

**Reclassification of the Genus *Chitinotylenchus* (Micoletzky, 1922)  
and a Redescription of *C. paragracilis* (Micoletzky, 1922)  
(Nematoda: Tylenchoidea)**

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*Abstract:* The holotype of *Chitinotylenchus paragracilis* (Micoletzky, 1922) is redescribed and illustrated. *Chitinotylenchus* is proposed as a synonym of *Ditylenchus* Filipjev, 1936 and *C. paragracilis* as *Ditylenchus paragracilis* (Micoletzky, 1922) new comb. The four other species in the genus *Chitinotylenchus* are considered *species inquirendae*. *Key Words:* Reclassification, *Chitinotylenchus* synonymy, *Ditylenchus*.

*Chitinotylenchus paragracilis* (Micoletzky, 1922) Filipjev, 1936, the type species of the genus *Chitinotylenchus* (Micoletzky, 1922) Filipjev, 1936, is known only from a meagre description and an illustration of the anterior portion of the body based on one female specimen from the Austrian Alps. Four additional species have been placed in this genus (6, 7).

Various authors have assigned this genus to different taxa. Thorne (10) and Paramonov (9) placed it in the subfamily Tylenchinae. Thorne in 1961 (11) pointed out that Micoletzky considered his species closely related to what is now *Hirschmanniella gracilis* (de Man, 1880) and, therefore, proposed the name *paragracilis*. Goodey (6) listed the genus in the family Tylenchidae without comment, and Allen and Sher (1) placed it in the subfamily Tylenchorhynchinae.

In 1922, Micoletzky proposed the subgenus *Chitinotylenchus* in the genus *Tylenchus*, listing eight species: *T. gracilis* de Man, 1880; *T. sacchari* Soltwedel, 1888; *T. similis* Cobb, 1893; *T. coffeae* Zimmerman, 1898; *T. symmetricus* Cobb, 1914; *T. penetrans* Cobb, 1917; *T. musicola* Cobb, 1919; and *T. mahogoni* Cobb, 1920; included also was

his new species *T. paragracilis* (Micoletzky, 1922). He did not propose a type species for this new taxon. Filipjev (2, 3, 4, 5) raised the subgenus to generic rank and made *Tylenchus* (*Chitinotylenchus*) *paragracilis* Micoletzky, 1922 the type species of the genus. The other species listed by Micoletzky for this subgenus were assigned to various other genera by Filipjev (4, 5).

Through the courtesy of Dr. G. Hartwich, Berlin, the original specimen (holotype) of *C. paragracilis* on the original slide has been made available for study. The specimen is in fair condition although flattened and cleared. The measurements, description and illustrations (Fig. 1) of this specimen are as follows:

L = 0.73 mm    a = 21    b = 6.3    c = 11  
V = 82    stylet = 8  $\mu$ .

Lip region not set off from body, flattened anteriorly with labial framework visible. Stylet moderately developed; knobs elongated, sloping, and separated distally. Median bulb with valve, posterior bulb not overlapping intestine. Ovary single, details obscure. Tail tapering to a point.

*Holotype:* Female on slide 9585, Zoological Museum of Humboldt University, Berlin, Germany. Labeled as follows: Steirermark Teichalpe Almboden 9·15 9585 Nemat. terric. *Tylenchus paragracilis* Micoletzky ♀.

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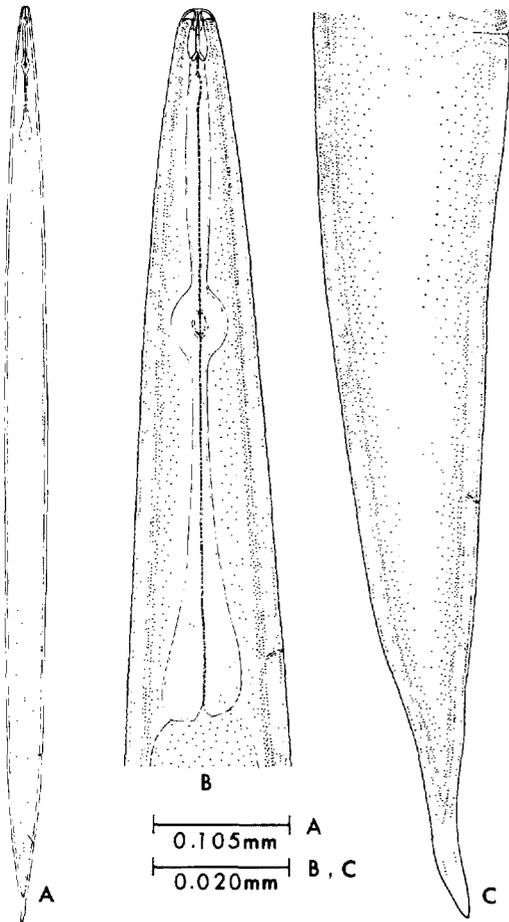


FIG. 1. *Ditylenchus paragracilis* (Micoletzky, 1922) new comb. A. Female; B. Female, anterior region; C. Female, posterior region.

#### DISCUSSION

It is clear from Micoletzky's original description (8) that he considered the well-developed labial framework to be the basis for his newly proposed subgenus. He regarded his species *T. (Chitinotylenchus) paragracilis* most closely related to *H. gracilis* (de Man, 1880). On page 576 of his paper (8), following the description of *C. paragracilis*, he discussed the relationship and differences between the two species as follows: "Gehört zur Gruppe der Tylenchen mit

Chitenspangen im Vorderende (SG *Chitinotylenchus*), ist durch Vorderendebau, Stachelnlänge und Schwanzform *T. gracilis* verwandt und unterscheidet sich von dieser Art 1. durch die Form und Stellung der Stachelknöpfe; 2. durch die weit nach hinten verlagerte Vulva und die unpaare Gonade; 3. durch die Körperkleinheit (gegen 2,2 mm) und den mässig schlanken, nie fadenförmigen Körper (a 32 gegen 65–70)."

Although Filipjev, in 1934 (3) used *Chitinotylenchus* as a generic name with *C. paragracilis* (Micoletzky, 1922) as the type species, it was in 1936 (4, 5) that he diagnosed the genus as follows: "Esophagus tylenchoid, ovary single, spear bifurcated behind." He listed this genus in his group A genera, which were characterized as follows: "head chitinized, cuticle coarsely striated, spear strong but not very long, tail varying in size, bursa always caudal."

The bifurcated stylet has been the character used by subsequent authors for placing species in this genus (6, 7), and this is the primary character that is used by textbook authors to characterize the genus *Chitinotylenchus* (6, 11).

The holotype specimen of *C. paragracilis* appears to me to belong in the genus *Ditylenchus* Filipjev, 1936, as the only known specimen exhibits all the characters (as far as can be seen) of that genus. The bifurcated stylet is not too different from stylets seen in the genus *Ditylenchus* and the families Neotylenchidae and Sphaerularidae (author's personal observations). Micoletzky in his original description of *C. paragracilis* pointed out that the stylet knobs are similar to *T. macrogaster* Fuchs, 1915. An incomplete survey of the literature revealed illustrations of a number of stylets that appear similar to that of the holotype of *C. paragracilis*, such as *Parasitylenchus scolyti* Fuchs, 1933; *Boleodorus indicus* Jairajpuri, 1962; *Anguina*

*agropyronifloris* Norton, 1965; *Aglenchus exiguus* Massey, 1969; *Ditylenchus myceliophagus* Goodey, 1958; *Ditylenchus convalariae* Sturhan and Friedman, 1965; *Ditylenchus minutus* Husain and Khan, 1967; and *Ditylenchus ausafi* Husain and Khan, 1967.

It is proposed, therefore, that the genus *Chitinotylenchus* Filipjev, 1936 be synonymized with the genus *Ditylenchus* Filipjev, 1936. *Ditylenchus paragracilis* (Micoletzky, 1922) new comb. is proposed. The four species *C. annulatus* (Cassidy, 1930) Filipjev, 1936; *C. incognata* (v.d. Linde, 1938) Loof, 1956; *C. sedatus* Kirjanova, 1951; and *C. boevii* Istullaeva, 1967 are proposed as *species inquirendae* as they are not considered to be adequately described or documented and, as far as is known, type material or specimens are unavailable.

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