

Observations on *Xiphinema vitis* Heyns, 1974,  
*X. elongatum* Schuurmans Stekhoven & Teunissen, 1938,  
*X. fatikae fatikae* Bos & Loof, 1985, and description of  
*X. fatikae eburnense* subsp. n. (Nemata : Longidoridae),  
from Africa

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SUMMARY

Description and illustration are given for a population of *Xiphinema vitis* Heyns, 1974, mixed with a population of *X. elongatum* Schuurmans Stekhoven & Teunissen, 1938, from ground maize roots in Burundi. Both populations are slightly different from the

Table 1  
Measurement of *Xiphinema vitis* Heyns, 1974 (in  $\mu\text{m}$ , unless otherwise stated)

	Females	Male	f1	f2	f3	f4
n	31	1	6	4	9	17
L (mm)	3.25 (2.85-3.83)	3.11	0.89 (0.81-0.95)	1.28 (1.23-1.32)	1.70 (1.60-1.86)	2.42 (1.95-3.54)

occupying 1/3 to 1/5 of corresponding body diameter. Lateral body pores distinct, 14-20 in the neck region; 2-5 dorsal and 11-13 ventral body pores observed in neck region. Lip region rounded, separated from body by a slight constriction. Amphid large, fovea stirrup-shaped with slit-like aperture, 7.5-9.0  $\mu\text{m}$  wide, located slightly anterior to constriction. Stylet conforms to genus; guiding ring situated around posterior end of odontostyle *i.e.* at about 88 % (84-104) of odontostyle. Vestigium 3-6.5  $\mu\text{m}$  long, observed in all specimens, variable in position, posteriorly directed in some specimens. Neck 458 (408-503)  $\mu\text{m}$  long. Slender part of pharynx 159 (90.5-189)  $\mu\text{m}$  long. Pharyngeal bulb with large distinct dorsal gland nucleus and pair of ventrosublateral gland nuclei; nuclei and their outlets located as follows ( $n = 5$ ): DN = 10.9 % (9.5-13.2); DO = 7.1 (6.3-8.8); RSN = 50.2 (47.8-51.7); LSN = 51.6 (49-56.7); SO (both at same level) = 73.8 (71.4-75.6). Cardia 12  $\mu\text{m}$  (9-16) long. Intestinal cells packed with refractive granules. Prerectum 520 (274-792)  $\mu\text{m}$  long or 15.9 % (9.6-20.6) of body length, demarcated from intestine by

shorter and broader after each moult. In J1, J2 and J3 tail is regularly conical and ventrally arcuate; in J4, tail shows a slight terminal digitation.

#### LOCALITY AND HABITAT

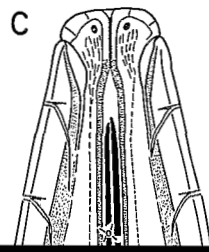
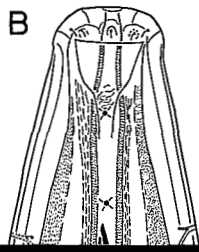
Soil, maize field and fallow with maize as previous crop, Institut des Sciences Agronomiques du Burundi (ISABU), Gisozi, Burundi (*rec. et leg.*: Ir. M. Goethals). Mixed with *X. elongatum*.

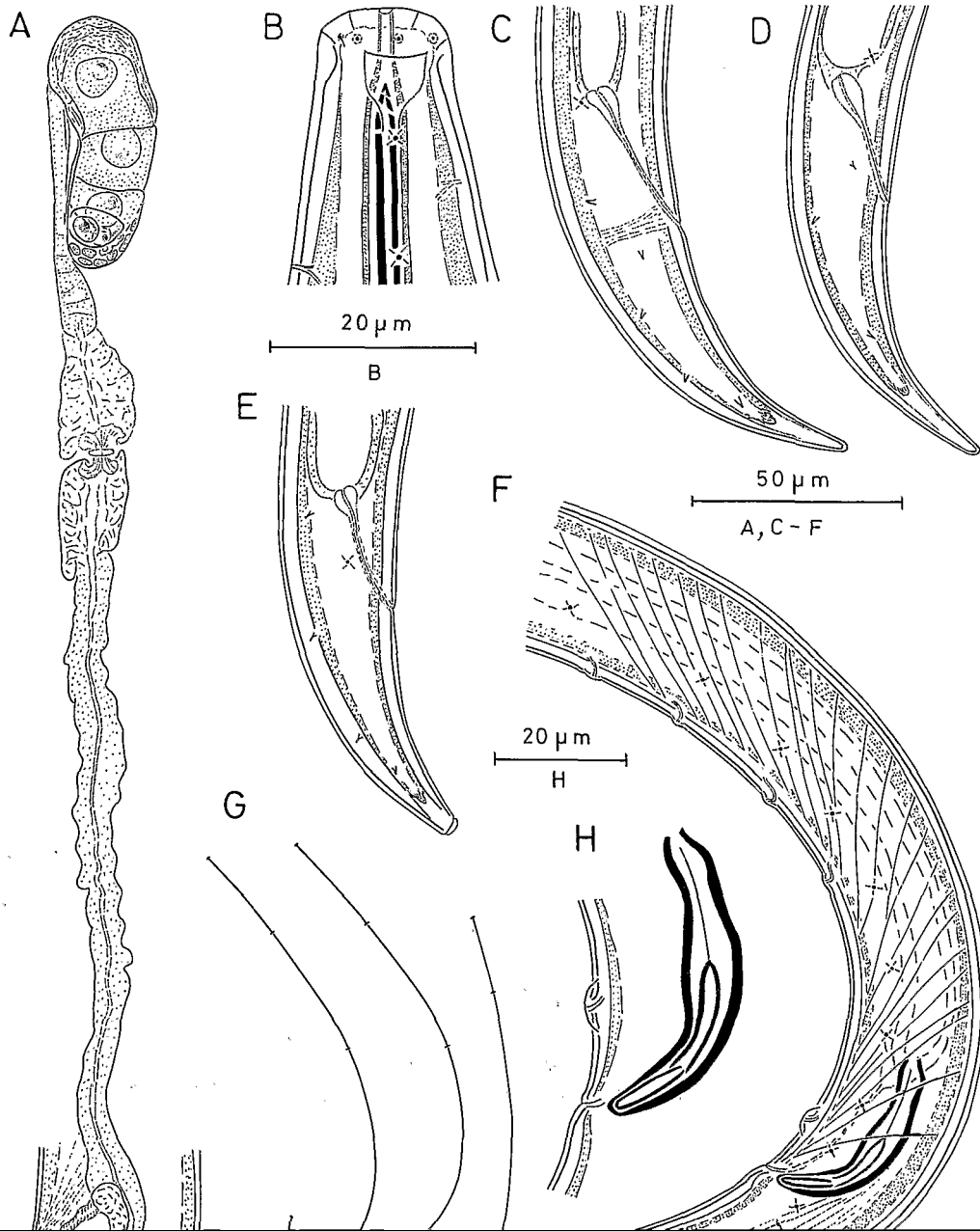
#### VOUCHER SPECIMENS

Deposited in the collection of the Instituut voor Dierkunde, Rijksuniversiteit Gent, Belgium.

#### DISCUSSION

*X. vitis* has been recorded in various places in South Africa (Heyns, 1974). The population from Burundi studied here generally conforms to the original descrip-





diam. = 40  $\mu\text{m}$ ; anal body diam. = 27.5  $\mu\text{m}$ ; spicules = 53.5  $\mu\text{m}$ ; lat. guid. pieces = 12  $\mu\text{m}$ ; prerectum = 560  $\mu\text{m}$ ; cloaca = 46  $\mu\text{m}$ ; tail length = 53  $\mu\text{m}$ .

#### DESCRIPTION

*Females* : Anterior and central parts of body slightly arcuate, posterior part strongly curved upon fixation; body tapering at both ends. Cuticle with two main layers, 2-3  $\mu\text{m}$  thick at midbody and increasing to 2.5-5  $\mu\text{m}$  on dorsal side of tail. Lateral chord about 1/4 of the midbody diameter. Dorsal and ventral body pores rather indistinct. Lateral body pores 15-18 in neck region. Lip

length, and *ii*) the tail shape, more curved and pointed than usual. Close body lengths have already been recorded in some specimens from South Africa (Heyns, 1974); also in specimens of these latter populations, as well as in specimen from Brazil (Ferraz, 1980), tail shape is rather similar to that observed in the Burundi population. In addition, the male closely resembles the rare males already described (Heyns, 1974). All other characters, namely the low value V in a didelphic species, length of stylet, structure of the female genital branches, fit very satisfactorily with the definition of *X. elongatum* (see Luc & Southey, 1980). In conclusion we consider the present population as representing a slightly divergent type from the "normal" *X. elongatum*.



Table 2

Measurements of *Xiphinema fatikae fatikae* Bos & Loof, 1985 and *X. fatikae eburnense* subsp. nov. (in  $\mu\text{m}$ , unless otherwise stated)

	X. fatikae fatikae				X. fatikae eburnense		
	Pop. 1	Pop. 2	Pop. 3	Pop. 4	Holotype	Paratypes	Pop. 2
n	11	3	2	2	1	2	4
L	2.32 $\pm$ 0.155						2.15
mm	(2.07-2.59)	(2.07-2.19)	(2.21-2.23)	(2.15-2.52)	2.27	(2.16-2.43)	(2.05-2.25)
a	49.8 $\pm$ 2.44		*				45.5
	(45.8-54.9)	(52-53.2)	—	(43-53.6)	55.3	(50.7-70.7)	(44.5-47.7)
b	6.5 $\pm$ 0.46						5.7
	(5.8-7.3)	(6-6.3)	(6.6)	(7.4-7.5)	6.7	(6.2-6.8)	(5.1-7.4)
c	25.5 $\pm$ 3.21						32.3
	(18.5-30.1)	(19.9-22.1)	(25.3-25.7)	(28.3-30.9)	28.9	(29.8-34.5)	(29.9-34.4)
c'	3.1 $\pm$ 0.25						2.4
	(2.7-3.6)	(3.3-3.6)	(2.9-3)	(2.6-2.8)	2.7	(2.3-2.9)	(2.3-2.4)
V	50.2 $\pm$ 1.82						51.2
	(46.8-54.1)	(48.7-51.2)	(48.7-50.1)	(53.8-54.5)	53.6	(52.9-53.2)	(50.4-52.5)
Od. style	111 $\pm$ 1.60						97.5
	(109-113.5)	(100.5-102)	(105-107)	(98-101)	100	(98-102)	(90-104)
Od. phore	65.7 $\pm$ 1.92						59.5
	(62-69)	(64.5-65.5)	(70-71)	(68-69)	60	(60-62)	(58-61)
Tot. stylet	176.5 $\pm$ 2.88						157
	(172-182.5)	(165-166.5)	(176-177)	(166-170)	160	(160-162)	(148-163)
Guide ring	78 $\pm$ 2.06						92
	(75-82)**	(68-83)**	(98-100)	(86-98)	86	(92)	(80-100)
Body diam. mid. body	47 $\pm$ 3.47						47
	(43-53.5)	(39-42)	—*	(47-50)	41	(42-48)	(43-50)
Tail	92.6 $\pm$ 9.92						66
	(79-111.5)	(97.5-104)	(86-88)	(76-81.5)	78.5	(62.5-84.5)	(62.5-68.5)
h	51.6 $\pm$ 8.37						38
	(34.5-64)	(52.5-58.5)	(42-52)	(43.5-44.5)	45	(35-48)	(36.5-41)
h%	55.4 $\pm$ 5.14						57.4
	(42-63)	(51-56)	(49-59)	(54.5-57.7)	57.4	(55.8-56.9)	(55.6-59.6)

\* Specimens flattened.

\*\* All females except one of the type population and all females of population 2 have their stylets protruded outside the mouth; this explains the more anterior position of the guide ring compared to population 3 and 4.

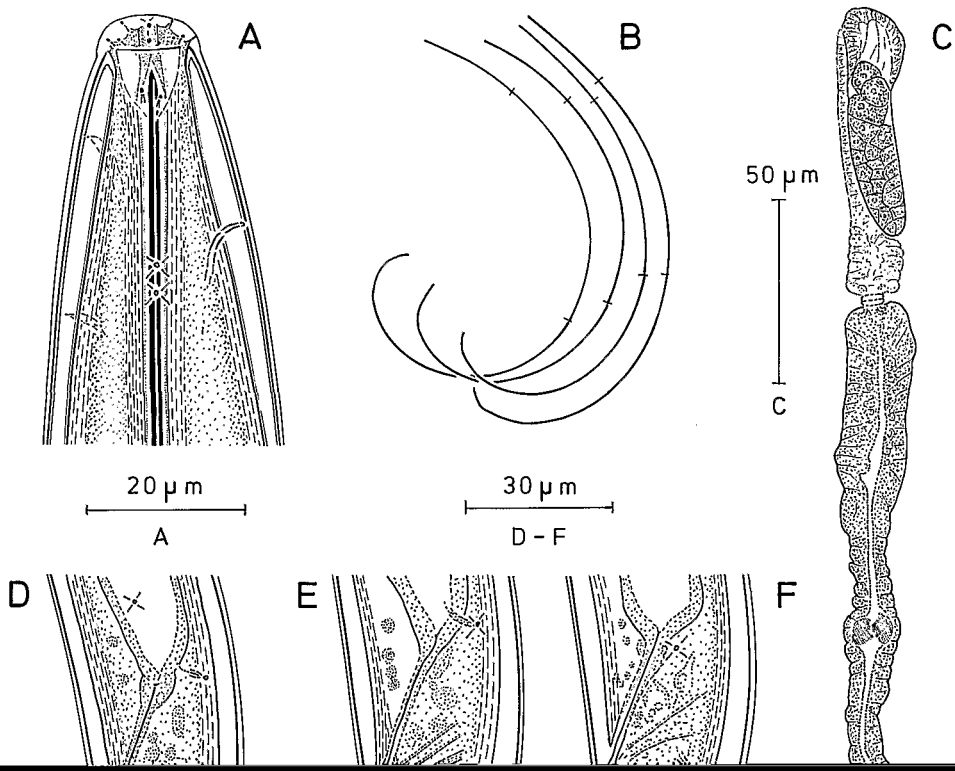
is optically empty or with a very fine granular content. Usually two pairs of caudal pores present, a mediolateral pair about halfway along the protoplasmic part of the tail and a subdorsal pair rather close to the anal level. The latter may be lacking or may be accompanied by a second subdorsal pair of pores.

c' = about 5; hyaline tail portion = 43.5 % of tail length).

## LOCALITIES AND HABITATS

— Population 1 : soil around the roots of *Sorghum* sp., 1 mile north of Ilora. 30 miles north of Ibadan, Oyo





— *Population 3* : soil around the roots of yam (*Dioscorea rotundata*), 15 miles from Ikoyi, along the road Ikoyi-Igbeti, south of Tewure, W. Nigeria (*Rec. et leg.* : F. E. Caveness) : one female.

— *Population 4* : soil under diseased cotton plants.

OTHER LOCALITIES AND HABITATS

— *Population 2* : soil around the roots of rice (*Oryza sativa*), Lagonou, Ivory Coast : four females (*Rec. et leg.* : R. Fortuner).

TYPE SPECIMENS