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TRICHODORIDS (NEMATODA) FROM ITALY

by

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Little is known about the occurrence and distribution of trichodorid nematodes in Italy. In 1966 Van Hoof *et al.* reported the occurrence of *Trichodorus viruliferus*, *Paratrichodorus teres* (syn. *Trichodorus teres*) and *P. nanus* (syn. *Trichodorus nanus*) in a survey of the spread of tobacco rattle virus in the northern regions of Italy. *Trichodorus viruliferus* was also found in Piedmont (Roca *et al.*, 1977; Mancini *et al.*, 1979) and Umbria (Roca *et al.*, 1984) and *Paratrichodorus tunisiensis* was detected in samples collected from artichoke fields in Sicily (Roca and Rana, 1981). Mancini *et al.* (1979) also reported *T. aequalis* from Piedmont but after more detailed study it was described by De Waele *et al.* (1982) as a new species, *T. taylori*. The same authors mapped the distribution of *T. sparsus* in northern and central Italy.

A survey of Trichodoridae was carried out in the Italian regions in the years 1971-1973. The species found are briefly described here, with comments on their biometrics and geographical distribution.

Materials and Methods

Over 4,000 soil samples were collected from as many 10 km squares as possible within the grid system of the U.T. map of Italy. Samples were taken at about 30 cm depth around the roots of cultivated plants and in natural habitats. Nematodes were extracted by Cobb's

sieving technique, killed in hot 5% formalin and mounted in glycerin by the slow method.

Results

A total of eight species were found: *Paratrichodorus minor* (Colbran, 1956) Siddiqi, 1974; *P. tansaniensis* Siddiqi, 1974; *P. tunisiensis* (Siddiqi, 1963) Siddiqi, 1974; *Trichodorus similis* Seinhorst, 1963; *T. sparsus* Szczygiel, 1968; *T. taylori* De Waele, Mancini, Roca et Lambert, 1982; *T. variopapillatus* Hooper, 1972; *T. viruliferus* Hooper, 1963.

PARATRICHODORUS MINOR (Colbran, 1956) Siddiqi, 1973 (Fig. 2)

This species was found only once in soil collected from the rhizosphere of orange trees at Giarre, in Sicily (Fig. 1).

Measurements: (5) females: L = 0.521 (0.464-0.664) mm; a = 19,3 (17.2-24.5); b = 4.8 (4.5-5.4); distance oral aperture to guiding ring = 11 (10.5-13.5) μm ; onchiostyle = 33 (32-36) μm ; V = 52 (51-55).

Description: body almost straight when killed by heat; cuticle swollen, finely striated transversely; lip region continuous with rest of the body; amphid vase-shaped with large aperture; onchiostyle slender, slightly curved; excretory pore near base of oesophagus; lateral body pores absent; oesophagus with a large basal portion overlapping ventrally the intestine; three oesophageal nuclei are visible in the basal oesophagus: the dorsal gland nucleus is situated at the beginning of the basal bulb, while the pair of the ventro-sublateral glands are at its base; oesophagus-intestinal valve inconspicuous; vulva opening a small transverse slit, in ventral view; vagina trapezoidal with small refractive thickenings, seen as longitudinal rods in lateral view; tail conoid with rounded terminus; anus subterminal (4-5 μm from posterior end); caudal pores not observed.

Male: not found.

The Sicilian population of *P. minor* fits with the original description and with the description given by Hooper (1962) of Australian



Fig. 1 - Geographical distribution of *Paratrichodorus* and *Trichodorus* species in Italy.

Paratrichodorus minor

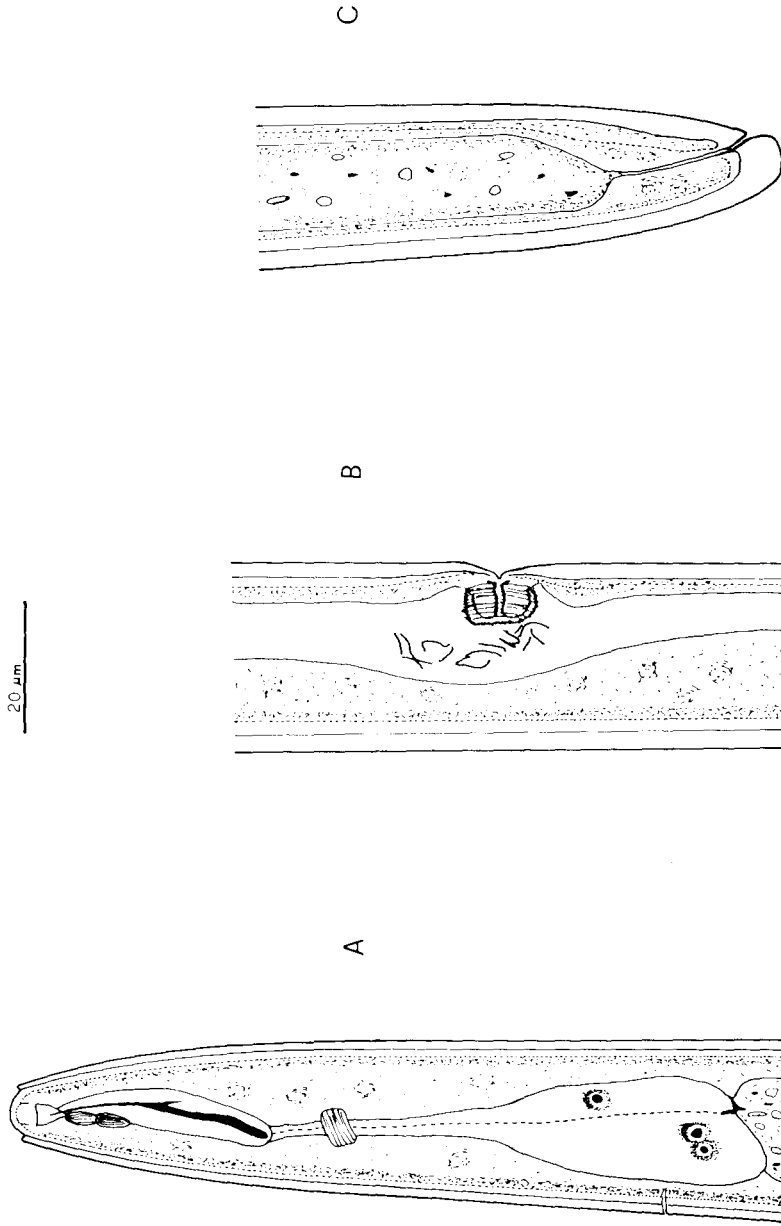


Fig. 2 - *Paratrichodorus minor* female: A, anterior extremity; B, vulval region; C, posterior extremity.

specimens. However, it differs from the Indian populations which, according to Siddiqi (1962), present only a slight ventral overlap of the basal bulb of the oesophagus with the intestine and have the refractive vaginal thickenings transversely situated as observed in lateral view. The onchiostyle of the Sicilian individuals is longer (33 viz 29 μm).

PARATRICHODORUS TANSANIENSIS Siddiqi, 1974
(Fig. 3)

Paratrichodorus tansaniensis seems to be rare although present in northern and southern Italy, where it was found in samples collected from the rhizosphere of grapevine at Grosseto, poplar at Dicomano (Firenze), apple at Bolzano and Caldonazzo (Trento), grapevine at Mesagne (Brindisi), and olive at Massafra (Taranto) (Fig. 1).

Measurements: (5) females of a population collected at Grosseto from the rhizosphere of grapevine; L = 0.882 (0.832-0.907) mm; a = 23.5 (21.8-27); b = 7.7 (7.7-7.8); distance oral aperture to guiding ring = 22 (19-27) μm ; onchiostyle = 45 (43-48) μm ; V = 56 (55-57).

(5) females of a population from grapevine at Mesagne: L = 0.946 (0.779-1.044) mm; a = 28.6 (21.4-32.5); b = 8.7 (7.0-10.2); distance oral aperture to guiding ring = 20 (19-22) μm ; onchiostyle = 48 (45-53) μm ; V = 55.5 (54.5-58).

Description: body almost straight when killed by heat; cuticle swollen, with very fine transverse striation; lip region separated from rest of body by a shallow constriction; amphid vase-shaped with large slit-like aperture; onchiostyle slender, slightly curved; lateral body pores not visible; excretory pore 110-114 μm from the anterior extremity, situated at the level of the median region of the oesophageal basal bulb; however, in some specimens the excretory pore is anteriorly situated at the beginning of the basal bulb; oesophageal basal bulb elongate, ventrally overlapping the intestine, occupying about 2/3 of the oesophagus total length, with five nuclei well evident; the nucleus of the dorsal oesophageal gland is situated at beginning of the basal bulb; two large posterior ventro-sublateral nuclei are situated at the base of the bulb, just anterior to its ventral overlapping with the intestine and a smaller pair of nuclei are visible in the anterior third

Paratrichodorus tansaniensis

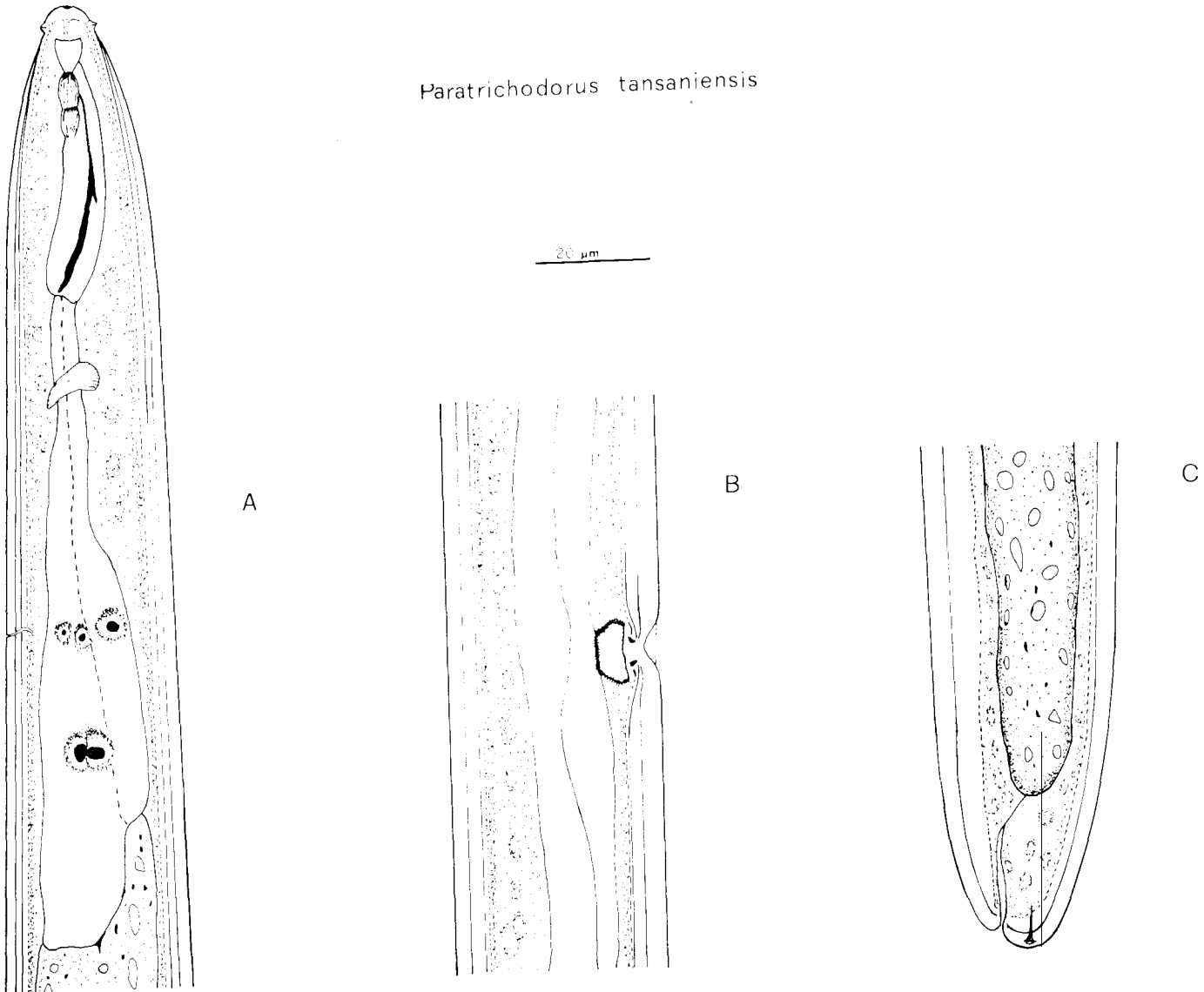


Fig. 3 - *Paratrichodorus tansaniensis* female: A, anterior extremity; B, vulval region; C, posterior extremity.

of the bulb; ventral overlapping of the oesophageal basal bulb usually 1.5 times body width long; vulva constituted by a large opening or a transverse slit; refractive vaginal thickenings as small drops or kidney-shaped, as seen in lateral view; reproductive system didelphic with reflexed ovaries; tail asymmetrical bearing a pair of small caudal pores; anus almost terminal 3-3.5 μm from tail tip.

Male: not found.

The Italian populations of *P. tansaniensis* appear to be morphologically identical with the species as originally described (Siddiqi, 1974), with the only exception that they are much larger ($L = 0.9$ viz 0.4-0.6 mm) and have, consequently, a longer onchiostyle (43-53 viz 35-40 μm).

PARATRICHODORUS TUNISIENSIS (Siddiqi, 1963) Siddiqi, 1974
(Fig. 5)

It is a widespread species frequently found in the central and southern regions (Fig. 4). Specimens of *P. tunisiensis* were present in the rhizosphere of grapevine, olive, artichoke, oak, hazelnut, poplar, apple, peach, walnut, alder, willow, elm, clover and pasture, in many localities of Apulia, Campania, Calabria, Sicily, Lucania, Latium, Apur-tium, Marche and Umbria.

Measurements: (10) males of a population from grapevine at Montefiascone (Viterbo): $L = 0.763$ (0.714-0.850) mm; $a = 22.3$ (20.2-25.3); $b = 9.4$ (8.4-10.8); $c = 66.6$ (54.5-84); $c' = 0.57$ (0.45-0.72); distance oral aperture to guiding ring = 22 (20-24) μm ; onchiostyle = 49 (47-52) μm ; $T = 60.5$ (56-64); spicules = 48 (45-50) μm ; gubernaculum = 12 (11-13.5) μm .

(10) females of the same population: $L = 0.777$ (0.707-0.876) mm; $a = 20.8$ (18.7-23.1); $b = 9$ (7.5-10.3); distance oral aperture to guiding ring = 22 (18-24) μm ; onchiostyle = 49 (48-51) μm ; $V = 56$ (53-58.5).

Description: male; body straight when killed by heat, gradually tapering towards the anterior extremity; cuticle smooth with the external layer swollen; lip region cupulate, with depressed oral opening, separated from rest of body by a conspicuous constriction; amphidial



Fig. 4 - Geographical distribution of *Paratrichodorus tunisiensis* in Italy.

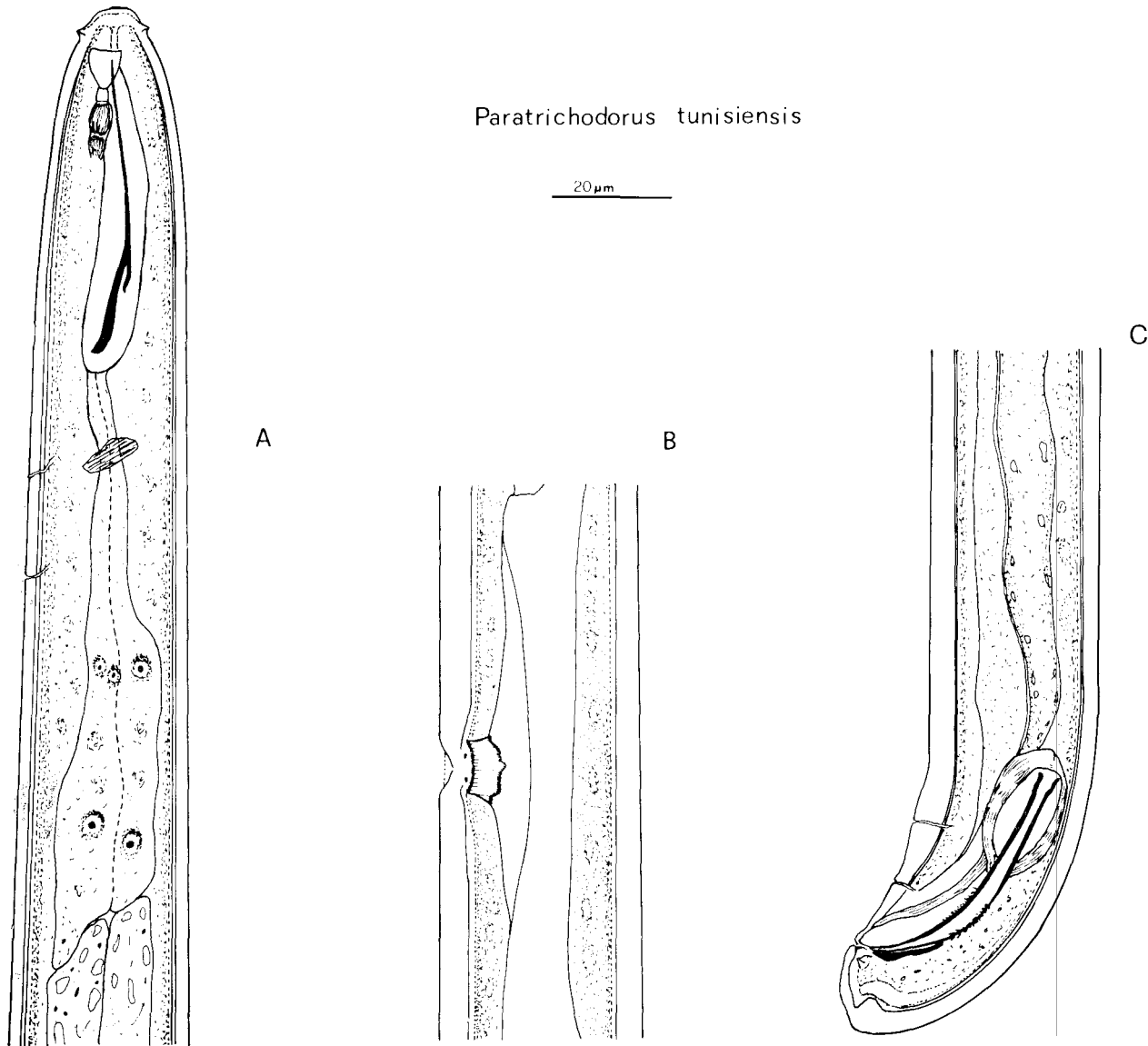


Fig. 5 - *Paratrichodorus tunisiensis*: A, anterior extremity of male; B, vulval region; C, posterior extremity of male.

pouches vase-shaped with elliptical aperture; oesophageal basal bulb sac-like, bilobed, ventrally overlapping the intestine; five nuclei are visible in the basal bulb, that of the dorsal gland situated at the beginning of the bulb, two ventro-sublateral opposite to the dorsal one, and two other ventro-sublateral in the distal third of the bulb; excretory pore at beginning of the basal bulb of the oesophagus, about one body width posterior to nerve ring; a single ventromedian cervical papilla is located 10.5-16 μm anterior to excretory pore; spicules slender slightly cephalated with proximal end lyre-shaped, proximal half cylindrical becoming curved at its distal third, with pointed terminus; thin short bristles are evident at the middle third of spicules; gubernaculum almost straight, thickened at its distal half; caudal alae enveloping the conoid tail, which bears two pairs of caudal papillae; three ventromedian supplements are present: the first one, conspicuous 11 μm anterior to anus, the second, less evident, situated at almost half spicule length and the third located about five body widths from anus;

female similar to male; cuticle not swollen at the extremities; two pairs of lateral body pores present almost equidistant (160-180 μm) from vulva; vulval opening as a narrow longitudinal slit; refractive vaginal thickenings as two thin and short transverse pieces parallel to the vaginal walls, in lateral view; gonads opposed, reflexed with oval spermathecae; tail conoid, rounded at terminus; anus almost terminal 2 μm from tail end; lateral caudal pores not observed.

The Italian populations of *P. tunisiensis* do not differ much morphologically and biometrically from the type population (Siddiqi, 1963) except for having a shorter body ($L = 0.7\text{-}0.9$ viz $0.9\text{-}1.1$ mm) and small bristles on the spicules.

TRICHODORUS SIMILIS Seinhorst, 1963

(Fig. 6)

This species was found in light soils in Apulia and Sicily in samples collected from the rhizosphere of pepper at Lecce and pea at Caltagirone (Catania) (Fig. 1).

Measurements: (6) males of the population from Lecce; $L = 0.887$ (0.803-0.976) mm; $a = 27$ (23.4-31.8); $b = 10$ (9.3-11.3); $c = 86.6$ (71.6-120);

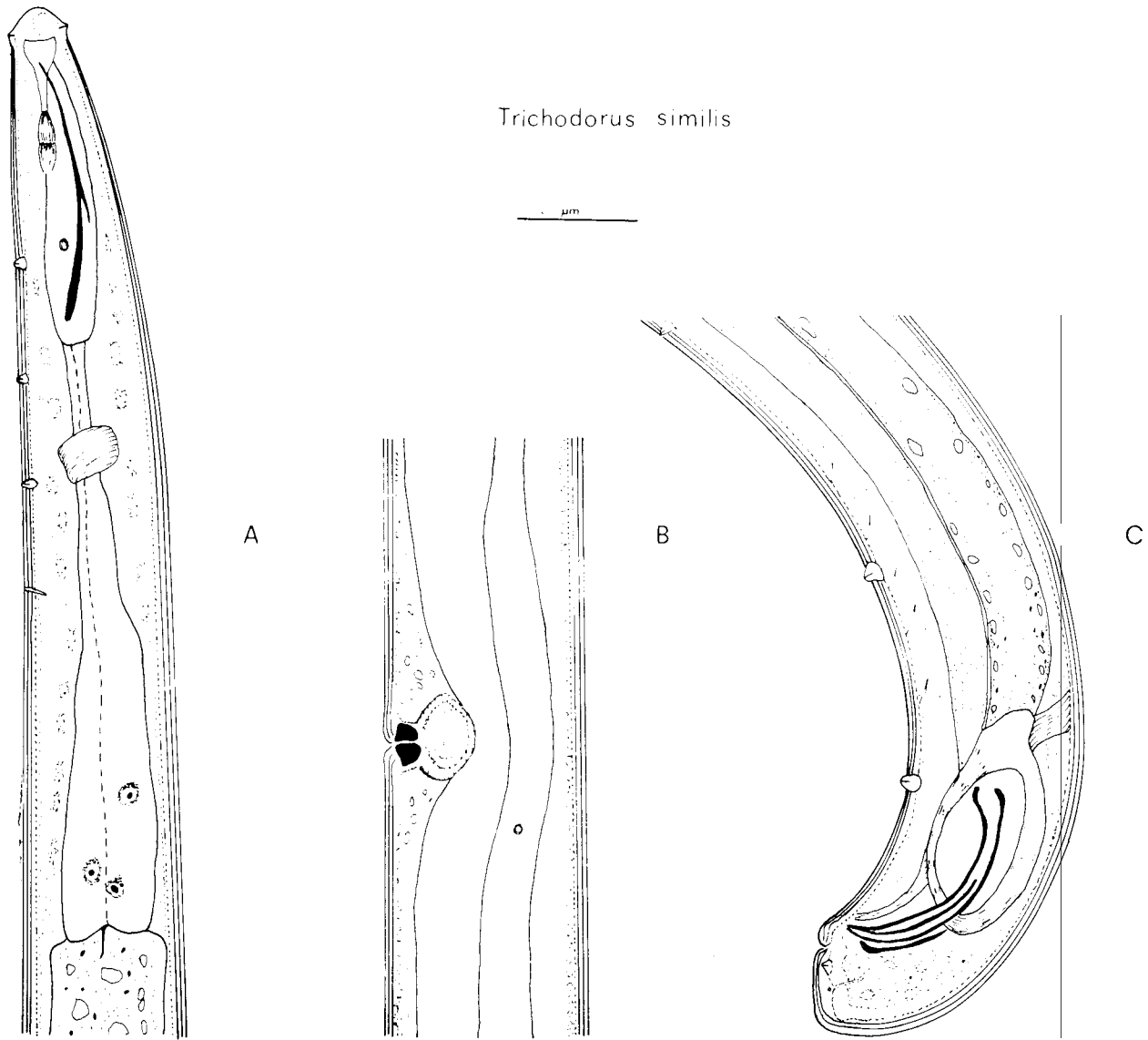


Fig. 6 - *Trichodorus similis*: A, anterior extremity of male; B, vulval region; C, posterior extremity of male.

$c' = 0.51$ (0.43-0.56); distance oral aperture to guiding ring = 19 (16-22) μm ; onchiostyle = 43 (40-47) μm ; T = 60.5 (58-62.5); spicules = 42 (39-44) μm ; gubernaculum = 16 (16-19) μm .

(6) females of the population from Lecce: L = 0.855 (0.792-0.954) mm; a = 24.8 (19.8-30); b = 9.6 (8.4-11); distance oral aperture to guiding ring = 18.5 (17.5-20.5) μm ; onchiostyle = 43 (40.5-46) μm ; V = 56.7 (54.6-59.2).

(10) males of the population from Caltagirone: L = 0.973 (0.880-1.059) mm; a = 29.5 (24.8-32.7); b = 9.3 (8-10.3); c = 97 (88-112); $c' = 0.48$ (0.42-0.52); distance oral aperture to guiding ring = 21 (20-23.5) μm ; onchiostyle = 45.5 (43-49) μm ; T = 62.5 (61-67); spicules = 41.6 (37.5-44) μm ; gubernaculum = 17 (14-21) μm .

(8) females of the population from Caltagirone: L = 0.952 (0.919-0.980) mm; a = 27 (23.3-30); b = 9.5 (8.7-11); distance oral aperture to guiding ring = 18 (16-19) μm ; onchiostyle = 45 (43-47) μm ; V = 56.6 (54.5-59.5).

Description: male; body slightly curved ventrally when killed by heat, with the posterior part more bent; cuticle smooth; lip region continuous with the rest of the body; amphidial pouches vase-shaped continuous with the rest of the body; amphidial pouches vase-shaped with large elliptical aperture; excretory pore at level of beginning of the enlarged portion of oesophagus, about two body widths posterior to the base of onchiostyle, 85-90 μm from anterior extremity; three ventromedian cervical papillae located anterior to excretory pore; the first at about a quarter of the onchiostyle length from its base, the second just anterior to nerve ring and the third slightly posterior to nerve ring; a lateral cephalic pore is located at the level of the onchiostyle base; oesophagus basal bulb not overlapping the intestine, bearing three nuclei well visible; three ventromedian supplements are present: the first situated near the proximal end of spicules, 27-31 μm anterior to anus, the second 1-1.5 times body diameter anterior to the first and the third, not easily visible, at two body widths anterior to the second; spicules cephalated, narrowing at their proximal third and enlarged in the shaft-shaped middle, with irregular tips; gubernaculum straight and slender, slightly curved proximally and knobbed distally; tail broadly rounded, bearing a pair of ventro-submedian papillae and a pair of pores;
female; similar to male but slightly more curved ventrally when killed by heat; a pair of lateral body pores are present just posterior

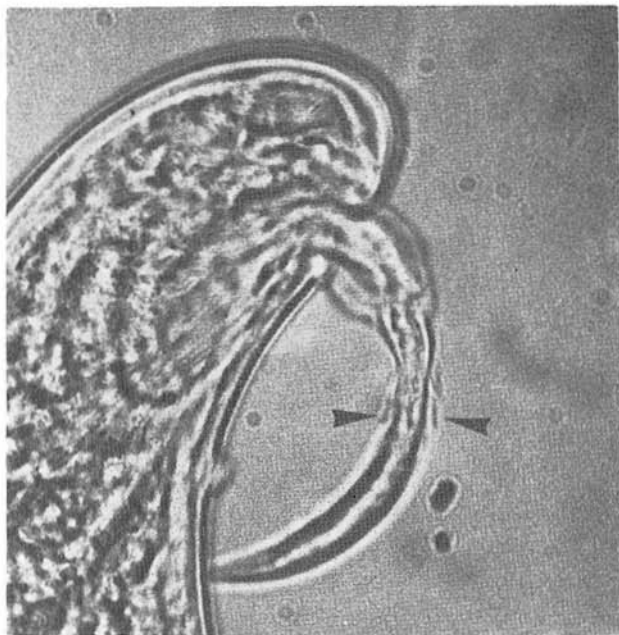


Fig. 7 - Protruding spicules with bristles of *Trichodorus similis*.

to vulva; vulval opening a narrow transverse slit; the vaginal refractive thickenings appear as a robust ring in ventral view and as two triangular pieces in lateral view; gonads opposed with reflexed ovaries and no spermathecae evident; anus subterminal 4-4.5 μm from tail tip; tail rounded bearing two pairs of terminal caudal pores.

The morphological and biometric characters of the Italian populations of *T. similis* fit with the original description of this species (Seinhorst, 1963). However, very thin bristles were observed on the distal portion of the protruding spicules of one of our specimens (Fig. 6). Presence of bristles were not reported in previous descriptions of *T. similis* (Seinhorst, 1963; Loof, 1973).

TRICHODORUS SPARSUS Szczygiel, 1968
(Fig. 8)

Trichodorus sparsus is widespread in northern and central Italy (Fig. 1) and was collected from the rhizosphere of various trees, e.g.,

Trichodorus sparsus

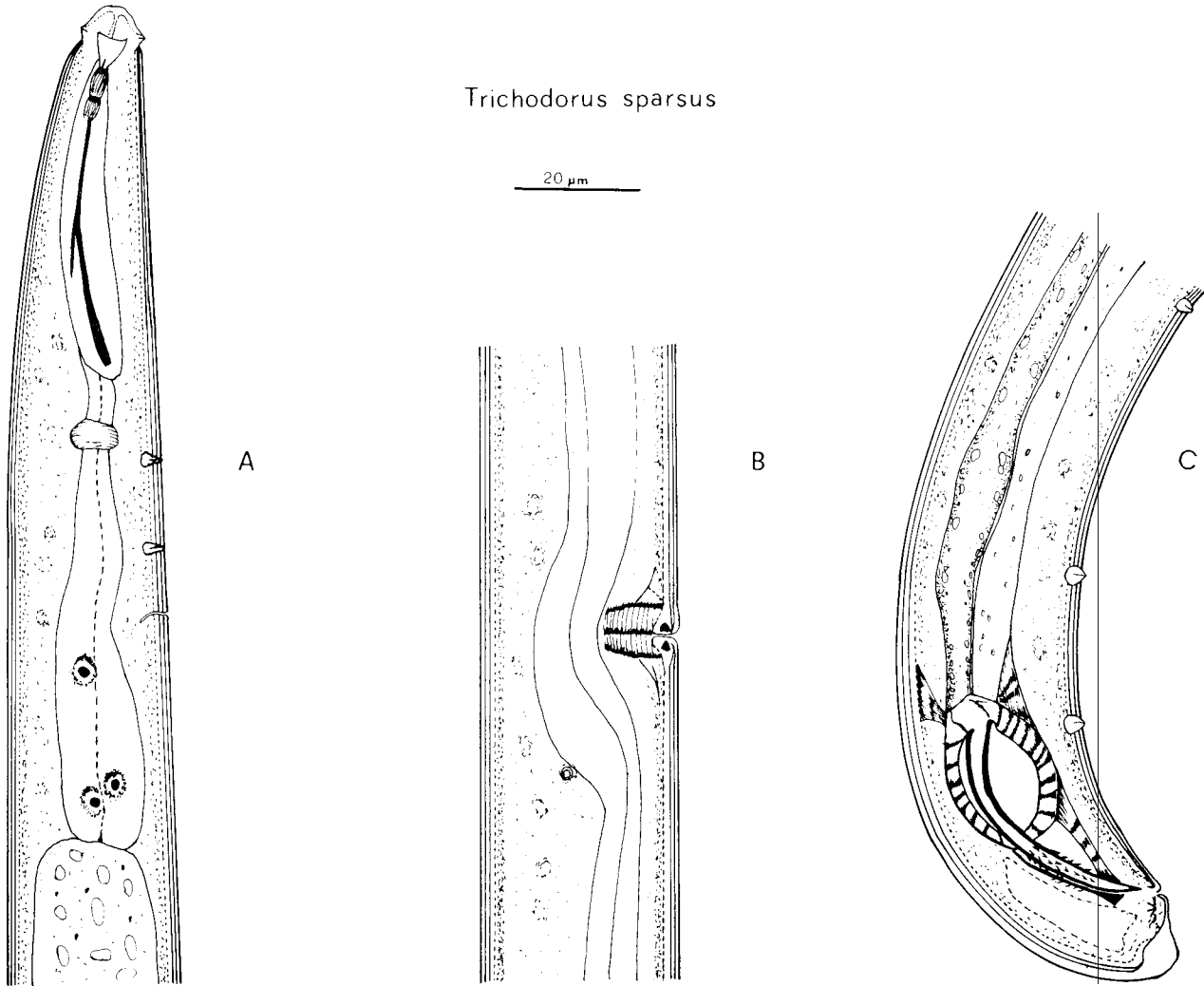


Fig. 8 - *Trichodorus sparsus*: A, anterior extremity of male; B, vulval region; C, posterior extremity of male.

grapevine near Trento and Sondrio; olive at Tovo S. Giacomo (Savona); poplar near Torino; alder at Amandola (Ascoli Piceno); pear at Chatillon (Aosta); chestnut at Edolo (Sondrio).

Measurements: (10) males of a population from beech at Castigliole (Cuneo); L = 0.785 (0.704-0.882) mm; a = 20.7 (16-26); b = 8.5 (6.4-10.3); c = 74 (63.5-93.8); c' = 0.56 (0.40-0.76); distance oral aperture to guiding ring = 25.5 (24-28) μm ; onchiostyle = 58 (52-65) μm ; T = 66 (59-71); spicules = 48 (41-55) μm ; gubernaculum = 20 (18-23) μm .

(10) females of the same population; L = 0.719 (0.694-0.753); a = 18.8 (16.1-24); b = 7.9 (7.2-8.3); distance oral aperture to guiding ring = 25.5 (23.5-28.8) μm ; onchiostyle = 59 (57-62) μm ; V = 55 (55-57).

Description: male; body slightly curved ventrally when killed by heat, with the posterior region more bent; cuticle smooth, lip region cupulate, set off from rest of body by an evident constriction; amphidial pouches vase-shaped with wide slit-like aperture; excretory pore situated at the beginning of the enlarged portion of the oesophagus 110-114 μm from anterior extremity; two ventromedian cervical papillae are present: one just posterior to the nerve ring and the other just anterior to the excretory pore; 3 nuclei readily visible in the basal oesophageal bulb; the two ventro-sublateral nuclei lie in the posterior third of the bulb, the dorsal one lies just anterior to them; a slight ventral overlapping of the glandular oesophagus with the intestine is present in some specimens; three ventromedian supplements: the first at level of the proximal end of spicules, the second one body width anterior to the first, and the third less evident, 1.5 body width anterior to the second; caudal alae not observed; spicules ventrally curved, wide proximally and slender for the remaining 3/4 with irregular tips, striated in the median part and bearing delicate bristles in the distal half; gubernaculum long and slender with a distinct keel at the distal portion; tail rounded bearing two pairs of caudal pores; *female,* similar to male, but slightly more curved ventrally when killed; two pairs of lateral pores are present in the gonad region: one about three body width anterior to vulva and the other one body width posterior to vulva; vulval opening pore-like as seen in ventral view; refractive vaginal thickenings appearing as triangular pieces in lateral view; reproductive system didelphic with reflexed ovaries; spermathecae present; anus subterminal 4-5 μm from posterior extremity, tail with rounded terminus, bearing one pair of post-anal pores.

Trichodorus variopapillatus

20 μ m

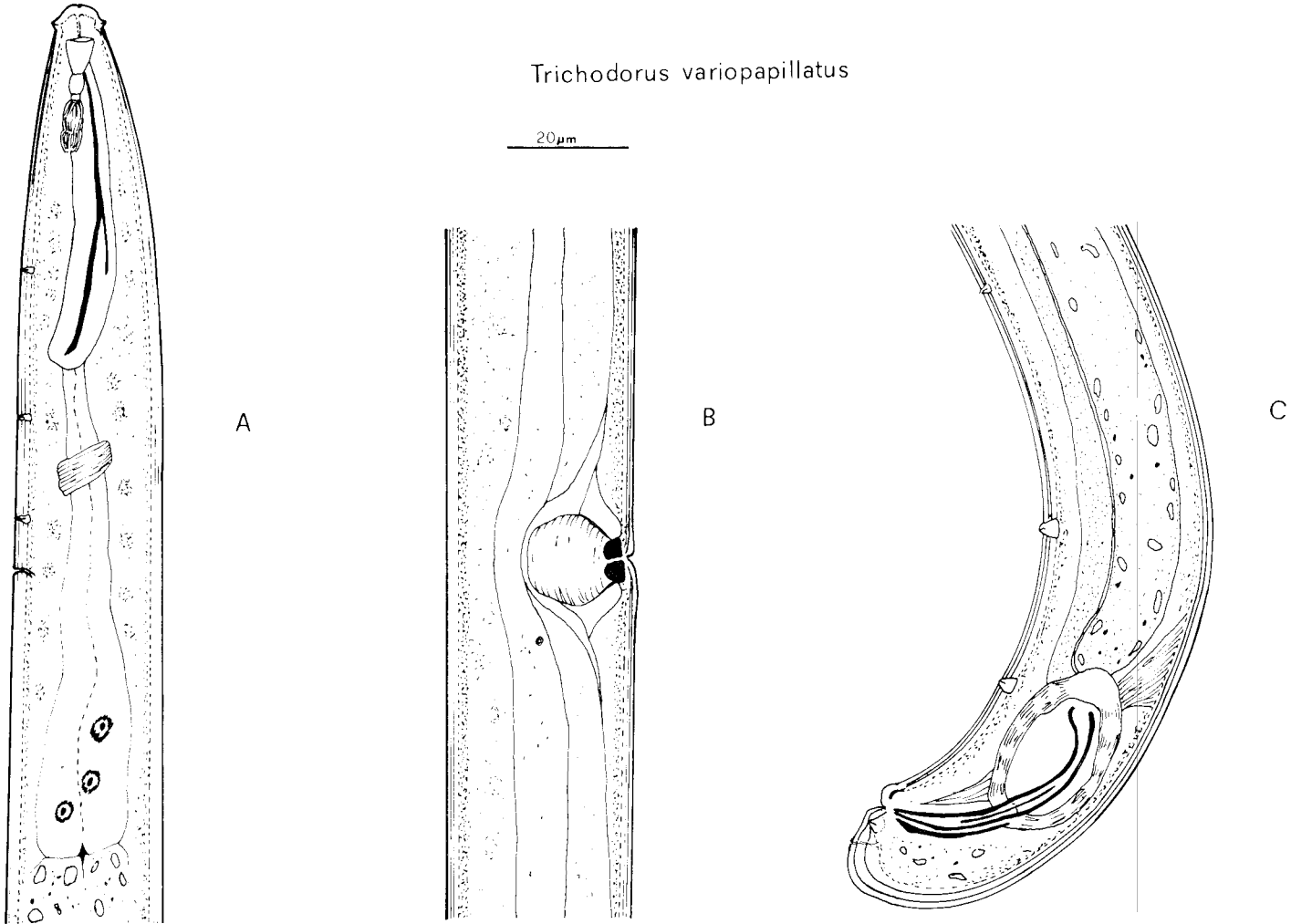


Fig. 9 - *Trichodorus variopapillatus*: A, anterior extremity of male; B, vulval region; C, posterior extremity of male.

The Italian populations of *T. sparsus* are morphologically and biometrically in the range of the European populations of this species (Loof, 1973).

TRICHODORUS TAYLORI De Waele, Mancini, Roca *et* Lamberti, 1982

A detailed description of this species and its biometrics is provided by De Waele *et al.* (1982). Its geographical distribution in Italy is shown in Fig. 1.

TRICHODORUS VARIOPAPILLATUS Hooper, 1972
(Fig. 9)

This species was found in central and southern Italy in the rhizosphere of olive at Vetralla (Viterbo), Castiglione Trasimeno (Perugia) and Pisticci (Matera); grapevine at Grottaminarda (Benevento); poplar at Castelraimondo (Macerata); oak at Sanseverino (Macerata); pepper at Otranto (Lecce); and pasture at Tricarico (Potenza) (Fig. 1).

Measurements: (9) males of a population (olive) from Castiglione Trasimeno (Perugia): L = 0.850 (0.812-0.915) mm; a = 26.4 (23.3-28.8); b = 9.9 (9.2-10.5); c = 88 (68-120); c' = 0.5 (0.38-0.60); distance oral aperture to guiding ring = 21 (20.5-22) μ m; onchiostyle = 53 (50-56) μ m; T = 66.6 (61-71); spicules = 49 (47-53) μ m; gubernaculum = 20 (16-24) μ m.

(10) females of the same population: L = 0.880 (0.797-1.006) mm; a = 26.3 (24.5-29.5); b = 10.8 (9.5-12); distance oral aperture to guiding ring = 21 (20-22) μ m; onchiostyle = 53 (50-56) μ m; V = 55 (50-58).

Description: male; body curved ventrally in the posterior region when heat killed; cuticle smooth; lip region cupolate set off from rest of body by a constriction; amphidial pouches vase-shaped with wide aperture; excretory pore at the beginning of the enlarged portion of the oesophagus, 83-85 μ m from the anterior extremity; three ventro-median cervical papillae always present: the first situated in the distal third of the onchiostyle region, the second at about 1/3 of the onchiostyle length behind the first and the third just anterior to the excretory pore; enlarged portion of the oesophagus pear-shaped with no over-



Fig. 10 - Geographical distribution of *Trichodorus viruliferus* in Italy.

lapping with the intestine; the ventro-sublateral gland nuclei lie in the posterior third of the bulb, the dorsal one just anterior to them; the three ventromedian supplements are located, the first at the level of the proximal end of spicules, the second one body width anterior to the first and the third, not very evident, 2.5-3 body diameters anterior to the second; spicules curved ventrally, cephalated proximally, shaft-shaped with slightly bifid tips; gubernaculum slender proximally and thickened, keel-shaped distally; tail short, rounded, bearing a pair of post-anal and a pair of caudal pores;

female, similar to male; body almost straight when heat killed; two pairs of lateral pores located, the first five body width anterior to vulva and the second half body width posterior to vulva; vulval opening a narrow transverse slit; refractive vaginal thickenings as large trapezoidal pieces in lateral view; gonads ampidelphic with reflexed ovaries; spermathecae present; anus subterminal 2-3 μm from tail tip; tail bluntly rounded bearing a pair of caudal subventral pores.

The Italian populations of *T. variopapillatus* morphologically and biometrically fit the original description (Hooper, 1972) with the exception of the off-set lip region. The variability in the distribution of the ventromedian cervical papillae reported by Hooper (1972) has not been noted in our specimens.

TRICHODORUS VIRULIFERUS Hooper, 1963
(Fig. 11)

Trichodorus viruliferus is the most common and widespread species in Italy, occurring throughout the country in association with various herbaceous and woody plants (Fig. 10). It has been found in about 260 samples in soil collected from the rhizosphere of grapevine, olive, apple, pear, peach, tomato, artichoke, pepper, maize, poplar, hazelnut, oak, pasture, orange, fig, lemon, walnut and many other plants.

Measurements: (10) males of a population from poplar at Cavagnolo (Torino): L = 0.686 (0.623-0.721) mm; a = 23.8 (22.6-25.8); b = 8.6 (7.9-9.6); c = 79 (63-87); c' = 0.5 (0.45-0.62); distance oral aperture to

Trichodorus viruliferus

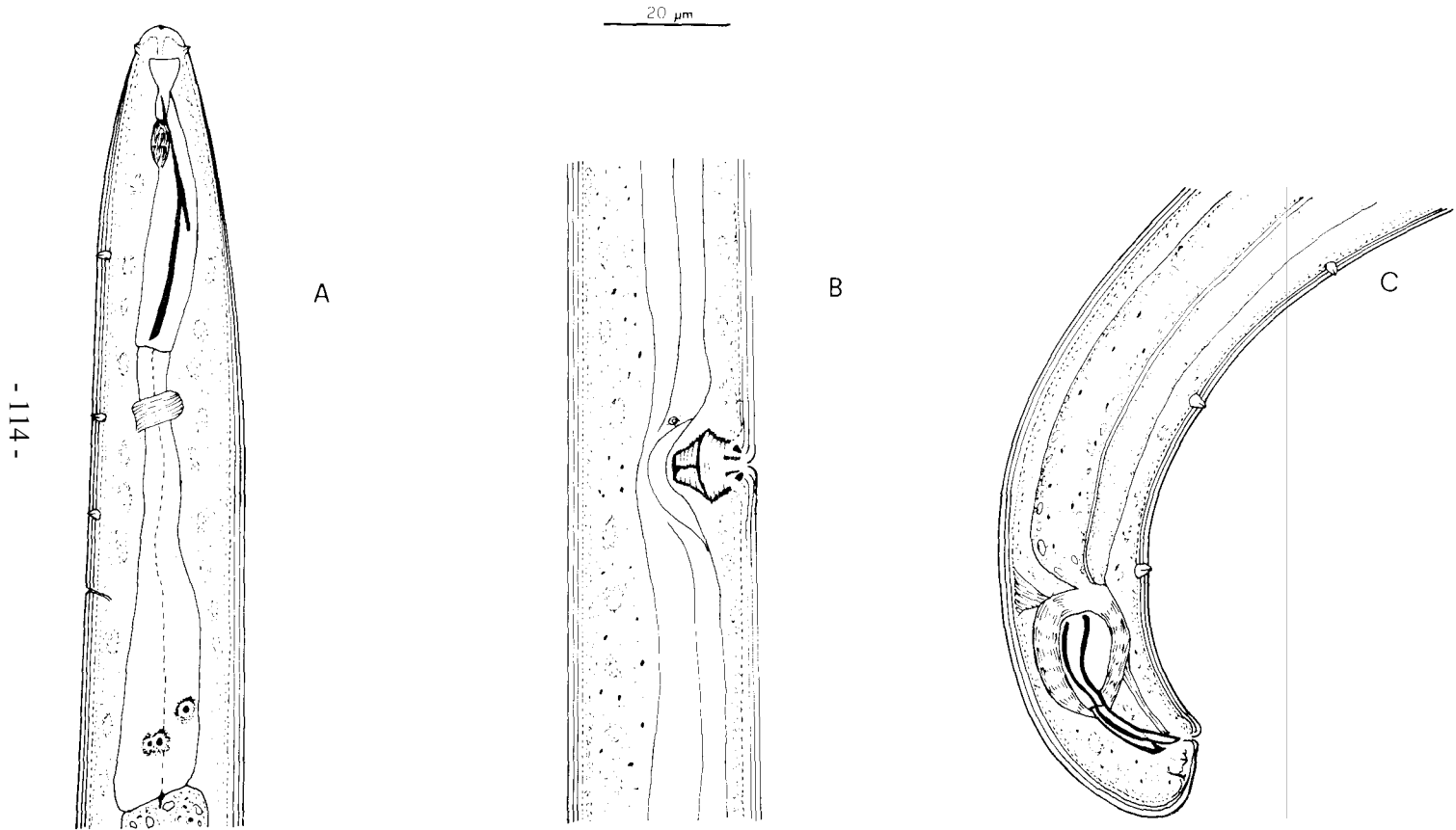


Fig. 11 - *Trichodorus viruliferus*: A, anterior extremity of male; B, vulval region; C, posterior extremity of male.

guiding ring = 20 (18-21) μm ; onchiostyle = 45 (42-48) μm ; T = 65 (52-70); spicules = 28 (26-30) μm ; gubernaculum = 17 (16-18) μm .

(10) females of the same population: L = 0.659 (0.578-0.712) mm; a = 20.6 (18.7-22.2); b = 7.5 (5-9); distance oral aperture to guiding ring = 19.5 (18.5-20.5) μm ; onchiostyle = 44 (38-50) μm ; V = 55 (52-58).

(10) males of a population from poplar at Dicomano (Firenze): L = 0.731 (0.653-0.807) mm; a = 24.8 (21.9-28.1); b = 10.1 (9.2-11.5); c = 77 (67-92); c' = 0.52 (0.48-0.62); distance oral aperture to guiding ring = 21.5 (19-24.5) μm ; onchiostyle = 49 (45-53) μm ; T = 64.5 (60-70); spicules = 29 (27-31) μm ; gubernaculum = 18 (17-20) μm .

(10) females of the same population: L = 0.811 (0.724-0.919) mm; a = 24.1 (21-27); b = 10.4 (7.7-12.4); distance oral aperture to guiding ring = 19.3 (17-22) μm ; onchiostyle = 48.2 (40.5-56) μm ; V = 56.5 (54-62).

Description: male: body slightly curved ventrally with the posterior region more bent, when killed by heat; cuticle smooth, sub-cuticle marked by fine transverse striae; lip region cupolated, set off from rest of body by slight constriction; amphidial pouches vase-shaped with wide aperture; excretory pore at level of the middle of the enlarged portion of oesophagus 109-112 μm from the anterior extremity; three ventromedian cervical papillae located anterior to excretory pore: the first at base of onchiostyle, the second almost opposite to nerve ring and the third just anterior to excretory pore; basal bulb of the oesophagus slightly overlapping ventrally the intestine, bearing 3 nuclei readily visible: the two ventro-sublateral lie in the posterior third of the bulb, the dorsal larger, lies just anterior to them; three ventromedian supplements: the first at level of proximal end of spicules, the second one body diameter anterior to the first and the third, not well developed, about 1.5-2 body widths anterior to the second; spicules curved ventrally, wide at their proximal end, tapering gradually to their middle where they bend and then widen again and taper towards their tips; gubernaculum broad proximally and keel-shaped at the distal third; tail conoid with rounded terminus, bearing a pair of post anal and a pair of caudal pores;

female: similar to male; body slightly curved ventrally when heat killed; two lateral pores located on either sides of vulva; vulval opening pore-like in ventral view; refractive vaginal thickenings seen as oval pieces in lateral view, as a ring in ventral view; gonads amphidelphic, with reflexed ovaries and large spermathecae; anus subter-

minal 4-6 μm from tail tip; tail conoid with rounded terminus, bearing a pair of caudal pores.

Males and females are found in almost equal numbers.

The Italian populations of *T. viruliferus* fit generally with the original description of the species. However, some differences were noted in the position of the second ventromedian cervical papilla often situated slightly posterior compared with the type population (Hooper, 1963).

Concluding Remarks

Trichodorid nematodes do not seem to be very frequent in Italy. Of a total of over 4,000 samples examined only 380 contained species of either *Paratrichodoros* or *Trichodoros*.

The range of species found is also modest: three *Paratrichodoros* and five *Trichodoros* species in a wide territory extending over 1,500 km from north to south.

The range of the european species is well represented with *T. similis*, *T. sparsus*, *T. variopapillatus* and *T. viruliferus*. Of them, only *T. viruliferus* appears to occur throughout the country; *T. sparsus* was found in northern and central Italy, *T. variopapillatus* in central and southern Italy and strangely *T. similis* only in Apulia and Sicily. *Trichodoros taylori* may presently be considered an Italian species and its distribution is confined to Piedmont and Lombardy. *Paratrichodoros tunisiensis* is a mediterranean species, therefore its presence in the central and southern regions is to be expected, but the widespread occurrence of *P. tansaniensis*, in northern and central Italy and of *P. minor*, in Sicily was unexpected as both these latter species have previously been reported only from tropical countries.

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S U M M A R Y

A survey of Trichodorid nematodes was carried out in the period 1971-1973 in Italy. A total of eight species were found: *Paratrichodorus minor* (Colbran) Siddiqi, *P. tansaniensis* Siddiqi, *P. tunisiensis* (Siddiqi) Siddiqi, *Trichodorus similis* Seinhorst, *T. sparsus* Szczygiel, *T. taylori* De Waele, Mancini, Roca et Lamberti, *T. variopapillatus* Hooper and *T. viruliferus* Hooper. Species of *Paratrichodorus* and *Trichodorus* appear to be of infrequent occurrence in Italy and there are few species considering the vast territory and the diversity of the habitats sampled. However, the range of the European species is well represented. *T. viruliferus* was found throughout the country, *T. sparsus* was found in northern and central Italy, *T. variopapillatus* and *P. tunisiensis* in central and southern Italy, and *T. similis* only in Apulia and Sicily. The detection of *P. tansaniensis* and *P. minor* was unexpected, as these two species are found mainly in the tropics, while *T. taylori* seems to be an Italian species found only in Piedmont and Lombardy.

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