Meloidogyne platani n. sp. (Meloidogynidae), a Root-knot Nematode Parasitizing American Sycamore[1]

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Abstract: Meloidogyne platani n. sp. is described and illustrated from specimens obtained from roots of American sycamore, *Platanus occidentalis*, in Virginia. This new species shows certain similarities with *M. arenaria* but differs from it by a number of distinctive characters. The perineal pattern of females is rounded with fine, wavy to zig-zag striae and raised, convoluted striae in the inner lateral line regions. The stylet of females is 16.5 μm long with large, rounded stylet knobs set off from the shaft. Males have a low head cap and smooth head region. The stylet length is 22.0 μm, and the stylet knobs are rounded and set off from the shaft. Mean second-stage juvenile length is 443.0 μm, and stylet length is 12.2 μm. The head region of juveniles is not annulated, and the tail has a definite terminus. This nematode causes severe galling and reproduces well on sycamore. Other good hosts include white ash and tobacco cv. NC 95. *M. platani* n. sp. reproduces by mitotic parthenogenesis and has a somatic chromosome number of approximately 45 (2n). *Key words:* taxonomy, morphology, new *Meloidogyne* species, host range, scanning electron microscopy.
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In the spring of 1976, several American sycamore seedlings (*Platanus occidentalis* L.) exhibiting severe root galling were received by the North Carolina State Plant Disease and Insect Clinic from a nursery in Franklin, Virginia. Preliminary examination revealed that the roots were infected with a root-knot nematode resembling *Meloidogyne arenaria* (Neal, 1889) Chitwood, 1949. Further studies on some biological aspects of the nematode from sycamore, including morphology, host range, pathogenicity, life cycle, and host parasite relationship, indicated that it was a new species or physiological race of *M. arenaria* highly virulent on sycamore (1,2). The perineal patterns of adult females were found to be somewhat similar to *M. arenaria* but were characterized by distinct zig-zag and wavy striae in the lateral line areas. The host response was different from that of other *Meloidogyne* species. Among the host differentials (8) commonly used for identification of *Meloidogyne* species, tobacco was heavily galled with moderate egg-mass production, tomato and watermelon were moderately galled with very few egg masses, and pepper was lightly galled but no reproduction occurred. No infection was found on peanut, strawberry, cotton, sweet potato, and corn. Among five hardwood species (red maple, dogwood, sweet gum, white ash, yellow poplar) tested, white ash was the only additional hardwood infected. It showed moderate to high galling and moderate egg mass production. Sycamore was always severely galled, with abundant egg masses, whereas it was not infected by the four common *Meloidogyne* species, *M. hapla* Chitwood, 1949, *M. javanica* (Treub, 1885) Chitwood, 1949, *M. incognita* (Kofoid and White, 1919) Chitwood, 1949, and *M. arenaria*. Based on its morphology and biological differences to other known *Meloidogyne* species, this nematode is designated here as a new species, *Meloidogyne platani* n. sp. and described below. The common name "sycamore root-knot nematode" is suggested.

An undescribed root-knot nematode species has been previously reported to gall roots of London planetrees, *Platanus* × *acerifolia*, in the Washington, D.C., area (4). Examination of specimens recently provided by Dr. L. R. Krusberg confirmed that this nematode is identical with *M. platani*.

MATERIALS AND METHODS

Stock cultures of *Meloidogyne platani* n. sp. were established from eggs and juveniles obtained originally from the type locality (nursery in Franklin, Virigina). The nematodes were propagated on seedlings of

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sycamore and tobacco 'NC 95,' and were maintained by periodic subculturing on these hosts in the greenhouse at 22–28 C. Nematodes from greenhouse cultures were used for all morphologic and morphometric studies.

Light microscope studies: Eggs were mounted in 2% formalin. Freshly hatched second-stage juveniles and males were killed with hot TAF and mounted on slides in TAF. The anterior portion, including the esophagus, of females was cut off in a drop of 2% formalin and mounted on slides. Morphological observations and measurements of eggs, second-stage juveniles, males and females were completed within 24–48 h of slide preparation. Measurements of whole females fixed in 2% formalin were taken from outlines drawn with a camera lucida. Perineal patterns of females were cut from unfixed specimens in 45% lactic acid and mounted in glycerin. Permanent mounts of whole females were prepared according to Hirschmann and Riggs (7). Type specimens of males and juveniles were prepared in glycerin according to Thorne's method (9). Photographs were taken with a bright field light microscope.

Scanning electron microscope studies: Juveniles, males, and females were processed for SEM as described previously (5,6). Perineal patterns were prepared as described earlier, then transferred to an oven and kept at 50 C for 1 h to drain most of the glycerin. The patterns were placed in a desiccator over anhydrous $CaSO_4$ for 1 wk. All specimens were mounted on double-sided adhesive tape on SEM stubs, coated with gold, and were viewed and photographed with an ETEC scanning electron mircoscope at 20 KV accelerating voltage. At least 50 specimens of each life stage and 50 perineal patterns were examined.

SPECIES DESCRIPTION

Meloidogyne platani n. sp.

Females: Measurements of 30 females in 2% formalin (perineal patterns in glycerin) are listed in Table 1.

Table 1. Measurements of 30 females of *Meloidogyne platani* n. sp.

Character	Range	Mean	Standard error of mean	Standard deviation	Coefficient of variability (%)
Linear (μm)					
Body length	540.0–860.0	678.4	14.65	80.24	11.8
Body width	320.0–585.0	453.0	12.96	71.01	15.7
Neck length	95.0–320.0	190.7	9.57	52.43	27.5
Neck width	50.0–198.0	136.8	6.65	36.41	26.6
Vulval slit length	21.6– 33.2	26.7	0.52	2.85	10.7
Vulva-anus distance	10.3– 23.1	16.4	0.47	2.57	15.7
Interphasmidial distance	19.8– 35.3	27.6	0.69	3.80	13.8
Stylet length	15.8– 17.3	16.5	0.09	0.51	3.1
Stylet knob height	2.2– 3.1	2.5	0.04	0.20	7.9
Stylet knob width	4.3– 5.2	4.8	0.04	0.22	4.5
DGO	2.8– 4.6	3.7	0.08	0.46	12.5
Excretory pore to head end	15.8– 39.5	26.8	1.22	6.70	25.0
Metacorpus length	36.3– 47.4	41.4	0.54	3.00	7.2
Metacorpus width	28.3– 55.3	39.4	0.83	4.54	11.5
Metacorpus valve length	12.6– 14.6	13.4	0.09	0.51	3.8
Metacorpus valve width	10.4– 12.7	11.7	0.09	0.47	4.1
Ratios					
a	1.1– 2.0	1.5	0.04	0.22	14.8
Body length/neck length	2.9– 11.7	5.4	0.32	1.77	33.0
Stylet knob width/height	1.6– 2.1	1.9	0.02	0.12	6.2
Metacorpus length/width	0.7– 1.4	1.1	0.02	0.12	11.6
Metacorpus valve length/width	1.1– 1.3	1.2	0.01	0.06	5.1
Percentages					
Excretory pore	2.3– 6.6	4.0	0.19	1.04	26.1

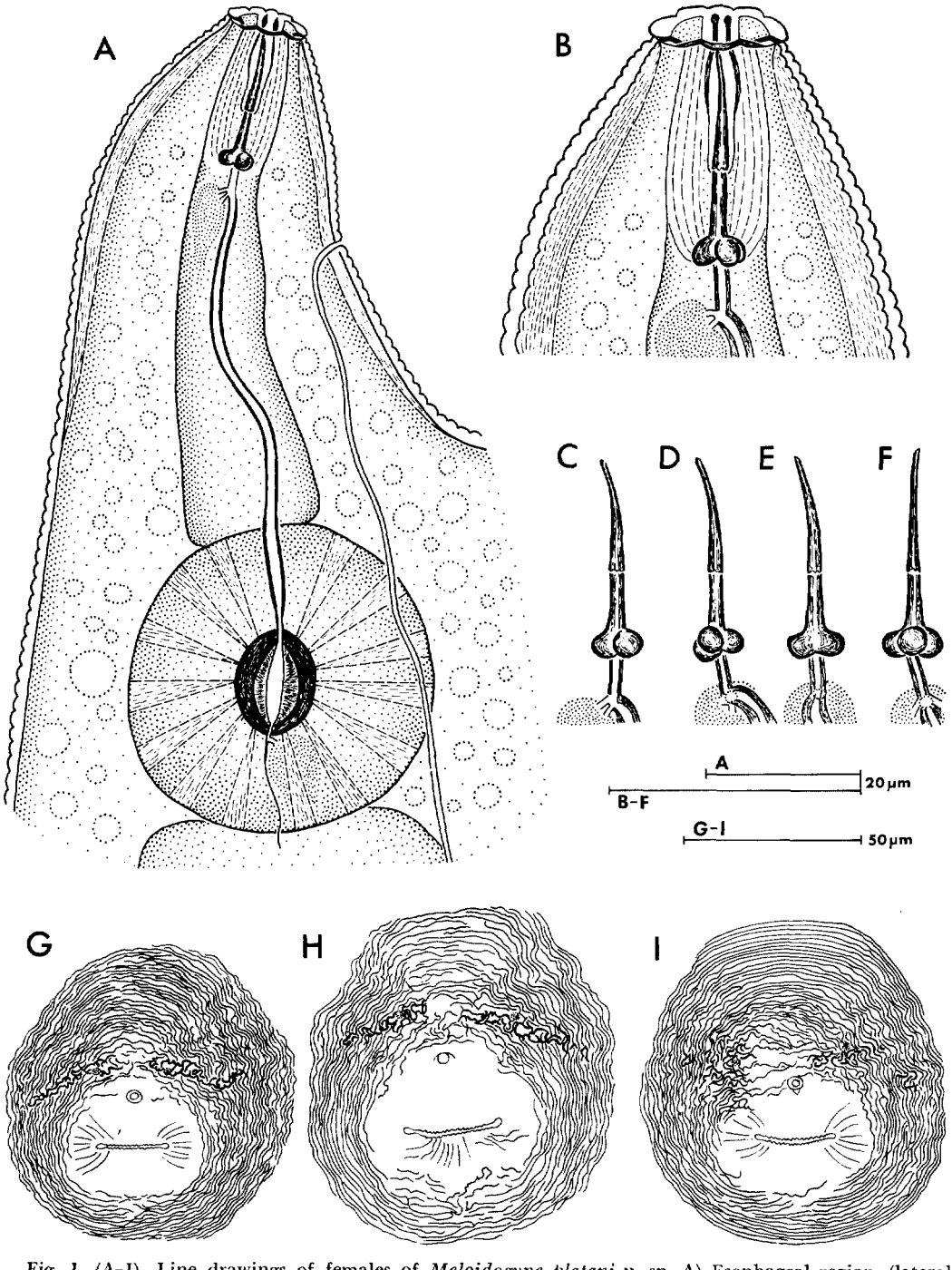

Fig. 1 (A–I). Line drawings of females of *Meloidogyne platani* n. sp. A) Esophageal region (lateral). B) Cephalic region (lateral). C–F) Stylets (lateral, ventrolateral, ventral and dorsal, respectively). G–I) Perineal patterns showing variation typical for *M. platani* n. sp.

Measurements of holotype in glycerin.— Body length: 710 μm; body width: 450 μm; a: 1.6; neck length: 290 μm; neck width: 155 μm; stylet length: 15.2 μm; stylet knob height: 2.2 μm; stylet knob width: 4.9 μm; DGO to stylet base: 3.7 μm; excretory pore to head end: 24.8 μm (ventral view); excretory pore %: 3.5; number of annules from excretory pore to head end: 12. Female as in general description. Stylet not level, therefore appearing slightly shortened. Perineal region not visible.

Description (Figs. 1, 2, 3, 6 A–C): Body white, variable in size, globular to pear-shaped, with prominent neck. Body posteriorly rounded, without tail protuberance. Cuticle with maximum thickness of about 4 μm, finely striated; cephalids not observed. Head region distinctly set off from body. In SEM labial disc slightly elevated (Fig. 6A). Medial lips and labial disc form dumbell-shaped structure in face view. Medial lips usually rounded, in some specimens slightly indented medially. No lateral lips distinguishable. Amphid openings small. Prestoma small, oval shaped; stoma obscure, slitlike. Inner labial sensilla and cephalic sensilla not observed. Head region without annulations. Cephalic framework approximately hexaradiate with slightly enlarged lateral sectors. Vestibule and vestibule extension distinct (Fig. 1-A,B). Stylet

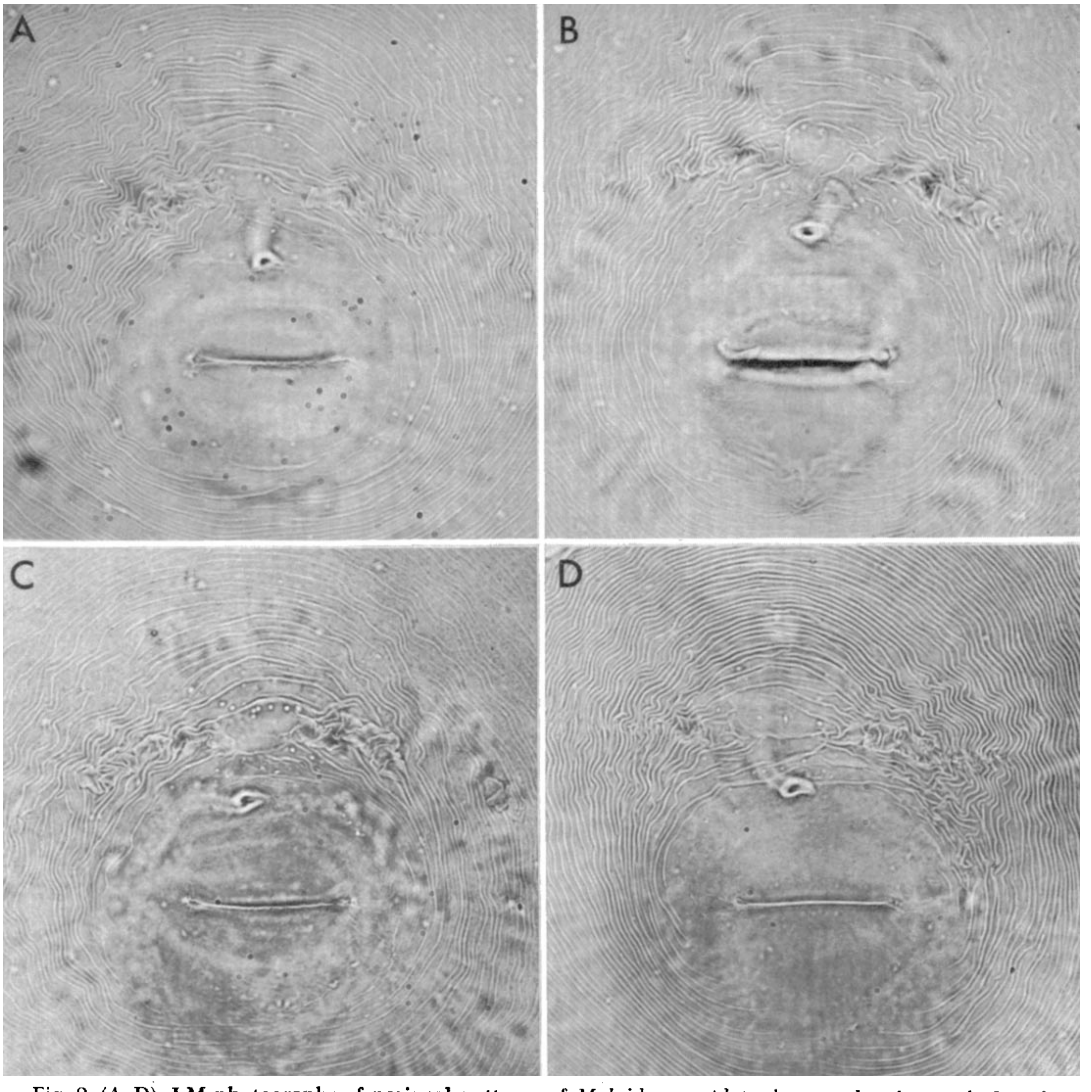

Fig. 2 (A–D). LM photographs of perineal patterns of *Meloidogyne platani* n. sp. showing typical variation.

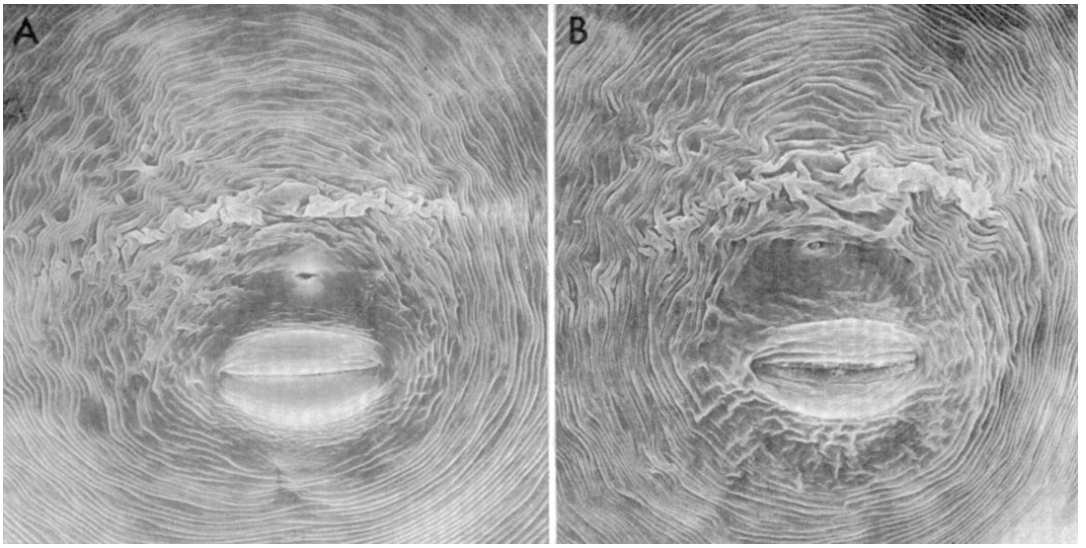

Fig. 3 (A,B). SEM photographs of perineal patterns of *Meloidogyne platani* n. sp. showing wavy to zig-zag striae and convoluted, raised striae of inner lateral line regions.

delicate (Figs. 1A-F; 6B,C); conical part distinctly curved dorsally, tapering towards tip; stylet shaft slightly enlarged posteriorly; stylet knobs set off from shaft, large, evenly rounded, and distinctly separate. Dorsal esophageal gland orifice (DGO) close behind stylet knobs, branched into three channels; dorsal gland ampulla large; subventral gland orifices immediately posterior to metacorpus valve and also branched. Esophageal gland lobe distinct with one large dorsal nucleus and two smaller subventral nuclei. Two esophago-intestinal cells present near junction of metacorpus and intestine. Position of excretory pore variable; close behind dorsal esophageal gland orifice in many females. Perineal pattern with closely spaced, mostly fine, continuous striae (Figs. 1G–I; 2, 3). Dorsal arch low, whole pattern appearing much rounded. Slightly forked striae at lateral lines present in only few specimens; usually no lateral lines distinguishable and striae in dorso- and ventro-lateral areas slightly wavy to pronounced zig-zag and continuous from dorsal to ventral region. Zig-zag striae, characteristic for this species, often more pronounced on one side than on the other. Inner lateral line regions with raised, irregular, closely looped and folded striae. Ventral pattern area composed of fine, curved, continuous striae, usually interrupted midway. Tail tip not visible, central tail area mostly free of striations. Vulval edges distinctly crenate; very fine vulval striation radiating outwardly from edges. Phasmidial ducts very distinct, no phasmid surface structure distinguishable in SEM.

Males: Measurements of 30 males in TAF are listed in Table 2.

Measurements of allotype in glycerin.— Body length: 1,740 μm; body width: 35.4 μm; a: 49.2; stylet length: 21.8 μm; stylet knob height: 3.0 μm; stylet knob width: 5.2 μm; DGO to stylet base: 3.6 μm; head end to metacorpus valve: 93.2 μm; excretory pore to head end: 153.7 μm; excretory pore %: 8.8; phasmids to tail end: 13.3 μm and 15.8 μm, respectively (dorsal view); testis outstretched, 742 μm long; T%: 42.6. Male as in general description. Posterior region turned dorsally; tail, spicules, and gubernaculum could not be measured.

Description (Figs. 4, 6H–J, 7C,D): Body slender, vermiform, tapering to rounded ends; posterior end more rounded than anterior. Heat-killed males curve ventrally in C-shape, tail twists through 90°. Head cap in lateral view low, rounded, narrower than slightly set off head region (Figs. 4A,B,E; 7C,D). In SEM, large rounded labial disc, distinctly elevated (Fig. 6H,I). Medial lips and labial disc form elongate head cap in face view. In some specimens lateral indentation at junction of labial disc and medial lips. Diameter of labial disc

Table 2. Measurements of 30 males of *Meloidogyne platani* n. sp.

Character	Range	Mean	Standard error of mean	Standard deviation	Coefficient of variability (%)
Linear (μm)					
Body length	960.0–2,010.0	1,354.8	50.32	275.60	20.3
Greatest body width	27.7– 42.7	34.1	0.76	4.18	12.3
Body width at stylet knobs	15.8– 20.9	18.4	0.24	1.29	7.0
Body width at excretory pore	24.3– 34.9	27.7	0.49	2.66	9.6
Head region height	5.5– 7.0	6.2	0.09	0.51	8.2
Head region width	10.9– 13.3	12.2	0.10	0.57	4.7
Stylet length	19.4– 24.3	22.0	0.20	1.08	4.9
Stylet base to head end	21.4– 27.5	24.5	0.26	1.41	5.7
Stylet shaft and knobs	8.9– 12.3	10.7	0.13	0.72	6.7
Stylet knob height	2.8– 3.8	3.3	0.05	0.27	8.2
Stylet knob width	4.8– 6.0	5.4	0.06	0.32	5.9
DGO	2.3– 4.5	3.7	0.10	0.56	15.4
Head end to metacorpus valve	75.1– 107.0	90.9	1.45	7.92	8.7
Metacorpus valve length	5.1– 6.8	5.8	0.06	0.34	5.9
Metacorpus valve width	4.4– 5.3	4.8	0.05	0.29	6.1
Metacorpus width	10.6– 14.3	12.1	0.17	0.90	7.5
Excretory pore to head end	111.9– 161.5	136.9	2.46	13.49	9.9
Tail length	9.5– 17.1	12.9	0.27	1.48	11.4
Phasmids to tail end	9.5– 22.2	13.4	0.51	2.81	20.9
Spicule length	25.1– 31.6	27.5	0.26	1.41	5.1
Gubernaculum length	7.9– 9.7	8.5	0.10	0.55	0.1
Testis length	435.0–1,146.0	756.1	30.27	165.81	21.9
Ratios					
a	27.3– 51.9	39.6	0.98	5.38	13.6
c	78.5– 160.3	104.8	3.13	17.13	16.4
Body length/head end to metacorpus valve	11.4– 19.2	14.8	0.38	2.09	14.1
Head region width/height	1.8– 2.2	2.0	0.02	0.11	5.5
Stylet knob width/height	1.4– 1.8	1.6	0.02	0.12	7.7
Metacorpus valve length/width	1.1– 1.4	1.2	0.01	0.07	5.9
Percentages					
Excretory pore	7.9– 12.8	10.3	0.26	1.41	13.7
T	37.2– 81.8	56.8	2.24	12.24	21.5

not bigger than that of medial lips. Medial lips crescent shaped to irregularly pointed in face view extending some distance onto head region. No indication of lateral lips. Head region without annulations. In most specimens, inner labial sensilla obscure, opening into prestoma. Cephalic sensilla not distinct. Prestoma oval-shaped to hexagonal. Cuticular body annules distinct, about 3.1–3.6 μm wide at mid body. Lateral field not clearly visible, basically with four incisures (Fig. 4F), in some specimens up to eight incisures for some distance; additional incisures short, broken, and fainter; inner incisures may fork; outer incisures straight or very slightly crenate, starting approximately at level of stylet knobs; no areolation except for few short lines in tail end; no areolation or crenation seen in tail by SEM (Fig. 6J). Cephalic framework moderately developed. Stylet robust with much rounded, large knobs, distinctly set off from shaft and slightly sloping backwards (Fig. 4B–E). Stylet shaft of same diameter throughout. Dorsal esophageal gland orifice distance variable, mostly opening short distance behind stylet knob base; dorsal gland duct branched; gland ampulla poorly defined. Esophagus lumen lining narrow between stylet knobs and metacorpus valve (Fig. 4A); procorpus distinctly outlined; metacorpus elongate, oval shaped with large valve plates; esophago-intestinal junction distinct; gland lobe variable in length with

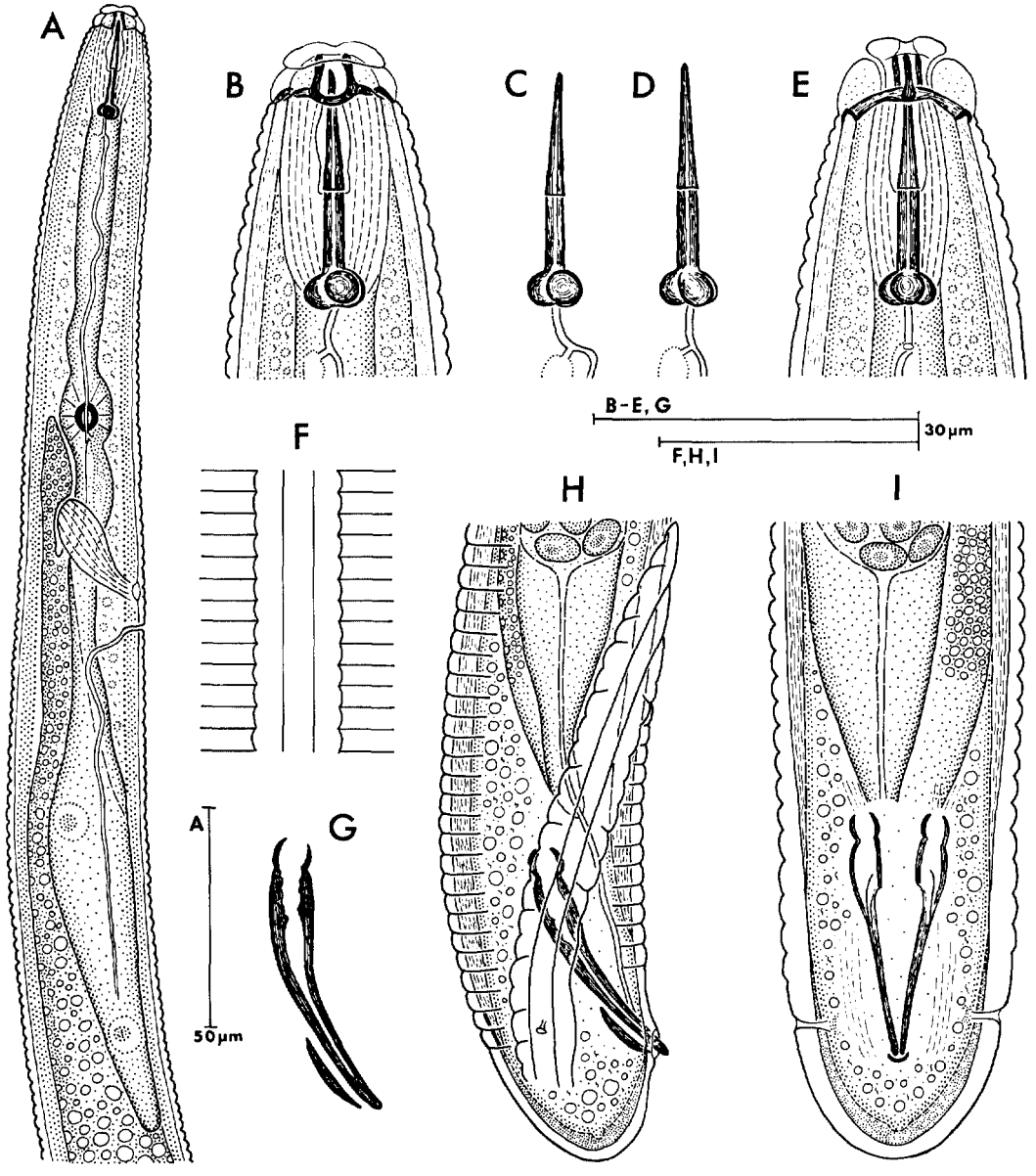

Fig. 4 (A–I). Line drawings of males of ***Meloidogyne platani*** n. sp. A) Esophageal region (lateral. B) Cephalic region (lateral). C,D) Stylets (lateral). E) Cephalic region (dorsal). F) Lateral field near mid-body. G) Spicule and gubernaculum (lateral). H) Tail (lateral). I) Tail (ventral).

two approximately equal-sized nuclei: anterior nucleus near beginning or middle of gland lobe and posterior nucleus in end of lobe; position of nuclei variable. Intestinal caecum extends on dorsal side to beginning or mid level of metacorpus. Excretory pore distinct; terminal duct long, typically curved; large sinus nucleus in right lateral chord. Hemizonid 1–4 annules anterior to excretory pore. One testis or two testes, outstretched or reflexed anteriorly. Sperm rounded and granular. Spicules arcuate, long and slender, with small rounded base and blunt single tip; typically tylenchoid (Fig. 4G–I). Gubernaculum distinct, simple. Tail elongate, sometimes slightly digitate. Phasmids frequently at level of cloaca, appearing slit-like in SEM (Fig. 6J).

Second-stage juveniles: Measurements of 50 juveniles in TAF are listed in Table 3.

Table 3. Measurements of 50 second-stage juveniles of *Meloidogyne platani* n. sp.

Character	Range	Mean	Standard error of mean	Standard deviation	Coefficient of variability (%)
Linear (μm)					
Body length	395.3–496.8	443.0	3.18	22.51	5.1
Greatest body width	14.9– 19.8	17.0	0.16	1.15	6.8
Body width at excretory pore	14.2– 17.6	15.8	0.11	0.78	5.0
Body width at anus	10.3– 12.6	11.4	0.09	0.61	5.4
Head region height	2.7– 3.4	3.0	0.02	0.14	4.6
Head region width	5.4– 6.0	5.8	0.02	0.15	2.6
Stylet length	11.6– 12.6	12.2	0.04	0.25	2.1
Stylet base to head end	15.4– 16.5	16.0	0.04	0.30	1.9
Stylet shaft and knobs	5.4– 5.9	5.7	0.02	0.17	2.9
Stylet knob height	1.4– 1.7	1.6	0.01	0.08	5.1
Stylet knob width	2.6– 2.9	2.7	0.01	0.09	3.3
DGO	2.7– 4.0	3.5	0.04	0.31	8.8
Head end to metacorpus valve	57.6– 69.5	63.9	0.40	2.83	4.4
Metacorpus valve length	4.3– 4.8	4.6	0.02	0.15	3.2
Metacorpus valve width	4.0– 4.6	4.2	0.02	0.17	4.0
Excretory pore to head end	80.5– 98.1	88.4	0.51	3.62	4.1
Tail length	49.6– 64.8	57.3	0.54	3.80	6.6
Tail terminus length	9.3– 15.3	12.4	0.20	1.41	11.4
Tail terminus width at beginning	3.9– 5.2	4.6	0.05	0.32	7.0
Phasmids to tail end	34.7– 57.4	45.5	0.63	4.44	9.8
Genital primordium to tail end	137.4–119.9	174.0	1.93	13.64	7.8
Ratios					
a	22.6– 29.7	26.2	0.22	1.54	5.9
b	5.9– 7.7	6.9	0.06	0.39	5.7
c	7.1– 8.5	7.7	0.05	0.37	4.8
d	4.4– 5.8	5.0	0.05	0.34	6.8
Caudal ratio A	2.1– 3.6	2.7	0.05	0.36	13.1
Head region width/height	1.7– 2.1	1.9	0.01	0.08	4.2
Stylet knob width/height	1.6– 2.1	1.8	0.01	0.10	5.8
Metacorpus valve length/width	1.0– 1.2	1.1	0.01	0.05	4.8
Tail length/tail terminus length	3.8– 6.2	4.7	0.07	0.48	10.4
Tail terminus length/stylet length	0.8– 1.3	1.0	0.02	0.12	11.3
Percentages					
Excretory pore	18.6– 21.9	20.0	0.11	0.77	3.9
Genital primordium	34.1– 42.1	39.2	0.25	1.79	4.6
Phasmids	66.4– 94.0	79.3	0.70	4.94	6.2

Description (Figs. 5, 6D–G, 7A,B,E): Rather large, long juveniles. Body vermiform, tapering slightly anteriorly but more so posteriorly, tail region distinctly narrowing. Heat-killed specimens slightly curved ventrally. Head region truncate, slightly set off from body (Figs. 5E–G; 7A,B). In SEM, labial disc distinctly elevated (Fig. 6D–G). Medial lips and labial disc dumbell shaped. Medial lips with squared off margins in one-third of the specimens examined (n = 220); medial lips slightly indented to indicate two lips in one-half of the specimens and deeply indented forming one lip pair in one-fifth of the specimens; only two specimens with two lip pairs each. Lateral lips fused at right angle with medial lips and lower than medial lips; occasionally one lateral lip fused with head region. Head region not annulated. Prestoma large, oval shaped. Inner labial sensilla distinct, opening on labial disc, arranged symmetrically around prestoma; prestoma and inner labial sensilla in slight depression. Cephalic sensilla faint. Body annules small but distinct, increasing in size and becoming irregular in posterior tail region (Fig. 5I–L). Lateral field 4.9–5.3 μm wide, with four incisures

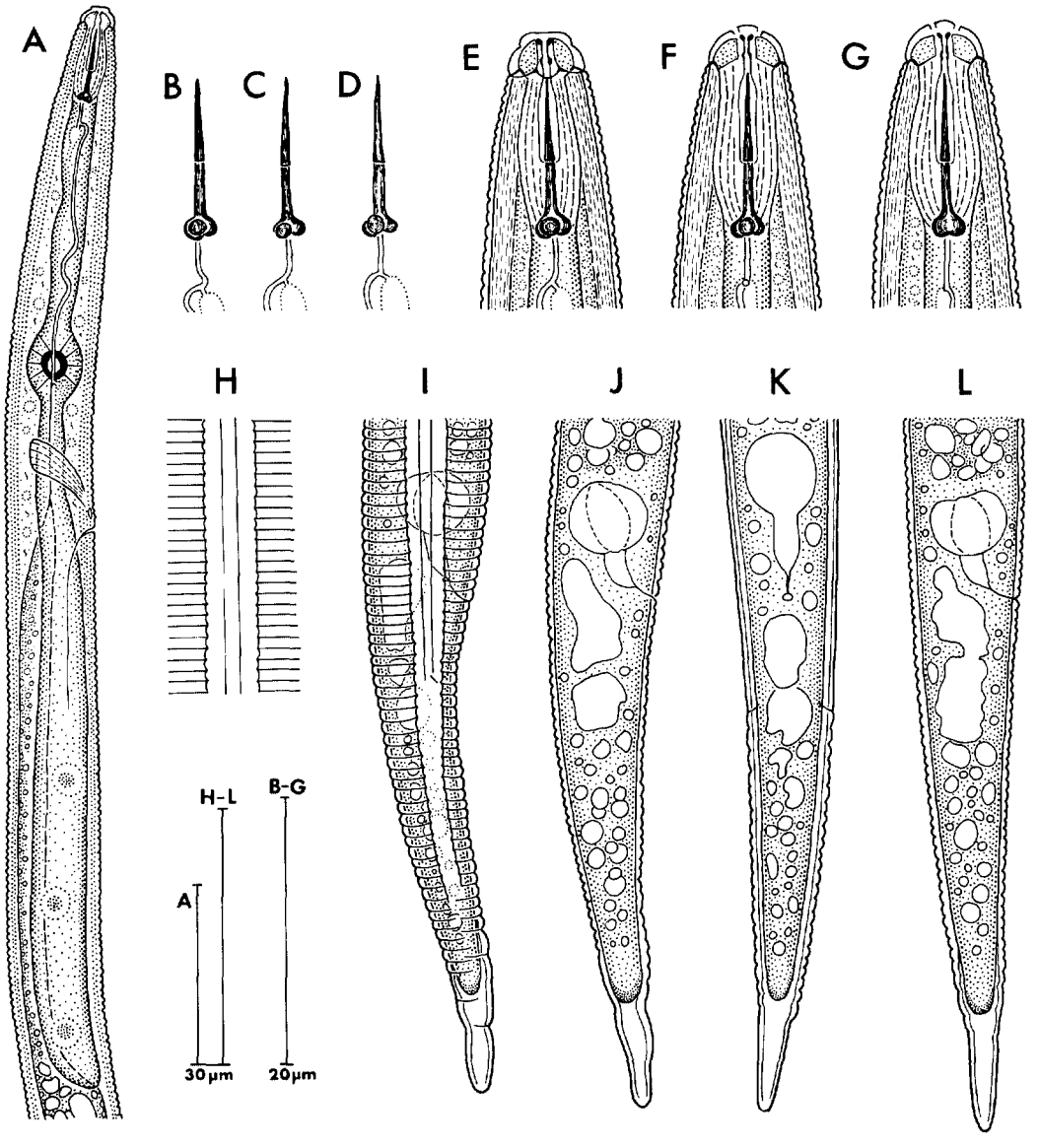

Fig. 5 (A–L). Line drawings of second-stage juveniles of *Meloidogyne platani* n. sp. A) Esophageal region (lateral). B–D) Stylets (lateral). E) Cephalic region (lateral). F) Cephalic region (dorsal). G) Cephalic region (ventral). H) Lateral field near mid-body. I–L) Variation in tail morphology (I,J,L lateral; K ventral).

(Fig. 5H), starting approximately at middle of procorpus and extending near beginning of hyaline tail terminus; not areolated; outer lines slightly crenate. Cephalic framework very weakly sclerotized, lateral sectors slightly enlarged. Stylet delicate, but stylet knobs large, rounded, well separated from each other and slightly slanting backwards; one of the subventral knobs frequently sloping more posteriad than the other (Figs. 5B–G; 7A,B). Cephalids not observed. Dorsal esophageal gland orifice distance long; gland ampulla poorly defined. Procorpus faintly outlined; metacorpus oval shaped with large valve plates; isthmus not clearly outlined (Fig. 5A). Esophago-intestinal junction poorly defined, between nerve ring and excretory pore. Gland lobe variable in length with three distinct nuclei of about equal size. Hemizonid 1–3 annules anterior to excretory pore. Tail slender, in some specimens narrowing abruptly behind anal opening (Figs. 5I–L; 7E). Tail annulations irregular and increasing in size near hyaline

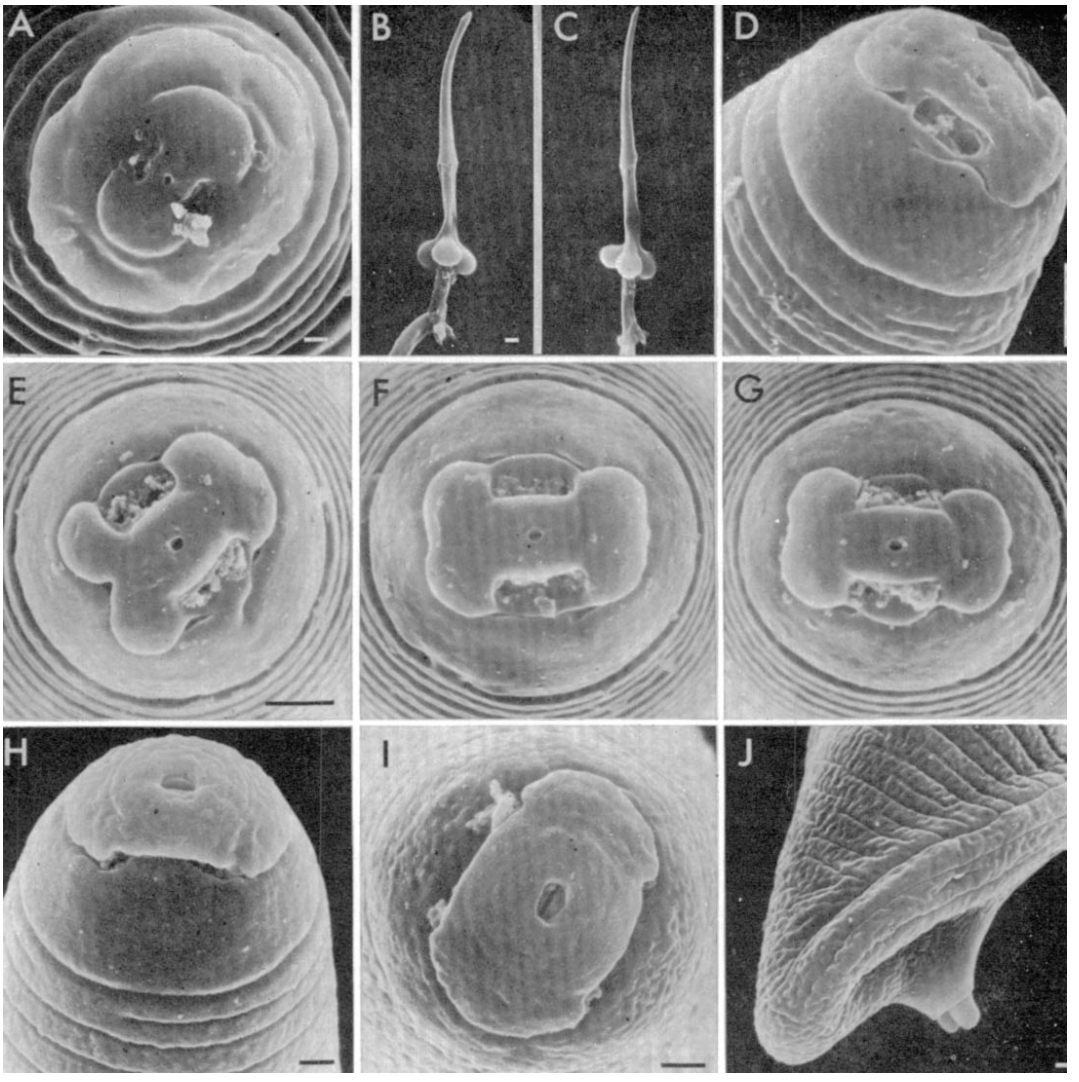

Fig. 6 (A–J). SEM photographs of females, second-stage juveniles, and males of *Meloidogyne platani* n. sp. A) Face view of female. B,C) Excised stylets of females (C same scale as B). D) Lateral view of second-stage juvenile. E–G) Face views of second-stage juveniles (F,G same scale as E). H) Lateral view of male. I) Face view of male. J) Lateral view of male tail. (B,C courtesy of J. D. Eisenback). All scales 1 μm.

tail terminus. Hyaline tail terminus distinct, slightly set off without annulations, or not set off and with few, large annulations; tail tip broad, bluntly rounded. Rectal dilation very large, filled with matrix material. Phasmids small, obscure, located short distance posterior to anal opening.

Eggs: Measurements of 50 eggs in 2% formalin. Length: 92.0–107.0 μm (mean 98.8 μm, standard error of mean 0.67, standard deviation 4.71, coefficient of variability [%] 4.8); width: 40.0–53.0 μm (mean 44.3 μm, standard error of mean 0.42, standard deviation 2.94, coefficient of variability [%] 6.7); length/width ratio: 1.8–2.6, (mean 2.2, standard error of mean 0.03, standard deviation 0.19, coefficient of variability [%] 8.0).

Description: Similar to eggs of other species of *Meloidogyne*. Egg shell without visible markings by light microscopy. Egg masses small with generally 50–100 eggs per mass.

Diagnosis: The relationship of *Meloidogyne platani* n. sp. to other *Meloidogyne* species is not clear. It is similar in certain characteristics to *M. arenaria* (3,10) but differs from the latter species in the following: The perineal pattern of the female has fine, closely spaced striae throughout the pattern, wavy to zig-zag striae in the outer lateral line

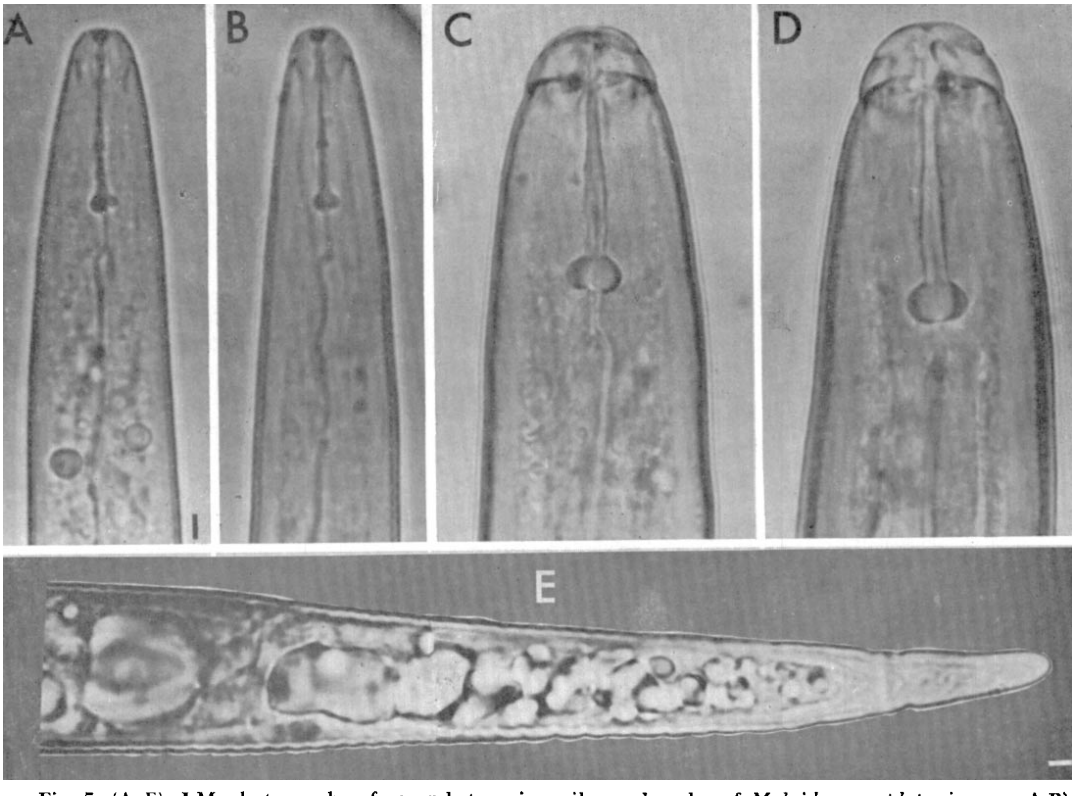

Fig. 7 (A–E). LM photographs of second-stage juveniles and males of *Meloidogyne platani* n. sp. A,B) Anterior portion of second-stage juveniles (lateral). C) Anterior portion of male (lateral). D) Anterior portion of male (dorsal). (B–D same scale as A). E) Tail of second-stage juvenile showing anus and large rectal dilation (lateral). All scales 2μm.

regions, and raised convoluted striae in the inner lateral line regions. The stylet of the female is longer (range: 15.8–17.3 μm; mean: 16.5 μm; *M. arenaria:* 14.4–15.8 μm; 15.4 μm), and the stylet morphology, including the shape of the style knobs, is different. The distance of the dorsal gland orifice to the stylet base is shorter in the female (2.8–4.6 μm; 3.7 μm; *M. arenaria:* 4–6 μm). The male has no annulations in the head region and lacks areolations in the lateral field. The dorsal esophageal gland orifice distance of the male is shorter (2.3–4.5 μm; 3.7 μm; *M. arenaria:* 4.0–4.7 μm). The spicules are shorter (25.1–31.6 μm; 27.5 μm; *M. arenaria:* 31.0–34.0 μm) and lack bifid termini. The ranges of body length of second-stage juveniles overlap in the two species. The tail of *M. platani* n. sp., however, is slightly longer (c: 7.1–8.5; 7.7; *M. arenaria:* 6.0–7.5) and has a bluntly rounded tip. The head region is not annulated, and the stylet is longer (11.6–12.6 μm; 12.2 μm; *M. arenaria:* 10 μm). The host preference is different. *M. platani* n. sp. does not infect peanut, corn, or sweet potato, whereas it reproduces on sycamore, which is not a host of *M. arenaria.* Reproduction is by mitotic parthenogenesis, and the somatic chromosome number is approximately 45 (2n) (A. C. Triantaphyllou, unpublished).

Holotype (female): Isolated from greenhouse culture propagated on *Platanus occidentalis,* derived from original population obtained from nursery plots owned by Union Camp Corporation, Franklin, Virginia. Slide T 348 USDA Nematode Collection (USDANC), Beltsville, Maryland, USA.

Allotype (male): Same data as holotype. Slide T-349 USDANC, Beltsville, Maryland, USA.

Paratypes (females, males, second-stage juveniles, and eggs): Same data as holotype. USDANC, Beltsville, Maryland. University of California Nematode Survey Collection (UCNSC), Davis, California, USA.

Type host and locality: Roots of seedlings of American sycamore, *Platanus occidentalis* L., from nursery plots owned by Union Camp Corporation, Franklin, Virginia.

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