NOTES ON SOME PLANT-PARASITIC NEMATODES FROM SOUTH AMERICA

BY

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Plant-parasitic nematodes were studied from several localities in Chile, Brazil and French Guiana. Measurements, new information on the morphology and illustrations consisting of drawings and SEM photos are given for Criconema annuliferum, Criconema orellanai and Hoplolaimus diadematus. Tylenchorhynchus queirozi and Xiphinema krugi are also recorded.

Keywords: Brazil, Chile, Criconema, French Guiana, Hoplolaimus, Nematoda, taxonomy.

Plant-parasitic nematodes were found in four soil samples from Chile and Brazil, collected by one of us (J.H.) during a recent visit to South America. Unfortunately, scarcity of specimens of several species precluded definite identification, but those species of which sufficient specimens in good condition were available, are discussed in more detail in this paper. Specimens of Hoplolaimus diadematus from French Guiana were received through the courtesy of Dr. P. Quénehervé of ORSTOM-INRA, Martinique.

MATERIALS AND METHODS

Soil samples were brought from South America to the Plant Protection Research Institute, Pretoria (PPRI) where nematodes were extracted using the rapid centrifugal-flotation technique of Jenkins (1964), killed in water by the gradual application of heat, preserved in TAF and mounted in anhydrous glycerine using the slow method of Hooper & Evans (1993). For scanning electron microscopy, specimens preserved in TAF were used after dehydration in increasing concentrations of amyl acetate. Following conventional critical point drying and gold-palladium coating (25 nm), specimens were viewed with a JEOL JSM-35 stereoscan microscope at 15 kV.
NOTES ON SPECIES FOUND

Tylenchorhynchus queirozi Monteiro & Lordello, 1976

This species was originally described from soil at the airport at Maraba, Para, Brazil and subsequently redescribed by Rashid et al. (1987) from cacao, Bahia, Brazil and from Gladiolus, Malta (Larizza & Lamberti, 1995). Only two poorly preserved specimens were now found.

Habitat. Collected at the Aranas Lodge about 100 km south of Pconé, Pantanal, Brazil from saturated soil under grasses where floodwater had receded.

Xiphinema krugi Lordello, 1955

This species was originally described from native forest trees, Piracicaba, State of S. Paulo, Brazil. It is further known from Colombia (Volcy, 1989), Surinam (Loof & Maas, 1970; Luc & Hunt, 1978), Paraguay (Luc & Hunt, 1978), Martinique (Luc & Coomans, 1992), USA (Tarjan, 1974; Frederick & Tarjan, 1974), Mauritius (Williams, 1959; Cohn & Sher, 1972), Sri Lanka (Cohn & Sher, 1972; Southey & Luc, 1973; Luc & Hunt, 1978), Hawaii (Cohn & Sher, 1972), Senegal (Luc & Hunt, 1978), Uruguay (s’Jacob & Loof, 1995), western Malaysia (Razak & Loof, pers. comm.) and South Africa (Heyns, 1977).

Criconema annuliferum (de Man, 1921) Micoletzky, 1925

(Figs 1A-E, 2E-G, Table I)

This species was originally described from Holland and later reported from various European countries. This report from Chile is the first record of the species from outside Europe.

The morphometrics of the present specimens agree well with those of previous descriptions as can be seen in Table I. However, a few small differences were noticed when compared with the Spanish specimens described by Gomez-Barcina et al. (1989), viz. tail shorter and more conoid-rounded, 21 (15-25) μm vs 32 (22-47) μm, resulting in a larger c-value 27 (22-38) vs 16 (11-23). Gomez-Barcina et al. (1991) gave the diameter of the first annulus as 15-18 μm compared with 22-26 μm in the present specimens and 15-25 μm of Gomez-Barcina et al. (1989). Our specimens were also compared with a Dutch specimen in the collection of the Plant Protection Research Institute, and were found to agree quite well.

Habitat. Collected from indigenous vegetation along the trail between the Peulla Hotel, Peulla, Chile and the small waterfall south of the hotel.