Dolichodorus aestuarius n. sp. (Nematode: Dolichodoridae)

F. H. CHOW and A. L. TAYLOR

Abstract: Dolichodorus aestuarius n. sp. from an estuarine habitat near Cedar Key, Florida is described. This nematode has a stylet range of 62-76 μm in females and 60-72 μm in males. The stylet is shorter than those of all described species except D. brevisustis. The probable host plant is Juncus roemerianus. Key Words: nematode, taxonomy.

During May 1976, a survey of nematode fauna in estuarine habitats in the Cedar Key, Florida area was conducted, and a new species of the awl nematode (Dolichodorus) was found in a habitat where Juncus roemerianus Scheele was the only plant. It is presumed that the nematode was feeding upon the roots of this plant.

Dolichodorus aestuarius n.sp.

Dimensions:

Paratypes (14 females): L 2.66 mm (2.50-2.87 mm), a 42.6 (38.8-47.8), b 11.3 (10.1-12.1), c 54.7 (30.9-44.8), V 55% (51-59%), stylet 68.1 μm (62-76 μm).

Holotype (female): L 2.87 mm, a 44.2, b 11.9, c 39.9, V 53%, 30.8, stylet 68 μm.

Paratypes (11 males): L 2.52 mm (2.11-2.59 mm), a 48.1 (39.1-60.0), b 10.1, 9.2-

Received for publication 30 March 1977.

1 Florida Agricultural Experiment Station Journal Series No. 462.  
2 Department of Entomology and Nematology, University of Florida, Gainesville, Florida 32611.
Dolichodorus aestuarius n. sp.: Chow, Taylor

stylet knob; nerve ring encircles posterior part of isthmus (Fig. 1-C). Excretory pore located slightly anterior to basal bulb. Hemizonid not observed. Intestine without peculiar characteristic. Vulva slit-like and deep with four peg-like cuticularized structures around opening; muscles of vagina uterina well developed (Fig. 1-D). Ovaries outstretched (Fig. 1-A). Concave conoid point of tail with more abrupt reduction in diameter ventrally than dorsally. There are about 60 annules on the tail; anal body diameter is about 37 μm; the last 15 annules on the tip are at an angle of 30-45° to preceding annules (Fig. 1-E). Phasmids located about 25-30 μm posterior to anus (Fig. 1-E).

**Males.**—About 10-12% shorter but about as wide as females; similar to females as regards anterior part, nerve ring, excretory pore, intestine, annulation, and lateral field. Bursa tri-lobed with striations to tips (Fig. 1-F,G); spicules massive, heavily cuticularized; gubernaculum mostly straight with curved and pointed distal end (Fig. 1-G).

**DISTRIBUTION:**

**Holotype (female).**—Collected on May 12, 1976 by F. H. Chow and D. E. Stokes. Type collection, Nematology Laboratory, U.S.D.A., Beltsville, Maryland, U.S.A.

**Allotype (male).**—Same as holotype.

**Paratypes.**—Same data as holotype, and distributed as follows:

- Four females, four males: Department of Entomology and Nematology, University of Florida, Gainesville, Florida, U.S.A.
- Four females, four males: Department of Entomology and Nematology, University of Florida, Gainesville, Florida, U.S.A.
- Two females, one male: Same as holotype.
- Two females, one male: Department of Nematology, University of California, Riverside, California, U.S.A.
- Two females, one male: Laboratorium voor Nematologie, Binnenhaven 15, Wageningen, The Netherlands.
- One female, one male: Nematology Department, Rothamsted Experimental Station, Harpenden, Herts., England.

**TYPE LOCALITY:**

Around roots of *Juncus roerianus* Scheele, a common brackish marsh plant, found 1.4 km from state road 24, on the unpaved road southwest of Cedar Key city dump area, Cedar Key, Florida, U.S.A.

**DIAGNOSIS:**

*Dolichodorus aestuarius* n. sp. has three incisures in the lateral field, which distinguishes it from *D. obtusus* Allen, 1957; *D. arenarius* Clark, 1963; *D. adelaidensis* Fisher, 1964; *D. brevistilus* Heyns and Harris, 1973; and *D. cassati* Luc and Dalmasso, 1971, all of which have four incisures (1, 2, 4, 7, 11). *D. aestuarius* may be separated from other species having three incisures as follows: from *D. silvestris* Gillespie and Adams, 1962; *D. pulverinus* Khan and Seshadri, 1971; *D. profundus* Luc, 1960; and *D. nigeriensis* Luc and Caveness, 1963 in that the excretory pore is a little anterior to the basal bulb in *D. aestuarius* and opposite the medium bulb in the others (5, 8, 9, 10). In *D. similis* Golden, 1958, the excretory pore is opposite the middle of the basal bulb (6). The stylet of *D. heterocephalus* is more than 100 μm long (3) in comparison with 68 μm in *D. aestuarius*.

**LITERATURE CITED**


Phytoparasitic Nematodes Adjacent to Established Strawberry Plantations

R. V. CROW and D. H. MACDONALD

Abstract: Plant-nematode populations associated with uncultivated vegetation, adjacent strawberry plants, and alternate crop sites were studied at three locations in Minnesota. At one site (Forest Lake), Paratylenchus projectus, Meloidogyne hapla, and Pratylenchus tenuis were frequently associated with the roots of native vegetation. These nematode species were also present in adjacent strawberry beds. Among alternate crops observed, oats and muskmelon usually supported the fewest nematodes although moderate densities of Xiphinema americanum and P. tenuis were found at one location in plots planted to oats. Pratylenchus tenuis was also found on rye at one location. Key Words: Population dynamics, control, nonhost plants, Meloidogyne hapla, Paratylenchus sp.

Plant-parasitic nematodes in cultivated soil may be affected by the planting of cover crops, the use of alternate crop sequences, and fallow (1, 2, 3, 5). Cover crops can influence plant-nematode densities in newly cleared and old agricultural land (1, 2). Investigations with alternate cropping and short-term (6 weeks) fallow indicate that nematodes may be controlled better by a combination of the two practices than by either alone (3, 5).

Morgan and Collins (8) observed that densities of Pratylenchus penetrans were low in strawberry plantings if favorable weed hosts were removed. In a host range study, 55 species of weeds and 7 cultivated plant species growing near strawberry were infected by P. penetrans (9). Weeds with soft-textured roots contained more nematodes than those with hard-textured roots, and perennials supported higher nematode populations than did annuals. Townshend and Davidson (9) suggested that P. penetrans probably overwintered in weeds with soft-textured roots.

Soil and root samples from wild strawberry plants (Fragaria virginiana) in wooded areas in Maryland contained Helicotylenchus dihystera, P. penetrans, Xiphinema sp., Meloidogyne hapla, Tylenchorhynchus sp., Hoplolaimus sp., and Paratylenchus sp. These genera are also frequently found in commercial strawberry plantings. Such findings suggest the possibility that nematodes found in strawberry plantings could be indigenous to the soil (4).

Because of the obligate parasitism of plant-parasitic nematodes, the use of host and nonhost plants often results in striking changes in nematode populations. Such changes were studied in, and adjacent to, established strawberry plantings at three locations in Minnesota.

MATERIALS AND METHODS

Soil samples, each consisting of 5-8 cores (2.5 x 25 cm) composited in a plastic bag, were collected from strawberry beds and contiguous areas. The number of samples taken from a strawberry bed depended upon the bed length. Three samples were collected from beds 15 to 46 m long while five samples were taken from beds up to 153 m long. Fields or groves were sampled according to total area. Twelve samples were collected from a 0.2- to 0.5-ha area, whereas 20 samples were taken from a 1-ha field. The sampling techniques employed utilized the recommendations of Langdon (7). An

Received for publication 5 October 1976.

Paper No. 9661, Scientific Journal Series, Minnesota Agricultural Experiment Station, University of Minnesota, St. Paul, MN 55108.

Respectively, former Graduate Assistant, now Manager-Agronomic Services, N-Ren Corporation, Cincinnati, Ohio 45226; and Associate Professor, Department of Plant Pathology, University of Minnesota, St. Paul, MN 55108.