

Guide to identifying the four major banana damaging Nematodes:

Elvis j Mbiru

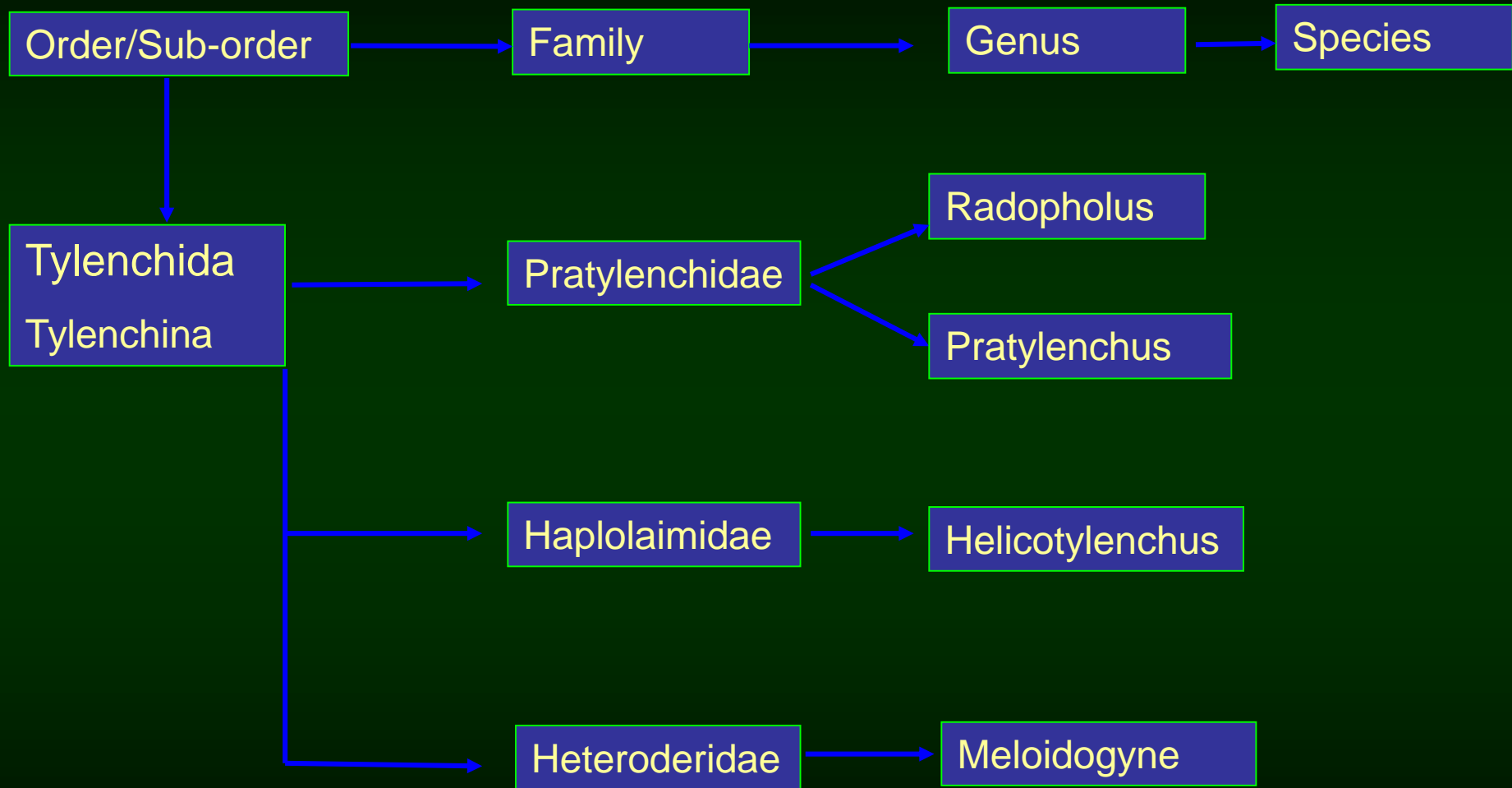
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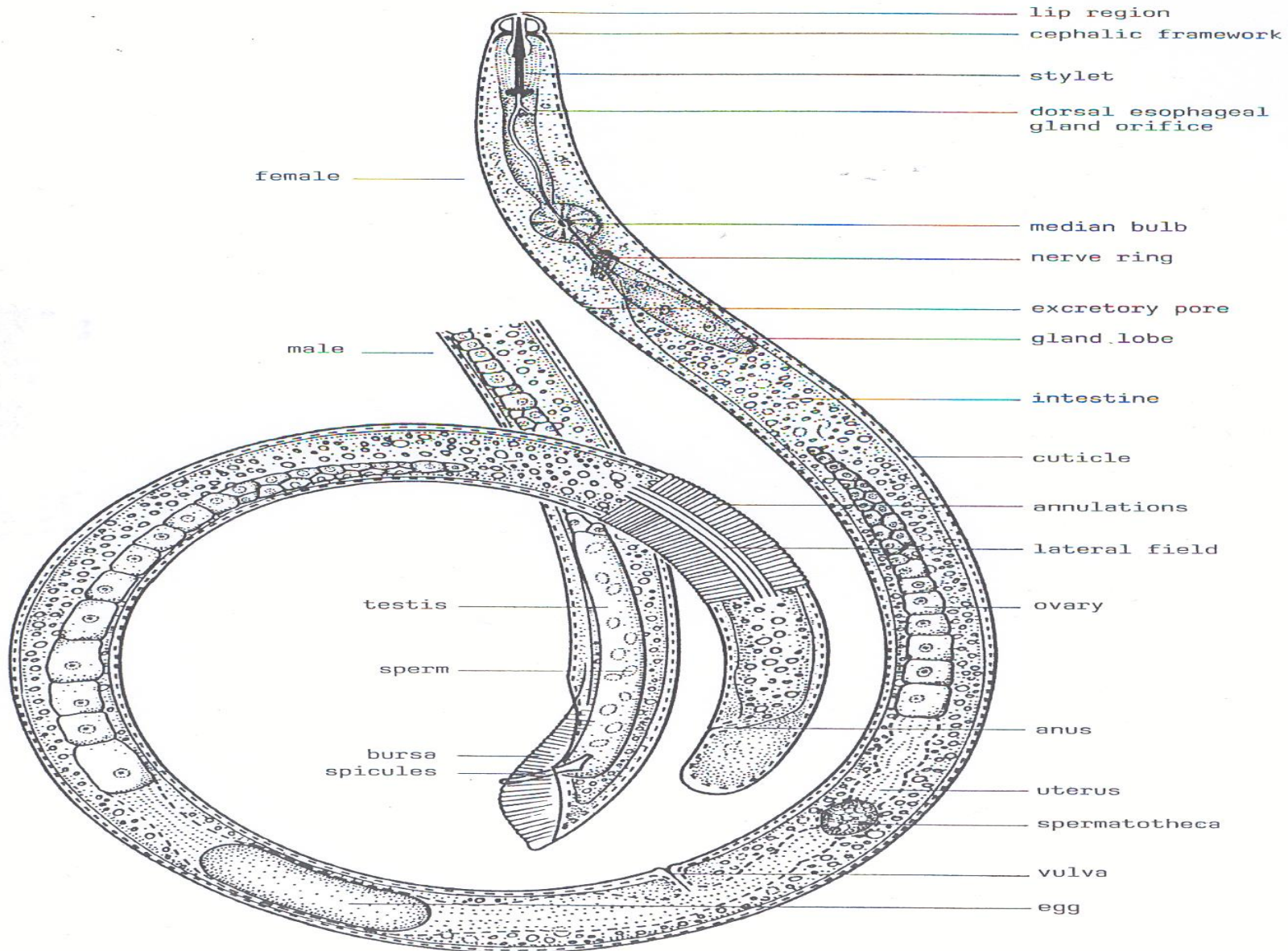
Functional nematodes damaging banana

- Burrowing nematode: *Radopholus similis*
- Root-lesion nematodes: *Pratylenchus coffeae* & *goodeyi*
- Spriral nematodes: *Helicotylenchus Multicinctus* & *dihystera*
- Sedentary nematodes: *Meloidogyne* spp (*incognita*, *javanica*, *arenaria*, *hapla*)

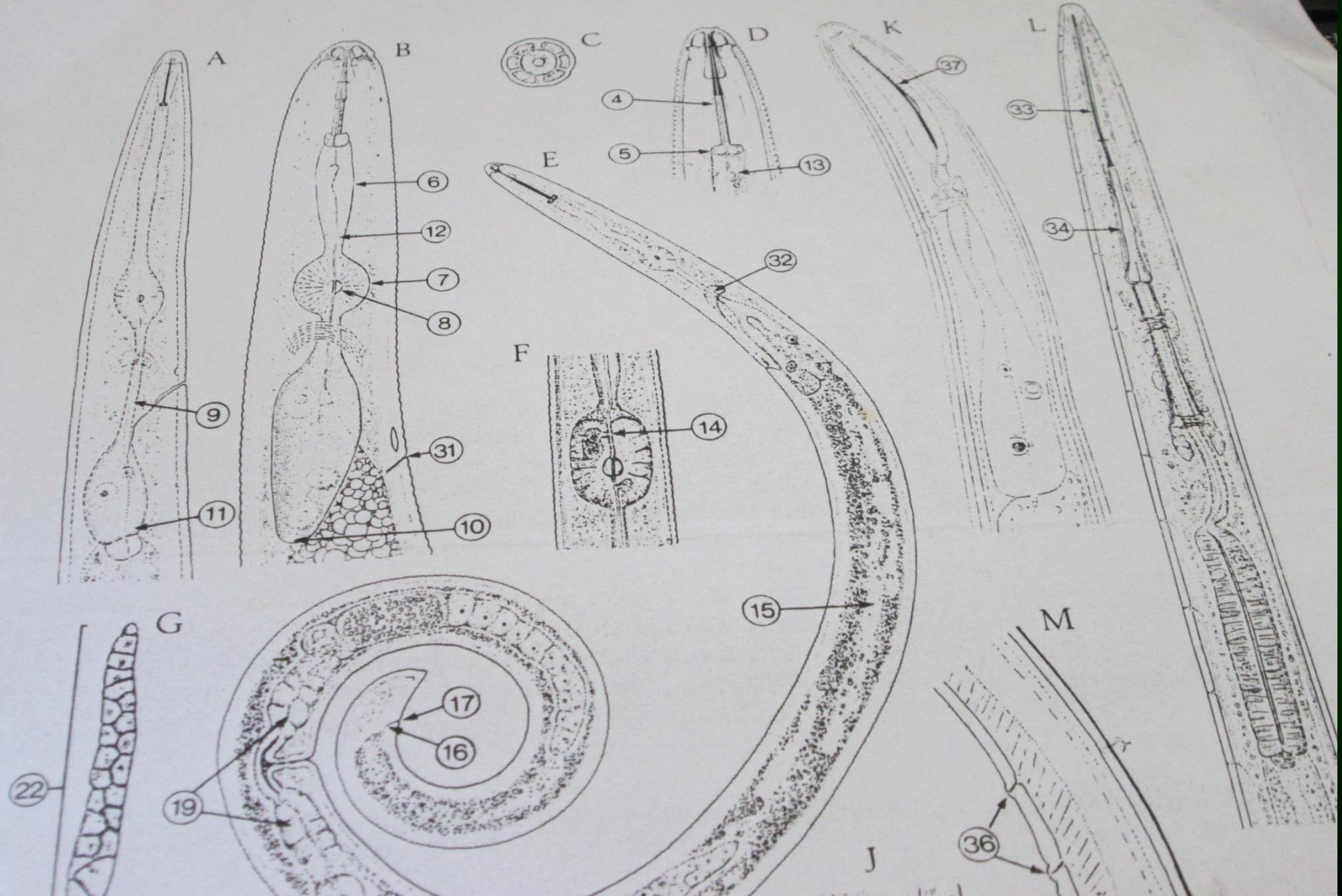
Banana nematodes phylogeny



Features of plant parasitic nematodes



Features of plant parasitic nematodes (con't)



Differences amongst the four nematodes

IDENTIFICATION OF NUSA NEMATODES

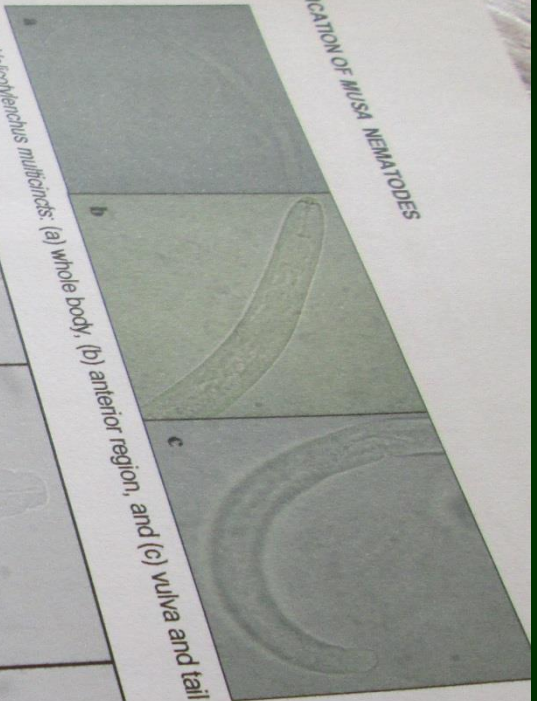


Figure 2. *Helicoverphus multibands*: (a) whole body, (b) anterior region, and (c) vulva and tail region.

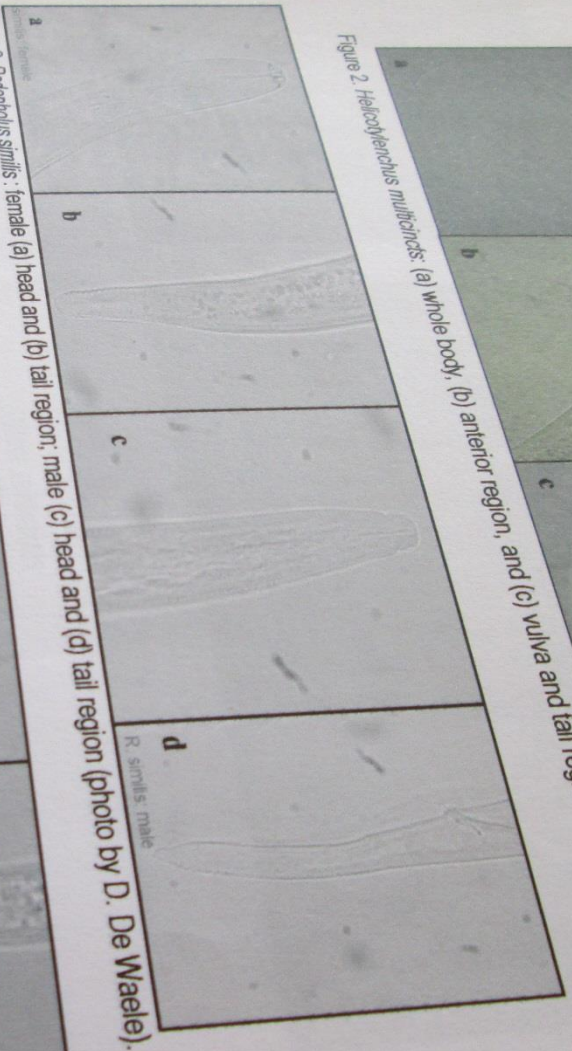


Figure 3. *Radopholus similis*: female (a) head and (b) tail region; male (c) head and (d) tail region (photo by D. De Waele).

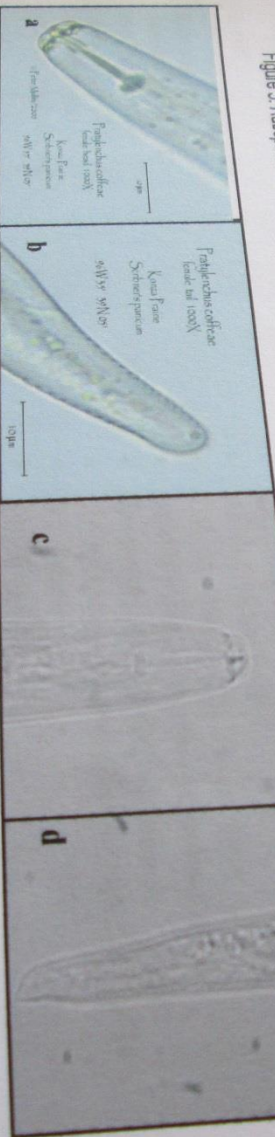


Figure 4. *Pratylenchus coffeae*: (a) head and (b) tail region (photo downloaded from <http://nematode.unl.edu>) ; *Pratylenchus goodii*: (c) head and (d) tail region (photo by D. De Waele).

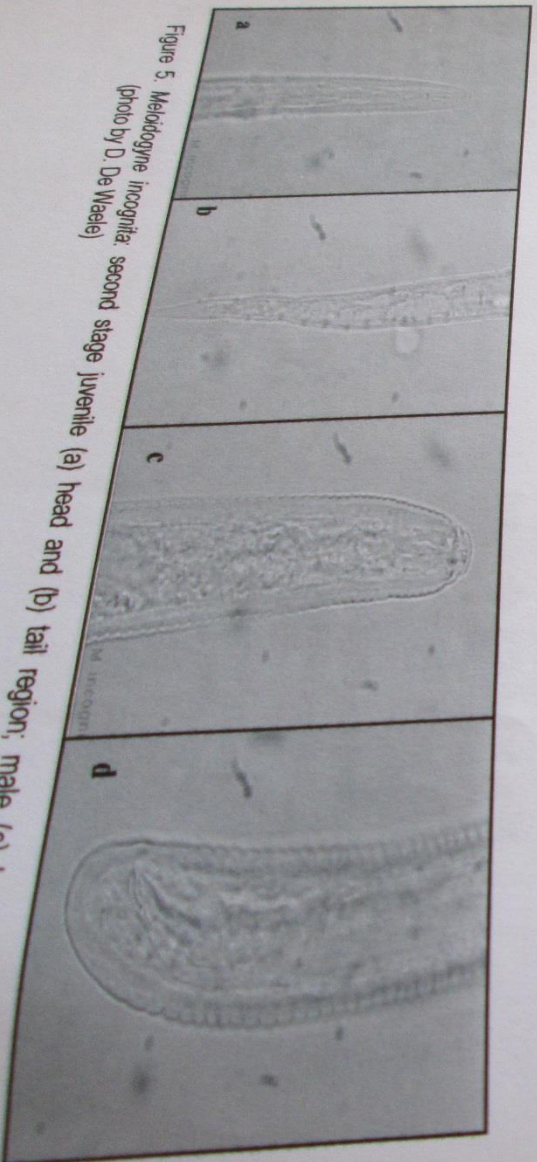
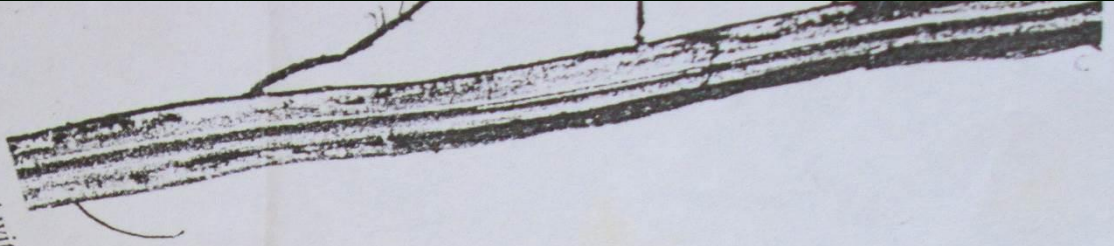


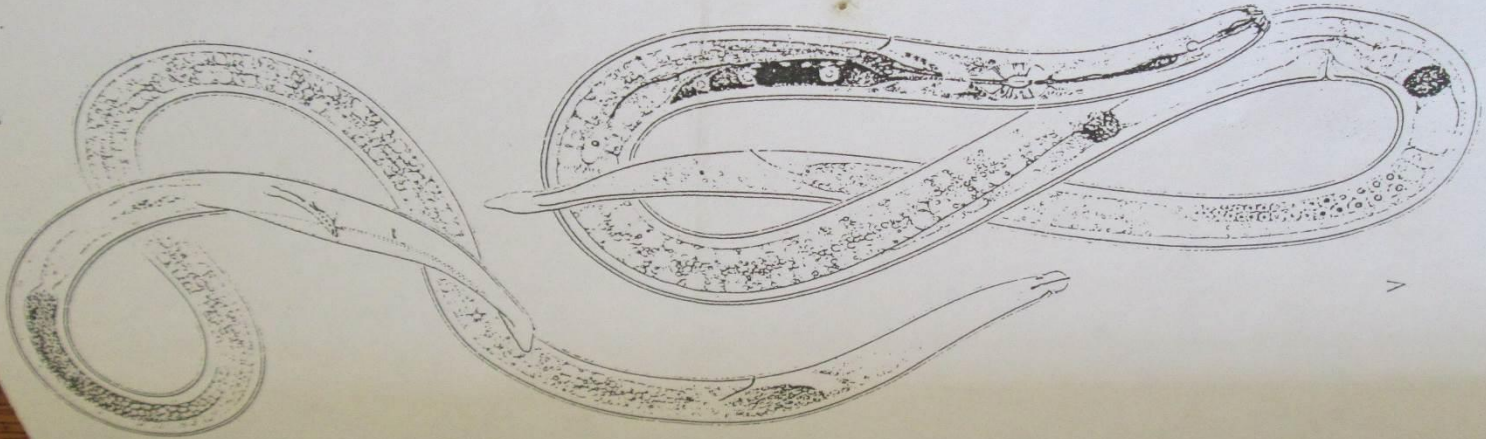
Figure 5. *Meloidogyne incognita*: second stage juvenile (a) head and (b) tail region; male (c) head and (d) tail region (photo by D. De Waele).

Radopholus similis



Left: Banana root with
split. Right: Root split
to show cortical
layers. The stele has not been
removed. (Photograph: Rotham-
sted Experimental Station.)

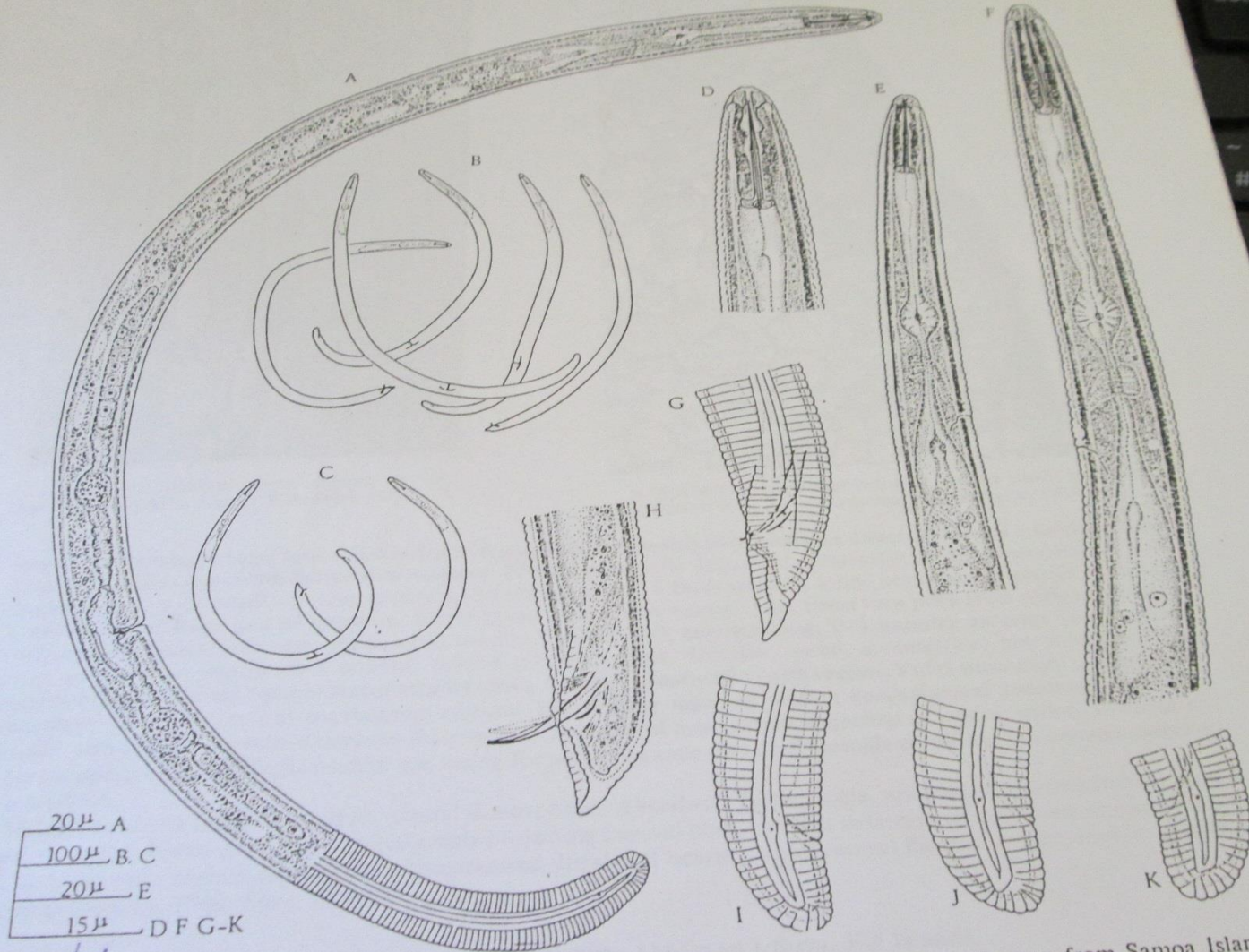
RADOPHOLUS SIMILIS



Helicotylenchus Multicinctus

C.I.H. Descriptions of
Plant-parasitic Nematodes
Set 2, No. 23

HELICOTYLENCHUS MULTICINCTUS

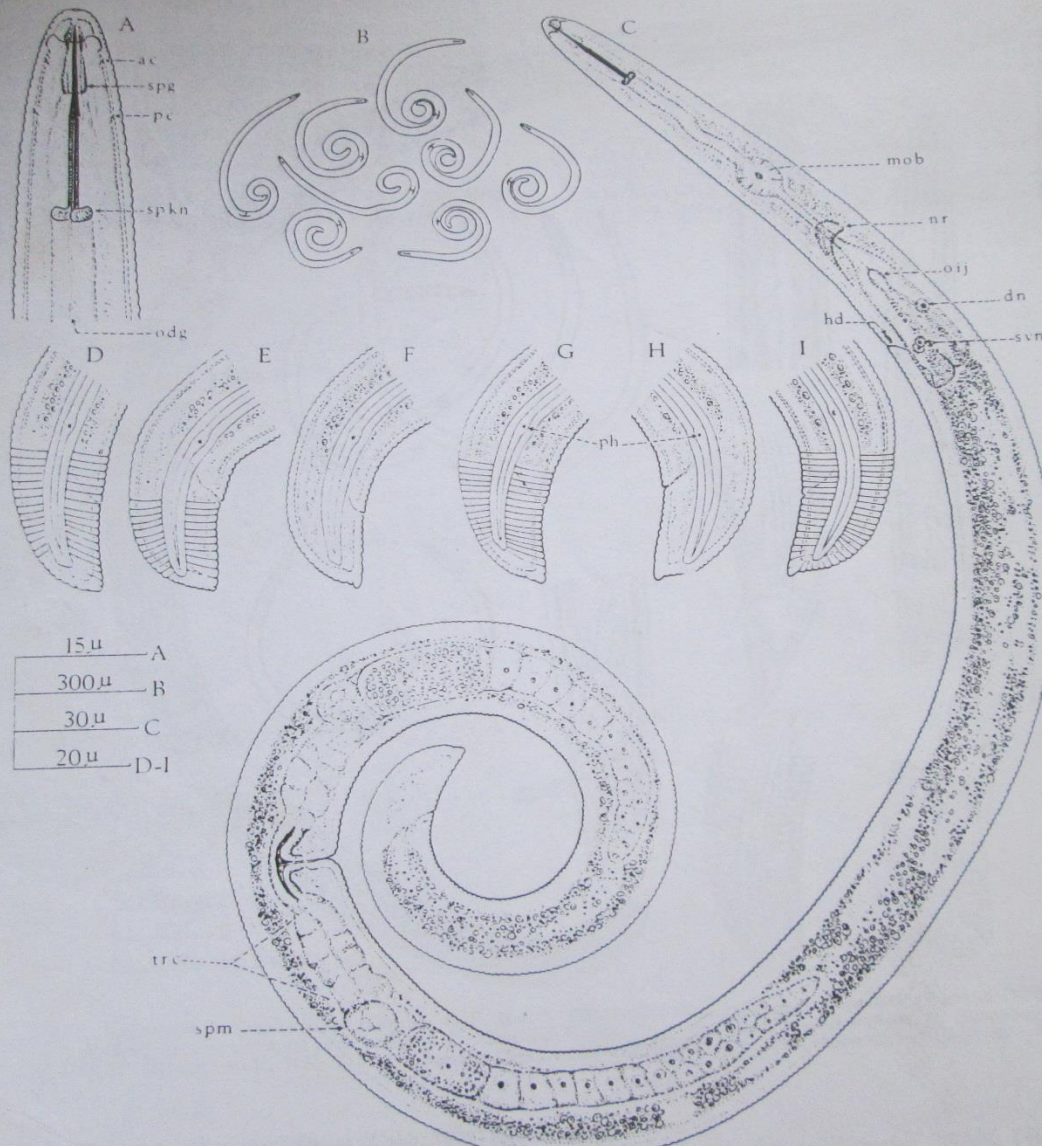


G, E, H & I. Topotypes; remainder specimens from banana from Samoa Island.
... female. F. Oesophageal region, male.
... (USA)

Helicotylenchus Dihystera

Descriptions of
Plant-parasitic Nematodes
Set 1, No. 9

HELICOTYLENCHUS DIHYSTERA

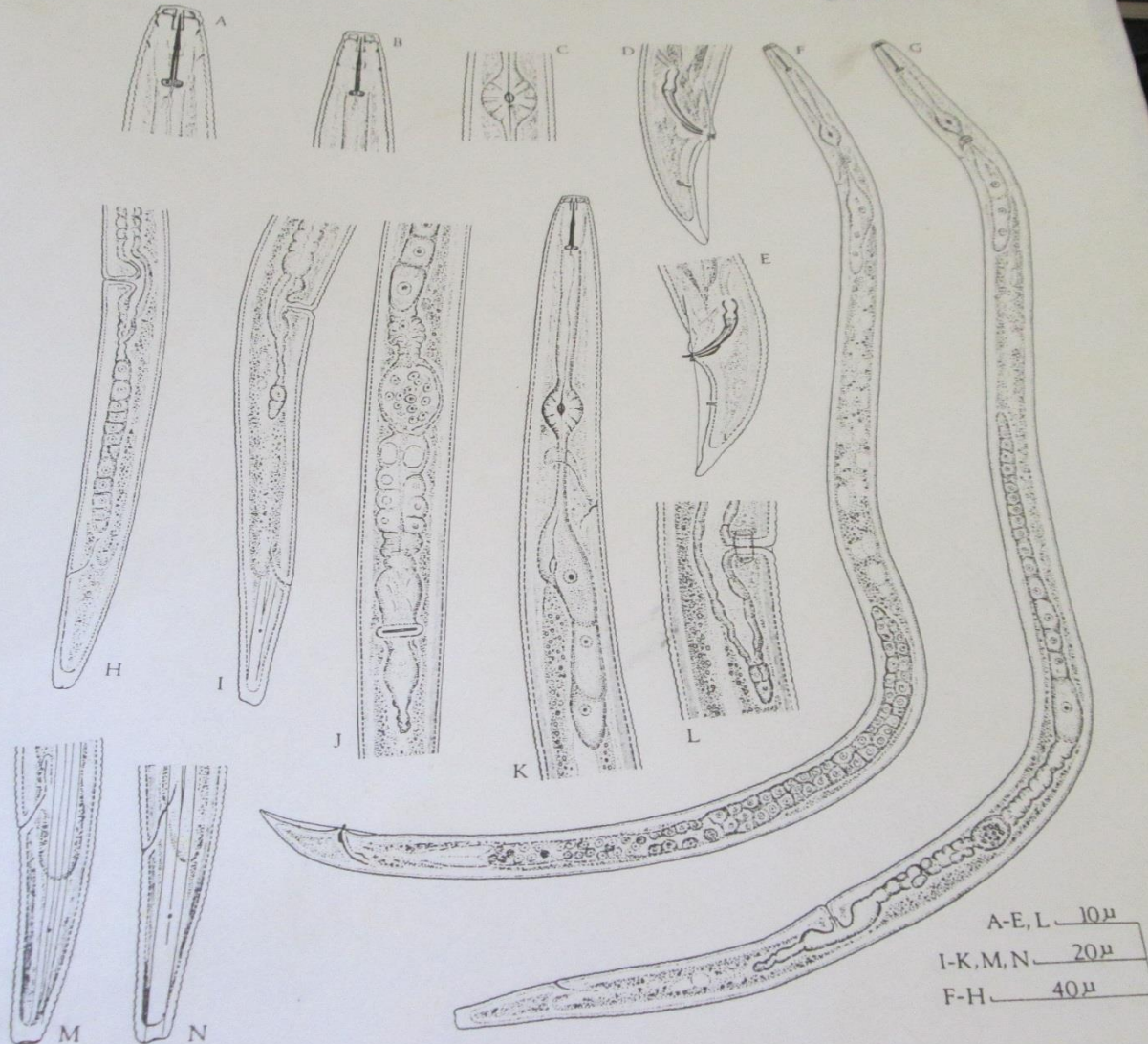


Pratylenchus coffeae

C.I.H. Descriptions of
Plant-parasitic Nematodes
Set 1, No. 6

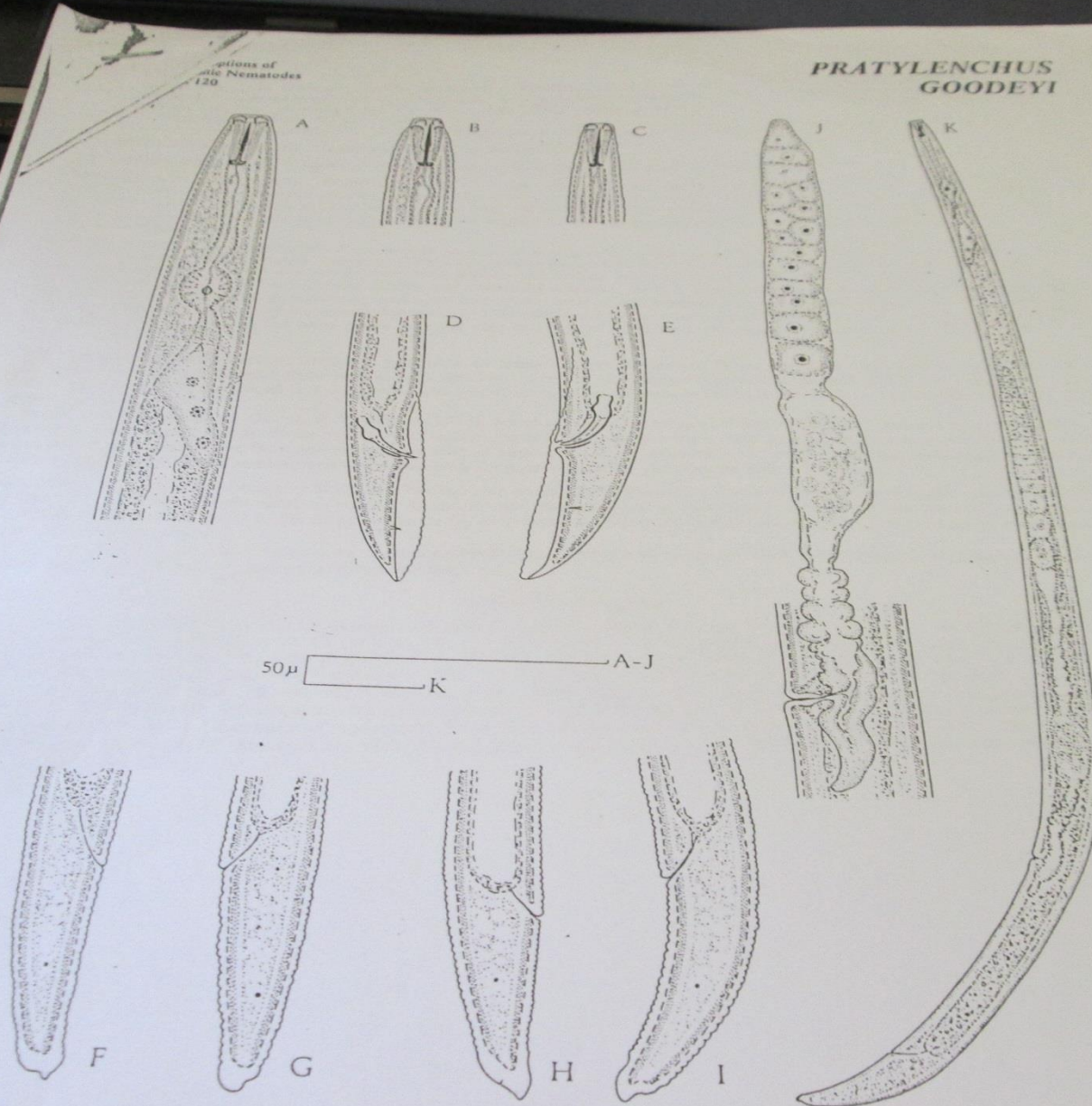
PRATYLENCHUS
COFFEAEE

4572



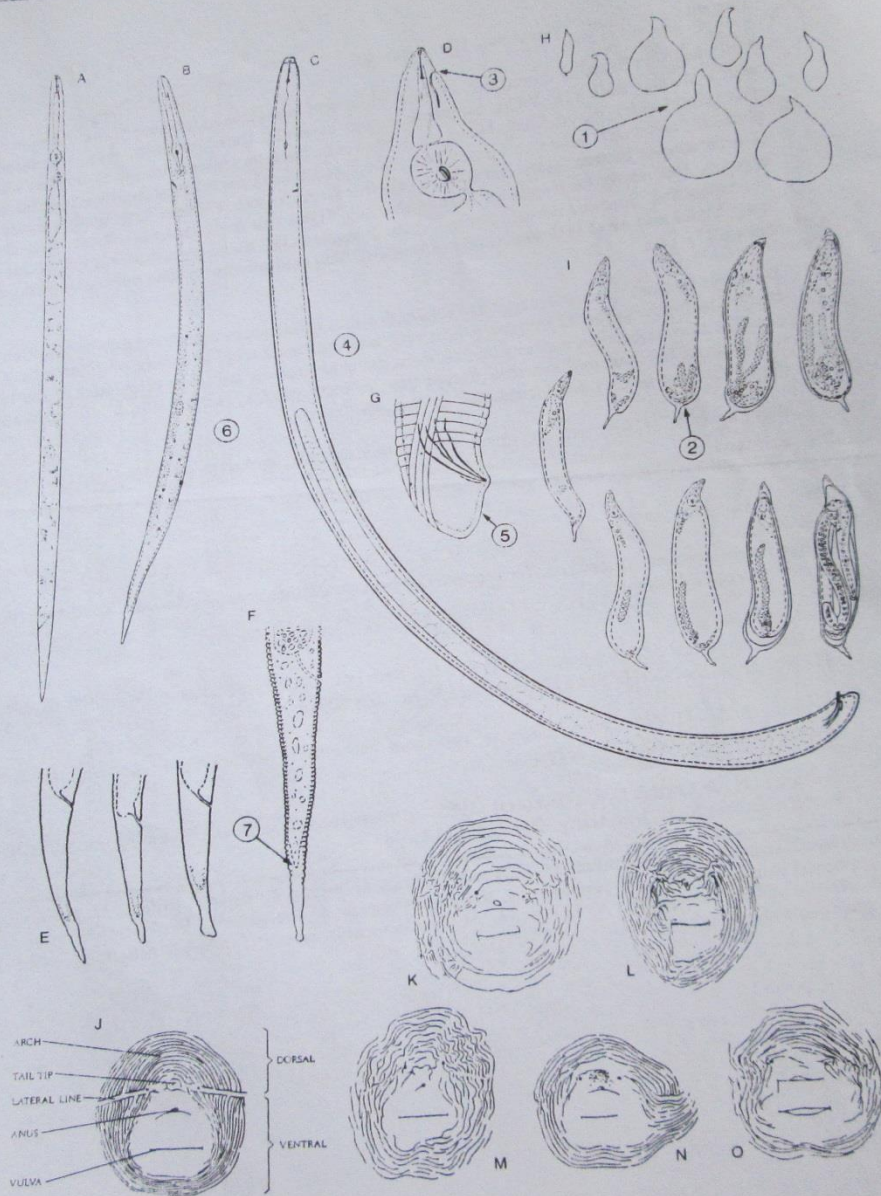
Pratylenchus coffeae (Zimmermann). B-F. Male; remainder female. A-G, I-L. Topotypes; H, M & N, from coffee soil. F, H, I, M & N. Tail ends. E. Entire male. G. Entire

Pratylenchus goodeyi



Meloidogyne spp

MORPHOLOGY, ANATOMY AND...

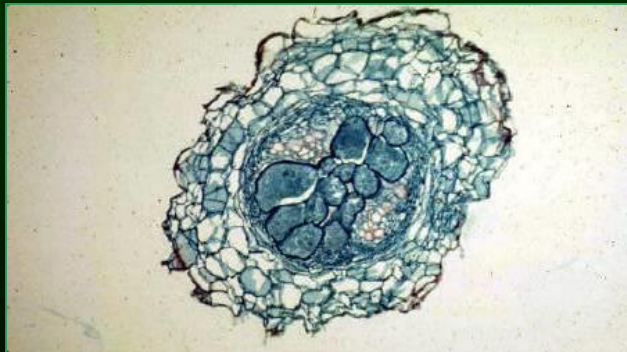


Meloidogyne under high resolution

- feed from highly modified cells
- Adults Loose mobility completely



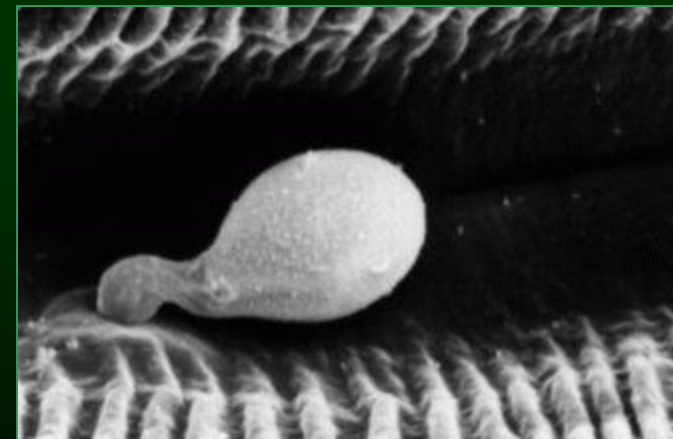
Meloidogyne juveniles in root tissue



Meloidogyne feeding sites (giant cells)



Meloidogyne female with egg mass



Globodera inside vascular bundle

IIITA