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Species of the genus *Pratylenchus* Filip'jev, 1936 (Nematoda : Tylenchida) from Cameroon

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Summary – Four known species of *Pratylenchus*, namely, *P. brachyurus* (Godfrey, 1929) Filip'jev & Schuurmans Stekhoven, 1941; *P. goodeyi* Sher & Allen, 1953; *P. scribneri* Steiner, 1943; and *P. sefaensis* Fortuner, 1973 were found in soil samples collected from the rhizosphere of a variety of crops in different localities in the western region of Cameroon. Identification was, however, not easy. The *P. goodeyi* population from Cameroon shows only three head annuli instead of four. The *P. sefaensis* populations from Cameroon have a very variable tail end (instead of the typical rounded tail end) and a lateral field structured as a wide band with a series of irregular lines, or with a faintly-marked pair of inner incisures (instead of four to five lines). Tentative identification with light microscopy was, for both species, supported by SEM *en face* views; moreover, the SEM showed that the cephalic sensilla in *P. goodeyi* are more developed in the male than in the female. Differences in morphometrics are evaluated. The four species are first records for Cameroon.

Résumé – ***Espèces du genre* Pratylenchus *Filip'ev, 1936 (Nematoda : Tylenchida) provenant du Cameroun*** – Quatre espèces déjà connues de *Pratylenchus-P. brachyurus* (Godfrey, 1929) Filip'ev & Schuurmans Stekhoven, 1941; *P. goodeyi* Sher & Allen, 1953; *P. scribneri* Steiner, 1943; *P. sefaensis* Fortuner, 1973 – ont été extraites d'échantillons de sols provenant de la rhizosphère de plantes cultivées en différents endroits de la région ouest du Cameroun. L'identification spécifique n'a cependant pas été facile. La population de *P. goodeyi* du Cameroun ne possède que trois anneaux céphaliques au lieu de quatre. La population de *P. sefaensis* du Cameroun montre une extrémité caudale très variable – au lieu d'une extrémité typiquement arrondie – et un champ latéral formé d'une large bande parcourue de lignes irrégulières ou bien une paire de lignes internes faiblement marquées – au lieu de quatre à cinq lignes. L'identification réalisée en microscopie optique pour ces deux espèces a été confirmée par les observations au MEB; de plus, le MEB a montré que les sensilles céphaliques de *P. goodeyi* sont plus développées chez le mâle que chez la femelle. Les différences dans les caractères morphométriques ont été évaluées. Ces quatre espèces sont signalées au Cameroun pour la première fois.

Key words : Cameroon, *Pratylenchus*, SEM, taxonomy.

There are few published reports on plant-parasitic nematodes in Cameroon, and only one records the occurrence of a *Pratylenchus* species, *P. zeae* Graham, 1951, found associated with rice roots in northern Cameroon (Samsoen & Geraert, 1975). In an ongoing study of plant-parasitic nematodes of Cameroon soil samples collected from the rhizosphere of a variety of food and vegetable crops in different localities in the western region of Cameroon contained, among others, large populations of *Pratylenchus* species. The present paper describes and illustrates four species of *Pratylenchus* found in those samples.

Nematodes were extracted from the soil by the sieving and centrifugal sugar-flotation technique (Caveness & Jensen, 1955) modified by Jenkins (1964). The specimens were killed and fixed by pouring a hot (85 °C) solution of 4 % formalin + 1 % glycerin over them, processed to anhydrous glycerin (Seinhorst, 1959) by a modified method (De Grisse, 1969), and mounted on aluminium double-coverslip slides. Glycerin-infiltrated specimens were used for scanning electron microscopy (SEM).

The specimens studied are deposited in the nematode collections of the Instituut voor Dierkunde, Ledeganckstraat 35, 9000 Gent, Belgium and the Nematology Laboratory, Department of Plant Protection, University of Dschang, Dschang, Cameroon.

Pratylenchus brachyurus (Godfrey, 1929) Filipjev & Schuurmans Stekhoven, 1941

(Measurements in Table 1)

REMARKS

The tail tip in our specimens varied from broadly-rounded to truncate or spatulate, similar to the variation illustrated by Godfrey (1929) and Corbett (1976). However, Sher and Allen (1953), Williams (1960), Roman and Hirschmann (1969), and Van den Berg (1971) all described and illustrated the rounded tail tip, with

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Fig. 1. *Map of the western region of Cameroon showing the localities from which samples were collected.*

little variation in shape. This is the first record of *P. brachyurus* from Cameroon.

Pratylenchus goodeyi Sher & Allen, 1953
(Figs 2, 3, 4)

MEASUREMENTS

See Table 2.

DESCRIPTION

Female : Lip region not set off from the body, marked by three annuli. The cephalic sensilla were not observed.

Male : Similar to female in general form and face pattern, but with the cephalic sensilla more developed, prominently situated on the outer portion of the submedian segments of the cephalic plate (Fig. 4 A). In lateral view, the lip region, like the female's, bears three annuli (Figs 2 D-F, 4 B).

DISCUSSION

Our specimens generally fit the original description of the species by Goodey (1928), the redescriptions of Sher and Allen (1953), de Guiran and Viladerbó (1962) and the description by Machon and Hunt (1975), except for differences in the number of lip region annuli, position of the vulva, and length of spicules. We observed three instead of four annuli on the lip region. Comparison of ours with specimens of a population from banana in Tanzania cultured by Mr. Webb and supplied to us by D. J. Hooper and specimens supplied by D. Sturhan showed no morphological differences except for the number of annuli on the lip region. However, one of the SEM photographs (S. Clark 517/42) used in the study by Corbett and Clark (1983) sent to us by D. J. Hooper showed, like ours, three annuli on the lip region. Moreover, the male from Tanzania showed a similar development of the cephalic sensilla (Fig. 4 E, F). Several *Pratylenchus* species have three and four lip annuli : *P. morettoi, P. pseudopratensis, P. vulnus.* The V value in our specimens (72-78 %) closely agrees with those of Loof (1960) and de Guiran and Vilardebó (1962) : 72-77 % and 71-78 %, respectively; in the original description, V is 73-75 % (Sher & Allen, 1953). Finally, the spicules in our specimens are slightly longer (19-21 µm) than Goodey's (1928) measurements (15 µm). The difference in the number of lip region annuli between our specimens and previous descriptions notwithstanding, we consider our specimens as *P. goodeyi.* This is the first record of *P. goodeyi* from Cameroon.

Pratylenchus scribneri Steiner, 1943
(Fig 5)

MEASUREMENTS

See Table 3.

DISCUSSION

Our specimens of *P. scribneri* are very similar to *P. jordanensis* Hashim, 1983; the only difference between them lies in the shape of the tail. In our specimens the tail is less conoid, with a smooth, broadly rounded terminus, while in *P. jordanensis* the tail is slightly more conoid, with a slightly narrower and indented terminus. In addition, *P. jordanensis* tail terminus has a thicker cuticle, and the hyaline terminal portion is longer than in our specimens. The tail in our specimens satisfactorily fits the tail of *P. scribneri* as described and illustrated earlier (Sher & Allen, 1953; Thorne & Malek, 1968; Roman & Hirschmann, 1969). We therefore regard our population as *P. scribneri.* There were only minor differences in body, stylet, and tail lengths and the length of the oesophageal lobe (oesophageal overlap) between our specimens and previous descriptions (Sher & Allen, 1953; Roman & Hirschmann, 1969; Van den Berg, 1971; Knobloch & Laughlin, 1973; Geraert *et al.,* 1975). In the original drawings of the tail and the description by Loof (1985), the protoplasmic core at the tail tip usually ends in some finger-like processes. These were not present in our populations. This is the first record of *P. scribneri* from Cameroon.

Pratylenchus sefaensis Fortuner, 1973
(Figs 6, 7)

MEASUREMENTS

Females : See Table 4.

Male (n = 1; from population from sugarcane in Mantum Bali) : L = 480 µm; a = 28.4; b = 6.3; b′ = 4.2; c = 17.9; stylet = 13.5 µm; DGO = 3.0 µm; T % = 42; spicules = 13.5 µm; gubernaculum = 5.5 µm.

Table 1. *Morphometric data of* Pratylenchus brachyurus *populations from maize in Foumbot, peanut in Dschang, soybean in Nkwen * and Weme **, and tomato in Santa Mbei, Cameroon (All measurements in μm).*

Character	Maize population	Peanut population	Soybean pop.*	Soybean pop.**	Tomato population
n	20	4	9	8	5
L	525 ± 32 (460-585)	514 ± 24 (485-540)	548 ± 29 (505-605)	500 ± 13.8 (475-525)	543 ± 44 (485-620)
VBW	20 ± 2.8 (15-25)	18.8 ± 1.1 (17-20)	18.8 ± 1.9 (17-21)	17 ± 1.4 (15-19)	19.8 ± 2.3 (17-23)
Oes. (valve)	85.8 ± 7.6 (72-95)	85, 83 (n = 2)	92 ± 3.9 (87-97)	87 ± 3.5 (83-93)	89 ± 0.8 (88-90)
Oes. (lobe)	144 ± 15.3 (111-161)	154 ± 4.1 (149-159)	155 ± 9.3 (145-167)	155 ± 5.8 (148-167)	139 ± 5 (131-145)
Tail	28.7 ± 2.4 (25-35)	27 ± 1.4 (26-29)	28 ± 2.3 (25-31)	27.3 ± 2.1 (25-30)	30 ± 1.6 (28-32)
ABW	13.6 ± 1.3 (10-15)	13.7 ± 1.2 (12-15)	13.3 ± 1.2 (11-15)	10-11	14 ± 0.7 (13-15)
a	26.7 ± 2.7 (21.6-31.2)	27.5 ± 0.9 (26.1-28.5)	29.4 ± 2.3 (26-34)	29.6 ± 2.4 (25.8-33)	27.6 ± 2 (24.3-30.6)
b	6.4 ± 0.7 (5.5-7.6)	6.4, 6.4 (n = 2)	5.9 ± 0.4 (5.4-6.4)	6.0 ± 0.6 (5.1-6.9)	6.4 ± 0.3 (6.2-6.9)
b′	3.6 ± 0.6 (2.9-4.9)	(3.3-3.5)	3.5 ± 0.4 (3.1-4.0)	3.3 ± 0.3 (2.9-4.0)	4 ± 0.5 (3.5-4.7)
c	18.5 ± 1.3 (17.0-20.4)	18.9 ± 1.5 (17.1-20.8)	19.8 ± 1.1 (18.8-22)	18 ± 0.9 (16.8-19)	18.3 ± 1.8 (15-20)
c′	2.1 ± 0.2 (1.8-2.7)	2.0 ± 0.2	2.2 ± 0.2 (1.9-2.3)	2.6 ± 0.1 (2.5-2.8)	2.1 ± 0.1 (2-2.3)
St	18.6 ± 0.7 (17-20)	(18-19)	19.3 ± 0.7 (18-20)	19.0 ± 0.6 (18-20)	20 ± 0.4 (20-21)
V %	84 ± 1.2 (82-87)	86 ± 1.1 (84-87)	86 ± 1.1 (84-87)	84 ± 1.2 (82-86)	85 ± 1.0 (83-86)
Oes. overlap	51 ± 9.4 (39-67)	68, 76 (n = 2)	66 ± 12.2 (52-80)	68 ± 7.0 (55-78)	49 ± 6.5 (41-57)
Nerve ring	71.7 ± 1.8 (68-74)	(71-73)	74.7 ± 4.1 (70-82)	71.8 ± 4.4 (65-81)	75 ± 2.1 (72-78)
Hemizonid	86.5 ± 3.5 (81-91)	87 ± 4.7 (83-95)	88.2 ± 2.8 (84-92)	85.0 ± 4.9 (75-91)	92.3 ± 6.8 (85-103)
Excr. pore	89.5 ± 3.9 (84-95)	88.8 ± 4.9 (85-97)	93 ± 1.9 (90-95)	87.6 ± 5.2 (77-93)	95.3 ± 6.8 (88-106)
PUS	15.4 ± 3.9 (9-23)	15 ± 3.1 (10-18)	12 ± 3.9 (5-16)	14.0 ± 2.9 (12-21)	14 ± 2.7 (10-17)
PUS/VBW	0.8 ± 0.2 (0.5-1.2)	0.8 ± 0.2 (0.5-0.9)	0.6 ± 0.2 (0.2-0.8)	0.8 ± 0.2 (0.6-1.2)	(0.6-0.8)
PUS/V-A (%)	29.1 ± 9 (17-52)	30.7 ± 7.5 (20-36)	23.6 ± 8.9 (8-33)	30.3 ± 4.5 (24-34)	26 ± 2.2 (24-29)
V-A/tail	1.9 ± 0.2 (1.5-2.2)	1.7 ± 0.2 (1.6-2.0)	1.8 ± 0.2 (1.6-2)	1.9 - 2.0 (1.8-0.3)	1.8 ± 0.3 (1.2-2)
Phasmid (% tail)	55 ± 2.3 (52-58)	?	42 ± 3.1 (39-46)	38.3 ± 5.0 (33-45)	?
Tail annuli	18 ± 1.3 (16-21)	17 ± 1.6 (15-19)	17 ± 1.9 (14-19)	19.0 ± 2.6 (17-23)	15 ± 1.6 (14-18)

Table 2. *Morphometric data of a* Pratylenchus goodeyi *population from plantain in Bali, Cameroon (All measurements in* µm).

Character	Females	Males
n	13	4
L	524 ± 59 (430-605)	543 ± 66 (470-650)
VBW	21 ± 2.6 (16-24)	19.3 ± 2.6 (17-23)
Oes. (valve)	81.7 ± 4.4 (72-86)	81.3 ± 6.4 (76-92)
Oes. (lobe)	129 ± 7.2 (115-140)	120 ± 13.7 (111-139)
Tail	31.6 ± 3.7 (25-38)	30.5 ± 2.5 (27-34)
ABW	13.5 ± 1.6 (11-16)	13.7 ± 0.9 (13-15)
a	25.4 ± 2.6 (21.7-28.8)	26.5 ± 2.7 (22.8-29.2)
b	6.4 ± 0.7 (5.4-7.7)	6.6 ± 0.5 (5.9-7.1)
b′	4.1 ± 0.4 (3.7-4.8)	4.6 ± 0.5 (3.8-5.1)
c	16.8 ± 1.4 (14.7-18.5)	17.8 ± 1.7 (15.2-19.4)
c′	2.4 ± 0.3 (1.7-2.8)	2.2 ± 0.2 (1.9-2.4)
St	15.5 ± 0.5 (14.5 - 16.5)	14.5 ± 1 (12.7 - 15.5)
V % or T %	75 ± 1.6 (72-78)	55 ± 7.8 (45-64)
Oes. overlap	47.3 ± 5.1 (37-55)	38.3 ± 8.2 (27-47)
Nerve ring	67.3 ± 3.6 (61-74)	64 ± 3.3 (60-68)
Hemizonid	76.6 ± 5.3 (69-86)	75 ± 4.5 (70-81)
Excr. pore	78.9 ± 5.3 (71-88)	77 ± 4.5 (72-83)
PUS	23.4 ± 5.7 (14-35)	–
PUS/VBW	1.2 ± 0.3 (0.6-1.7)	–
PUS/V-A (%)	23.3 ± 4.9 (16-34)	–
Tail annuli	19 ± 2.5	–
Spicules	–	19-21
Gubernaculum	–	5.5-6.5

Table 3. *Morphometric data of* Pratylenchus scribneri *populations from soybean in Santa Mbu and Bamunka Ndop, Cameroon (All measurements in* µm).

Character	Santa population	Bamunka population
n	10	4
L	414 ± 14.2 (380-430)	425 ± 25.9 (400-460)
VBW	16 ± 1.1 (15-18)	16 ± 0.7 (15-17)
Oes. (valve)	69 ±5.7 (63-84)	77 (75-79)
Oes. (lobe)	112 ± 13.2 (100-143)	110 ± 3.4 (107-115)
Tail	23.5 ± 1.6 (20-26)	25 ± 1.1 (23-26)
ABW	11 ± 0.9 (10-13)	9-10
a	26.3 ± 1.6 (23.3-28.3)	26.7 ± 1.9 (23.5-28.8)
b	6 ± 0.5 (5.1-6.7)	5.7 ± 0.3 (5.3-6.0)
b′	3.7 ± 0.4 (3.0-4.2)	3.9 ± 0.3 (3.5-4.1)
c	17.7 ± 1.0 (16-19)	17.4 ± 1.3 (15.4-19.1)
c′	2.1 ± 0.2 (1.9-2.4)	2.6 ± 0.3 (2.3-2.9)
St	13.5 - 14.5	14.5 - 15.5
V %	78 ± 0.7 (77-79)	74 ± 0.8 (73-75)
Oes. overlap	44.7 ± 9.8 (32-60)	33.3 ± 2.4 (30-36)
Nerve ring	58.7 ± 2.6 (55-65)	64.8 ± 1.1 (63-66)
Hemizonid	69.7 ± 2.8 (65-74)	73.3 ± 3.3 (69-77)
Excr. pore	72.1 ± 2.7 (67-75)	75.3 ± 2.9 (71-79)
PUS	19.8 ± 8.4 (12-43)	24 ± 5.2 (21-33)
PUS/VBW	1.3 ± 0.5 (0.7-2.6)	1.5 ± 0.3 (1.2-2.0)
PUS/V-A (%)	25.3 ± 4.2 (19-33)	28 ± 3.1 (25-33)
V-A/tail	2.8 ± 0.4 (2.0-3.2)	3.5 ± 0.5 (2.8-4.2)
Phasmid (% tail)	51.4 ± 2.6 (48-56)	52 (n = 1)
Tail annuli	15 ± 1.6 (14-19)	23 ± 4.5 (17-28)

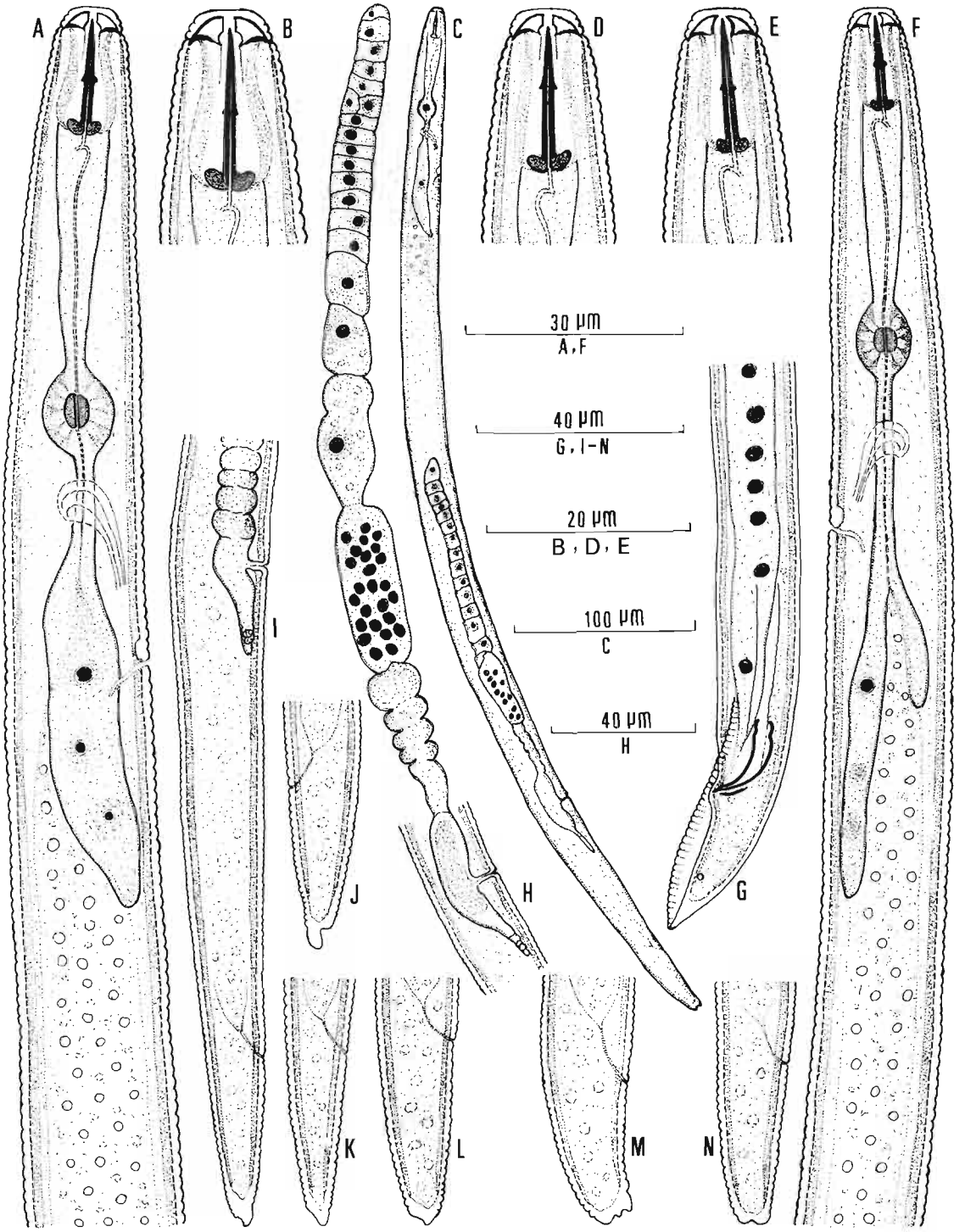

Fig. 2. Pratylenchus goodeyi – *Female. A : Œsophageal region; B : Anterior region; C : Entire view; H : Genital tract with ovary, spermatheca, uterus, and PUS; I : Postvulval region; J-N : Tails, with variation in tip shape – Male. D, E : Anterior region; F : Œsophageal region; G : Posterior (cloacal) region with sperm in seminal vesicle.*

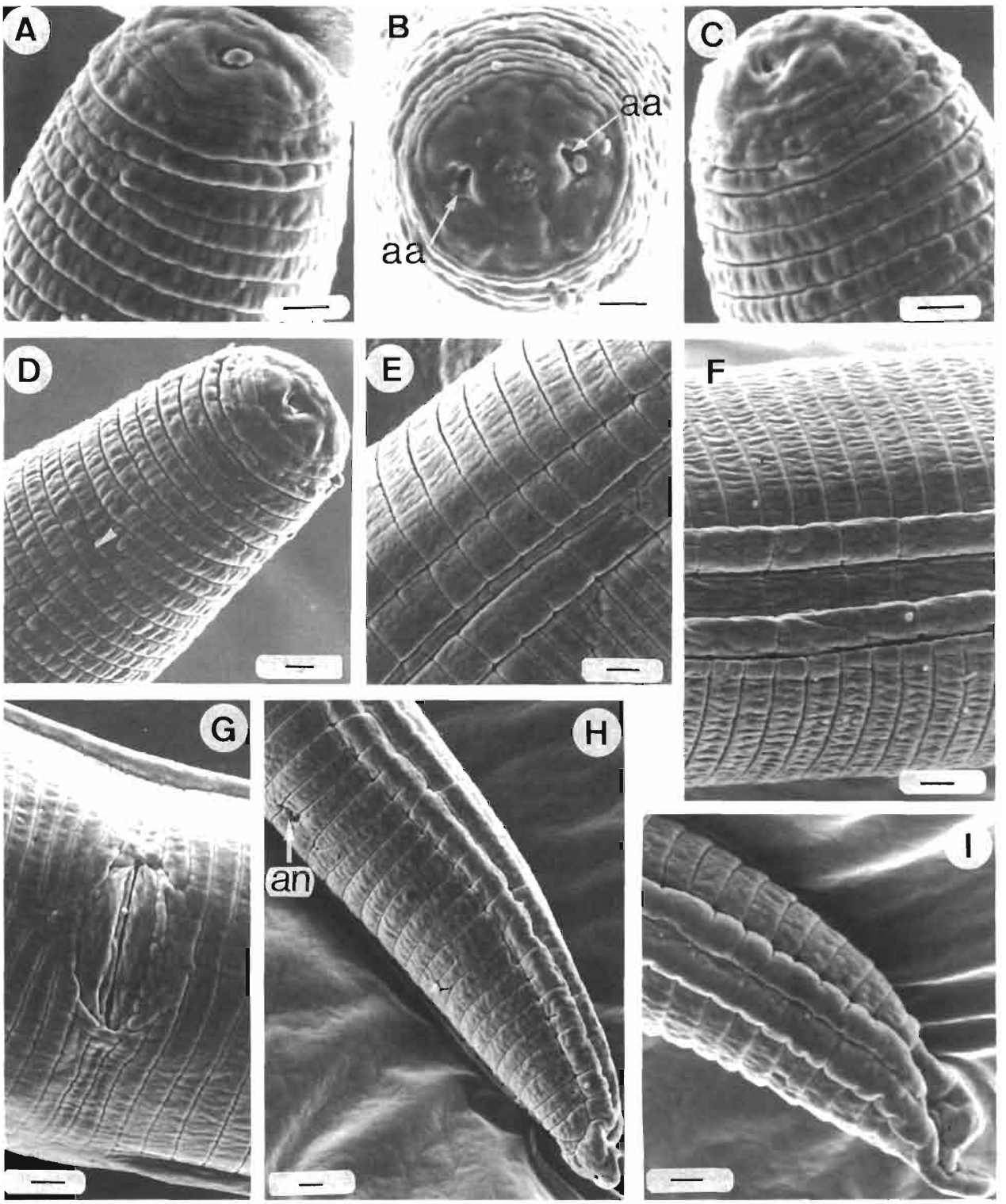

Fig. 3. Pratylenchus goodeyi. *SEM micrographs – Female. A-C : Lip region, lateral view (A, C),* en face *view (B, aa = amphidial aperture); D : Anterior region (arrow = start of lateral field); E, F : Lateral field, anterior part (E), midbody (F); G : Vulva region, ventral view; H, I : Tails (an = anus). (Bars = 1 μm).*

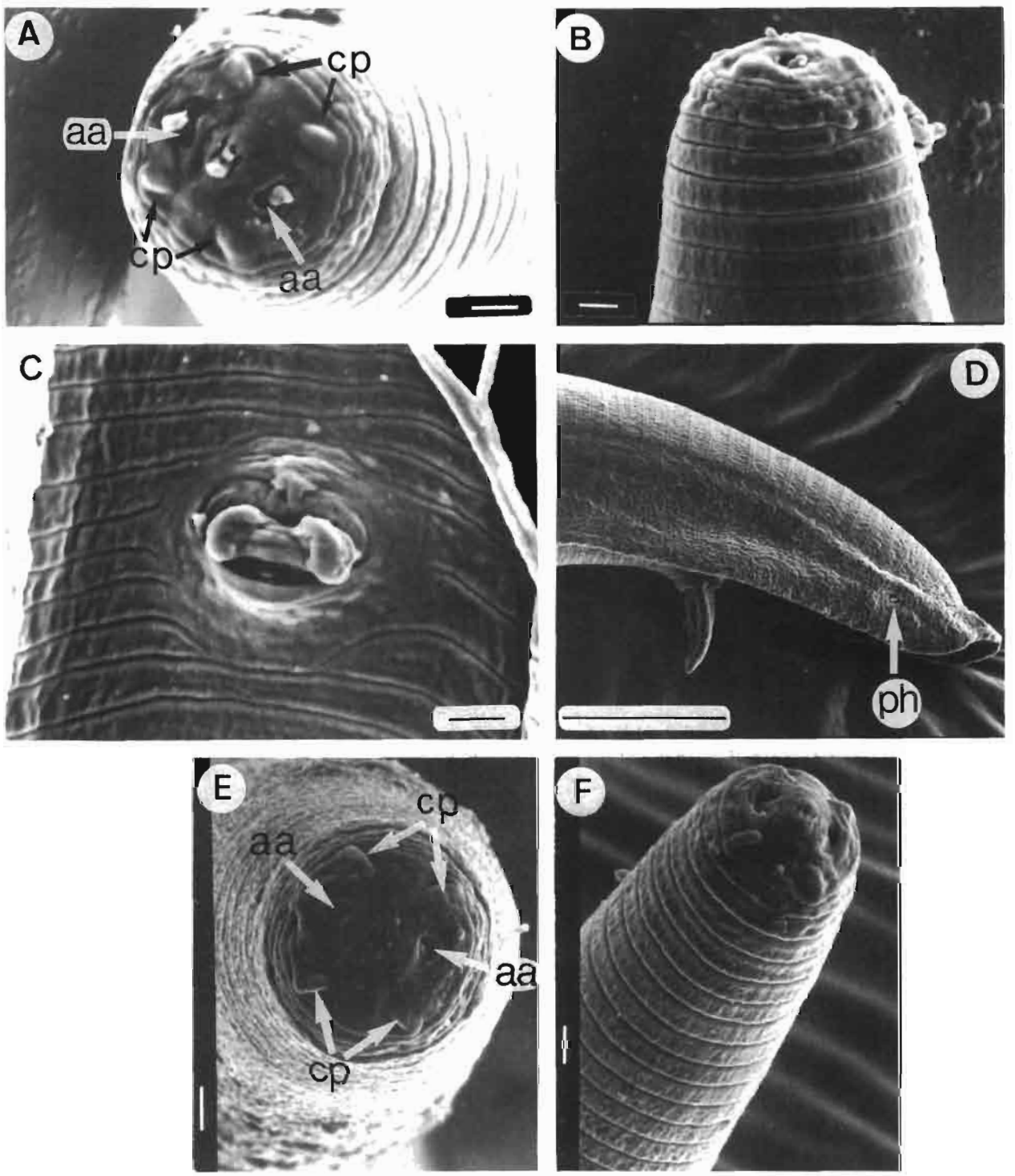

Fig. 4. Pratylenchus goodeyi. *SEM micrographs – Male. A-D : Cameroon population. A : Lip region,* en face *view; B : Lip region, lateral view; C : Cloacal region, ventral view; D : Posterior region (ph = phasmid). E, F : Tanzanian population. E : Lip region,* en face *view; F : Anterior region, lateral view. (aa : amphidial aperture, cp = cephalic sensilla. Bars = 1 µm except D = 10 µm).*

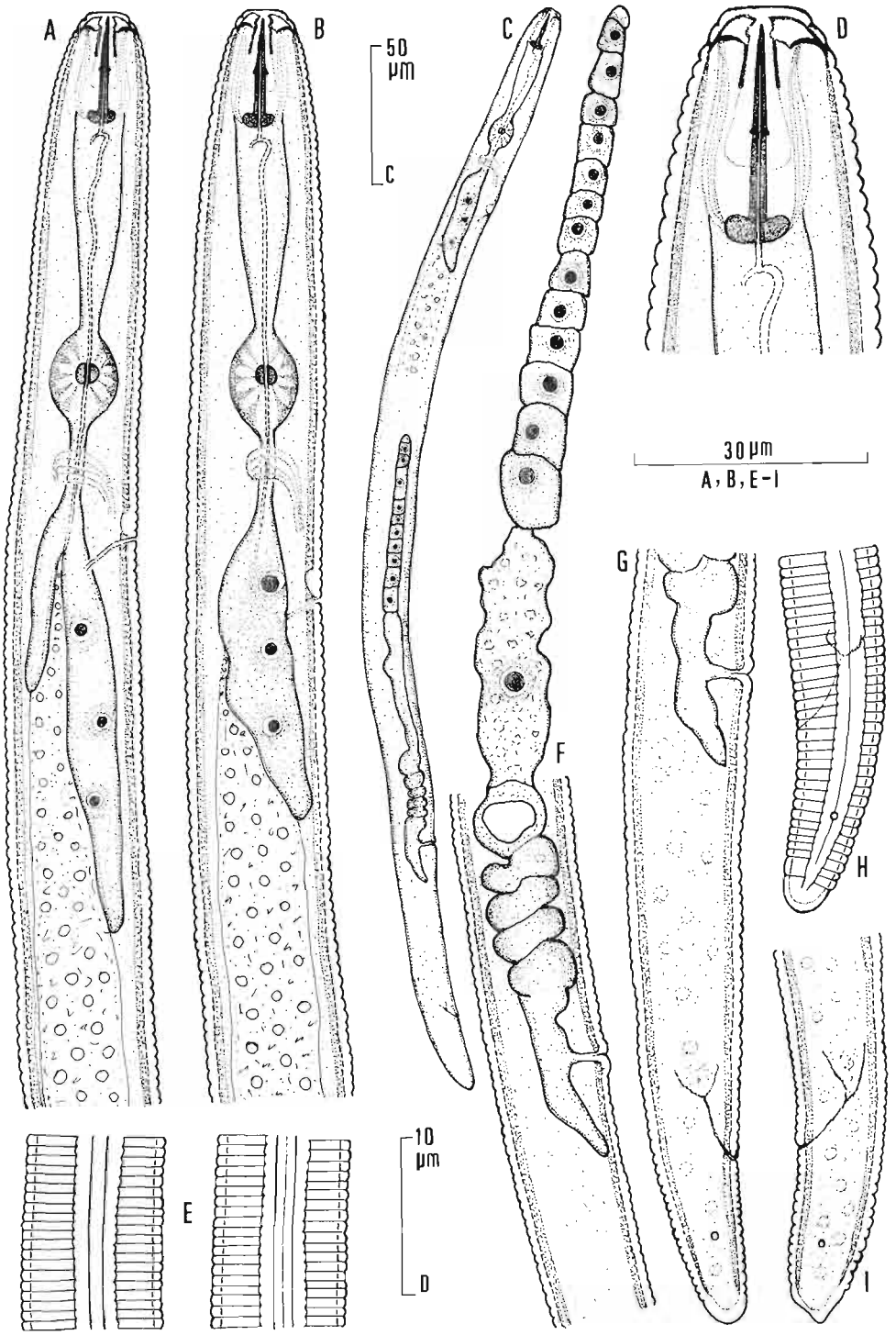

Fig. 5. Pratylenchus scribneri. *Female. A, B : Œsophageal region; C : Entire view; D : Anterior region; E : Lateral field, midbody; F : Genital tract with ovary, spermatheca, uterus, and PUS; G : Postvulval region, with usual tail shape; H, I : Tail variation, irregular annuli (H), aberrant tail tip (I).*

Table 4. *Morphometric data of* Pratylenchus sefaensis *populations from maize in Bambui Upper Farm* and Santa Ndjong**, peanut in Dschang, soybean in Bambui Plain, and yam in Nkwen, Cameroon (All measurements in μm).*

Character	Maize population*	Maize population**	Peanut population	Soybean pop.	Yam population
n	16	12	10	5	12
L	550 ± 56 (440-680)	602 ± 44.8 (550-705)	464 ± 52.7 (360-550)	491 ± 26 (460-535)	440 ± 24.8 (410-495)
VBW	19.6 ± 1.9 (15-22)	20 ± 2.5 (17-24)	16.3 ± 1.2 (15-18)	17 ± 1.1 (15-18)	18 ± 1.2 (16-19)
Oes. (valve)	91 ± 3.9 (84-101)	92 ± 6.4 (85-106)	83.2 ± 6.8 (75-99)	91 ± 3.5 (85-94)	82.8 ± 4.5 (76-93)
Oes. (lobe)	128.4 ± 7.5 (107-142)	124 ± 10.7 (109-149)	115.8 ± 10 (101-133)	126 ± 6.3 (118-136)	118 ± 9.7 (105-136)
Tail	30.2 ± 3.3 (25-36)	29 ± 4.3 (25-39)	26.6 ± 4.2 (21-33)	27.4 ± 3 (24-33)	24 ± 1.6 (22-27)
ABW	12.7 ± 3.4 (9-15)	12.7 ± 0.9 (11-14)	10.3 ± 1.2 (9-12)	11.4 ± 1.4 (9-13)	12 ± 1.2 (10-13)
a	28.2 ± 2.3 (24.1-32.4)	29.5 ± 2.9 (25.0-33.2)	28.6 ± 4 (21.2-36.7)	28.9 ± 1.5 (27-31.3)	25 ± 2 (21.6-28.4)
b	5.9 ± 0.5 (5.2-7.2)	6.5 ± 0.5 (5.7-7.6)	5.6 ± 0.6 (4.8-6.9)	5.5 ± 0.1 (5.3-5.7)	5.4 ± 0.3 (4.9-5.8)
b′	4.2 ± 0.5 (3.4-5.2)	4.8 ± 0.4 (4.2-5.6)	4.0 ± 0.3 (3.5-4.7)	(3.8-3.9)	3.7 ± 0.3 (3.2-4.2)
c	18.3 ± 1.7 (16.1-22.8)	20.7 ± 2.5 (16.7-23.7)	17.6 ± 1.4 (15-20)	18 ± 1.1 (16.2-19.6)	18 ± 0.9 (16.6-19.3)
c′	2.3 ± 0.2 (1.9-2.8)	2.4 ± 0.5 (1.9-3.3)	2.6 ± 0.5 (1.8-3.3)	2.4 ± 0.2 (2.2-2.6)	2 ± 0.3 (1.7-2.5)
St	(14.5-15.5)	(14.5-16.0)	14.5 ± 0.5 (13.5-15.5)	(14.5-16.0)	14.5 ± 0.7 (13.5-15.5)
V %	79 ± 1.3 (76-81)	78 ± 1.2 (76-81)	79 ± 0.9 (77-80)	(78-80)	79.7 ± 1 (77-81)
Oes. overlap	37.5 ± 6.5 (19-46)	32.4 ± 4.9 (24-43)	32.6 ± 6.1 (19-44)	36.8 ± 4.3 (32-42)	34 ± 5.2 (27-43)
Nerve ring	73 ± 4.1 (63-80)	70.2 ± 2.6 (67-74)	67.3 ± 4.1 (60-73)	67 ± 3.7 (61-72)	61 ± 3.1 (57-66)
Hemizonid	86.3 ± 4.7 (81-94)	84.4 ± 3.5 (78-87)	77.4 ± 4.8 (69-84)	79.6 ± 5.3 (74-82)	73.8 ± 4.4 (68-81)
Excr. pore	89.4 ± 5.1 (78-96)	87.2 ± 3.4 (81-95)	80.6 ± 4.9 (72-87)	82.4 ± 5.3 (76-90)	76 ± 4.4 (71-83)
PUS	26.2 ± 4.9 (18-34)	34.3 ± 5.9 (27-42)	24.9 ± 2.6 (21-30)	27.8 ± 6.3 (17-33)	26.5 ± 5 (15-31)
PUS/VBW	1.4 ± 0.2 (1.0-1.8)	1.7 ± 0.2 (1.4-2.2)	1.5 ± 0.2 (1.2-1.9)	1.6 ± 0.3 (1.1-1.9)	1.5 ± 0.2 (0.9-1.8)
PUS/V-A (%)	34.8 ± 7.1 (23-44)	34.4 ± 5.6 (27-42)	37 ± 4.5 (30-43)	34.5 ± 6.8 (23-40)	45 ± 9 (33-61)
V-A/tail	2.9 ± 0.4 (2.2-3.6)	3.5 ± 0.5 (2.6-4.0)	2.7 ± 0.3 (2.3-3.3)	2.8 ± 0.2 (2.6-3.0)	2.7 ± 0.2 (2.4-3.1)
Phasmid (% tail)	47.3 ± 6.1 (36-56)	43.7 ± 4.3 (38-50)	49 ± 2.7 (43-53)	57.8 ± 4.9 (50-62)	?
Tail annuli	22 ± 2.5 (16-26)	21 ± 3.6 (18-29)	22 ± 1.9 (18-22)	21 ± 1.5 (19-23)	(19-21)

DESCRIPTION

Female (based on population from maize, Upper Farm, Bambui) : The lateral field in the midbody and vulval regions is a wide band with a series of irregular lines (Fig. 7 E), or with a faintly-marked pair of inner incisures (Fig. 7 F). Tail broadly conoid, usually tapering to a smooth subdigitate terminus, with a straight or sinuate dorsal contour (oblique-truncate with a ventral projection), but with considerable variation in tip shape (Fig. 6 K-P, R-U).

Male : Very rare. Morphologically similar to female except for sexual characters.

DISCUSSION

The specimens of all our populations generally agree with the original description of the species by Fortuner (1973) except for differences in tail tip shape and structure of the lateral field. Tail tip shape was the single most variable morphological feature encountered in our populations. In the original description, the tail tip is rounded. In all our populations the subdigitate tail tip with a straight or sinuate dorsal contour (Figs 6 H-J, 7 H, I) was the predominant form (occurring in about four-fifths of all specimens examined), but considerable variation was observed, including the deviations shown in Fig. 6 K, L, N, O, Q, S, U; a rather infrequently encountered truncate tip (Fig. 6 M, P, T), and one aberrant form (Fig. 6 R) all of which were found only one time each. In the lateral field in the type population, a fifth incisure in the central band is continuous or interrupted, parallel to body axis or obliquely situated, sometimes doubled; in ours, on the other hand, the lateral field is a wide band with a series of irregular lines, or with a faintly-marked pair of inner incisures. *P. kralli* Ryss, 1982 and *P. ventroprojectus* Bernard, 1984 both have a tail tip shape similar to that found in our populations which is, however, different from that of *P. pseudopratensis* Seinhorst, 1968 and *P. sefaensis* Fortuner, 1973 (Table 5). Frederick and Tarjan (1989) synonymised *P. ventroprojectus* with *P. kralli* and *P. sefaensis* with *P. pseudopratensis*, in the latter case ignoring the presence of males in *P. pseudopratensis* and their rare occurrence in *P. sefaensis* as a valid differentiating criterion. However, inspite of the variation in tail tip form and a slightly different lateral field structure observed in our specimens, because of *i)* similar face pattern with similar wedges and lip region, as seen with the SEM (Corbett & Clark, 1983), *ii)* vulva position, and *iii)* rare occurrence of males, we regard our specimens as belonging to *P. sefaensis*. This is the first record of *P. sefaensis* from Cameroon.

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Table 5. *Comparison of selected morphometric data and morphological characters of* Pratylenchus sefaensis *from maize in Bambui Upper Farm, Cameroon, with those of the type population,* P. kralli, P. ventroprojectus, *and* P. pseudopratensis.

Species	Stylet (μm)	V %	Tail shape	Lat. field	Spermatheca
P. sefaensis (Cameroon)	14.5-15.5	76-81	Broadly conoid, subdigitate tip	Variable	Rounded, empty; male very rare
P. sefaensis (Type pop.)	14-15.5	76-81	Broadly conoid, rounded tip	Variable	Rounded, empty; male very rare
P. kralli	14-15	74-80	Subcylindrical, subdigitate tip	4 lines	Rounded, with sperm; male present
P. ventro-projectus	14-16	78-80	Broadly conoid, subdigitate tip	4 lines	Oval to rectangular, with sperm; occasionally empty; male present
P. pseudo-pratensis	15	76-80	Conoid, rounded tip	4 lines	Oval to rectangular, with sperm; male present

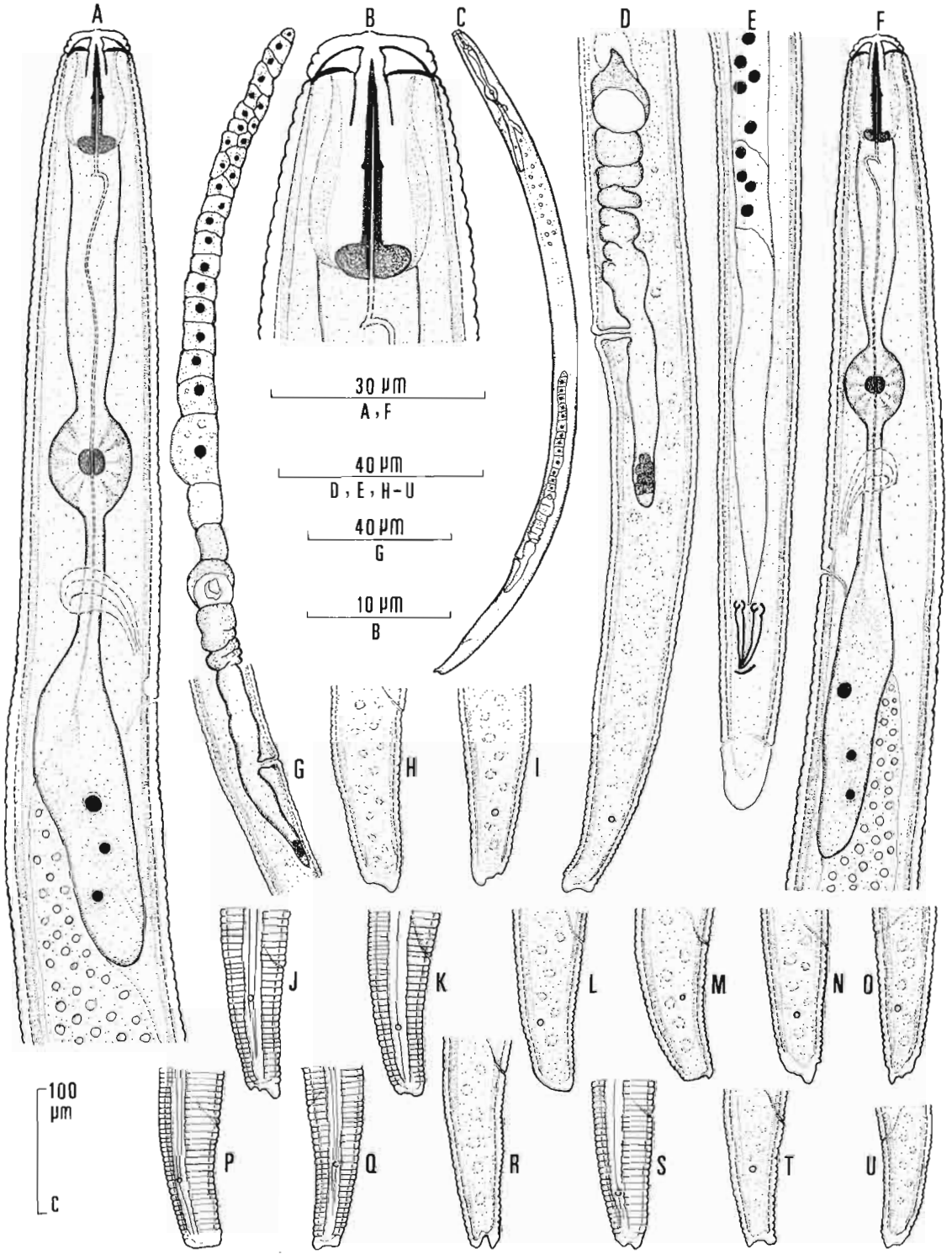

Fig. 6. Pratylenchus sefaensis – *Female. A : Œsophageal region; B : Anterior end; C : Entire view; D : Postvulval region; G : Genital tract with ovary, spermatheca, and PUS; H-U : Tails, variation in tip shape – Male. E : Posterior region (ventral view) with spicules, gubernaculum, and sperm in seminal vesicle; F : Œsophageal region.*

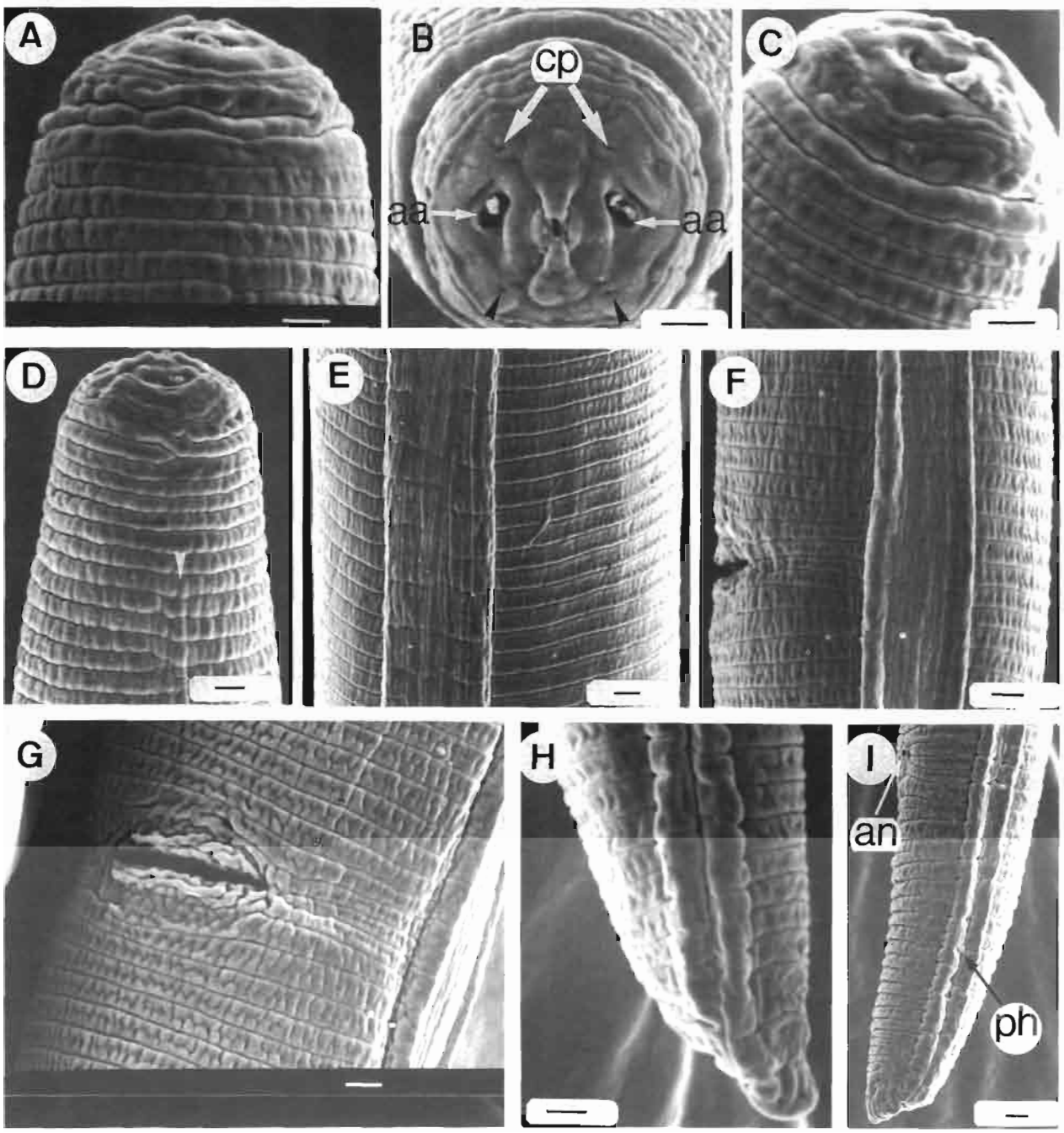

Fig. 7. Pratylenchus sefaensis. *SEM micrographs – Female. A-C : Lip region, lateral view (A, C),* en face *view (B, aa = amphidial aperture, cp = cephalic sensilla); D : Anterior region; E, F : Lateral field, midbody (E), vulval region (F); Vulval region, ventral view; H, I : Tails (an = anus, ph = phasmid). (Bars = 1 μm).*

P. goodeyi specimens and SEM photographs, Messrs. Zomo Sebastien and Dongho Jean-Claude for technical assistance, Mrs. Rita Van Driessche for the SEM and Mrs. Rose-Marie Servaes for the photographs.

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