

STUDIES OF PLANT AND SOIL NEMATODES

**3. *BELONOLAIMUS HASTULATUS*, *PSILENCHUS TUMIDUS* AND *HEMICYCLIOPHORA LABIATA*,
THREE NEW SPECIES FROM QUEENSLAND**

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SUMMARY

Three new species, *Belonolaimus hastulatus*, *Psilenchus tumidus* and *Hemicycliophora labiata*, are described. *B. hastulatus* is distinguished by a short stylet and four sublateral incisures in each lateral field and *Psilenchus tumidus* by a single ovary and swollen tail tip. *Hemicycliophora labiata* resembles *H. typica* de Man, *H. similis* Thorne and *H. gracilis* Thorne but differs in having a single continuous lateral incisure and protuberant anterior vulval lip.

***Belonolaimus hastulatus* n.sp.**

(Figure 1)

Females.—L = 920–1110 μ ; a = 39–59; b = 11.0–13.1; c = 23–29; V = 52–58; stylet = 30–33 μ .

Holotype.—L = 1055 μ ; a = 39.0; b = 12.3; c = 28.6; V = 52.6; stylet = 31 μ .

Males.—L = 890–1000 μ ; a = 40–62; b = 11.0–12.6; c = 18–26; stylet = 29–31 μ ; spicules = 22–25 μ ; gubernaculum = 11–12 μ .

Allotype.—L = 944 μ ; a = 40.9; b = 11.0; c = 19.8; stylet = 31 μ ; spicules = 24.5 μ ; gubernaculum = 11.6 μ .

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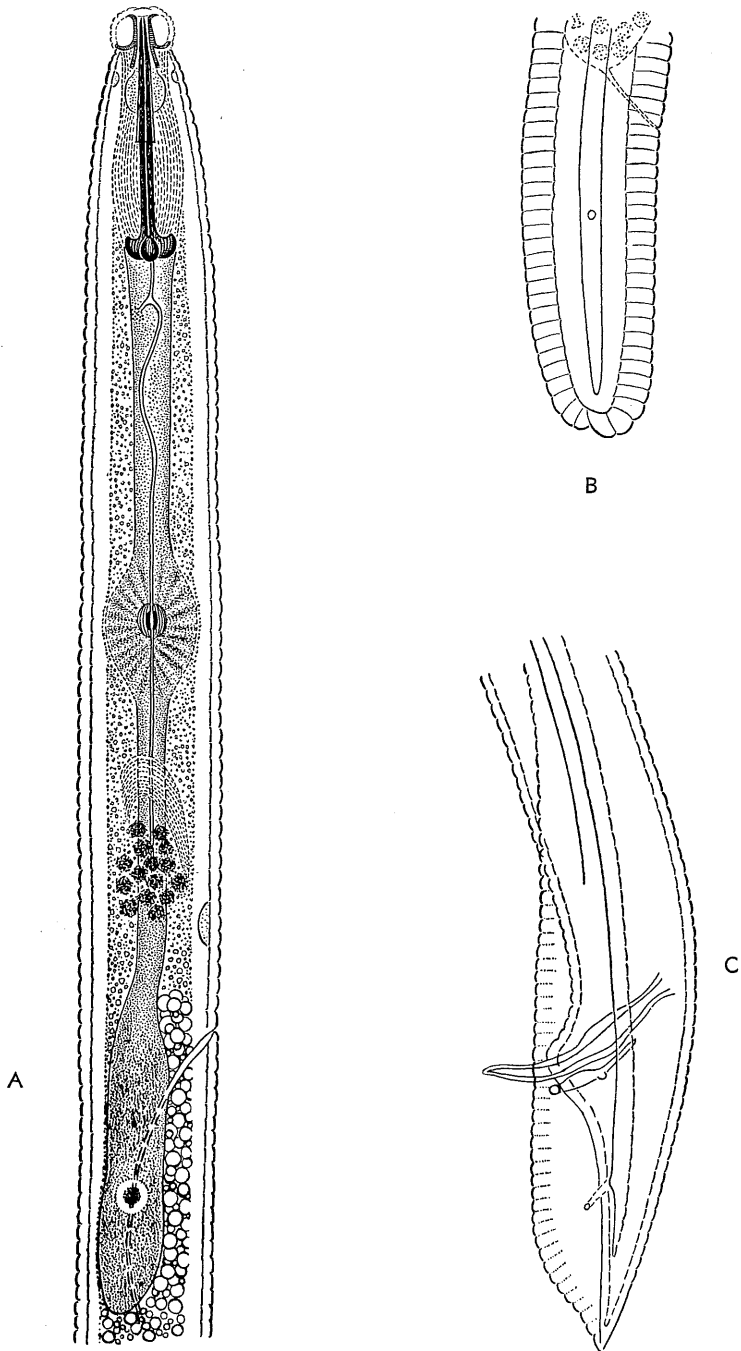


Fig. 1—*Belonolaimus hastulatus* n.sp. A. Oesophageal region ($\times 1000$). B. Female tail ($\times 1000$). C. Male tail ($\times 1000$).

Body cylindrical, assuming an arcuate position when relaxed. Lip region globular, set off by a constriction and marked by 6 or 7 transverse striae. Cuticle with coarse striations $2.0-2.3 \mu$ apart in the middle of the body. Lateral fields marked by four sublateral incisures over the greater part of their length. Outer incisures crenate. Two incisures from the metacarpus to the middle of the stylet. Stylet 31μ long with well developed basal knobs. Knobbed base of the stylet 5μ in width. Anterior face of knobs concave. Prorhabdion a little longer than half the length of the stylet. Dorsal gland orifice 5μ behind base of stylet. Vestibule extension well developed. Metacarpus with sclerotized valve 4μ long. Oesophageal glands in a long lobe overlapping intestine. Excretory pore opposite anterior end of lobe. Hemizonid conspicuous, 5 or 6 annules anterior to excretory pore. Phasmids distinct, in anterior half of tail. Vulva equatorial; vagina extending half way across body. Ovaries paired, opposed, outstretched. Oocytes in a single row except for a short area near the cap cell. Tail cylindrical, 2.1 anal body diameters in length. Terminus hemispherical. Cuticular striations continuous around the terminus, coarser than in other parts of the body giving the tip an indented appearance.

Male similar in general appearance to female. Phasmids opening on to caudal alae which envelop tail tip. Edge of caudal alae crenate. Spicules large, arcuate and heavily sclerotized. Gubernaculum thickened in distal half, extrusible and cephalated.

Types.—Holotype (female) and allotype (male) Slide Reg. No. G 2446 in the Queensland Museum; labelled paratypes in the Queensland Department of Agriculture and Stock Nematology Collection.

Occurrence.—*Belonolaimus hastulatus* was collected in May 1959 from soil around the roots of a Late Valencia orange on sweet orange rootstock at Mundubbera, Queensland.

Diagnosis.—*Belonolaimus hastulatus* is distinguished by the presence of four sublateral incisures on each side of the body and the short stylet.

***Psilenchus tumidus* n.sp.**

(Figure 2)

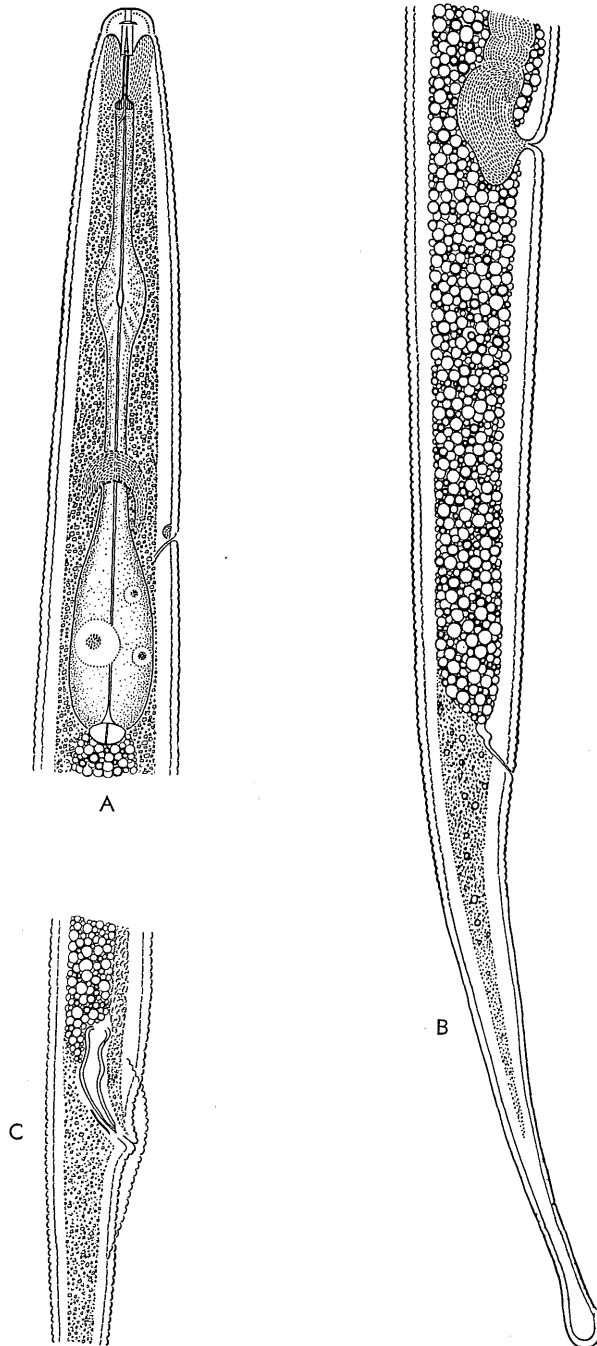


Fig. 2.—*Psilenchus tumidus* n.sp. A. Oesophageal region ($\times 1000$). B. Female post-vulval region ($\times 1000$). C. Male anal region ($\times 1000$).

Females.—L = 555-639 μ ; a = 28-34; b = 5.5-6.6; c = 5.8-8.0; V = 66-73; stylet 11-13 μ .

Holotype.—L = 569 μ ; a = 29.3; b = 6.4; c = 6.7; V = 70.

Males.—L = 520-598 μ ; a = 31-34; b = 5.6-6.3; c = 6.3-7.8; stylet = 11-13 μ ; spicules = 18-20 μ ; gubernaculum = 5.6 μ .

Allotype.—L = 528 μ ; a = 31.1; b = 5.6; c = 7.4; stylet = 11.0 μ .

Body practically straight when relaxed. Cuticle with fine transverse striae 1.0-1.5 μ apart. Lateral field about 5 μ wide in middle of body, consisting of 4 incisures, the outer pair crenate. Incisures extend to middle of tail. Excretory pore opposite terminal oesophageal bulb. Deirids at latitude of excretory pore. Hemizonid immediately anterior to excretory pore, two body annules long. Amphid apertures slit-like, about half as wide as head, located towards base of lateral lips. Head slightly set off, without transverse striae. Stylet slender, 12.2 μ long with knobbed base 1.6 μ wide. Dorsal oesophageal gland opening into lumen of oesophagus at base of stylet. Median bulb of oesophagus ovate, terminal bulb elongate. Distance from anterior end to valve of median bulb less than half distance from anterior end to oesophago-intestinal valve. Vulva a transverse slit 11 μ wide. Ovary single, prodelphic, outstretched. Oocytes in single row. Oviduct cellular with a narrow lumen. Spermatheca present. Post-vulval uterine sac about two-thirds as long as width of body at vulva.

Male similar to female. Bursa adanal, extending a little further posterior to anus than anterior to it. Spicules curved, 19 μ long. Gubernaculum narrow, 5 μ long, slightly arcuate.

Types.—Holotype (female) and allotype (male) Slide Reg. No. G 2447 in the Queensland Museum; labelled paratypes in the Queensland Department of Agriculture and Stock Nematology Collection.

Occurrence.—*Psilenchus tumidus* was collected in December 1959 in a field of volunteer weeds, predominately *Digitaria adscendens* (H.B.K.) Henrard, at Glasshouse Mountains, Queensland.

Diagnosis.—*Psilenchus tumidus* is distinguished by the presence of one ovary, a slender, knobbed stylet and a clavate tail.

Hemicycliophora labiata n.sp.

(Figure 3)

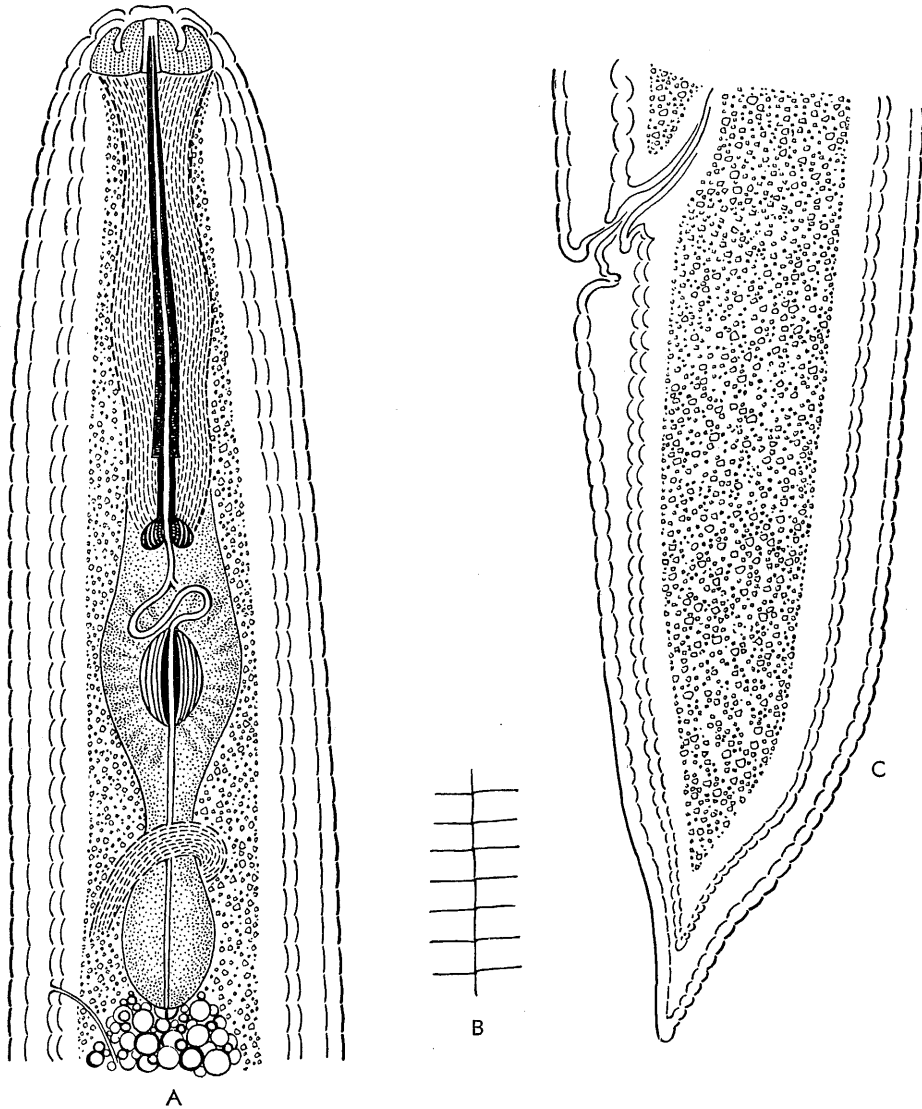


Fig. 3.—*Hemicycliophora labiata* n.sp. A Oesophageal region ($\times 1000$). B. Lateral field ($\times 1000$). C. Female post-vulval region ($\times 1000$).

Females.—L = 700–860 μ ; a = 19–24; b = 5.2–6.1; V = 81–86; stylet = 66–75 μ .

Holotype.—L = 701 μ ; a = 21.2; b = 5.2; V = 82.

Body straight when relaxed. Outer adult cuticle with flattened annules approximately 4.4μ wide in middle of body and separated from inner cuticle except at vulva and head. Annules on inner cuticle rounded, much wider and better defined in middle of body than on tail. Number of annules approximately 200. Lateral fields on outer cuticle each consisting of a single continuous incisure. Head rounded in front, not set off, with two annules, more clearly defined on outer cuticle. Labial cap present. Six well-defined lips, 2 lateral, 2 sub-dorsal, 2 sub-ventral. Stylet 68μ long, dorsally arcuate, extending through 16 body anules. Prorhabdion 54μ long. Knobs rounded, projecting posteriorly. Dorsal oesophageal gland orifice situated near base of stylet. Oesophagus typical of genus. Excretory pore near level of oesophago-intestinal valve. Nerve ring crossing anterior part of terminal bulb. Vulva with protuberant anterior and posterior lips. Ovary prodelphic, outstretched. Body constricted immediately posterior to vulva. Post-vulval uterine sac absent. Anus obscure. Tail convex-conoid with a sub-acute terminus.

Types.—Holotype Slide Reg. No. G 2448 in the Queensland Museum; labelled paratypes in the Queensland Department of Agriculture and Stock Nematology Collection.

Occurrence.—*Hemicyclophora labiata* is described from specimens collected in October 1959 around the roots of *Entolasia stricta* (R.Br.) Hughes in a wallum soil, Portion 377, Parish of Oxley, Brisbane. The species occurs also at Mulambin Beach, Central Queensland.

Diagnosis.—*H. labiata* is closely related to *H. typica* de Man, *H. similis* Thorne and *H. gracilis* Thorne. It can be distinguished from these species by the presence of a single continuous lateral incisure on each side of the body and the protuberant anterior lip of the vulva.

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