

# NEMATODES OF THE SUPERFAMILY DORYLAIMOIDEA COLLECTED IN THE NORTHERN PART OF THE KRUGER NATIONAL PARK

By JUAN HEYNS and GERDA LAGERWEY,  
Plant Protection Research Institute, Pretoria.

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Technical Services.)

During July 1963 several soil samples were taken in the Punda Milia Pafuri area of the Kruger National Park, and examined for free living nematodes. These samples were taken during the severe drought of 1962/63, with the soil utterly desiccated, practically reduced to a loose, powdery substance, and grass growth non-existent. In spite of this, normal nematode populations of average numbers (several hundred specimens per 100 cc of soil) were found, which seems to emphasise the fact that nematodes have resistant phases capable of bridging such unfavourable conditions.

The specimens were killed by the gradual application of heat, fixed in F.A.A. and mounted in glycerine. The slides are in the collection of the Plant Protection Research Institute, Pretoria.

Genus *Eudorylaimus* Andr ssy, 1959

*Eudorylaimus rapsus* Heyns, 1963

6 ♀♀ from soil among grass roots, outside Punda Milia Rest Camp.

2 ♀♀ from soil under *Hyphaene crinita* at Pafuri.

On the average these specimens are longer, relatively more slender, and the vulva more anteriorly located than in the type specimens of this species.

Measurements: L = 0.55 — 0.79 mm; a = 21 — 26; b = 3.3 — 3.6;  
c = 13 — 22; V = 47 — 56.

*Eudorylaimus diadematus* (Cobb, in Thorne and Swanger, 1936) Andr ssy, 1959 (Fig. 10)

2 ♀♀ from soil under *Ficus sycomorus* outside Punda Milia Rest Camp.

1 ♀ from soil under *Acacia xanthophloea* outside Punda Milia Rest Camp.

1 ♀ from soil under *Hyphaene crinita* at Pafuri.

1 ♀ from soil among roots of dry grass, halfway between Punda Milia and Pafuri.

This is an extremely common species in Southern Africa, and has been found in numerous localities outside the Park. An interesting feature of this species, which is altogether consistent and makes recognition quite easy, is the presence of a disc-shaped organ between the base of the oesophagus and the cardia, bulging out into the body cavity on the dorsal side (see figure 10).

Measurements: L = 1.11 — 1.31 mm; a = 20 — 23; b = 3.3 — 3.9; c = 20 — 25; V = 47 — 51.

*Eudorylaimus nothus* (Thorne and Swanger, 1936) Andrassy, 1959

1 ♀ 2 ♂♂ from soil among roots of dry grass, between Punda Milia and Pafuri.

Measurements: ♀: L = 1.23 mm; a = 32; b = 4.0; c = 57; V = 51.  
♂: L = 1.86 — 1.96 mm; a = 27 — 28; b = 4.5 — 5.5; c = 50—54.

*Eudorylaimus rapsoides* n.sp. (Fig. 1-4)

Measurements:

Female (n = 3): L = 0.37 — 0.39 mm; a = 17 — 24; b = 3.1 — 3.4; c = 17 — 21; V = 55 — 58.

Holotype: L = 0.39 mm; a = 18.0; b = 3.1; c = 18.5; V = 14.0 57.2 14.9

Body slightly ventrally curved when relaxed. Cuticle apparently smooth. Lips closely amalgamated, almost confluent with neck, and two-fifths as wide as body at base of oesophagus. Outer circlet of papillae relatively far posterior, close to the shallow depression separating the lip region from the neck. Spear length one and one-fourth times lip region width; the aperture occupying one-third its length. Spear extension slightly longer than spear. Guiding ring appearing single. Amphids stirrup-shaped, half as wide as head. Oesophagus expanded in its basal two-fifths. Dorsal gland nucleus and a single pair of subventral gland nuclei observed. Cardia bluntly conoid. Hemizonid opposite nerve ring. Intestine apparently four or five cells in circumference. Prerectum about one and one-half times the corresponding body diameter in length. Rectum somewhat longer than anal body diameter. Tail about one and one-half times anal body diameter in length; dorsally convex conoid; terminus bluntly rounded. Two pairs of caudal papillae observed. Lateral field one-third as wide as body.

Vulva transverse. Vagina extending almost half-way across the body. Ovaries reflexed back almost to the vulva.

Diagnosis: *E. rapsoides* n.sp. is closely related to *E. rapsus* Heyns, 1963. It differs from *rapsus* in the less angular lip region which is set off from the head by a very slight depression, and in the shorter tail which is ventrally straight, not concave as in *rapsus*. It is very close also to *E. miser* (Thorne

and Swanger, 1936), but differs in the lip region which is somewhat more angular and practically continuous with the head, while smoothly rounded and clearly set off in *miser*.

*Holotype*: Female on slide 1778, collected from soil under *Hyphaene crinita* at Pafuri Rest Camp, Kruger National Park.

*Paratypes*: Two females on slide 1703, collected from soil in a mopani (*Colophospermum mopane*) forest between Punda Milia and Pafuri, Kruger National Park.

#### Genus *Mesodorylaimus* Andrassy, 1959

*Mesodorylaimus* sp.

5 ♀♀ from soil among grass roots at Punda Milia.

1 ♂ from soil under *Acacia xanthophloea* at Punda Milia.

These specimens probably represent a new species showing close affinities to the group of species *Mesodorylaimus subtilis* (Thorne and Swanger, 1936), *M. subtiliformis* (Andrassy, 1959), *M. subtiloides* (Paetzold, 1958) and *M. parasubtilis* (Meyl, 1957). However, it is not thought advisable to give a description at this stage, since none of the specimens available is in very good condition.

#### Genus *Lordellonema* Andrassy, 1960

*Lordellonema porosum* (Heyns, 1963) Heyns, 1963

syn. *Poronema porosum* Heyns, 1963

2 ♀♀ 2 juvenile collected from soil in a mopani forest halfway between Punda Milia and Pafuri. Except for somewhat smaller size, these specimens are in complete agreement with the type specimens of this species.

*Measurements*: L = 0.42 — 0.43 mm; a = 19 — 21; b = 3.1 — 3.2; c = 23 — 25; V = 61.

#### Genus *Discolaimus* Cobb, 1913

*Discolaimus intermedius* n.sp. (Fig. 5-9)

*Measurements*:

*Holotype* (female): L = 1.36 mm; a = 28.4; b = 3.6; c = 52;  
V = <sup>7.6</sup> 51.1 <sup>10.2</sup>

*Allotype* (male): L = 1.49 mm; a = 26.5; b = 3.6; c = 69.

Body ventrally curved when relaxed, especially posterior part of body. Cuticle with minute transverse striae. Lip region typical; half as wide as

body at base of oesophagus. Spear length two-thirds lip region width; the aperture occupying half its length. Spear extension more than twice as long as spear. No sclerotized guiding ring present; anterior edge of guiding sheath plicated. Width of amphids not known since neither of the specimens available presented a perfect lateral view. Oesophagus typical; expanded to half the corresponding body diameter in its basal three-fifths. Dorsal gland nucleus one body diameter behind oesophageal expansion. Cardia small, cylindroid, two-sevenths as wide as body. Hemizonid slightly anterior to nerve ring. Glandular bodies present in oesophageal region, both anterior, lying parallel to anterior slender part of oesophagus, and posterior, surrounding the cardia. Intestinum five or six cells in circumference. Prerectum in female five times and in male seven times the corresponding body diameter in length. Rectum equal to anal body diameter in length. Tail dorsally convex conoid to a bluntly rounded terminus. No caudal papillae observed except two pairs originating from the posterior end of the lateral field. Lateral field between one-sixth and one-fifth the body diameter, with a single row of about 75 lateral pores.

Vulva transverse. Vagina extending slightly more than one-third the way across the body. Each uterus with a sphincter muscle less than one body diameter from the vulva. Ovaries reflexed about three-fourths the way to the vulva.

Male with an adanal pair and eight ventromedian supplements, the posterior four being contiguous, the anterior ones a small distance apart. Spiculae  $\pm$  55 microns in length, measured along the contour. Lateral guiding pieces with knobbed distal ends.

*Diagnosis:* The most outstanding feature of *D. intermedius* n.sp. is the long prerectum. The shape of the tail is intermediate between that of *D. texanus* Cobb, 1913 and *D. similis* Thorne, 1939. Apart from the longer prerectum it differs from *texanus* in the more posterior location of the vulva (51% compared with 41% in *texanus*) and from *similis* in smaller body size. From *D. auritus* Lordello, 1955, of which the length of the prerectum is not given in the description, it differs in the shape of the tail.

*Holotype:* Female on slide 1782, collected from soil under *Hyphaene crinita* at Pafuri, Kruger National Park.

*Allotype:* Male on slide 1904, collected from soil among dead grass, halfway between Pafuri and Punda Milia, Kruger National Park.

Genus *Discolaimium* Thorne, 1939

*Discolaimium sublatum* Heyns, 1963

A single female was collected from dry stony soil among mopani trees, halfway between Pafuri and Punda Milia. Apart from its somewhat smaller size, it agrees perfectly with the type specimens of this species.

Measurements:  $L = 0.65$  mm;  $a = 29$ ;  $b = 3.5$ ;  $c = 43$ ;  $V = 48$ .

Genus *Longidorella* Thorne, 1939 *sensu* J. B. Goodey, 1963

*Longidorella* sp.

A single female was taken in a mopani forest between Punda Milia and Pafuri. This specimen resembles *L. microdorus* (de Man, 1880) Goodey, 1963, but is smaller and has a differently shaped tail.

Genus *Tylencholaimus* de Man, 1876

*Tylencholaimus* sp.

A single female was collected under a *Ficus sycomorus* tree at Punda Milia. This specimen agrees with *T. proximus* Thorne, 1939 in general appearance and measurements, but has a low, rounded lip region, almost continuous with the body, as illustrated for *T. zimmermanni* (Bally and Reydon, 1931) by Thorne and Swanger (1936).

Genus *Nygolaimus* Cobb, 1913

*Nygolaimus vulgaris* Thorne, 1930

6 ♀♀ 3 juvenile from soil among roots of dry grass, between Punda Milia and Pafuri. These specimens differ from *vulgaris* only in the somewhat longer tail, as reflected also by the  $c$  measurement.

Measurements:  $L = 0.91 - 1.03$  mm;  $a = 30 - 35$ ;  $b = 2.6 - 3.0$ ;  
 $c = 27 - 38$ ;  $V = 48 - 54$ .

Genus *Dorylaimellus* Cobb, 1913

*Dorylaimellus directus* Heyns, 1963

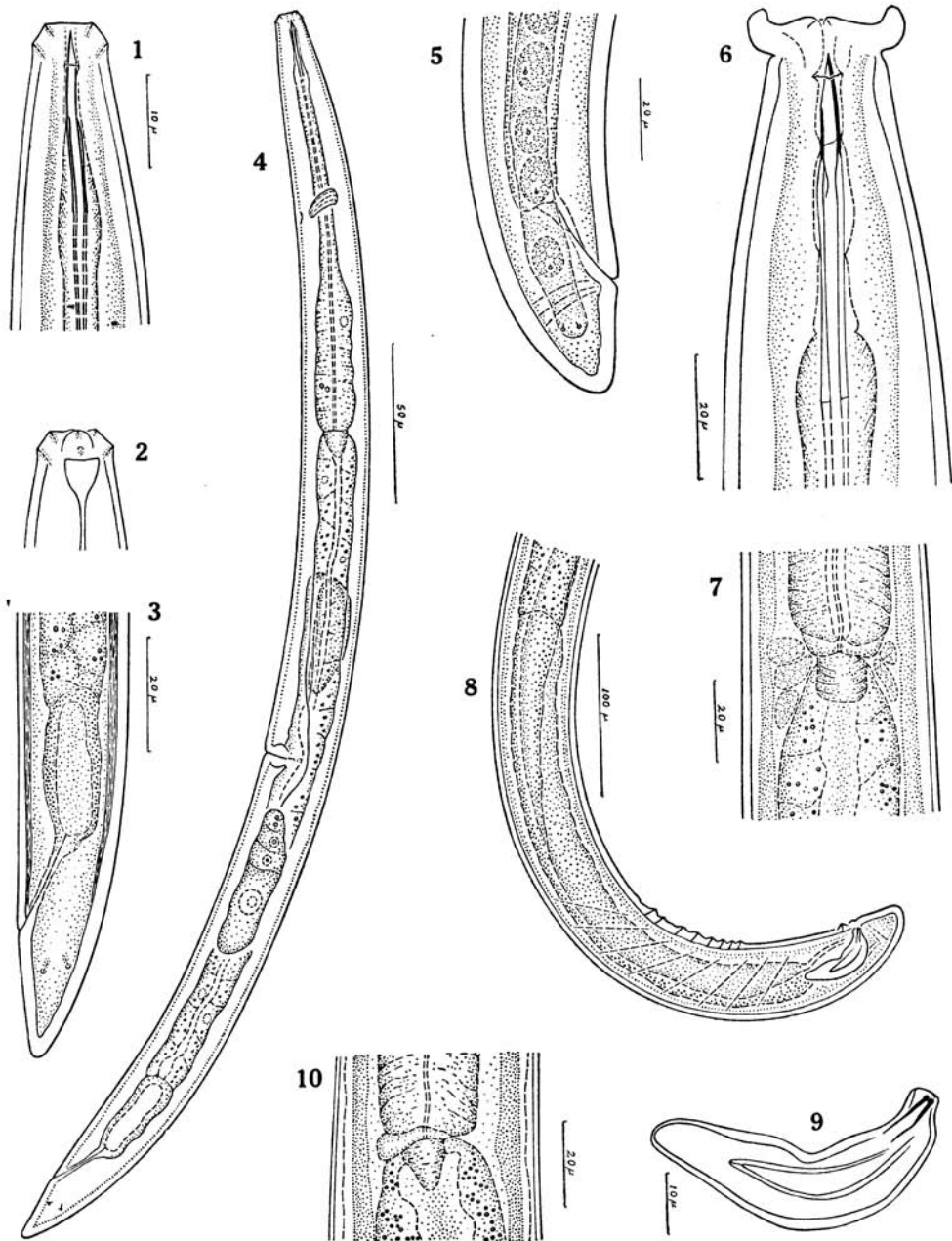
6 ♀♀ from soil among roots of dry grass, between Punda Milia and Pafuri.

Measurements:  $L = 0.61 - 0.69$  mm;  $a = 29 - 31$ ;  $b = 2.5 - 3.1$ ;  
 $c = 22 - 30$ ;  $V = 53 - 56$ .

The authors thank Mr. Paul van Niekerk for technical assistance.

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(Explanation of figures)

Figures 1-4: *Eudorylaimus rapsoides* n.sp.

1. Head; 2. Surface view of head showing amphid;

3. Female tail; 4. Female, natural position when relaxed.

Figures 5-9: *Discolaimus intermedius* n.sp.

5. Female tail; 6. Head; 7. Cardiac region; 8. Male tail; 9. Spicules and lateral guiding pieces.

Figure 10: *Eudorylaimus diadematus* (Cobb, in Thorne and Swanger, 1936), cardiac region.