

al plants, LM Basu and Co., Allahabad, 1933, p. 525.

3. Nadkarni, A. K., *The Indian Materia Medica*, Kalthari Book Department, Bombay, 1954, p. 167.
4. Bose, B. C. and Dwarkanath, C., *Medicinal plants of India*, ICMR, New Delhi, 1975, Vol. 1.

STUDIES ON THE NEMATODES FROM MANGROVE SWAMPS OF DELTAIC SUNDARBANS, WEST BENGAL, INDIA. (III) ANOPLSTOMA MACROSPICULUM N. SP. (ANOPLSTOMATIDAE: NEMATODA)

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ANOPLSTOMA MACROSPICULUM n. sp. is described and figured as new from a mangrove environment of deltaic Sundarbans, West Bengal. The new species under consideration is unique among all the described species of the genus *Anoplostoma* Buetschli, 1874, in having very long and unequal spicular apparatus (5.5–7.8 a.b.d. and 12.5–16.8 a.b.d.). The worm was found to be prevalent in detritus-rich mangrove litter soil around roots of *Phoenix peludosa* in the intertidal zone of Hooghly estuary.

Morphology:

Anoplostoma macrospiculum n. sp. (figure 1)

Pronounced sexual dimorphism. Observation based on 10 specimens (♂ 5; ♀ 5). Cuticle smooth without lateral alae. Sclerotized stoma 11–11.5 μm deep. Cephalic setae 12 of 8–9 μm long. Oesophagus 210–215 μm long, Amphids obscure. Head not offset but marked with slight depression. Vulva almost pre-equatorial, gonad amphidelphic, reflexed, spermatheca filled with sperms. Rectum less than one anal body width long. Tail long, 180–185 μm or about 10.5–10.8 anal body diameters long with slightly rounded terminus possessing three 5–6 μm long caudal spines in female. Two spicula in male are of different lengths, measuring about 100–130 μm and 250–305 μm long or 5.5–7.8 a.b.d. and 12.5–16.8 a.b.d. long with distal cephalated end. Gubernaculum somewhat spiral, 50–58 μm

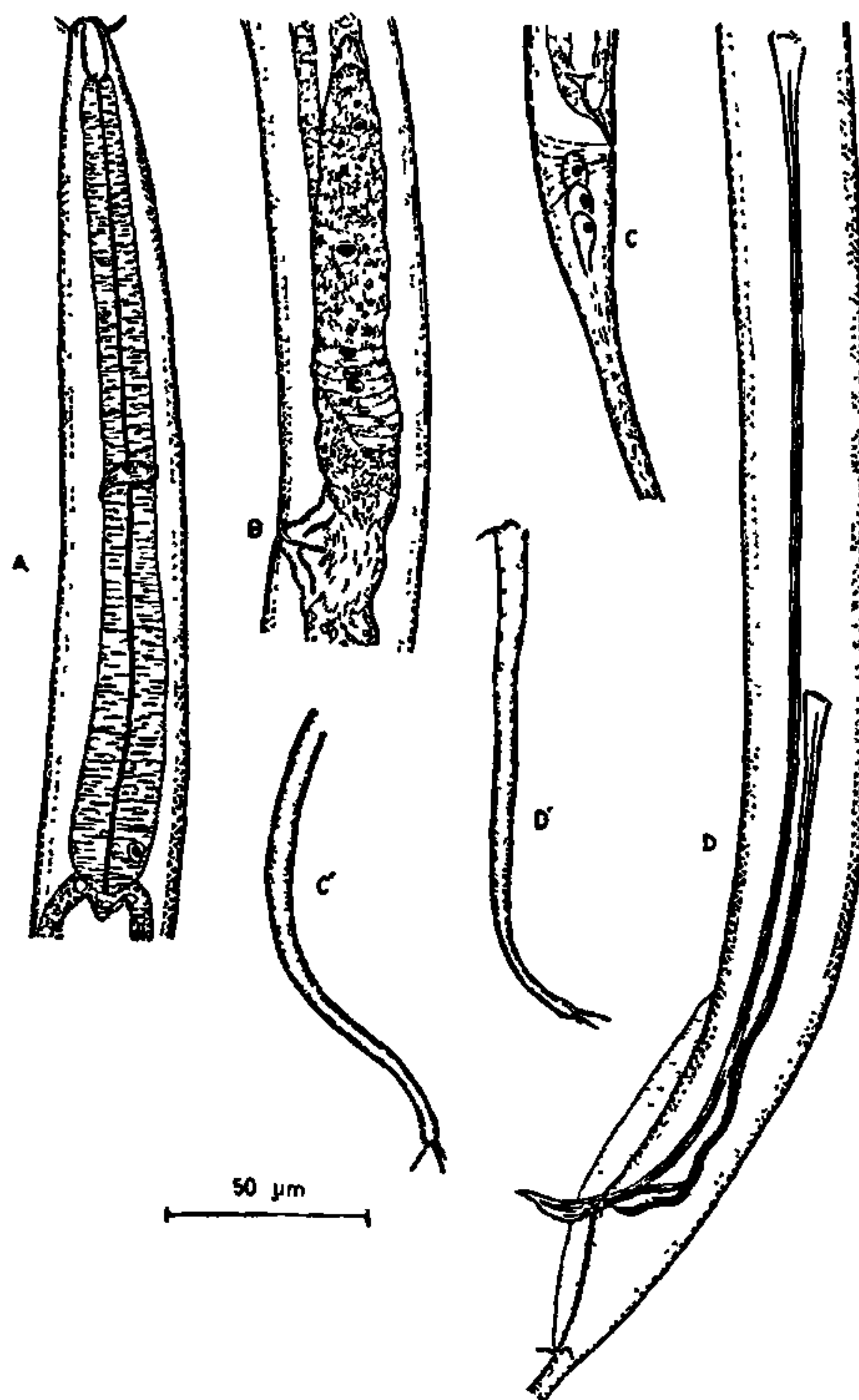


Figure 1. A. Anterior end; B. Vulval region with anterior uterine branch; C. Posterior end of female; C'. Tail tip of female; D. Spicular apparatus of male; D'. Tail tip of male.

long. Caudal alae 82–88 μm long with a posterior pair of 5 μm long spine-like setae. As regards the length of the tail, it is 140–150 μm or 7.3–7.9 a.b.d. long.

Since the organism does not completely agree with the described species of the genus *Anoplostoma* Buetschli, 1874, by its unique possession of very long and unequal spicular apparatus (5.5–7.8 a.b.d. and 12.5–16.8 a.b.d. long), it is considered as a new species and named as *Anoplostoma macrospiculum* sp. nov.

Type habitat and locality:

The type material has been collected from the mid-littoral zone of Gangasagar around roots of *Phoenix peludosa*. Habitat exposed, salinity 24‰. It has been deposited in the National Zoological Collections of Zoological Survey of India, Calcutta.

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1. Belogurov, O. I., *Zool. Zh.*, 1977, 56, 188.
2. Hopper, B. E., *Can. J. Zool.*, 1961, 39, 184.
3. Hopper, B. E., *Can. J. Zool.*, 1969, 47, 671.
4. Sergeeva, N. G., *Zool. Zh.*, 1973, 53, 20.
5. Wieser, W., *Lund Univ. Arssk; n.f. avd. 2, Med. Mat. O. Naturvetensk Aemnen*, 1953, 49, 5.

A NOTE ON THE USE OF RAINFALL EROSION INDICES FOR PREDICTING SOIL AND WATER LOSSES FROM THE SLOPY FIELDS OF KERALA

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USE of equations and relationships as an aid in the calculation of field soil loss has been attempted^{1,2}. The major contribution to the prediction of soil loss was made in U.S.A. by studies on rainfall erosion index and evaluation of the cropping management factor³. In 1961, the universal soil loss equation was formulated⁴. The science of soil conservation had advanced much with the introduction of universal soil loss equation. Work on this line can be rarely done in India.

The present authors report the results of a pilot study conducted to select the proper rainfall erosion indices to be used in the universal soil loss equation for predicting soil and water losses from the slopy fields of Kerala.

An one year field experiment was conducted in the moderately acidic oxisols of the Kerala Agricultural University Campus, Vellanikkara with the above objective. The soil series established for the location was called the "Vellanikkara series" of Kerala. The experiment was laid out in RBD on a 15% uniform slope with 5 treatments and 4 replications in a soil having a basic infiltration rate of

14.85 cm/hr and sandy clay loam surface soil with crumb structure. The aggregate analysis, stability index, structural coefficient, percentage of aggregate stability and the mean weight diameter of the soil at the start and 6 months afterwards are presented in tables 1 and 2. The water dispersible aggregates of the surface soil as determined by shaking for 24 hr were 12%. The treatments consisted of, T₁—cassava alone on mounds, T₂—cassava on mounds with peanut intercrop, T₃—cassava alone on ridges across the slope, T₄—cassava on ridges across the slope with peanut intercrop and T₅—uncultivated bare fallow as the control. The mounds and ridges are illustrated in figures 1 and 2. The plots (24.3 m long, 2.7 m wide) were tilled with a spade (except T₅), ridges and mounds were taken and cassava and peanut were raised according to the requirements using cassava cultivar M₄ and peanut cultivar TMV-2 with the normal package of practices recommended. The control plot (T₅) was untilled, but all the weeds were removed as soon as noticed. The run-off and soil loss from each plot were collected directly into waterproof polythene-lined tanks constructed at the

Table 1 Mean aggregate analysis of the surface soil (%)

Aggregate size (mm)	At the start of the experiment	6 months after start of the experiment
> 5	11.01	4.78
2.5-5	14.00	10.16
1.0-2.5	20.10	13.19
0.5-1.0	20.48	21.78
0.25-0.5	21.11	23.80
< 0.25	13.30	26.79

Table 2 Stability index, structural coefficient, percentage of aggregate stability and mean weight diameter of the surface soil

Character	At the start of the experiment	6 months after start of the experiment
Stability index (%)	45.14	33.28
Structural coefficient	0.79	0.64
Aggregate stability (%)	79.00	64.00
Mean weight diameter (mm)	1.70	1.21