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An updated and annotated checklist of the Dolichodoridae (Nematoda: Tylenchoidea) of Iran

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Abstract

The list of plant parasitic nematodes of the family Dolichodoridae, known from Iran, is updated. 81 species belonging to 13 genera and three subfamilies are included in the list. Data for 29 species are added, of which seven species viz. *Neodolichorhynchus phaseoli*, *Pratylenchoides crenicauda*, *P. erzurumensis, P. utahensis*, *Scutylenchus paniculoides*, *Trophurus impar* and *Tylenchorhynchus variannus* are new records for the Iranian nematofauna. The list of species, further information on their morphometrics, references, referring to full or partial descriptions, associated plants, geographical distribution and some taxonomic remarks are provided. More detailed studies on some doubtful populations are proposed. The information on the taxonomic position of species in different classification schemes, as well as, the tendency of the species to certain climatic condition or ecological niche are provided. Challenges on the reliable identification of this group of nematodes in Iran are discussed and finally, suggestions were proposed for future studies.

Key words: taxonomy, distribution, nematofauna, new records, description, morphometrics

Introduction

The family Dolichodoridae Chitwood in Chitwood & Chitwood, 1950 includes eight subfamilies, 24 genera and over 400 species worldwide (Decraemer & Hunt, 2006; Geraert, 2011; Sturhan, 2012). So far, several species of the genera *Amplimerlinius* Siddiqi, 1976, *Geocenamus* Thorne & Malek, 1968, *Merlinius* Siddiqi, 1970, *Nagelus* Thorne & Malek, 1968, *Paramerlinius* Sturhan, 2012 and *Scutylenchus* Jairajpuri, 1971 of the subfamily Merliniinae Siddiqi, 1971, *Neodolichorhynchus* Jairajpuri & Hunt, 1984, *Paratrophurus* Arias, 1970, *Quinisulcius* Siddiqi, 1971, *Trichotylenchus* Whitehead, 1960, *Trophurus* Loof, 1956 and *Tylenchorhynchus* Cobb, 1913 of the subfamily Telotylenchinae Siddiqi, 1960, and *Pratylenchoides* Winslow, 1958 of the subfamily Pratylenchoidinae Sturhan, 2012 have been reported from Iran.

There are some comprehensive systematic reviews on this group of nematodes (Allen, 1955; Hooper, 1978; Brzeski, 1998; Siddiqi, 2000; Andrássy, 2007; Geraert, 2011). However, the available literature on this group of nematodes in Iran comprises several faunistic surveys (documented in Barooti, 1987, Barooti & Alavi, 1995, and Ghaderi *et al.,* 2012b), a study on intraspecific variability (Pourjam *et al.,* 2000), some data on biology (Hashemi & Karegar, 2012a,b; Hashemi *et at.*, 2012; Majd Taheri *et al.,* 2012) and a few attempts for designing paper- or web-based identification keys (Mojtahedi *et al.,* 1983; Chenari Bouket & Niknam, 2012). The first and indeed only comprehensive taxonomic study on this family in Iran (Mojtahedi *et al.,* 1983) identified 31 species, including 25 new records, from different regions of the country. In the present paper, all previously published works are documented and also some new data and records of our unpublished populations are added. As a basis for the present study, the classification presented by Geraert (2011) is used, but taxonomic comments of Sturhan (2012) are also considered in the paper.

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morphological characters and the range of intraspecific variations are needed, if possible accompanied by biological surveys, SEM examinations or molecular analysis. Considering the most important characters for species identification, making diagnoses on the more individuals (at least 10 specimens), detailed comparisons with populations elsewhere and with the closely related species and finally, using the most updated keys (e.g., Geraert, 2011) may be help to more reliable and accurate identification of this group of plant parasitic nematodes. The depositing microscopic slides in a national nematology collection may be a suggestive approach to allow accessibility to the specimens and the possibility of correcting misidentifications, or even of recognizing undescribed taxa.

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