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## MORPHOLOGICAL OBSERVATIONS ON TWO *SCUTELLONEMA* SPECIES (NEMATODA: HOPLLOLAIMINAE) FROM TANZANIA

by

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**Summary.** *Scutellonema brachyurum* and *S. unum* from Tanzania are briefly described and compared with other populations. Descriptions are complemented with SEM micrographs.

The genus *Scutellonema*, established by Andr ssy in 1958 is mainly recognized by the enlarged phasmids (scutella). It includes about 20 species most of them occurring only on the African Continent (Germani *et al.*, 1985).

In a plant parasitic nematode survey recently conducted in Tanzania two species of *Scutellonema* (*S. brachyurum* and *S. unum*) were frequently detected. This note provides additional information on their morpho-anatomy and illustrates the main characters (seen by SEM) used for species differentiation. Specimens were fixed in hot aqueous solution of 4% formaldehyde, dehydrated slowly in an ethanol saturated chamber and mounted in dehydrated glycerine. Wergin's (1981) methods were used for the preparation of nematodes for scanning electron microscope observations.

### Observations

#### *SCUTELLONEMA BRACHYURUM* (Steiner, 1938)

Andr ssy, 1958 (Figs. 1 A-D, 2 A-D)

Measurements, female (n = 12): L = 0.5-0.7 mm; a = 20-32; b = 4.6-9.8; c = 40-60; stylet 22-28  $\mu\text{m}$  long; V% = 55-62; scutellum diameter = 2.8-4.1  $\mu\text{m}$ .

**Description.** Body spiral when relaxed. Lip region roughly hemispherical with 4-5 annuli. Excretory pore opposite the oesophageal lobe. Body annuli 1.3-1.5  $\mu\text{m}$  wide. Spermatheca not seen. Epiptygma usually double. Lateral field areolated at level of scutella and from level of oesophageal lobe to the anterior end. Tail varies in shape (usually bluntly rounded), 10-14  $\mu\text{m}$  long, 8-12 annuli. Scutellum rounded, 2.8-4.1  $\mu\text{m}$  in diameter at anal level or 2-3 annuli anteriorly or posteriorly.

Male not found.

**Habitat and locality:** soil samples collected from the rizosphere of unidentified grasses at Boko near Dar es Salaam.

**Remarks.** According to Sher, 1964 this is the most cosmopolitan *Scutellonema* species. The Tanzanian specimens correspond well with the original description and others reported from Africa (Williams, 1960; Sher, 1964; Germani *et al.*, 1985). *Scutellonema brachyurum*, *S. clathricaudatum* and *S. truncatum* all lack males and are areolated in the scutella region but specific lip region characteristics distinguish each of them.

#### *SCUTELLONEMA UNUM* (Sher, 1964)

(Figs. 1 E-H, 2 E-G)

Measurements, female (n = 12): L = 0.51-0.76 mm; a = 18-27; b = 4.0-7.5; c = 55-90; stylet 26-31  $\mu\text{m}$  long; scutellum diameter = 4.0-5.6  $\mu\text{m}$ .

**Description.** Body C-shape. Lip region hemispherical with 4-5 annuli. Basal annulus with 15-18 longitudinal striations. Excretory pore opposite the oesophageal gland. Body annuli 1.6-2.1  $\mu\text{m}$  wide. Epiptygma double. Lateral field 1/4-1/5 of the body width, areolated from the level of oesophageal lobe to anterior end and at level of scutellum. Tail rounded, slightly more convex on dorsal side with 8-10 annuli.

Male not found.

**Habitat and locality:** soil samples collected from the rizosphere of *Ficus sp.* at Manyoni, 50 km from Dodoma.

**Remarks.** The morphometrical data of the Tanzanian specimens were compared with those of two populations reported from Zaire and South Africa (Ali *et al.*, 1973 and

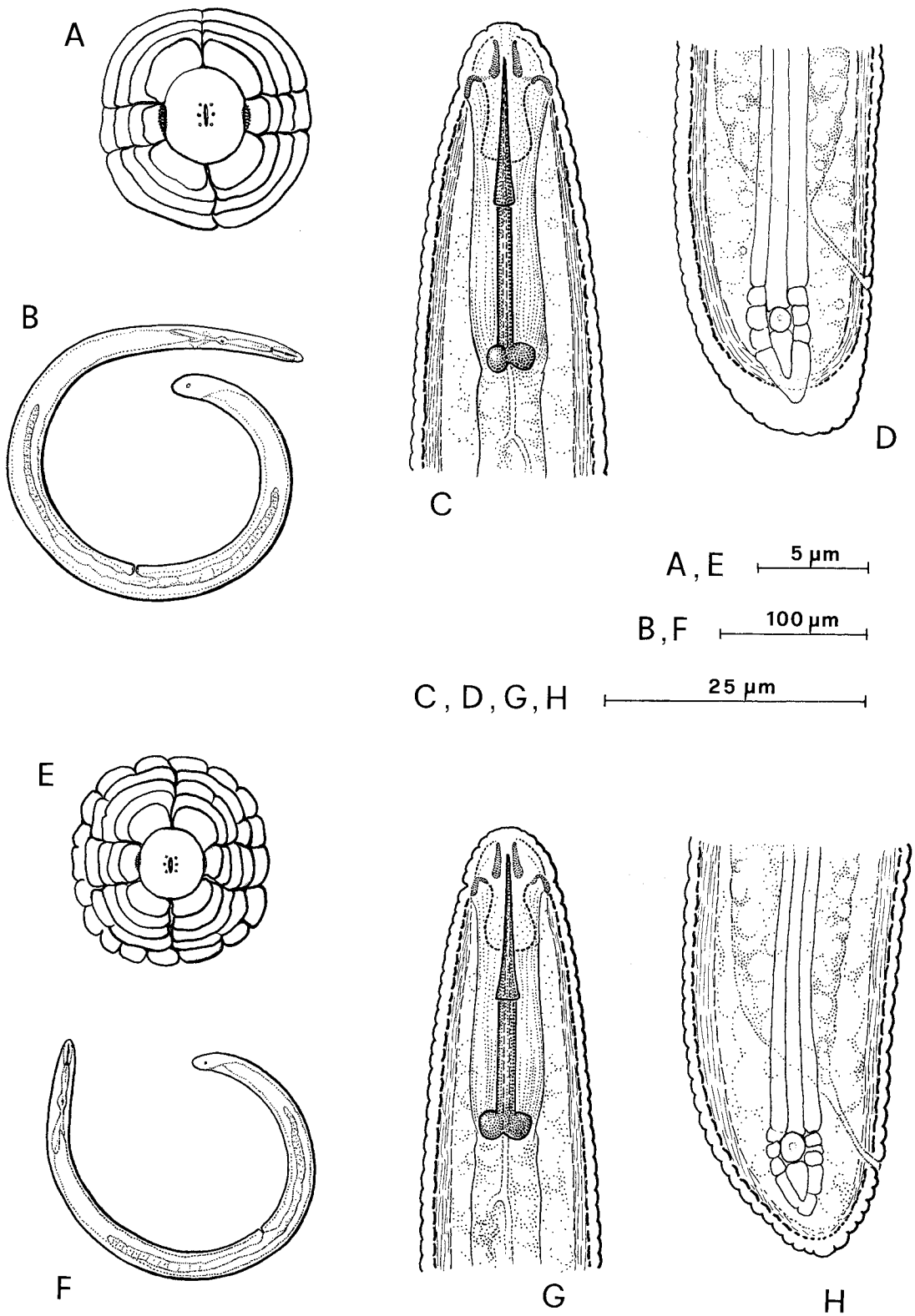


Fig. 1 - A-D, *Scutellonema brachyurum*: A) face view; B) position of female when killed; C) anterior part of female body; D) female tail. E-H, *Scutellonema unum*: E) face view; F) female death position; G) anterior part of female body; H) female tail.

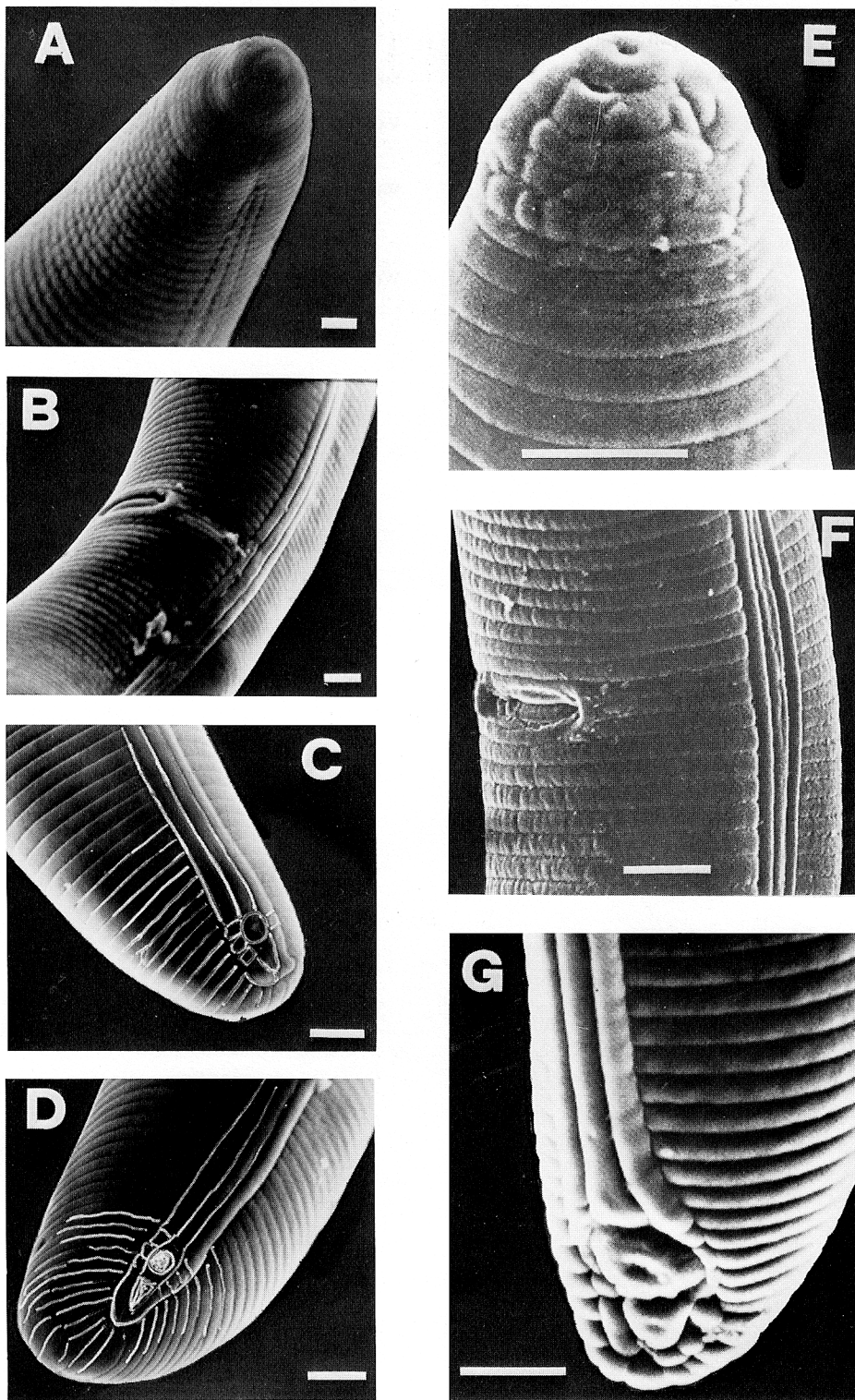


Fig. 2 - SEM micrographs of *S. brachyurum* (A-D) and *S. unum* (E-G). (Scale bar = 5  $\mu$ m). A, F) anterior part of female body; B, F) vulval area; C, D, G) tails.

Van der Berg et Heyns, 1973). They correspond well with these two populations as well as with the original description of the species (Sher, 1964).

We would like to thank Dr. N. Vovlas for confirming species identification and helping with SEM.

#### Literature cited

ALI S. S., GERAERT E. and COOMANS A., 1973. Some spiral nematodes from West Africa. *Biol. Farb.*, 41: 53-70.

- GERMANI G., BALDWIN J. G., BELL A. H. and XUI-YANGWU, 1985. Revision of the genus *Scutellonema* Andrassy, 1958 (Nematoda: Tylenchida). *Rev. Nematol.*, 8: 289-320.
- SHER S. A., 1964. Revision of Hoplolaiminae (Nematoda). III *Scutellonema* Andrassy, 1988. *Nematologica*, 9: 421-443.
- VAN DEN BERG E. and HEYNS J., 1973. South African Hoplolaiminae 2. The genus *Scutellonema* Andrassy, 1958. *Phytophylactica*, 5: 23-40.
- WERGIN W. P., 1981. Scanning electron microscopic techniques and applications for use in Nematology, pp. 175-204 in: Plant Parasitic Nematodes, Vol. 3 B. M. Zucherman R. A. Rhode, eds.) Academic Press, New York and London.
- WILLIAMS J. R., 1960. Studies on the nematode soil fauna of sugar cane fields in Mauritius 4. Tylenchoidea. *Oceas. Pap. Mauritius Sugar Industry Res. Inst.*, 4: 1-30.