COMMENTS ON SOME KNOWN SPECIES OF THE GENUS TYLENCHUS AND DESCRIPTION OF TYLENCHUS STACHYS SP. N. (NEMATODA: TYLENCHIDAE)

BY

M. W. BRZESKI
Research Institute of Vegetable Crops, 96-100 Skierniewice, Poland

Variability of Tylenchus arcuatus, T. elegans (n. syn. T. ritae and T. capitatus), T. davainei (n. syn. T. martini) and T. rex are discussed. T. neominimus and T. parangalici are considered species inquirendae. Stylet length, areolation of lateral field, ratio “a” and body shape upon relaxation are reliable characters for Tylenchus species differentiation. Tylenchus stachys sp. n., from Australia, is characterized by stylet 14.5-16.5 µm, outer bands of lateral field areolated on entire body, body thin and slightly arcuate.

Keywords: Nematoda, Tylenchida, Tylenchidae, Tylenchus, morphology, taxonomy.

The genus Tylenchus Bastian, 1865 contains 24 nominal species (Ebsary, 1991). Out of these only four were measured and described more than once; these are T. arcuatus Siddiqi, 1963, T. davainei Bastian, 1865, T. elegans de Man, 1876, and T. ritae Siddiqi, 1963. The limits of variation of morphological characters and their usefulness for species diagnoses remains unknown for the great majority of species. Therefore, an attempt has been made to see which characters are reliable for species differentiation.

MORPHOLOGY AND MORPHOMETRICS

Body length of known species lies between 0.6-1.3 mm but the large variation observed within species practically eliminates body length from the list of characters useful for identification. Body shape of relaxed nematodes usually arcuate ventrad, seldom almost straight. It appears relatively constant for the species and can be used in species diagnoses, providing that enough specimens are inspected. Cuticular annuli rounded and striae distinct, subcuticular annuli much narrower than the cuticular, except for the region between anterior and posterior cephalids where striation of both layers is similar. Lateral field with four incisures as seen under the light microscope, outer bands in some species areolated. Lateral field is a stretchable zone of the cuticle and the width of the
field and of each band may change during the life of the nematode. Therefore, lateral field width should not be used as a specific character. Lip region may be narrower than adjacent body, but this varies within many populations. Lips fused, anterior surface somewhat rectangular in outline, as seen on SEM micrographs (Sher & Bell, 1975; Brzeski & Sauer, 1983; Fig. 6 in this paper). No labial disc, although the area near the oral opening may be slightly elevated. Stoma surrounded by six anterior labial sensilla seen as small pits. Amphidial openings large rounded holes on anterior surface extending as short narrow slits to the lateral sides of the head. Labial framework weak, built of a central cylinder that extends posteriorly beyond the basal plate and surrounds anterior part of the stylet cone. Basal plate not sclerotized, composed of six narrow arms than join central cylinder with outer ribs. The ribs of the framework extend posteriorly for two or three annuli. Anterior cephalids immediately posterior to the ribs of the framework. Posterior cephalids about 6-10 annuli posterior in relation to the anterior cephalids, approximately at the level of stylet knobs. Stylet cone usually 45-48 percent of total stylet length, knobs more or less rounded and variable in shape. Stylet length very stable. Stylet protractor muscles anteriorly attached, partly to the junction of the framework ribs and basal plate, partly they appear to join extension of the central cylinder. Dorsal cesophageal gland outlet close to knobs. Metacorporeal bulb muscular, with large thickenings of lumen walls. Glandular bulb offset from intestine, its length and shape appear variable and probably depend on the requirements for gland products at a given moment. Perhaps in actively feeding nematodes the secretions of the glands are pushed forward and expand the posterior part of the isthmus thus enlarging the size of the bulb. The granular contents of the dorsal gland, seen in some mounted specimens, supports this hypothesis. The length and the shape of the bulb should not be used for species differentiation.

Female reproductive system composed of vulval slit that is about a quarter of body circumference. Vagina short, with thin walls, perpendicular to body axis. Uterine sac spacious, PUS length about equal to the body width. Anteriorly some cells separate uterine sac from crustaformeria. The latter formed by four rows of cells, four cells in a row. Spermatheca as partly offset pouch, usually not much stretched when filled with sperm. Gonad may extend anteriorly to the isthmus, but usually shorter. Tail elongate but never filiform, tail tip pointed or rounded. The state of the latter character may result from the loss of the last one or two annuli. Specimens with an almost broken and only slightly attached last annulus were observed. The tail tip shape should not be used as a specific character.