

DESCRIPTION OF *PROLEPTONCHUS SHAMIMI* N. SP. (NEMATODA:
DORYLAIMIDA) WITH REMARKS ON VARIABILITY

BY

HARISH K. BAJAJ and D. S. BHATTI

Department of Nematology, Haryana Agricultural University, Hissar-125004, India

Proleptonchus shamimi n. sp. collected from soil around the roots of unidentified grasses in Hissar, Haryana, India, is most closely related to *P. weischeri* Goseco & Ferris, 1976 but differs mainly in the structure of female posterior sexual branch, position of vulva, shape of tail and size of spicules. Depending on the presence of sperms in it the length of postvulval uterine sac in the new species is greatly variable. The variability of morphological characters used in the taxonomy of *Proleptonchus* and also the terminology of female reproductive organs in nematodes is discussed. Remarks on the affinities of *Leptonchus* with *Proleptonchus* are given.

Different characters have been used for differentiating species of *Proleptonchus* Lordello, 1955, e.g. Jairajpuri (1964) and Timm (1964) thought the size and shape of spicules, number and disposition of ventromedian supplements were good diagnostic characters and consequently designated male holotypes. They also thought that the shape of amphids and the length of postvulval uterine sac were important in distinguishing species of *Proleptonchus*. Siddiqi & Khan (1964) differentiated *P. indicus* Siddiqi & Khan, 1964 from *P. aestivus* Lordello, 1955 mainly on length of the postvulval uterine sac and tail shape. Goseco *et al.* (1974), revising the superfamily Leptonchoidea, described four new species and gave a key to species of *Proleptonchus* using the following characters: shape of stoma and amphids, body size, length of postvulval uterine sac and tail, presence or absence of reduced ovary in the postvulval uterine sac.

Most species of *Proleptonchus* have been described from few specimens, e.g., *P. amphidius* Jairajpuri, 1964 one female and one male; *P. teres* Jairajpuri, 1964 three females and a male; *P. indicus* a single female; *P. luquillensis* Goseco *et al.*, 1974 one female and two males; *P. johnsoni* Goseco *et al.*, 1974 two females. Therefore, little is known about the variability within these species of *Proleptonchus*. We studied the variability within a population of *P. shamimi* n. sp. collected from around grass roots at Hissar.

Specimens were fixed in hot 4% formalin, dehydrated slowly in a desiccator and mounted in anhydrous glycerine.

*Proleptonchus shamimi**) n. sp.
(Figs. 1-2)

Dimensions: Table I.

TABLE I
Dimensions of *Proleptonchus shamimi* n. sp.

| Characters | Female Holotype | Females Paratypes n = 48 | Males Paratypes n = 42 | J ₄ n = 1 | J ₃ n = 13 |
|--|--------------------|--------------------------------|------------------------------|-------------------------|--------------------------|
| Body length (mm) | 1.27 | 1.26 (1.14-1.47) | 1.24 (1.10-1.50) | 0.87 | 0.53 (0.49-0.56) |
| a | 32 | 33 (28-37) | 35 (31-40) | 31 | 26 (25-27) |
| b | 5.6 | 6.2 (5.5-6.8) | 6.0 (5.0-6.9) | 4.9 | 3.7 (3.5-3.8) |
| c | 83 | 88 (68-142) | 63 (53-74) | 64 | 48 (33-60) |
| V | 57 | 57 (54-60) | — | 57 | 58 (57-61) |
| Postvulval uterine sac without sperms/VBD | 2.3 | 2.5 (1.8-4.1) | — | — | — |
| Postvulval uterine-sac with sperms/VBD | — | 5.0 (3.9-7.8) | — | — | — |
| Tail length (μm) | 15 | 15 (11-18) | 20 (17-26) | 14 | 12 (9-16) |
| Spicule length* (μm) | — | — | 30 (27-34) | — | — |

VBD = Body diameter at vulva. * Measured along the middle.

Description:

Female: Body 1.26 mm (1.14-1.42) long, almost straight upon fixation with blunt extremities. Cuticle in two layers, thickest (3-5 μm) on tail.

Lip region 9-11 × 3-5 μm, marked off by slight depression. Stoma flask-shaped. Amphids stirrup-shaped with slit-like apertures which measure 6-8 μm. Odontostyle 6-9 μm long with odontophore of almost equal size. Guiding ring at 6-8 μm from anterior extremity. Basal bulb of oesophagus 34 μm (30-38) × 15 μm (13-18), separated from the anterior slender part by a distinct constriction. Positions of oesophageal gland nuclei and their orifices as follows: DN = 33-46; DO = 18-32; RS₁N = 59-68; LS₁N = 59-68; S₁O = 59-68. Nerve ring encircling the oesophagus at 99 μm (90-106) from anterior extremity. Cardia conoid.

Genital tract pseudomonodelphic or didelphic (*cf.* Cohn & Sher, 1972) with unequal development of sexual branches. Anterior branch consists of reflexed ovary, narrow distal and expanded proximal part of oviduct, a distinct

*) Named after Dr. M. Shamim Jairajpuri, Department of Zoology, Aligarh University, Aligarh, India.