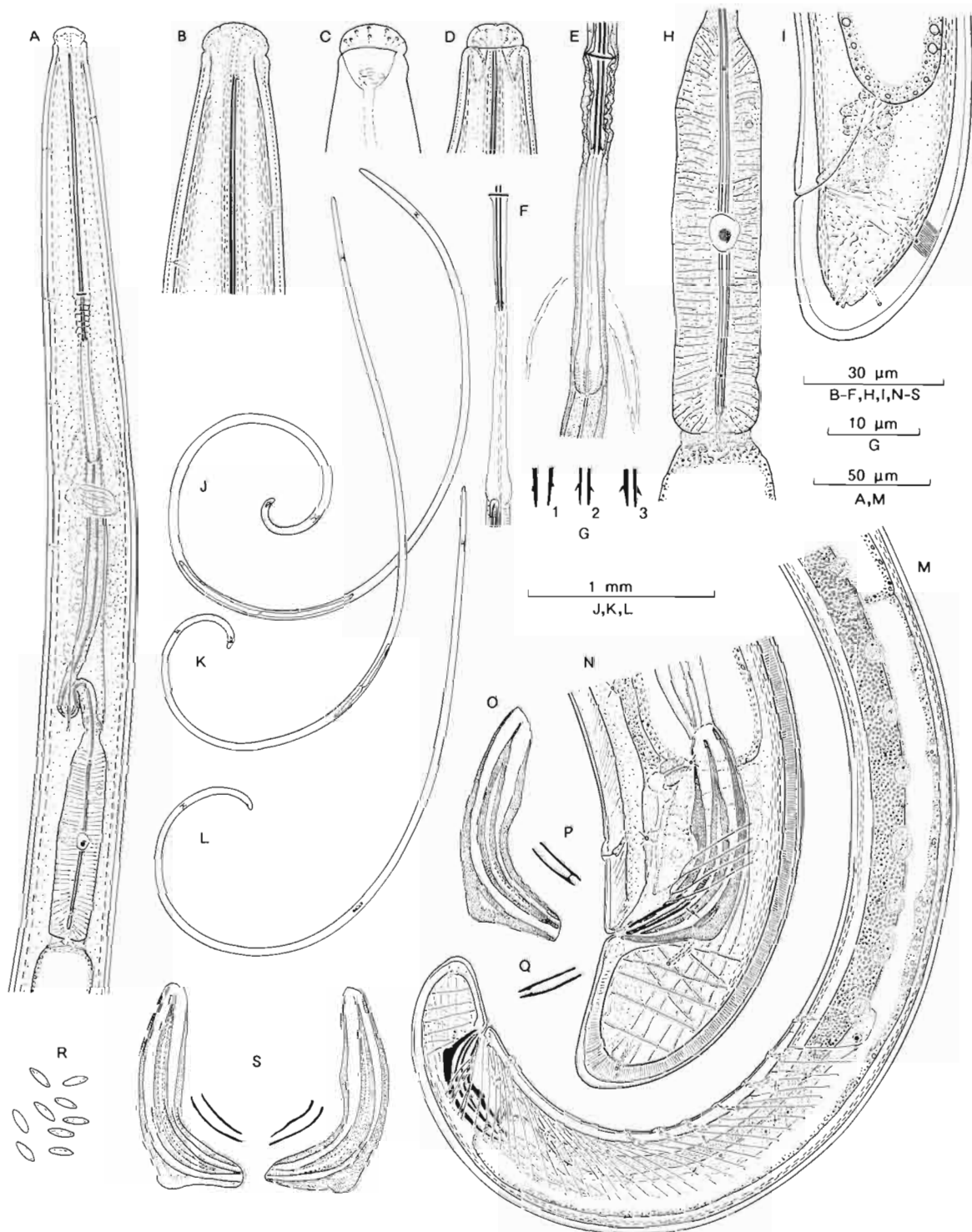


Fig. 1. *Paraxiphidorus michelluci* *n.g., n.sp.* A : Neck region; B : Anterior end, median view; C : Anterior end, surface view; D : Anterior end, dorso-ventral view; E : Posterior part of stylet; F : Same, but of juvenile; G : Base of odontostyle [1 : *Paralongidorus cebensis* (for comparison); 2 : Functional odontostyle of juvenile; 3 : Replacement odontostyle of juvenile]; H : Pharyngeal bulb; I : Tail of juvenile; J : Holotype male; K : Paratype male; L : Juvenile paratype; M : Posterior body region of male; N : Tail end of male; O : Right spicule; P, Q : Lateral guiding pieces; R : Sperm; S : Spicules and lateral guiding pieces of paratype male. (A-C, E, H, J, M-R are from holotype).

The base of the odontostyle is less clearly forked, but the base of the replacement odontostyle is forked as in the male.

TYPE LOCALITY AND HABITAT

Uncultivated soil, Campo Arana, Pdo. de Tandil, Buenos Aires Province, Argentina. Collected by E. Chaves, 20 Aug. 1984.

TYPE SPECIMENS

Holotype male and paratype juvenile on slides n° 3809 and 3810 respectively in the Nematode Collection of the Zoology Institute, University of Ghent, Belgium. Paratype male in the Nematode Collection

of INTA-Estación Experimental de Balcarce, Argentina.

References

- MONTEIRO, A. R. (1976). *Xiphidorus yepesara* n.gen., n.sp. (Nematoda : Longidoridae), from Brazil. *Nematol. Medit.*, 4 : 1-6.
- SEINHORST, J. W. (1959). A rapid method for the transfer of nematodes from fixative to anhydrous glycerin. *Nematologica*, 4 : 67-69.
- SIDDIQI, M. R., HOOPER, D. J. & KHAN, E. (1963). A new nematode genus *Paralongidorus* (Nematoda : Dorylaimoidea) with descriptions of two new species and observations on *Paralongidorus citri* (Siddiqi, 1959) n.comb. *Nematologica*, 9 : 7-14.