SOME PLANT PARASITIC NEMATODES FROM CAMEROON
WITH A DESCRIPTION OF CRICONEMELLA PELERENTSI SP. N.
(TYLENCHIDA: CRICONEMATIDAE)

BY

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Soil samples collected from the rhizosphere of various crops in several locations in northern Cameroon yielded one new and nine known species of plant-parasitic nematodes belonging to the genera Aorolaimus Sher, 1963; Criconemella De Grisse & Loof, 1965; Hoplolaimus von Daday, 1905; Rotylenchulus Linford & Oliveira, 1940; Scutellonema Andrássy, 1958; and Tylenchorhynchus Cobb, 1913. *Criconemella pelerentsi* sp. n. is characterised by the females possessing a 53-66 µm long stylet, 56-86 body annuli, punctations under the cuticle, and the smooth posterior margins of the annuli of the juveniles. *Criconemella curvata* (Raski, 1952) Luc & Raski, 1981; *Hoplolaimus pararobustus* (Schuurmans Stekhoven & Teunissen, 1938) Sher, 1963; *Rotylenchulus borealis* Loof & Oostenbrink, 1962 and *Tylenchorhynchus phaseoli* Sethi & Swarup, 1968 have been reported previously from Cameroon. *Aorolaimus nigeriensis* (Sher, 1964) Fortuner, 1987; *Scutellonema cavenessi* Sher, 1964; *Scutellonema clathricaudatum* Whitehead, 1959; *Tylenchorhynchus annulatus* (Cassidy, 1930) Golden, 1971 and *Tylenchorhynchus sulcatus* de Guiran, 1967 are recorded for the first time from Cameroon soils.

**Keywords:** taxonomy, morphology, SEM, Criconemella, Cameroon.

The first reports of plant parasitic nematodes from Cameroon are those of Goodey & Luc in 1957. Goodey (1957) isolated *Hoplolaimus pararobustus* (Schuurmans Stekhoven & Teunissen, 1938) Sher, 1963 (described as *H. pororicus* n. sp.) from the rotten roots of seedlings of oil palm (*Elaeis guenensis*) suffering from a disease known as “blast” in the Cameroon Development Corporation plantations in British Cameroon. In the same year Luc (1957) found *Hirschmanniella spinicaudata* (Schuurmans Stekhoven, 1944) Luc & Goodey, 1964 (described as *Radopholus lavabri* n. sp.) in the roots of rice (*Oryza sativa*) plants from Yagoua in the Far North Province of Cameroon.

Twenty one other species have been reported from Cameroon, one each by Gadea (1960), Seinhorst (1963), Barat et al. (1969), Germani (1978) and Bridge (1982); four species by Luc & de Guiran (1960) and 14 species by Samsoen & Geraert (1975). This paper is the first in a projected series of articles on plant parasitic nematodes from Cameroon.

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MATERIALS AND METHODS

The study is based on [preserved] specimens extracted from soil samples collected by the second author in 1972 from the rhizosphere of cotton (*Gossypium hirsutum*), millet (*Eleusine coracana*), okra (*Hibiscus esculentus*), pea (*Pisum sp.*) and peanut (*Arachis hypogaea*) in several locations in northern Cameroon. The nematodes were extracted from the soil by sieving, killed and fixed in hot (almost boiling) double strength (8-10%) formalin, and later taken to the Zoology Laboratory at the State University of Ghent, Belgium where they were stored. Subsequently, the nematodes were washed from the soil by the centrifugal-flotation method, using Ludox HS 40, dehydrated following Seinhorst’s (1959) rapid glycerine-ethanol method, and mounted in pure anhydrous glycerine on double-coverslip aluminium slides. Head mounts were prepared by the method described by Hooper (1970). Glycerine-embedded nematodes were used for scanning electron microscopy (SEM). Measurements are given in the tables and text in the format: mean ± SD (range). All measurements are in micrometres except otherwise specified.

RESULTS

*Criconemella pelerentsi* sp. n.

(Table I and Figs. 1, 2, 3)

Measurements

See Table I.

Description

**Female:** Body short, cylindrical, with rounded anterior and posterior ends, slightly ventrally arcuate upon fixation. Cuticle thick and coarsely annulated; body annuli retrorse, with smooth posterior margins; striae 7.4 ± 0.7 (6.0-8.5) μm apart in the midbody region. Anastomoses rare, 1-4 maximum when present, separate, never on successive annuli (Fig. 1L). Punctations (Figs. 1H, O and 2J, M-O) present, varying in size (from small, bead-like to relatively large) and arrangement (in single or a few rows across the annuli) and arrangement (in single or a few rows across the annuli). SEM of body annuli (Fig. 3C, E) shows that there is a marked differentiation in annulus structure. At about the middle of each annulus ("a" (= "g" to "g") in Fig. 3C, E) is a continuous line, appearing like a string of beads (Fig. 3C:I) or a simple line (Fig. 3E:I). Adjacent to this line, on either side, are two distinct bands: a posterior rough-looking band (Fig. 3C:r) and an anterior smoother band (Fig. 3C:s). The anterior band is very slightly narrower than the posterior band (2.0 μm wide versus 2.5 μm in Fig. 3C) which may be denser in appearance than the anterior band in some specimens (Fig. 3E). The rough appearance of the posterior band is presumably due to the subcuticular punctations which are clearly visible under the light microscope but not with the SEM.