

REVISED PROPOSALS CONCERNING THE VALIDATION OF  
*DITYLENCHUS* FILIPJEV, 1936 (NEMATODA). Z.N.(S.) 1955By the Secretary, International Commission  
on Zoological Nomenclature

In December 1971 Dr. P.A. Loof (*Landbouwhogeschool, Wageningen, Netherlands*) and Dr. S.A. Sher (*University of California, Riverside*) published an application for the validation of the generic name *Ditylenchus* Filipjev, 1936 (Nematoda) by the suppression of *Chitinotylenchus* Micoletzky, 1922 (*Bull. zool. Nomencl.* vol. 28: 112-113). *Ditylenchus* is widely used, not only in taxonomic, but also in agricultural and economic literature, for nematodes of economic importance: *D. dipsaci* (the type-species), the stem nematode; *D. destructor*, the potato-rot nematode; *D. angustus*, causing ufra disease in rice. *Chitinotylenchus* has been used for four species only doubtfully referred to the genus, of which the type-species, *C. paragracilis* Micoletzky, 1922, has never been reported since its first description. The synonymy of the two generic names is based on a re-examination by Sher, 1970 (*J. Nematol.* vol. 2: 236-238) of the holotype female of *C. paragracilis* which, though flattened, is in fair condition.

2. In 1974 (*Bull.* 31: 110-111) Dr. Lemche added a clause to complete the detailed proposals to the Commission; and Dr. Loof provided 12 references to works by different authors since 1969 in which *Ditylenchus* had been used as a valid name. The application was supported by Dr. David Hooper (*Rothamsted Experimental Station*).

3. In June 1975, the Commission was invited to vote on this application and supported it by 19 votes to 1. The Opinion has not been prepared because Dr. Dupuis, who voted for postponing a decision on the following grounds, said: "La nécessité de conserver *Ditylenchus* ne fait aucun doute, mais la proposition de supprimer *Chitinotylenchus* ne repose que sur une synonymie subjective, établie par un helminthologiste. Avant de décider cette suppression, j'estime qu'il faut consulter d'autres spécialistes des nématodes des plantes et notamment: Michel Luc, *Muséum national d'Histoire naturelle, Paris*; M.R. Siddiqui, *Commonwealth Institute of Helminthology, St Albans*; I. Andrassy, *Egyetemi Allatrendszertani Intezet, Budapest*." Dr. Mroczkowski, who abstained from voting, also thought that the case for regarding the respective type-species of *Ditylenchus* and *Chitinotylenchus* as congeneric had not been sufficiently made.

4. I accordingly wrote to the gentlemen named by Dr. Dupuis and asked for their advice on whether the Commission should preserve *Ditylenchus* by suppressing *Chitinotylenchus*, or by ruling that the junior name should be given precedence over the senior one by any zoologist who held both names to denote one taxon. My letter made it clear that advice was sought not on the end to be attained, but on the better of two alternative routes to it. The following replies were received:



*Dr. Siddiqui:* "I think the two genera are not synonymous for reasons given below. It should be noted here that the holotype specimen is the only known specimen of *Chitinotylenchus paragracilis* and is flattened although in fair condition, and that Sher (1970) based his proposed synonymy on the examination of this specimen only when he said: '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'.

"(a) The genus *Ditylenchus* (type-species *D. dipsaci* (Kuhn, 1857), Filipjev, 1936) is a large group of species requiring a careful revision. Golden (1971, in *Plant Parasitic Nematodes*, vol. 1, edit. Zuckerman, Mai & Rohde, Academic Press) expresses his opinion about the type-species as 'Many of the 30 or more synonyms of *D. dipsaci* may prove to be valid species when further studied'.

"A revision of the group may reveal that the species in *Ditylenchus* represent more than one genus. A recently proposed genus, *Diptenchus* Khan and others, 1969, has been differentiated from *Ditylenchus* by its (1) differently shaped posterior oesophageal bulb, and (2) absence of a post-vulval uterine sac. Khan and others placed *Diptenchus* under TYLENCHIDAE (near *Ditylenchus*), Siddiqui (1971, *Indian J. Nematol.* vol. 1: 25-43) under ANGUININAE next to *Ditylenchus*, and Golden (1971) placed it in his new subfamily DITYLENCHINAE.

"In *D. dipsaci* a long post-vulval uterine sac ending in a rudiment of a posterior gonad is present. This feature has not been commented upon by Sher (1970) for *C. paragracilis*, but his illustrations A and C on : 237 show that a post-vulval sac is absent. In this respect, *Chitinotylenchus* resembles *Diptenchus* and differs from *Ditylenchus*.

"(b) *Chitinotylenchus paragracilis* has, according to Sher (1970) 'Stylet moderately developed; knobs elongated, sloping and separated distally'. This description of the stylet is closest to 'stylet with furcate base' which is depicted in Sher's figure 1B and can be regarded as a generic character for *Chitinotylenchus*, as has been done for a long time. The stylet in *Ditylenchus dipsaci* is also moderately developed, but it has rounded, non-sloping basal knobs which are placed close together without even a notch at the base. The stylet in *Diptenchus*, on the other hand, is weakly developed, with inconspicuous knobs in the form of slight thickenings. Thus the stylet base is of a different type in each of the three genera.

"(c) The holotype of *C. paragracilis* has, according to Sher, 'ovary single, details obscure'. Thus it is not clear whether the ovary is of the *Ditylenchus*-type (simple with a row of oocytes) or of the *Anguina*-type (multiple rows of oocytes arranged about a rachis).

"(d) The tail of the holotype of *C. paragracilis* as illustrated by Sher (1970) shows a long, hyaline, non-protoplasmic terminal portion which is unusual for *Ditylenchus*.

"(e) It is difficult to identify *Chitinotylenchus* with *Ditylenchus* when information on the following is lacking:

(i) Head-on view, and (ii) Male tail, for differentiation from insect-parasites *Sychnotylenchus* and *Neoditylenchus*;

(iii) Uterus, spermatheca, ovary and sperms, to ascertain its relationship



with *Ditylenchus* and members of TYLENCHIDAE. Geraert & Kheiri (1970, *Nematologica* vol. 16: 197-202) have shown that *Pseudhalenchus* Tarjan, 1958, is very similar to *Ditylenchus*. Its type-species, *P. anchilisposomus* has a female gonad which is structurally similar to that of *Ditylenchus*, whereas its other species, *P. minutus*, has a gonad which resembles that of *Tylenchus* (TYLENCHIDAE);

(iv) Cuticular lateral fields, number of incisures, presence of deirids, etc. These are always helpful in ascertaining the taxonomic position of tylenchid genera.

"For these reasons it seems justified to reject Sher's (1970) proposed synonymy of *Chitinotylenchus* with *Ditylenchus* and to recognise them as separate genera. The genus *Ditylenchus* will then not be threatened and there will be no need to apply for its protection. *Chitinotylenchus*, it is urged, should not be suppressed by the Commission but should continue to be used by those zoologists who believe that it denotes a different genus from *Ditylenchus*.

"I propose, as a result of your letter, to publish a note to the effect that Sher's proposal to classify *C. paragracilis* as *Ditylenchus* is unacceptable."

*Monsieur Luc*: "L'examen du travail de Sher montre que, sans ambiguïté, les deux genres *Ditylenchus* et *Chitinotylenchus* sont identiques. D'autre part, le nom du premier étant de loin le plus connu et, surtout, s'appliquant à plusieurs espèces économiquement importantes et mondialement répandues, il est à mon avis essentiel de le conserver. Je suis donc tout à fait en faveur de la protection du nom de genre *Ditylenchus*. Je pense de plus que la situation serait beaucoup plus claire si le nom de *Chitinotylenchus* était complètement supprimé, suivant en cela l'opinion de Sher et de Loof."

*Professor Andrassy*: "I know well the paper of Sher in which he proposed to synonymise *Chitinotylenchus* with *Ditylenchus*. Sher - who is a very eminent scientist indeed - investigated the type-specimen (a single female) of *C. paragracilis* Micoletzky, 1922 and found it to be very similar to species of *Ditylenchus*. He said: 'The holotype specimen of *C. paragracilis* appears to me to belong in the genus *Ditylenchus*.... The bifurcated stylet is not too different from stylets seen in the genus *Ditylenchus*' (the bifurcation of the stylet would be the most important generic character differentiating the two genera).

"What does this mean? And what can we see in Sher's drawings? Only that *C. paragracilis* is similar to the species of *Ditylenchus* and probably belongs to them, but not more. The conclusion is not certain. First, Micoletzky's specimen is only in a relatively fair condition (it is flattened and cleared); secondly, it is a single female and we do not know any males of this species, although the characteristics of the male would be of great importance precisely in the systematics of this group of Tylenchida.

"My standpoint is therefore as follows: from the original description and the single flattened holotype, and from the lack of males, we cannot characterise the species *C. paragracilis* Micoletzky, 1922 as a valid species, or the genus *Chitinotylenchus* Micoletzky, 1922 as a valid genus. Until the species has been redescribed on the basis of both male and female topotypes, we can regard Micoletzky's species and genus only as *species inquirenda* and *genus inquirendum*, with a possible note that they belong perhaps to *Ditylenchus*.



"It is worth mentioning that the other four species described in or transferred to *Chitinotylenchus* are, in Sher's opinion, *species inquirendae*."

5. In the face of these three independent pieces of advice, it seems to me clear that the Commission ought to reconsider the question, and to vote, first, whether or not to use the plenary powers in this case. If the Commission declines to use its plenary powers, *Chitinotylenchus* will become the valid name for the genus now known to taxonomists and agricultural scientists as *Ditylenchus* - the opposite of the end sought by all who have contributed to the discussion so far.

6. If the Commission decides to use the plenary powers, it should then be offered a choice between two alternatives: either A, to reaffirm its former decision and suppress *Chitinotylenchus* (i.e. to adopt the proposals published in *Bull. zool. Nomencl.* vol. 28: 112-113 and vol. 31: 110), or, B:

(1) to use its plenary powers to rule that the generic name *Ditylenchus* Filipjev, 1936 is to be given precedence over the generic name *Chitinotylenchus* Micoletzky, 1922, by any zoologist who believes both names to denote the same taxon;

(2) to place the generic name *Ditylenchus* Filipjev, 1936 (gender: masculine), type-species, by original designation, *Anguillula dipsaci* Kuhn, 1857, on the Official List of Generic Names in Zoology with the endorsement specified in (1) above;

(3) to place the generic name *Chitinotylenchus* Micoletzky, 1922, (gender: masculine), type-species, by subsequent designation by Filipjev, 1936, *Chitinotylenchus paragracilis* Micoletzky, 1922, on the Official List of Generic Names in Zoology, with an endorsement that it is not to be given precedence over the generic name *Ditylenchus* Filipjev, 1936, by any zoologist who believes that both names denote the same taxon;

(4) to place the following specific names on the Official List of Specific Names in Zoology:

(a) *dipsaci* Kuhn, 1857, as published in the binomen *Anguillula dipsaci* (specific name of type-species of *Ditylenchus* Filipjev, 1936);

(b) *paragracilis* Micoletzky, 1922, as published in the binomen *Chitinotylenchus paragracilis* (specific name of type-species of *Chitinotylenchus* Micoletzky, 1922).



Melville, R. V. 1977. "Revised proposals concerning validation of *Ditylenchus Filipjev*, 1936 (Nematoda). Z.N.(S.) 1955." *The Bulletin of zoological nomenclature* 33, 241–244.

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