

Overview of the nematode fauna of Pakistan

F. Shahina[†], K. Nasira, K. Firoza and Y. I. Erum

National Nematological Research Centre, University of Karachi, Karachi-75270, Pakistan

[†]Corresponding author: shahinafayyaz@gmail.com

Abstract

This research publication provides a comprehensive indexed resource of plant parasitic, soil, marine and entomopathogenic nematode species described and reported during last sixty nine years (1952-2019) from Pakistan. The information compiled in this paper came gradually from many and diverse sources. It is the product of the efforts of several authors who contributed to gather knowledge on the biological diversity through systematics and faunistic studies. Information published in different scientific journals, newsletters, reports, book chapters, books booklets and proceedings have been considered. Those records contained in abstracts of conferences/ congresses, doctoral theses were not included. A total of 749 species belonging to 261 genera of 81 subfamilies, 85 families of 24 Superfamilies, 19 suborders of 12 orders have been described and reported so far from Pakistan in which 232 species are new to science. The paper includes i) new nematode species described from Pakistan in chronological order; ii) species of plant parasitic nematodes; iii) species of free-living soil nematodes; iv) species of marine nematodes; v) species of entomopathogenic nematodes all in alphabetical order and vi) taxonomic position of the all nematode species of Pakistan.

Keywords: Nematode fauna, systematics, new and known species, Pakistan.

Nematology is one of the most dynamic and exciting discipline in the agricultural science. The development of nematology is largely attributed to the discovery of the importance of nematodes in agricultural ecosystems and their impact on society. The economic stability of the country depends upon the performance of the agriculture sectors, it is therefore extremely important that the agriculture sector perform its role of sustenance of national economy. In an agriculture country like Pakistan, the plant parasitic nematode besides other pest and disease causing organisms, have been recognized as one of the greatest threat to crop production. Nematodes are one of the most abundant, highly diversified and ecologically significant groups with wide host range and wide geographical distribution. They may be free-living in marine and fresh water, soil inhabiting and as parasites on all kinds of plants.

Inspite of these, the subject of nematology remained neglected and given very little importance by the academic institutions and agriculturists of the country.

The present work, in line with the previous nematode faunal publication (Maqbool & Shahina, 2001), bringing up-to-date information on species of all nematode groups recorded in the country, using the available literature; internet and other diverse sources.

According to the latest information available the 232 new nematode species were recorded in Pakistan so far. The paper provides comprehensive lists of 749 species of all nematode groups belonging to 261 genera, 85 families and 12 orders (Fig. 1), reported during the last six decades since the first contribution of Sattar & Hafiz (1952) who reported *Anguina tritici* from D.G. Khan, Muzaffargarh and Jhang areas of Pakistan. The taxonomic positions of species also incorporated regarding the nematode fauna of Pakistan.

Materials and Methods

Classification of plant parasitic, soil, marine and entomopathogenic nematodes was based on the systematics provided by various groups experts. Siddiqi (2000) book was followed for the higher categories and synonymy for the order Tylenchida Thorne, 1949, but some other nomenclatorial changes have been introduced; in general, Aphelenchida Siddiqi, 1980 systematics was followed, given by Hunt (1993). Jairajpuri & Ahmad (1992), classification for the order Dorylaimida Pearse, 1942 was followed. In general, the nomenclature provided by Ahmed & Jairajpuri, (2010) for the taxa of Mononchida Jairajpuri, 1969, has been accepted for higher categories and synonyms in present details.

Andrassy's (2005; 2007) classification is followed in the higher categories for the taxa belonging to the order Rabditida Chitwood, 1933; Diplogastrida Maggenti, 1981; Triplonchida Cobb, 1920; Chromadorida Filipjev, 1929; Enoplida Filipjev, 1929; Monhysterida Filipjev, 1929 whereas Lorenzen (1981), Platt & Warwick (1983, 1988) and Somerfield *et al.*, 1998 contributions for the systematics of Enoplida, Filipjev, 1929; Chromadorida Filipjev, 1929; Monhysterida Filipjev, 1929; Araeolaimida De Coninck & Schuurmans-Stekhoven, 1933, Plectida Malakhov, 1982 was also considered but recent nomenclatorial changes were also introduced. In systematics and characterization of number of species and genera, Eyualem-Abebe *et al.*, (2006) was also taken under consideration.

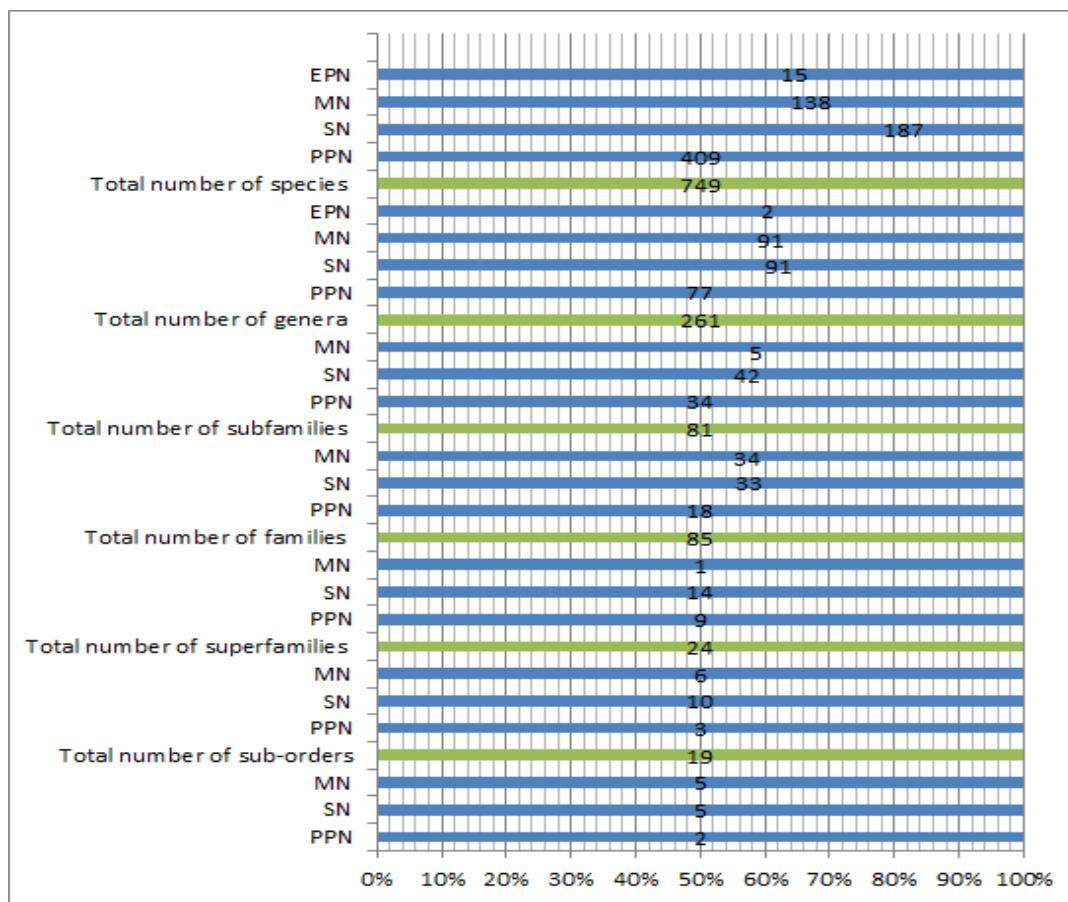
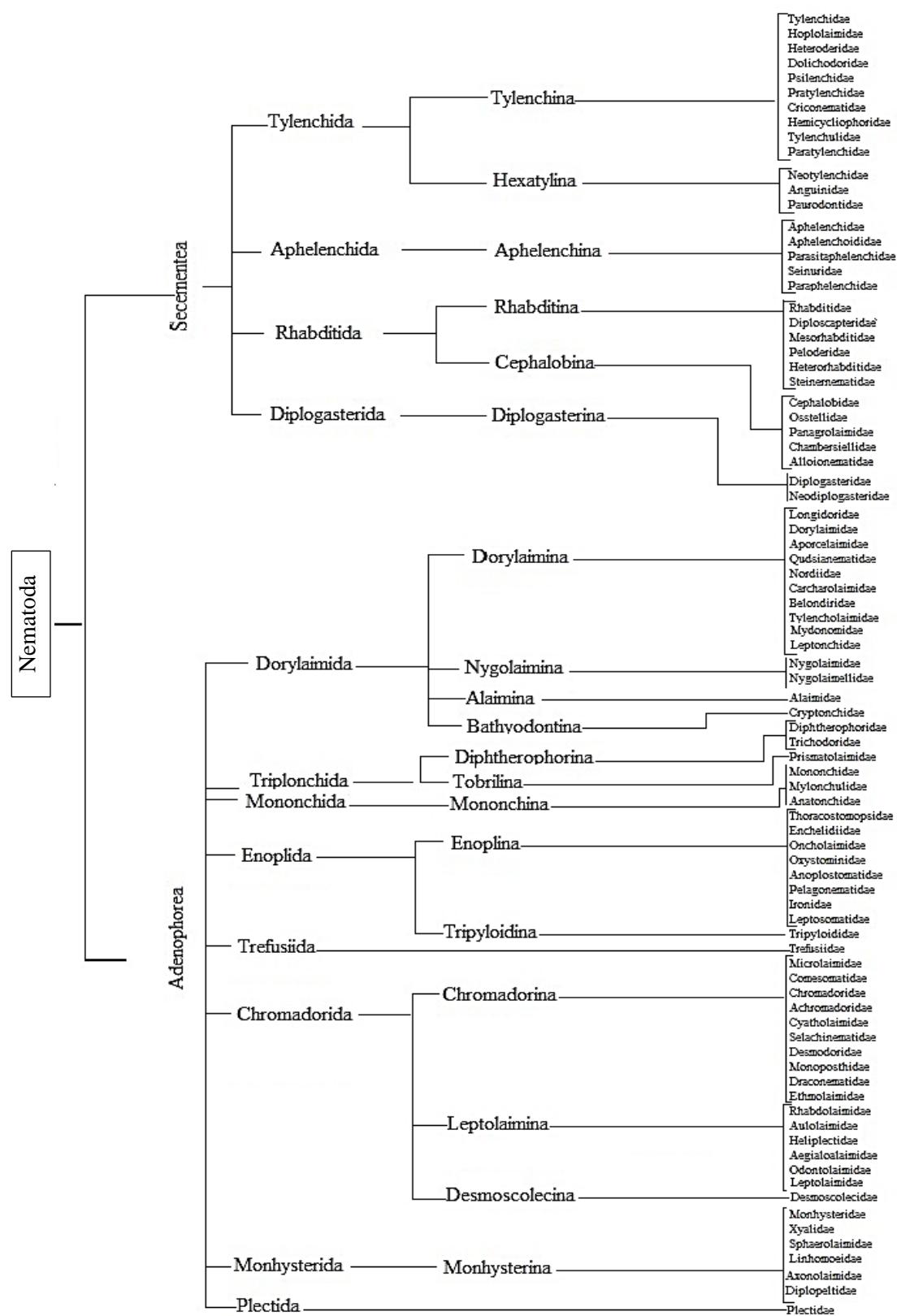


Fig.1. Graphical presentation of reported nematode fauna of Pakistan.



NEW NEMATODE SPECIES DESCRIBED FROM PAKISTAN

<i>Laptosomatum ranjhai</i>	Timm, 1960
<i>Aphelenchus sacchari</i>	(Akhter, 1962) Goodey & Hooper, 1965
<i>Cephalobus litoralis</i>	(Akhter, 1962) Andrassy, 1984
<i>Cinctonema papillata</i>	Timm, 1962
<i>Megadesmolaimus contortus</i>	Timm, 1962
<i>Metalinhomoeus karachiensis</i>	Timm, 1962
<i>Spirinia (perspiria) striaticaudata</i>	Timm, 1962
<i>Terschellingia lissa</i>	Timm, 1962
<i>Terschellingia longissimicaudata</i>	Timm, 1962
<i>Terschellingia magna</i>	Timm, 1962
<i>Trichodorus pakistanensis</i>	Siddiqi, 1962
<i>Paramonhystera (Paramonhystera) longicaudata</i>	Timm, 1963
<i>Paraphanolaimus granuliferus</i>	Timm, 1963
<i>Steineria simplex</i>	Timm, 1963
<i>Cobbia macrostoma</i>	Timm, 1963
<i>Ionema cobbi</i>	Timm, 1963
<i>Leptolaimus luridus</i>	Timm, 1963
<i>Monhystera karachiensis</i>	Timm, 1963
<i>Tylenchorhynchus trilineatus</i>	Timm, 1963
<i>Discolaimium pakistanicum</i>	Timm, 1963
<i>Boleodorus pakistanensis</i>	Siddiqi, 1963
<i>Dorylaimoides pakistanensis</i>	Siddiqi, 1963
<i>Axonchium oostenbrinki</i>	Khan & Ahmad, 1970
<i>Helicotylenchus lucernis</i>	Khan & Ahmad, 1970
<i>Criconemoides kamaliei</i>	Khan, 1971
<i>Mylonchulus rosensis</i>	Khan, 1975
<i>Timminema pakistanicum</i>	Khan, 1977
<i>Aporcelaimellus goldeni</i>	Khan & Fatima, 1980
<i>Quinisulcius solani</i>	Maqbool, 1982
<i>Pauromontella sohailai</i>	Maqbool, 1982
<i>Nothotylenchus goldeni</i>	Maqbool, 1982
<i>Boleodorus zaini</i>	Maqbool, 1982
<i>Hemicriconemoides ghaffari</i>	Maqbool, 1982
<i>Axodorylaimellus aghai</i>	Siddiqi, 1983
<i>Elongidorylaimellus lauceolatus</i>	Siddiqi, 1983
<i>Jamilius adenophorus</i>	Siddiqi, 1983
<i>Jamilius jamali</i>	Siddiqi, 1983
<i>Sindellus sindi</i>	Siddiqi, 1983
<i>Coslenchus tuberosus</i>	(Maqbool, 1983) Siddiqi, 1986
<i>Merlinius niazeae</i>	Maqbool, Fatima & Hashmi, 1983
<i>Aglenchus mardanensis</i>	Maqbool, Shahina & Zarina, 1984
<i>Basiroides sindhicus</i>	Maqbool, Fatima & Shahina, 1984
<i>Basiroides citri</i>	Maqbool, Fatima & Shahina, 1984
<i>Cephalenchus sacchari</i>	Maqbool, Fatima & Shahina, 1984
<i>Atetylenchus amiri</i>	(Maqbool & Shahina, 1984) Geraert & Raski, 1987

<i>Rotylenchus karachiensis</i>	(Maqbool & Ghazala, 1984) Fortuner, 1987
<i>Scutylenchus quettensis</i>	Maqbool, Ghazala & Fatima, 1984
<i>Dolichorhynchus tuberosus</i>	Maqbool, Ghazala & Fatima, 1984
<i>Malenchus labiatus</i>	Maqbool & Shahina, 1985
<i>Malenchus pyri</i>	Maqbool & Shahina, 1985
<i>Karachinema elongatum</i>	Maqbool & Shahina, 1985
<i>Ottolenchus azadkashmirensis</i>	Maqbool & Shahina, 1985
<i>Ottolenchus longicauda</i>	Maqbool & Shahina, 1985
<i>Pararotylenchus microstylus</i>	Maqbool, Ghazala, Fatima & Qasim, 1985
<i>Scutylenchus baluchiensis</i>	Maqbool, Ghazala, Fatima & Qasim, 1985
<i>Rotylenchus fragaricus</i>	Maqbool & Shahina, 1986
<i>Rotylenchus pakistanensis</i>	Maqbool & Shahina, 1986
<i>Rotylenchus alii</i>	Maqbool & Shahina, 1986
<i>Helicotylenchus obliquus</i>	Maqbool & Shahina, 1986
<i>Heterodera pakistanensis</i>	Maqbool & Shahina, 1986
<i>Boleodorus arachis</i>	Maqbool & Ghazala, 1986
<i>Cephalenchus longicaudatus</i>	Maqbool & Ghazala, 1986
<i>Aulosphora karachiensis</i>	Maqbool, Shahina & Zarina, 1986
<i>Hemicyclophora veechi</i>	Maqbool, Shahina & Zarina, 1986
<i>Mesodorylaimus mehraniensis</i>	Khan & Saeed, 1986
<i>Anatonchus valitangiensis</i>	Khan & Saeed, 1987
<i>Pakmylonchulus amurus</i>	Khan & Saeed, 1987
<i>Tylenchorhynchus quaidi</i>	Golden, Maqbool & Handoo, 1987
<i>Tylenchorhynchus tritici</i>	Golden, Maqbool & Handoo, 1987
<i>Nagelus saifulmulukensis</i>	Maqbool & Shahina, 1987
<i>Merlinius montanus</i>	Maqbool & Shahina, 1987
<i>Tylenchus skarduensis</i>	Maqbool & Shahina, 1987
<i>Tylenchus bhitai</i>	Maqbool & Shahina, 1987
<i>Tylenchus naranensis</i>	Maqbool, Zarina & Ghazala, 1987
<i>Heterodera bergeniae</i>	Maqbool & Shahina, 1988
<i>Neothada major</i>	Maqbool & Shahina, 1989
<i>Pratylenchoides maqsoodi</i>	Maqbool & Shahina, 1989
<i>Heterodera cynodontis</i>	Shahina & Maqbool, 1989
<i>Eudorylaimus andersoni</i>	Khan, 1989
<i>Aporcelaimellus sacchari</i>	Khan, 1989
<i>Hoplolaimus tabacum</i>	Firoza, Nasira & Maqbool, 1990
<i>Amplimerlinius parbati</i>	Zarina & Maqbool, 1990
<i>Neopsilenchus (Acusilenchus) bilineatus</i>	Shahina & Maqbool, 1990
<i>Neopsilenchus (Neopsilenchus) curvistylus</i>	Shahina & Maqbool, 1990
<i>Neopsilenchus (Neopsilenchus) minor</i>	Shahina & Maqbool, 1990
<i>Neopsilenchus (Neopsilenchus) peshawarensis</i>	Shahina & Maqbool, 1990
<i>Boleodorus azadkashmirensis</i>	Maqbool, Shahina & Firoza, 1990
<i>Willsonenma promissum</i>	Khan, Seema & Khan, 1990
<i>Ogma sadabhari</i>	Shahina & Maqbool, 1991
<i>Ogma multiannulata</i>	Shahina & Maqbool, 1991
<i>Ogma qamari</i>	Shahina & Maqbool, 1991
<i>Rotylenchus capsicumi</i>	Firoza & Maqbool, 1991

<i>Tylenchorhynchus swatiensis</i>	Nasira, Shahina & Maqbool, 1991
<i>Helicotylenchus verecundus</i>	Zarina & Maqbool, 1991
<i>Tylenchorhynchus rosei</i>	Zarina & Maqbool, 1991
<i>Tylenchus pakistanensis</i>	Farooq, Fatima & Khan, 1991
<i>Trichromadorita arinus</i>	Khan, 1991
<i>Xiphinema karachiense</i>	Nasira, Firoza & Maqbool, 1992
<i>Quinisulcius quaidi</i>	Zarina & Maqbool, 1992
<i>Deladenus pakistanensis</i>	Shahina & Maqbool, 1992
<i>Merlinius pistaciei</i>	Fatima & Farooq, 1992
<i>Merlinius pyri</i>	Fatima & Farooq, 1992
<i>Acrobeloides saeedi</i>	Siddiqi, Ley & Khan, 1992
<i>Aglenchus siddiqii</i>	Khan, Khan & Bilquees, 1992
<i>Rhabditis karachiensis</i>	Khan, Seema, Khan, Qamar & Anwarullah, 1992
<i>Criconemoides (Criconemoides) afghanicus</i>	Shahina & Maqbool, 1993
<i>Pakcriconemoides anastomoides</i>	(Maqbool & Shahina, 1985) Shahina & Maqbool, 1993
<i>Macroposthonia curvata alpina</i>	Shahina & Maqbool, 1993
<i>Gracilacus musae</i>	Shahina & Maqbool, 1993
<i>Helicotylenchus microtylus</i>	Firoza & Maqbool, 1993
<i>Helicotylenchus discocephalus</i>	Firoza & Maqbool, 1993
<i>Rotylenchus goldeni</i>	Firoza & Maqbool, 1993
<i>Paralongidorus lemoni</i>	Nasira, Shahina, Firoza & Maqbool, 1993
<i>Basiria bajorensis</i>	Khan & Bilquees, 1993
<i>Dentolaimoides papillifer</i>	Khan, 1994
<i>Paroriverutus timmi</i>	Khan, 1994
<i>Tylenchorhynchus tuberosus</i>	Zarina & Maqbool, 1994
<i>Filenchus sindhicus</i>	Shahina & Maqbool, 1994
<i>Paratrichodorus psidii</i>	Nasira & Maqbool, 1994
<i>Paratrichodorus faisalabadensis</i>	Nasira & Maqbool, 1994
<i>Xiphinema cynodontis</i>	Nasira & Maqbool, 1994
<i>Helicotylenchus meloni</i>	Firoza & Maqbool, 1994
<i>Helicotylenchus striatus</i>	Firoza & Maqbool, 1994
<i>Scutylenchus fici</i>	Farooq & Fatima, 1994
<i>Longidorus trapezoides</i>	Nasira & Maqbool, 1995
<i>Merlinius indicus</i>	Zarina & Maqbool, 1995
<i>Merlinius bilqueesae</i>	Khan & Khan, 1995
<i>Tylenchorhynchus gossypii</i>	Nasira & Maqbool, 1996
<i>Helicotylenchus lemoni</i>	Firoza & Maqbool, 1996
<i>Radopholus allius</i>	Shahina & Maqbool, 1996
<i>Radopholus brassicae</i>	Shahina & Maqbool, 1996
<i>Aulolaimus rashidae</i>	Shahina, Hunt & Siddiqi, 1996
<i>Discolaimus lahorensis</i>	Khan, 1998
<i>Xiphinema pakistanensis</i>	Nasira & Maqbool, 1998
<i>Pratylenchus portulacus</i>	Zarina & Maqbool, 1998
<i>Pratylenchus roseus</i>	Zarina & Maqbool, 1998
<i>Dolichorhynchus motiiae</i>	Zarina & Maqbool, 1998
<i>Solididens swatiensis</i>	Nasira, Shahina & Maqbool, 1999
<i>Enoplolaimus karachiensis</i>	Maqbool, Nasira & Turpeenniemi, 1999

<i>Microlaimus sonmianensis</i>	Nasira, Maqbool, Turpeenniemi & Zarina, 2000
<i>Arabanema pakistanensis</i>	Turpeenniemi, Nasira & Maqbool, 2001
<i>Desmodora (Pseudochromadora) cliftensis</i>	Turpeenniemi, Nasira & Maqbool, 2001
<i>Halichoanolaimus balochiensis</i>	Turpeenniemi, Nasira & Maqbool, 2001
<i>Odontophora hawskiensis</i>	Turpeenniemi, Nasira & Maqbool, 2001
<i>Ptycholaimellus sindhicus</i>	Turpeenniemi, Nasira & Maqbool, 2001
<i>Steinernema pakistanense</i>	Shahina, Anis, Reid, Rowe & Maqbool, 2001
<i>Plectus karachiensis</i>	Shahina, Tabassum & Maqbool, 2001
<i>Drilocephalobus alykhani</i>	Siddiqi, 2001
<i>Steinernema asiaticum</i>	Anis, Shahina, Reid & Rowe, 2002
<i>Halalaimus gidanensis</i>	Nasira & Turpeenniemi, 2002
<i>Trissonchulus lichenii</i>	Nasira & Turpeenniemi, 2002
<i>Oscheius maqbooli</i>	Tabassum & Shahina, 2002
<i>Cephalobus sacchari</i>	Shahina & Tabassum, 2002
<i>Gonionchus arabica</i>	Nasira & Turpeenniemi, 2003
<i>Ditylenchus bilqueese</i>	Khan, Batool & Khatoon, 2004
<i>Psilenchus khuzarensis</i>	Khan, Batool & Khatoon, 2004
<i>Tylenchorhynchus handooi</i>	Khan, 2004
<i>Bitylenchus maximus pakistanensis</i>	Zarina, Siddiqi & Shahina, 2004
<i>Tylenchorhynchus fatimae</i>	Khan, Saeed & Akhter, 2004
<i>Geomonhystera dubia</i>	Siddiqi & Shahina, 2004
<i>Geomonhystera karuni</i>	Siddiqi & Shahina, 2004
<i>Diodontolaimus karachiensis</i>	Nasira, Shahina & Kamran, 2005
<i>Longidorella subannulatum</i>	Tabassum, Shahina & Sidiqi, 2005
<i>Poronemella divulgata</i>	Tabassum, Shahina & Siddiqi, 2005
<i>Moshajia teres</i>	Tabassum, Shahina & Siddiqi, 2005
<i>Distolabrellus pakistanensis</i>	Tabassum, Shahina, Firoza & Siddiqi, 2005
<i>Nygolaimus gigantus</i>	Shahina, Erum & Siddiqi, 2005
<i>Nygolaimus neominimus</i>	Shahina, Erum & Siddiqi, 2005
<i>Discolaimium capitulum</i>	Shahina, Mussarat & Siddiqi, 2005
<i>Tylencholaimus cynodonti</i>	Nasira, Erum & Shahina, 2005
<i>Laimydorus wirisi</i>	Shahina, Tabassum & Nasira, 2006
<i>Thalassironus qatarense</i>	Nasira, Kamran, Shahina & Kazmi, 2006
<i>Moshajia qasmi</i>	Zarina & Shahina, 2007
<i>Marylynnia musharafii</i>	Nasira, Kamran & Shahina, 2007
<i>Paracanthonchus sandspitensis</i>	Nasira, Kamran & Shahina, 2007
<i>Tylenchorhynchus qasimii</i>	Mussarat, Handoo & Shahina, 2008
<i>Subanguina balochia</i>	Erum, Shahina & Siddiqi, 2008
<i>Discolaimus pakistanense</i>	Nasria, Shahina & Erum, 2008
<i>Oscheius andrassi</i>	Tabassum & Shahina, 2008
<i>Atetylenschus metaphorus</i>	Erum & Shahina, 2008
<i>Helicotylenchus handooi</i>	Khan, Ghazi & Soomro, 2008
<i>Microlaimus amphidius</i>	Kamran, Nasira & Shahina, 2009
<i>Microlaimus karachiensis</i>	Kamran, Nasira & Shahina, 2009
<i>Synonchium oblongus</i>	Kamran, Nasira & Shahina, 2009
<i>Synonchium marina</i>	Kamran, Nasira & Shahina, 2009
<i>Synonchium pakistanense</i>	Kamran, Nasira & Shahina, 2009

<i>Paurodontella balochistanica</i>	Handoo, Iqbal, Nasira & Shahina, 2010
<i>Paurodontella myceliophaga</i>	Handoo, Iqbal, Nasira & Shahina, 2010
<i>Longidorella (Saevadorella) tharensis</i>	Nasira, Shahina & Firoza, 2010
<i>Halaphanolaimus marinus</i>	Kamran, Nasira & Shahina, 2010
<i>Oscheius siddiqi</i>	Tabassum & Shahina, 2010
<i>Oscheius niazii</i>	Tabassum & Shahina, 2010
<i>Neodolichorhynchus (Mulkorhynchus) indicus</i>	Erum, Mussarat & Shahina, 2011
<i>Onyx balochiensis</i>	Nasira, Rehmat & Shahina, 2011
<i>Deladenus cocophilus</i>	Nasira, Shahina & Firoza, 2013
<i>Steinernema maqboolii</i>	Shahina, Tabassum, Mehreen & Salma, 2013
<i>Heliplectus gracilis</i>	Shahina, Siddiqi & Nasira, 2014
<i>Heliplectus minor</i>	Shahina, Siddiqi & Nasira, 2014
<i>Heliplectus monodelphis</i>	Shahina, Siddiqi & Nasira, 2014
<i>Heliplectus pakistanensis</i>	Shahina, Siddiqi & Nasira, 2014
<i>Heliplectus paradorsalis</i>	Shahina, Siddiqi & Nasira, 2014
<i>Heliplectus robustus</i>	Shahina, Siddiqi & Nasira, 2014
<i>Bathyeurystomina minima</i>	Nasira, Shahina & Shamim, 2014
<i>Belbolla longispiculata</i>	Nasira, Shahina & Shamim, 2014
<i>Steinernema bifurcatum</i>	Shahina, Yan, Qui, Han, Mehreen, Tabassum & Salma, 2014
<i>Bitylenchus capsicum</i>	Akhter & Zarina, 2014
<i>Metoncholaimus siddiqii</i>	Shahina, Nasira & Shamim, 2015
<i>Meloidogyne pakistanica</i>	Shahina, Nasira, Salma, Mehreen & Bhatti, 2015
<i>Steinernema balochiense</i>	Shahina, Tabassum, Shaukat, Solangi, Mehreen & Salma, 2015
<i>Helicotylenchus siddiqii</i>	Zarina & Akhter, 2016
<i>Paratylenchus (Paratylenchus) karachiensis</i>	Zarina & Akhter, 2016
<i>Oscheius citri</i>	Tabassum, Shahina, Nasira & Erum, 2016
<i>Oscheius sacchari</i>	Tabassum, Shahina, Nasira & Erum, 2016
<i>Oscheius cobbi</i>	Tabassum, Shahina, Nasira & Erum, 2016
<i>Oscheius cynodonti</i>	Tabassum, Shahina, Nasira & Erum, 2016
<i>Oscheius esculentus</i>	Tabassum, Shahina, Nasira & Erum, 2016
<i>Oscheius punctate</i>	Tabassum, Shahina, Nasira & Erum, 2016
<i>Heterorhabditis pakistanense</i>	Shahina, Tabassum, Salma, Mehreen & Knoetze, 2016
<i>Aphelenchiodes turnip</i>	Israr, Shahina, Nasira, 2017
<i>Merlinius nagerensis</i>	Sagir & Erum, 2017
<i>Filenchus maqbooli</i>	Aatika, Nasira & Shahina, 2017
<i>Paradorylaimus dorsocaudali</i>	Nasira, Israr & Shahnia, 2017
<i>Oncholaimus paraoxyuris</i>	Salma, Nasira, Saima & Shahina, 2017
<i>Theristus cylindricus</i>	Salma, Nasira, Saima & Shahina, 2017
<i>Theristus (Penzancia) karachiense</i>	Salma, Nasira, Saima & Shahina, 2017
<i>Metoncholaimus medispiculatum</i>	Salma, Nasira, Saima & Shahina, 2017
<i>Aulolaimus mubarakvilli</i>	Salma, Saima, Nasira & Shahina, 2018
<i>Oscheius karachiensis</i>	Nasir & Tabassum, 2018
<i>Acrobeloides gossypii</i>	Ashfaque, Shahina & Nasira, 2019
<i>Amphibelondira sindhiclus</i>	Ashfaque, Nasira & Shahina, 2019
<i>Paratylenchus manilkarii</i>	Erum, Nasir, Nasira & Shahina, 2019
<i>Paratylenchus sindhiclus</i>	Erum, Nasir, Nasira & Shahina, 2019

SPECIES OF PLANT PARASITIC NEMATODES

- Aglenchus agricola* (de Man, 1884) Meyl, 1961
A. mardanensis Maqbool, Shahina & Zarina, 1984
A. siddiqi Khan, Khan & Bilquees, 1992
Amplimerlinius parbati Zarina & Maqbool, 1990
Anguina tritici (Steinbuch, 1799) Filipjev, 1936
Aphelenchoides aligarhiensis Siddiqi, Hussain & Khan, 1967
A. astero caudatus Das, 1960
A. besseyi Christie, 1942
A. bicaudatus (Imamura, 1931) Filipjev & Schuurmans Stekhoven, 1941
A. blastophthorus Franklin, 1952
A. caprifici (Gasparrini, 1864) Filipjev, 1934
A. dactylocercus Hooper, 1958
A. goodeyi Siddiqi & Franklin, 1967
A. helicosoma Maslen, 1979
A. involutus Minegawa, 1992
A. parietinus (Bastian, 1865) Steiner, 1932
A. richardsoni Grewal, Siddiqi & Atkey, 1992
A. ritzemabosi (Schwartz, 1911) Steiner, 1932
A. rutgersi Hooper & Myers, 1971
A. sacchari Hooper, 1958
A. siddiqii Fortunner, 1970
A. turnipi Israr, Shahina & Nasira, 2017
A. unisexus Jain and Singh, 1984
A. winchesi Paesler, 1957
Aphelenchus avenae Bastian, 1865
A. eremitus Thorne, 1961
A. isomerus Anderson & Hooper, 1980
A. sacchari (Akhtar, 1962) Goodey & Hooper, 1965
Atetylenchus amiri (Maqbool & Shahina 1984) Geraert & Raski, 1987
A. metoporus Erum & Shahina, 2008
Aulosphora karachiensis Maqbool, Shahina & Zarina, 1986
A. penetrans (Thorne, 1955) Siddiqi, 1980
Basiria bajorensis Khan & Bilquees, 1993
B. graminophila Siddiqi, 1959
B. incita Szczygiel, 1970
B. ritteri (Baqri & Jairajpuri, 1969) Bernard, 1980
Basiriodies citri Maqbool, Fatima & Shahina, 1984
B. sindicus Maqbool, Fatima & Shahina, 1984
Belonolaimus gracilis Steiner, 1949
B. longicaudatus Rau, 1958
Bytylenchus brevilineatus (Williams, 1960) Siddiqi, 1986
B. canalis (Thorne & Malek, 1968) Siddiqi, 1986
B. capsicumi Akhter & Zarina, 2014
B. clavicaudatus (Seinhorst, 1963) Siddiqi, 1986
B. goffarti (Sturhan, 1966) Siddiqi, 1986
B. maximus maximus (Allen, 1955) Siddiqi, 1986

- B. maximus pakistanensis* Zarina, Siddiqi & Shahina, 2004
B. parvus (Allen, 1955) Siddiqi, 1986
B. vulgaris (Upadhyay, Swarup & Sethi, 1972) Siddiqi, 1986
Boleodorus acutus Thorne & Malek, 1968
B. arachis Maqbool & Ghazala, 1986
B. azadkashmirensis Maqbool, Shahina & Firoza, 1990
B. neosimilis Geraert, 1971
B. pakistanensis Siddiqi, 1963
B. rafiqi Hussain & Khan, 1965
B. thylactus Thorne, 1941
B. volutus Lima & Siddiqi, 1963
B. zaini Maqbool, 1982
Cephalenchus longicaudatus Maqbool & Ghazala, 1986
C. sacchari Maqbool, Fatima & Shahina, 1984
Coslenchus areolatus (Egunjobi, 1967) Siddiqi, 1978
C. costatus (de Man, 1921) Siddiqi, 1978
C. tuberosus (Maqbool, 1983) Siddiqi, 1986
Criconema (Nothocriconemella) mutabile (Taylor, 1936) Raski & Luc, 1985
Criconemoides (Criconemoides) afghanicus Shahina & Maqbool, 1993
C. (C.) bakeri Wu, 1965
C. (C.) brevistylus Singh & Khera, 1976
C. (C.) curvatus Raski, 1952
C. (C.) kamaliei Khan, 1971
C. (C.) onoensis Luc, 1959
C. (C.) parvulus Siddiqi, 1961
C. (C.) pruni (Siddiqi, 1961) Raski & Golden, 1966
C. (C.) sphaerocephalus Taylor, 1936
C. (C.) xenoplax Raski, 1952
Deladenus cocophilus Nasira, Shahina & Firoza, 2013
D. imperialis Bedding, 1974
D. pakistanensis Shahina & Maqbool, 1992
Ditylenchus anchilisposomus (Tarjan, 1958) Fortuner, 1982
D. angustus (Butler, 1913) Filipjev, 1936
D. bilqueese Khan, Batool & Khan, 2004
D. clarus Thorne & Malek, 1968
D. destructor Thorne, 1945
D. dipsaci (Kuhn, 1857) Filipjev, 1936
D. emus Khan, Chawla & Prasad, 1969
D. geraerti (Paramonov, 1970) Bello & Geraert, 1972
D. kheirii Fortuner & Maggenti, 1987
D. medicaginis Wasilewska, 1965
D. myceliophagus Goodey, 1958
Dolichorhynchus motiaii Zarina & Maqbool, 1998
D. phaseoli (Sethi & Swarup, 1968) Mulk & Jairajpuri, 1974
D. tuberosus Maqbool, Ghazala & Fatima, 1984
Duotylenchus bilineatus Saha & Khan, 1982
Eutylenchus spp.
Filenchus afghanicus (Khan & Khan, 1978) Siddiqi, 1986

- F. cylindricus* (Thorne & Malik, 1968) Niblack & Bernard, 1985
F. ditissimus (Brzeski, 1963) Siddiqi, 1986
F. filiformis (Butschli, 1873) Meyl, 1961
F. maqbooli Aatika, Nasira & Shahina, 2017
F. microdorus Chawla, Prasad, Khan & Nand, 1969
F. parvissimus (Thorne & Malek, 1968) Siddiqi, 1986
F. sheri (Khan & Khan, 1978) Siddiqi, 1986
F. sindhicus Shahina & Maqbool, 1994
F. vulgaris (Brzeski, 1963) Lownsbery & Lownsbery, 1985
Fergusobia indica (Jairajpuri, 1962) Siddiqi, 1986
Globodera pallida (Stone, 1973) Behrens, 1975
G. rostochiensis (Wollenweber, 1923) Skarbilovich, 1959
G. tabacum tabacum (Lownsbery & Lownsbery, 1954) Skarbilovich, 1959
Gracilacus musae Shahina & Maqbool, 1993
Helicotylenchus abuharazi Zeidan & Geraert, 1990
H. abunaamai Siddiqi, 1972
H. arachisi Mulk & Jairajpuri, 1975
H. californicus Sher, 1966
H. canadensis Waseem, 1961
H. cavenessi Sher, 1966
H. certus Eroshenko & Nguen Vu Thanh, 1981
H. conicephalus Siddiqi, 1972
H. crenacauda Sher, 1966
H. digonicus Perry in Perry, Darling & Thorne, 1959
H. dihystera (Cobb, 1893) Sher, 1961
H. discocephalus Firoza & Maqbool, 1993
H. egyptiensis Tarjan, 1964
H. erythrinae (Zimmermann, 1904) Golden, 1956
H. exallus Sher, 1966
H. falcatus Eroshenko & Nguen Vu Thanh, 1981
H. goodi Tikyani, Khera & Bhatnagar, 1969
H. gulabi Jain, Siddiqui & Aruna Parihar, 2002
H. handooi Khan, Ghazi & Soomro, 2008
H. indicus Siddiqi, 1963
H. jasminii Jain, Siddiqi & Aruna Parihar, 2000
H. lemoni Firoza & Maqbool, 1996
H. lucernis Khan & Ahmad, 1970
H. macronatus Mulk & Jairajpuri, 1975
H. martini Sher, 1966
H. meloni Firoza & Maqbool, 1994
H. microcephalus Sher, 1966
H. microdorus Prasad, Khan & Chawla, 1965
H. microlobus Perry in Perry, Darling & Thorne, 1959
H. microtylus Firoza & Maqbool, 1993
H. multicinctus (Cobb, 1893) Golden, 1956
H. obliquus Maqbool & Shahina, 1986
H. oscephalus Anderson, 1979
H. platyurus Perry in Perry, Darling & Thorne, 1959

- H. pseudorobustus* (Steiner, 1914) Golden, 1956
H. seshadrii Singh & Khera, 1980
H. siddiqi Zarina & Akhter, 2016
H. striatus Firoza & Maqbool, 1994
H. thornei Roman, 1965
H. urobeles Anderson, 1978
H. verecundus Zarina & Maqbool, 1991
H. wajihii Sultan, 1981
H. willmottae Siddiqi, 1972
Hemicriconemoides brachyurus (Loos, 1949) Chitwood & Birchfield, 1959
H. cocophilus (Loos, 1949) Chitwood & Birchfield, 1957
H. communis Edward & Misra, 1964
H. gaddi (Loos, 1949) Chitwood & Birchfield, 1957
H. ghaffari Maqbool, 1982
H. mangiferae Siddiqi, 1961
H. strictathecatus Esser, 1960
Hemicycliophora gracilis Thorne, 1955
H. veechi Maqbool, Shahina & Zarina, 1986
Heterodera avenae Wollenweber, 1924
H. bergeniae Maqbool & Shahina, 1988
H. cajani Koshy, 1967
H. cruciferae Franklin, 1945
H. cynodontis Shahina & Maqbool, 1989
H. fici Kirjanova, 1954
H. mani Mathews, 1971
H. mothi Khan & Husain, 1965
H. oryzae Luc & Berdon Brizuela, 1961
H. pakistanensis Maqbool & Shahina, 1986
H. sacchari Luc & Merny, 1963
H. schachtii Schmidt, 1871
H. zae Koshy, Swarup & Sethi, 1971
Hirschmanniella gracilis (de Man, 1880) Luc & Goodey, 1964
H. magna Siddiqi, 1966
H. mexicana (Chitwood, 1951) Sher, 1968
H. mucronata (Das, 1960) Luc & Goodey, 1964
H. oryzae (Van Breda de Haan, 1902) Khan, Siddiqi, Khan, Hussain & Saxena, 1964
H. spinicaudata (Schuurmans Stekhoven, 1944) Luc & Goodey, 1964
Hoplolaimus aegypti Shafiee & Koura, 1969
H. californicus Sher, 1963
H. columbus Sher, 1963
H. dimorphicus Mulk & Jairajpuri, 1976
H. dubius Chaturvedi & Khera, 1979
H. galeatus (Cobb, 1913) Thorne, 1935
H. indicus Sher, 1963
H. pararobustus (Schuurmans Stekhoven & Teunissen, 1938) Sher, 1963
H. seinhorsti Luc, 1958
H. seshadrii Mulk & Jairajpuri, 1976
H. stephanus Sher, 1963

- H. tabacum* Firoza, Nasira & Maqbool, 1990
H. tylenchiformis Daday, 1905
Irantylenchus clavidorus Kheiri, 1972
Karachinema elongatum Maqbool & Shahina, 1985
Longidorus africanus Merny, 1966
L. elongatus (de Man, 1876) Thorne & Swanger, 1936
L. pisi Edward, Misra & Singh, 1964
L. trapezoides Nasira & Maqbool, 1995
Macroposthonia coomansi De Grisse, 1967
M. curvata alpina Shahina & Maqbool, 1993
Malenchus andrassyi Merny, 1970
M. exiguum (Massey, 1969) Andrassy, 1980
M. fusiformis (Thorne & Malek, 1968) Siddiqi, 1979
M. labiatus Maqbool & Shahina, 1985
M. nanellus Siddiqi, 1979
M. platycephalus (Thorne & Malek, 1968) Andrassy, 1981
M. pyri Maqbool & Shahina, 1985
Meloidogyne arenaria (Neal, 1889) Chitwood, 1949
M. graminicola Golden & Birchfield, 1965,
M. hapla Chitwood, 1949
M. incognita (Kofoid & White, 1919) Chitwood, 1949
M. javanica (Treub, 1885) Chitwood, 1949
M. pakistanica Shahina, Nasira, Salma, Mehreen & Bhatti, 2015
Merlinius adakensis Bernard, 1984
M. alboranensis (Tobar-Jimenez, 1970) Tarjan, 1973
M. bavaricus (Sturhan, 1966) Siddiqi, 1970
M. bilqeessae Khan & Khan, 1995
M. brevidens (Allen, 1955) Siddiqi, 1970
M. indicus Zarina & Maqbool, 1995
M. microdorus (Geraert, 1966) Siddiqi, 1970
M. montanus Maqbool & Shahina, 1987
M. nagerensis Sagir & Erum, 2017
M. nanus (Allen, 1955) Siddiqi, 1970
M. niazae Maqbool, Fatima & Hashmi, 1983
M. nothus (Allen, 1955) Siddiqi, 1980
M. pistaciae Fatima & Farooq, 1992
M. pseudobavaricus Saltukoglu, Geraert & Coomans, 1976
M. pyri Fatima & Farooq, 1992
Nagelus saifulmulukensis Maqbool & Shahina, 1987
N. varians (Thorne & Malek, 1968) Siddiqi, 1986
Neodolichorhynchus (Mulkorhynchus) indicus Erum, Mussarat & Shahina, 2011
Neopsilenchus (Acusilenchus) bilineatus Shahina & Maqbool, 1990
N. (Neopsilenchus) curvistylus Shahina & Maqbool, 1990
N. (Neopsilenchus) minor (Geraert, 1968) Shahina & Maqbool, 1990
N. (Neopsilenchus) peshawarensis Shahina & Maqbool, 1990
Neothada major Maqbool & Shahina, 1989
Neotylenchus spp.
Nothotylenchus basiri Khan, 1965

- N. goldeni* Maqbool, 1982
Ogma multiannulata Shahina & Maqbool, 1991
O. qamari Shahina & Maqbool, 1991
O. sadabhari Shahina & Maqbool, 1991
Ottolenchus azadkashmirensis Maqbool & Shahina, 1985
O. facultativus (Szczygiel, 1970) Brzeski, 1982
O. longicauda Maqbool & Shahina, 1985
Pakcriconemoides anastomoides (Maqbool & Shahina, 1985) Shahina & Maqbool, 1993
Paralongidorus beryllus Siddiqi & Hussain, 1965
P. citri (Siddiqi, 1959) Siddiqi, Hooper & Khan, 1963
P. lemoni Nasira, Shahina, Firoza & Maqbool, 1993
P. major Verma, 1973
P. xiphinemoides Heyns, 1965
Paraphelenchus litoralis Akhtar, 1962
P. sacchari Hussain & Khan, 1967
Paraphelenchus spp.
Pararotylenchus microstylus Maqbool, Ghazala, Fatima & Qasim, 1985
Paratrichodorus faisalabadensis Nasira & Maqbool, 1994
P. minor (Colbran, 1956) Siddiqi, 1974
P. mirzai (Siddiqi, 1960) Siddiqi, 1974
P. psidii Nasira & Maqbool, 1994
P. renifer Siddiqi, 1974
Paratrophurus anomalus Kleynhans & Heyns, 1983
Paratylenchus hamatus Thorne & Allen, 1950
P. holdemani Raski, 1975
P. italiensis Raski, 1975
P. manilkarii Erum, Nasir, Nasira & Shahina, 2019
P. nainianus Edward & Misra, 1963
P. nanus Cobb, 1923
P. projectus Jenkins, 1956
P. salubris Raski, 1975
P. sindhicus Erum, Nasir, Nasira & Shahina, 2019
P. karachiensis Zarina & Akhter, 2016
P. tateae Wu & Townshend, 1973
Paurodontella balochistanica Handoo, Erum, Nasira & Shahina, 2010
P. myceliophaga Handoo, Erum, Nasira & Shahina, 2010
P. sohailai Maqbool, 1982
Paurodontus similis Siddiqi, 1961
Pratylenchoides maqsoodi Maqbool & Shahina, 1989
Pratylenchus allenii Ferris, 1961
P. brachyurus (Godfrey, 1929) Filipjev & Schuurmans Stekhoven, 1941
P. coffeae (Zimmermann, 1898) Filipjev & Schuurmans Stekhoven, 1941
P. crenatus Loof, 1960
P. delatterei (Luc, 1958) Handoo & Golden, 1989
P. flakkensis Seinhorst, 1968
P. goodeyi Sher & Allen, 1953
P. hexincisus Taylor & Jenkins, 1957
P. kralli Ryss, 1982

- P. neglectus* (Rensch, 1924) Filipjev & Schuurmans Stekhoven, 1941
P. penetrans (Cobb, 1917) Filipjev & Schuurma Stekhoven, 1941
P. portulacus Zarina & Maqbool, 1998
P. pratensis (de Man, 1880) Filipjev, 1936
P. pseudofallax Café-Filo & Huang, 1989
P. pseudopratensis Seinhorst, 1968
P. roseus Zarina & Maqbool, 1998
P. sacchari (Soltwedel, 1888) Filipjev, 1936
P. scribneri Steiner in Sherbakoff & Stanley, 1943
P. sefaensis Fortuner, 1973
P. similis Khan & Singh, 1975
P. sudanensis Loof & Yassin, 1971
P. thornei Sher & Allen, 1953
P. vulnus Allen & Jensen, 1951
P. zae Graham, 1951
Psilenchus aestuarius Andrassy, 1962
P. hilarulus de Man, 1921
P. hilarus Siddiqi, 1963
P. iranicus Kheiri, 1970
P. khuzarensis Khan, Batool & Khatoon, 2004
P. minor Siddiqi, 1963
Quinisulcius acutoides (Thorne & Malik, 1968) Siddiqi, 1971
Q. acutus (Allen, 1955) Siddiqi, 1971
Q. capitatus (Allen, 1955) Siddiqi, 1971
Q. curvus (Williams, 1960) Siddiqi, 1970
Q. quaidi Zarina & Maqbool, 1992
Q. solani Maqbool, 1982
Radopholus allius Shahina & Maqbool, 1996
R. brassicae Shahina & Maqbool, 1996
R. similis (Cobb, 1893) Thorne, 1949
Rhadinaphelenchus cocophilus (Cobb, 1919) Goodey, 1960
Rotylenchulus parvus (Williams, 1960) Sher, 1961
R. reniformis Linford & Oliveira, 1940
Rotylenchus alii Maqbool & Shahina, 1986
R. buxophilus Golden, 1956
R. capsicum Firoza & Maqbool, 1991
R. cypriensis Antoniou, 1980
R. dalhousiensis Sultan & Jairajpuri, 1979
R. fragaricus Maqbool & Shahina, 1986
R. goldeni Firoza & Maqbool, 1993
R. himprus (Sultan, 1980) Fortuner, 1987
R. jagatpurensis Sultan, 1985
R. karachiensis (Maqbool & Ghazala, 1984) Fortuner, 1987
R. pakistanensis Maqbool & Shahina, 1986
R. robustus (de Man, 1876) Filipjev, 1936
R. siddiqii (Mulk & Jairajpuri, 1976) Fortuner, 1987
Scutellonema bradys (Steiner & LeHew, 1933) Andrassy, 1958
S. brachyurus (Steiner, 1938) Andrassy, 1958

- Scutylenchus baluchiensis* Maqbool, Ghazala, Fatima & Qasim, 1985
S. fici Farooq & Fatima, 1994
S. koreanus (Choi & Geraert, 1971) Siddiqi, 1979
S. quettensis Maqbool, Ghazala & Fatima, 1984
S. rugosus (Siddiqi, 1963) Siddiqi, 1979
Seinura nagini Husain & Khan, 1965
S. oostenbrinki Husain & Khan, 1967
Stictylus spp.
Subanguina balochia Erum, Shahina & Siddiqi, 2008
Telomalenchus williamsi (Geraert & Raski, 1986) Siddiqi, 2000
Telotylenchus indicus Siddiqi, 1960
Tetylenchus spp.
Trichodorus obtusus Cobb, 1913
T. pakistanensis Siddiqi, 1962
Tylenchorhynchus annulatus (Cassidy, 1930) Golden, 1971
T. brassicae Siddiqi, 1961
T. clarus Allen, 1955
T. claytoni Steiner, 1937
T. crassicaudatus Williams, 1960
T. cylindricus Cobb, 1913
T. elegans Siddiqi, 1961
T. ewingi Hopper, 1959
T. fatimae Khan, Saeed & Akhtar, 2004
T. gossypii Nasira & Maqbool, 1996
T. handooi Khan, 2004
T. intervallatus (Tobar-Jimenez, 1970) Fortunr & Luc, 1987
T. kegasawai Minagawa, 1995
T. levitermalis Siddiqi, Mukherjee & Dasgupta, 1982
T. madrasensis Gupta & Uma, 1981
T. manubriatus Litvinova, 1946
T. mashhoodi Siddiqi & Basir, 1959
T. nudus Allen, 1955
T. obscurisulcatus Andrassy, 1959
T. penniseti Gupta & Uma, 1980
T. qasimii Mussarat, Handoo & Shahina, 2008
T. quaidi Golden, Maqbool & Handoo, 1987
T. rosei Zarina & Maqbool, 1991
T. striatus Allen, 1955
T. swatiensis Nasira, Shahina & Maqbool, 1991
T. trilineatus Timm, 1963
T. tritici Golden, Maqbool & Handoo, 1987
T. tuberosus Zarina & Maqbool, 1994
Tylenchulus semipenetrans Cobb, 1913
Tylenchus bhitai Maqbool & Shahina, 1987
T. butteus Thorne & Malek, 1968
T. hamatus Thorne & Malek, 1968
T. naranensis Maqbool, Zarina & Ghazala, 1987
T. pakistanensis Farooq, Fatima & Khan, 1991

- T. sandneri* Wasilewska, 1965
T. skarduensis Maqbool & Shahina, 1987
T. uniformis Cobb, 1893
Xiphinema americanum Cobb, 1913
X. basiri Siddiqi, 1959
X. bergeri Luc, 1973
X. bolandium Coomans & Heyns, 1985
X. brevicolle Lordello & Da Costa, 1961
X. californicum Lamberti & Bleve-Zacheo, 1979
X. chambersi Thorne, 1939
X. cynodontis Nasira & Maqbool, 1994
X. diversicaudatum (Micoletzky, 1927) Thorne, 1939
X. elongatum Schuurmans Stekhoven & Teunissen, 1938
X. index Thorne & Allen, 1950
X. insigne Loos, 1949
X. intermedium Lamberti & Bleve-Zacheo, 1979
X. karachiense Nasira, Firoza & Maqbool, 1992
X. machoni Hunt, 1980
X. oxycaudatum Lamberti & Bleve-Zacheo, 1979
X. pachtaicum (Tulaganov, 1938) Kirjanova, 1951
X. pachydermum Sturhan, 1983
X. pakistanensis Nasira & Maqbool, 1998
X. radicicola Goodey, 1936
X. rivesi Dalmasso, 1969
X. rotundatum Schuurmans Stekhoven & Teunissen, 1938
X. thornei Lamberti & Golden, 1986
Zygotylenchus guevarai (Tobar-Jimenez, 1963) Braun & Loof, 1966

SPECIES OF FREE-LIVING SOIL NEMATODES

- Acrobeles complaxus* Thorne, 1925
A. geraerti Rashid, Heyns & Coomans, 1990
A. mariannae Andrassy, 1968
A. ornatus Thorne, 1925
Acrebeloides bodenhemeri (Steiner, 1936) Thorne, 1937
A. enoploides Loof, 1971
A. gossypii Ashfaque, Shahina & Nasira, 2019
A. saeedi Siddiqi, Ley & Khan, 1992
Alaimus minor Cobb, 1893
Allodorylaimus americanus Andrassy, 1986
Amphibelondira sindhicus Ashfaque, Nasira & Shahina, 2019
Anatonchus valitangiensis Khan & Saeed, 1987
Aprocelaimellus goldeni Khan & Fatima, 1980
A. obscures (Thorne & Swanger, 1936) Heyns, 1965
A. obtusicaudatus (Bastian, 1865) Altherr, 1960
A. sacchari Khan, 1989
A. taylori Yeates, 1967
Aprocelaimus cocophilus Loos, 1949

- A. digitalis* Loos, 1949
A. spiralis (Cobb, 1913) Thorne & Swanger, 1936
Axodorylaimellus aghai Siddiqi, 1983
Axonchium gigas Thorne, 1939
A. indicum Siddiqi, 1964
A. mauritiense Williams, 1958
A. oostenbrinki Khan & Ahmad, 1970
Basirotyleptus (Basirotyleptus) basiri (Jairajpuri, 1964) Jairajpuri & Ahmad, 1992
Belondira paraclava Jairajpuri, 1964
Belondira spp.
Brevibucca saprophaga Goodey, 1935
Bursilla monohystera Butschili, 1873
Carcharolaimus spp.
Cephalobus litoralis (Akhter, 1962) Andrassy, 1984
C. nanus de Man, 1880
C. persignis Bastian, 1865
C. sacchari Shahina & Tabassum, 2002
Cervidellus spp.
Chiloplacus longiuterus Rashid & Heyns, 1990
Chiloplacus spp.
Chrysonema mauritiana Williams, 1959
Clarkus papillatus (Bastian, 1865) Jairajpuri, 1970
Crustorhabditis scanica (Allgen, 1949) Andrassy, 1983
Cruznema brzeskii (Brzeski, 1989) Sudhaus & Hooper, 1994
C. tripartitum (Linstow, 1906) Zullini, 1982
Cryptochus spp.
Cuticularia regenfussi (Sudhaus, 1980) Andrassy, 1983
Demaniella cibourgensis Steiner, 1914
Diphtherophora spp.
Diplogaster spp.
Diploscapter coronata (Cobb, 1893) Cobb, 1913
Discolaimium australe (Yeates, 1967) Andrassy, 1990
D. brachyurum Husain & Siddiqi, 1967
D. capitulum Shahina, Mussarat & Siddiqi, 2005
D. gracile Thorne, 1939
D. pakistaninum Timm, 1963
D. upum Baqri & Jairajpuri, 1968
Discolaimus acuticapitus Furstenberg & Heyns, 1966
D. bulbiferus (Cobb, 1906) Thorne & Swanger, 1936
D. lahorensis Khan, 1998
D. major Thorne, 1939
D. pakistanense Nasira, Shahina & Erum, 2008
D. similis Thorne, 1939
D. texanus Cobb, 1913
Discomyctus spp.
Distolabrellus veechi Anderson, 1983
D. pakistanensis Tabassum, Shahina, Firoza & Siddiqi, 2005
Dorylaimellus clavicaudatus Williams, 1958

- D. vexator* Heyns, 1963
Dorylaimoides (Acridorylaimoides) arcuatus Siddiqi, 1964
D. (Digidorylaimoides) pakistanensis Siddiqi, 1964
D. (Dorylaimoides) parateres Siddiqi, 1964
Dolichorhabditis dolichura (Schneider, 1866) Andrassy, 1983
Dorylaimus bastiani Butschli, 1873
D. biroi Daday, 1899
D. granuliferus Cobb, 1893
D. stagnalis Dujardin, 1845
D. subsimilis Cobb, 1893
Doryllium minor Jairajpuri, 1963
Doryllium spp.
Drilocephalobus alykhani Siddiqi, 2001
Ecumenicus monohystera (de Man, 1880) Thorne, 1974
Elongidorylaimellus lanceolatus Siddiqi, 1983
Enchodelus arcuatus Thorne, 1939
E. macrodorus (de Man, 1880) Thorne, 1939
Eucephalobus spp.
Eudorylaimus andersoni Khan, 1989
E. magestri Andrassy, 1986
E. major
E. minusculus (Loos, 1946) Siddiqi, 1969
E. subjunctus Loof, 1971
E. varians Thorne, 1974
Eudorylaimus spp.
Heterodorus longidens (Jairajpuri & Loof, 1968) Andrassy, 2009
Jamilius adenophorus Siddiqi, 1983
J. jamili Siddiqi, 1983
Labronema digitatum Sakul, Das & Mitra, 1975
L. mauritiense Williams, 1959
Laimydorus pseudostagnalis (Micoletzky, 1927) Siddiqi, 1969
L. wirisi Tabassum, Shahina & Nasira, 2006
Latocephalus smithi (Heyns, 1963) Patil & Khan, 1982
Leptonchus granulosus Cobb, 1920
Leptonchus spp.
Longidorella (Kantbhala) allii Suryawanshi, 1971
L. (Saevadorella) tharensis Nasira, Shahina & Firoza, 2010
Longidorella spp.
Lordellonema subannulatum Tabassum, Shahina & Siddiqi, 2005
Macrolaimus spp.
Mesodorylaimus aberrans Loof, 1969
M. bastiani (Butschli, 1873) Andrassy, 1959
M. clavicaudatus (Thorne & Swanger, 1936) Andrassy, 1959
M. mehraniensis Khan & Saeed, 1986
Mesorhabditis cranganorensis (Khera, 1968) Sudhaus, 1976
M. minuta Bostrom, 1991
M. striatica Dassonville & Heyns, 1984
Miconchus dalhousiensis Jairajpuri, 1969

- Microdorylaimus miser* (Thorne & Swanger, 1936) Andrassy, 1986
Mononchoides andrassyi Timm, 1961
Mononchus aquaticus Coetzee, 1968
M. papillatus Bastian, 1865
Mononchus spp.
Moshajia qasmi Zarina & Shahina, 2007
M. teres Tabassum, Shahina & Siddiqi, 2005
Mylonchulus amurus Khan & Jairajpuri, 1979
M. brachyuris Butschli, 1873
M. contractus Jairajpuri, 1970
M. lacustis (Cobb in Cobb, 1915) Andrassy, 1958
M. minor (Cobb, 1893) Andrassy, 1958
M. nainitalensis Jairajpuri, 1970
M. paitensis Yeates, 1992
M. rosensis Khan, 1975
M. sigmaturus (Cobb, 1916) Altherr, 1953
Mylonchulus spp.
Neodiplogaster spp.
Nygolaimellus abnormis Loos, 1949
Nygolaimoides spp.
Nygolaimus gigantus Shahina, Erum & Siddiqi, 2005
N. neominimus Shahina, Erum & Siddiqi, 2005
N. vulgaris Thorne, 1930
Oscheius andrassi Tabassum & Shahina, 2008
O. citri Tabassum, Shahina, Nasira & Erum, 2016
O. cobbi Tabassum, Shahina, Nasira & Erum, 2016
O. cynodonti Tabassum, Shahina, Nasira & Erum, 2016
O. esculentus Tabassum, Shahina, Nasira & Erum, 2016
O. karachiensis Tabassum & Nasir, 2018
O. maqbooli Tabassum & Shahina 2002
O. niazii Tabassum & Shahina, 2010
O. punctata Tabassum, Shahina, Nasira & Erum, 2016
O. sacchari Tabassum, Shahina, Nasira & Erum, 2016
O. shamimi Tehseen & Nisa, 2006
O. siddiqi Tabassum & Shahina, 2010
Pakmylonchulus amurus Khan & Saeed, 1987
Panagrolaimus rigidis (Schneider, 1866) Thorne, 1937
Panagrolaimus spp.
Paradorylaimus dorsocaudali Nasira, Israr & Shahnia, 2017
Paroriverutus Carbonell & Coomans, 1982
P. timmi Khan, 1994
Pellioidites typica (Stefanski, 1922) Dougherty, 1955
Poronemella divulgata Tabassum, Shahina & Siddiqi, 2005
Prismatolaimus intermedius (Butschli, 1873) de Man, 1880
Prodorylaimus spp.
Propanagrolaimus hygrophilus (Bassen, 1940) Andrassy, 2005
Pseudacrobeles spp.

- Pungentus engadinensis* Alterr, 1950
Pungentus spp.
Rashidanema cognatum (Siddiqi, 1983) Jairajpuri & Ahmad, 1992
Rhabditis karachiensis Khan, Seema, Khan, Qamar & Anwarullah, 1992
R. longicaudatus (Bastian, 1865) Osche, 1952
R. marious Maupas, 1899
R. producta (Schneider, 1866) Linstow, 1878
R. terricola Dujardin, 1845
Rhabditis spp.
Rhabditophanes brassicae Fuchs, 1930
Rhitis luci (Andrassy, 1982) Andrassy, 1983
Sindellus sindi Siddiqi, 1983
Solididens swatiensis Nasira, Shahina & Maqbool, 1999
Talanema mauritiense (Williams, 1959) Andrassy, 1990
Teratorhabditus andrassyi Tahseen & Jairajpuri, 1988
Thonus saccatus Thorne, 1974
Thornenema maruitianum (Williams, 1959) Baqri & Jairajpuri, 1969
Timminema pakستانicum Khan, 1977
Tricephalobus longicaudatus (Bütschli, 1873) Steiner, 1936
Tylencholaimus cynodonti Nasira, Erum & Shahina, 2005
T. gertii Kruger, 1965
T. nagauriensis Baqri & Bohra, 2001
T. proximus Thorne, 1939
Tylencholaimus spp.
Xiphinema ornata (Loos, 1949) Loos, 1950
Zeldia punctata (Thorne, 1925) Thorne, 1937

SPECIES OF FREE-LIVING MARINE NEMATODES

- Achromadora ruricola* (de Man, 1880) Micoletzky, 1925
Achromadora spp.
Aegialoalaimus spp.
Anoplostoma sunderbanae Timm, 1967
Arabanema pakistanensis Turpeenniemi, Nasira & Maqbool, 2001
Araeolaimus elegans de Man, 1888
A. texianus Chitwood, 1951
Aulolaimus mubarakvilli Salma, Saima, Nasira & Shahina, 2018
A. rashidae Shahina, Hunt & Siddiqi, 1996
Bathyeurystomina minima Nasira, Shahina & Shamim, 2014
Bathylaimus australis Cobb, 1894
Belbolla longispiculata Nasira, Shahina & Shamim, 2014
Calomicrolaimus arenarius Blome, 1982
Camacolaimus tardus de Man, 1889
Camacolaimus spp.
Choanolaimus spp.
Chromadora nudicapitata Bastian, 1865
Chronogaster typica (de Man, 1921) de Coninck, 1937

- Cinctonema papillata* Timm, 1962
Cobbia macrostoma Timm, 1963
Cyatholaimus spp.
Daptonema spp.
Dentolaimoides papillifer Khan, 1994
Desmodora (Pseudochromadora) cliftensis Turpeenniemi, Nasira & Maqbool, 2001
Desmoscolex spp.
Diodontolaimus karachiensis Nasira, Kamran & Shahina, 2005
Diplolaimella dievengatensis Jacobs, Velde, Geraert & Vranken, 1990
Diplolaimelloides delyi Andrassy, 1958
Dracograllus demanii Allen & Noffsinger, 1978
Eleutherolaimus inglesi Timm, 1967
E. longus Filipjev, 1922
E. obtusicaudatus Allgen, 1947
Endeolophos minutus Gerlach, 1967
Enoplolaimus karachiensis Maqbool, Nasira & Turpeenniemi, 1999
Eurystomina indica Yoshimura, 1980
Eurystomina spp.
Geomonhystera dubia Siddiqi & Shahina, 2004
G. karuni Siddiqi & Shahina, 2004
Gonionchus arabica Nasira & Turpeenniemi, 2003
Graphonema spp.
Halalaimus gidanensis Nasira & Turpeenniemi, 2002
Halaphanolaimus marinus Kamran, Nasira & Shahina, 2010
Halichoanolaimus balochiensis Turpeenniemi, Nasira & Maqbool, 2001
Heliplectus dorsalis Cobb in Chitwood, 1956
H. gracilis Shahina, Siddiqi & Nasira, 2014
H. minor Shahina, Siddiqi & Nasira, 2014
H. monodelphis Shahina, Siddiqi & Nasira, 2014
H. pakistanensis Shahina, Siddiqi & Nasira, 2014
H. paradorsalis Shahina, Siddiqi & Nasira, 2014
H. robustus Shahina, Siddiqi & Nasira, 2014
Heliplectus spp.
Hypodontolaimus spp.
Ionema cobbi Timm, 1963
Ironus dentifurcatus Agro & Heyns, 1972
Leptolaimus luridus Timm, 1963
Leptosomatum ranjhai Timm, 1960
Linhomoeus spp.
Marylynnia musharaffii Nasira, Kamran & Shahina, 2007
Megadesmolaimus contortus Timm, 1962
Megalolaimus spp.
Metachromadora (Metachromadoroides) remanei Gerlach, 1951
Metalinhomoeus karachiensis Timm, 1962
Metoncholaimus medispiculatum Salma, Nasira, Saima & Shahina, 2017
M. siddiqii Shahina, Nasira & Shamim, 2015
Microlaimus arenicola Schulz, 1938

- M. amphidius* Kamran, Nasira & Shahina, 2009
M. karachiensis Kamran, Nasira & Shahina, 2009
M. sonmianensis Nasira, Maqbool, Turpeenniemi & Zarina, 2000
Monhystera karachiensis Timm, 1963
M. parelegantula De Coninck, 1943
Monhystrella spp.
Monochromadora spp.
Monoposthia spp.
Odontolaimus spp.
Odontophora hawskbiensis Turpeenniemi, Nasira & Maqbool, 2001
Oncholaimus oxyuris Ditlevsen, 1911
O. paraoxyuris Salma, Nasira, Saima & Shahina, 2017
Onyx balochiensis Nasira, Rehmat & Shahina, 2011
Oxystomina elongata Butschli, 1874
Panduripharynx spp.
Paracanthonchus sandspitensis Nasira, Kamran & Shahina, 2007
P. hawaiiensis Allgen, 1951
Paracomesoma longispiculum Timm, 1961
Paraethmolaimus appendixocaudatus Jensen, 1994
Paralinhomoeus dubius Timm, 1961
Paramonhystera (Leptogastrella) pellucida Cobb, 1920
P. (Paramonhystera) longicaudata Timm, 1963
Paraphanolaimus granuliferus Timm, 1963
Pareuryystomina vaughtae Keppner, 1989
Parodontophora cobbi Timm, 1963
P. pacifica (Allgen, 1947) Timm, 1963
Pelagonema spp.
Plectus (Ceratoplectus) armatus (Butschli, 1873) Andrassy, 1984
P. karachiensis Shahina, Tabassum & Maqbool, 2001
P. peritinus Bastian, 1865
P. raabei Brzeski, 1963
P. tenuis Bastian, 1865
Plectus spp.
Pseudololella granulifera Cobb, 1920
Ptycholaimellus sindhicus Turpeenniemi, Nasira & Maqbool, 2001
Rhynchonema scutatum Lorenzen, 1971
Rogerus spp.
Sabatieria microsetosa Timm, 1967
Sphaerolaimus gracilis de Man, 1876
S. maeoticus Filipjev, 1922
Spilophorella candida Gerlach, 1951
Spirinia (Perspirnia) striaticaudata (Timm, 1962) Wieser & Hooper, 1967
Steineria simplex Timm, 1963
S. pilosa brevisetosa Timm, 1957
Stephanolaimus spp.
Synonchium marina Kamran, Nasira & Shahina, 2009
S. oblongus Kamran, Nasira & Shahina, 2009

- S. pakistanense* Kamran, Nasira & Shahina, 2009
Syringolaimus brevicaudatus Micoletzky, 1922
Terschellingia communis de Man, 1888
T. lissa Timm, 1962
T. longicaudata de Man, 1907
T. longissimicaudata Timm, 1962
T. magna Timm, 1962
T. mora Gerlach, 1956
Thalassironus qatarense Nasira, Kamran, Shahina & Kazmi, 2006
Theristus cylindricus Salma, Nasira, Saima & Shahina, 2017
T. flevensis Stekhoven, 1935
T. (Penzancia) karachiense Salma, Nasira, Saima & Shahina, 2017
T. longisetifer Kito & Aryuthaka, 1998
T. otoplanobius Gerlach, 1951
T. (Cylindrotheristus) polaris Cobb, 1914
T. (Cylindrotheristus) normandicus de Man, 1890
Trefusia spp.
Trichoatheristus floridanus Wieser & Hopper, 1967
Trichoatheristus spp.
Trichromadorita arinus Khan, 1991
Triconema spp.
Trissonchulus benepapillosum Schulz, 1935
T. lichenii Nasira & Turpeenniemi, 2002
T. oceanus Cobb, 1920
Viscosia elegans Kreis, 1924
Willsonema promissum Khan, Seema & Khan, 1990

SPECIES OF ENTOMOPATHOGENIC NEMATODES

- Heterorhabditis bacteriophora* Poinar, 1976
H. indica Poinar, Karunakar & David, 1992
H. pakistanense Shahina, Tabassum, Salma, Mehreen & Knoetze, 2016
Steinerinema abbasi Elawad, Ahmad & Reid, 1997
S. affine (Bovien, 1937) Wouts, Mracek, Gerdin & Bedding, 1982
S. asiaticum Anis, Shahina, Reid & Rowe, 2002
S. balochiense Shahina, Tabassum, Shaukat, Sarwar, Mehreen & Salma, 2015
S. bifurcatum Shahina, Xun, Qiu, Han, Mahreen, Tabassum & Salma, 2014
S. carpopcapsae (Weisser, 1955) Wouts, Mracek, Gerdin & Bedding, 1982
S. cholashanense Nguyen, Puza & Mracek, 2008
S. feltiae Filipjev, 1934
S. litorale Yoshida, 2004
S. maqbooli Shahina, Tabassum, Mehreen & Salma, 2013
S. pakistanense Shahina, Anis, Reid, Rowe & Maqbool, 2001
S. siamkayai Stock, Somsook & Reid, 1998

TAXONOMIC POSITION OF NEMATODE FAUNA OF PAKISTAN

Phylum: Nematoda Rudolphi, 1808 (Lankester, 1877)

syn. Nemata Cobb, 1919 (1932)

Class: Secernentea von Linstow, 1905

syn. Phasmidia Chitwood & Chitwood, 1933

Tylenchida Thorne, 1949

Tylenchina Chitwood in Chitwood & Chitwood, 1950

Tylenchoidea (Orley, 1880) Chitwood & Chitwood, 1937

Tylenchidae Orley, 1880

Tylenchinae (Orley, 1880) Marcinowsky, 1909

Tylenchus Bastian, 1865

T. bhitai Maqbool & Shahina, 1987

T. butteus Thorne & Malek, 1968

T. hamatus Thorne & Malek, 1968

T. naranensis Maqbool, Zarina & Ghazala, 1987

T. pakistanensis Farooq, Fatima & Khan, 1991

T. sandneri Wasilewska, 1965

syn. *T. cerealis* Kheiri, 1970

T. skarduensis Maqbool & Shahina, 1987

T. uniformis Cobb, 1893

syn. *Anguillulina uniformis* (Cobb) Goodey, 1932

Filenchus (Andrassy, 1954) Meyl, 1961

F. afghanicus (Khan & Khan, 1978) Siddiqi, 1986

syn. *Tylenchus afghanicus* Khan & Khan, 1978

F. cylindricus (Thorne & Malek, 1968) Niblack & Barnard, 1985

F. ditissimus (Brzeski, 1963) Siddiqi, 1986

syn. *Tylenchus ditissimus* Brzeski, 1963

F. filiformis (Butschli, 1873) Meyl, 1961

syn. *Tylenchus filiformis* Butschli, 1873

Anguillulina filiformis (Butschli) Goodey, 1922

T. vulgaris Brzeski, 1963

F. maqbooli Aatika, Nasira & Shahina, 2017

F. microdorus Chawla, Prasad, Khan & Nand, 1969

F. parvissimus (Thorne & Malek, 1968) Siddiqi, 1986

syn. *Tylenchus parvissimus* Thorne & Malek, 1968

F. sheri (Khan & Khan, 1978) Siddiqi, 1986

syn. *Tylenchus sheri* Khan & Khan, 1978

F. sindhiclus Shahina & Maqbool, 1994

F. vulgaris (Brzeski, 1963) Lownsbery & Lownsbery, 1985

syn. *Tylenchus vulgaris* Brzeski, 1963

Filenchus conicephalus Siddiqi & Khan, 1983

Aglenchus (Andrassy, 1954) Meyl, 1961

A. agricola (de Man, 1884) Meyl, 1961

syn. *Tylenchus Agricola* de Man, 1884

- Anguillulina Agricola* (de Man) Goodey, 1932
Tylenchus filiformis apud de Man, 1876 et 1880
Tylenchus filiformis de Man, 1876 in Goodey, 1932
 nec *T. filiformis* Butschli, 1873
Tylenchus paragricola Paetzold, 1958
A. paragricola (Paetzold) Meyl, 1961
A. mardanensis Maqbool, Shahina & Zarina, 1984
A. siddiqii Khan, Khan & Bilquees, 1992

- Coslenchus*** Siddiqi, 1978
 syn. ***Paktylenchus*** Maqbool, 1983
C. areolatus (Egunjobi, 1967) Siddiqi, 1978
 syn. *Tylenchus (Aglenchus) areolatus* Egunjobi, 1967
C. costatus (de Man, 1921) Siddiqi, 1978
 syn. *Tylenchus costatus* de Man, 1921
T. (Aglenchus) costatus de Man (Andrassy, 1954)
Aglenchus costatus (de Man) Meyl, 1961
Anguillulina costata (de Man) Goodey, 1932
T. buffalorae Altherr, 1950
Anguillulina buffalorae (Altherr) Altherr, 1952
Coslenchus buffalorae (Altherr) Siddiqi, 1986
T. (Aglenchus) neozelandicus Egunjobi, 1967
Coslenchus neozelandicus (Egunjobi) Siddiqi, 1986
C. tuberosus (Maqbool, 1983) Siddiqi, 1986
 syn. ***Paktylenchus tuberosus*** Maqbool, 1983

- Irantylenchus*** Kheiri, 1972 (Andrassy, 1976)
I. clavidorus Kheiri, 1972

- Boleodorinae*** Khan, 1964
Boleodorus Thorne, 1941
B. acutus Thorne & Malek, 1968
B. arachis Maqbool & Ghazala, 1986
B. azadkashmirensis Maqbool, Shahina & Firoza, 1990
B. neosimilis Geraert, 1971
 syn. *B. similis* Thorne & Malek, 1968
B. pakistanensis Siddiqi, 1963
B. rafiqi Hussain & Khan, 1965
B. thylactus Thorne, 1941
B. volutus Lima & Siddiqi, 1963
B. zaini Maqbool, 1982

- Basiria*** Siddiqi, 1959
B. bajorensis Khan & Bilquees, 1993
B. graminophila Siddiqi, 1959
 syn. *Tylenchus (Filenchus) graminophilus* (Siddiqi) Goodey, 1963
B. incita Szczygiel, 1970
B. ritteri (Baqri & Jairajpuri, 1969) Bernard, 1980

syn. *Tylenchus (Clavilenchus) ritteri* Baqri & Jairajpuri, 1969
Clavilenchus ritteri (Baqri & Jairajpuri) Baqri & Jairajpuri, 1969

Basiroides Thorne & Malek, 1968

B. citri Maqbool, Fatima & Shahina, 1984
B. sindhicus Maqbool, Fatima & Shahina, 1984

Neopsilenchus Thorne & Malek, 1968

N. (Acusilenchus) Shahina & Maqbool, 1990
N. (A.) bilineatus Shahina & Maqbool, 1990
N. (Neopsilenchus) Shahina & Maqbool, 1990
N. (N.) curvistylus Shahina & Maqbool, 1990
N. (N.) minor (Geraert, 1968) Shahina & Maqbool, 1990
syn. *Basiria minor* Geraert, 1968
Neopsilenchus minor (Geraert, 1968) Kheiri, 1972
N. (N.) peshawarensis Shahina & Maqbool, 1990

Thadinae Siddiqi, 1986

Neothada Khan, 1973
N. major Maqbool & Shahina, 1989

Duosulciinae Siddiqi, 1979

Duotylenchus Saha & Khan, 1982
D. bilineatus Saha & Khan, 1982

Malenchus Andrassy, 1968

M. andrassyi Merny, 1970
M. exiguous (Massey, 1969) Andrassy, 1980
syn. *Aglenchus exiguous* Massey, 1969
M. fusiformis (Thorne & Malek, 1968) Siddiqi, 1979
syn. *Tylenchus fusiformis* Thorne & Malek, 1968
Ottolenchus fusiformis (Thorne & Malek) Wu, 1970
M. labiatus Maqbool & Shahina, 1985
M. nanellus Siddiqi, 1979
M. platycephalus (Thorne & Malek, 1968) Andrassy, 1981
syn. *Tylenchus platycephalus* Thorne & Malek, 1968
Ottolenchus platycephalus (Thorne & Malek) Siddiqi & Hawksworth, 1982
M. pyri Maqbool & Shahina, 1985

Telomalenchus Siddiqi, 2000

T. williamsi (Geraert & Raski, 1986) Siddiqi, 2000

Ottolenchus (Husain & Khan, 1967) Wu, 1970

O. azadkashmirensis Maqbool & Shahina, 1985
O. facultativus (Szczygiel, 1970) Brzeski, 1982
syn. *Tylenchus facultativus* Szczygiel, 1970
O. facultativus (Szczygiel) Siddiqi & Hawksworth, 1982
Malenchus piahyensis Monteiro, 1974

Ottolenchus piahyuensis (Monteiro) Siddiqi, 1986
O. longicauda Maqbool & Shahina, 1985

Tyloadorinae Paramonov, 1967

Cephalenchus (Goodey, 1962) Golden, 1971
C. longicaudatus Maqbool & Ghazala, 1986
C. sacchari Maqbool, Fatima & Shahina, 1984

Eutylenchus Cobb, 1913

Eutylenchus spp.

Epicharinematinae Maqbool & Shahina, 1985

Karachinema Maqbool & Shahina, 1985
K. elongatum Maqbool & Shahina, 1985

Hoplolaimidae Filipjev, 1934

Hoplolaiminae Filipjev, 1934

Hoplolaimus Von Daday, 1905

syn. *Basirolaimus* Shamsi, 1979
H. aegypti Shafiee & Koura, 1969

syn. *Basirolaimus aegypti* (Shafiee & Kora, 1969) Shamsi, 1979

H. aegypti (Shafiee & Koura, 1969) Luc, 1981

B. aegypti (Shafiee & Koura, 1969) Siddiqi, 1986

H. californicus Sher, 1963

syn. *Hoplolaimoides californicus* (Sher, 1963) Shakil, 1973

Hoplolaimus californicus (Sher, 1963) Siddiqi, 1986

H. columbus Sher, 1963

syn. *B. columbus* (Sher, 1963) Shamsi, 1979

H. columbus (Sher, 1963) Luc, 1981

B. columbus (Sher, 1963) Siddiqi, 1986

H. dimorphicus Mulk & Jairajpuri, 1976

syn. *B. dimorphicus* (Mulk & Jairajpuri, 1976) Shamsi, 1979

H. dimorphicus (Mulk & Jairajpuri, 1976) Luc, 1981

B. dimorphicus (Mulk & Jairajpuri, 1976) Siddiqi, 1986

H. dubius Chaturvedi & Khera, 1979

syn. *B. dubius* (Chaturvedi & Khera, 1979) Siddiqi, 1986

H. galeatus (Cobb, 1913) Thorne, 1935

syn. *Nemonchus galeatus* Cobb, 1913

Hoplolaimus coronatus Cobb, 1923

H. indicus Sher, 1963

syn. *B. indicus* (Sher, 1963) Shamsi, 1979

H. indicus (Sher, 1963) Luc, 1981

H. arachidis (Maharaju & Das, 1982) Siddiqi, 1986

B. arachidis (Maharaju & Das, 1982) Siddiqi, 1986

B. indicus (Sher, 1963) Siddiqi, 1986

H. pararobustus (Schuurmans Stekhoven & Teunissen, 1938) Sher, 1963

syn. *Tylenchorhynchus robustus* Schuurmans Stekhoven, 1936

T. pararobustus Schuurmans Stekhoven & Teunissen, 1938

- Rotylenchus pararobustus* (Schuurmans Stekhoven & Teunissen)
 Filipjev & Schuurmans Stekhoven, 1941
Hoplolaimus proporicus Goodey, 1957
Gotholddteineria pararobusta (Schuurmans Stekhoven & Teunissen) Andrassy, 1958
Hoplolaimus angustalatus Whitehead, 1959
H. kittenbergeri Andrassy, 1961
H. seinhorsti Luc, 1958
 syn. *B. seinhorsti* (Luc, 1958) Shamsi, 1979
H. seinhorsti (Luc, 1958) Luc, 1981
B. seinhorsti (Luc, 1958) Siddiqi, 1986
H. seshadrii Mulk & Jairajpuri, 1976
 syn. *B. seshadrii* (Mulk & Jairajpuri, 1976) Shamsi, 1979
H. seshadrii (Mulk & Jairajpuri, 1976) Luc, 1981
B. seshadrii (Mulk & Jairajpuri, 1976) Siddiqi, 1986
H. stephanus Sher, 1963
H. tabacum Firoza, Nasira & Maqbool, 1990
H. tylenchiformis Daday, 1905
 syn. *Criconema tylenchiformis* (Daday) Micoletzky, 1917
- Scutellonema*** Andrassy, 1958
S. bradyi (Steiner & LeHew, 1933) Andrassy, 1958
 syn. *Hoplolaimus bradyi* Steiner & LeHew, 1933
Anguillulina bradyi (Steiner & LeHew) Goodey, 1935
Rotylenchus bradyi (Steiner & LeHew) Filipjev, 1936
R. blaberus Steiner, 1937
Scutellonema blaberum (Steiner, 1937) Andrassy, 1958
S. dioscoreae Lordello, 1959
S. brachyurus (Steiner, 1938) Andrassy, 1958
- Rotylenchus*** Filipjev, 1936
R. alii Maqbool & Shahina, 1986
R. buxophilus Golden, 1956
 syn. *R. sheri* Jairajpuri, 1964
R. capsicum Firoza & Maqbool, 1991
R. cypriensis Antoniou, 1980
R. dalhousiensis Sultan & Jairajpuri, 1979
R. fragaricus Maqbool & Shahina, 1986
R. goldeni Firoza & Maqbool, 1993
R. himprus (Sultan, 1980) Fortuner, 1987
 syn. *Orientylus himprus* Sultan, 1980
Varotylus himprus (Sultan, 1980) Siddiqi, 1986
R. jagatpurensis Sultan, 1985
R. karachiensis (Maqbool & Ghazala, 1984) Fortuner, 1987
 syn. *Orientylus karachiensis* Maqbool & Ghazala, 1984
R. pakistanensis Maqbool & Shahina, 1986
R. robustus (de Man, 1876) Filipjev, 1936
 syn. *Hoplolaimus uniformis* Thorne, 1979

- Scutellonema picea* Gubina, 1973
R. siddiqii (Mulk & Jairajpuri, 1976) Fortuner, 1987
 syn. *Orietylus siddiqii* (Mulk & Jairajpuri, 1976) Jairajpuri & Siddqi, 1970
Varotylus siddiqii (Mulk & Jairajpuri, 1976) Siddqi, 1986
- Pararotylenchus*** Baldwin & Bell, 1981
P. microstylus Maqbool, Ghazala, Fatima & Qasim, 1985
- Helicotylenchus*** Steiner, 1945
H. abuharazi Zeidan & Geraert, 1990
H. abunaamai Siddqi, 1972
H. arachisi Mulk & Jairajpuri, 1975
H. californicus Sher, 1966
H. canadensis Waseem, 1961
 syn. *H. cairnsi* Waseem, 1961
H. cavenessi Sher, 1966
H. certus Eroshenko & Nguen Vu Tkhan, 1981
H. conicephalus Siddqi, 1972
H. crenacauda Sher, 1966
 syn. *H. pteracerca* Singh, 1971
H. paracrenacauda Phukan & Sanwal, 1981
H. pteracercaoides Fotedar & Kaul, 1985
H. digonicus Perry in Perry, Darling & Thorne, 1959
 syn. *H. broadbalkiensis* Yuen, 1964
H. dihystera (Cobb, 1893) Sher, 1961
 syn. *Tylenchus dihystera* Cobb, 1893
T. olaeae Cobb, 1906
T. ylenchorhynchus olaeae (Cobb) Micoletzky, 1922
Helicotylenchus olaeae (Cobb) Siddqi, 1986
Aphelenchus dubius var. *peruensis* Steiner, 1920
Tylenchus spiralis Cassidy, 1930
Helicotylenchus spiralis (Cassidy) Siddqi, 1986
H. nannus Steiner, 1945
H. crenatus Das, 1960
H. flatus Roman, 1965
H. punicae Swarup & Sethi, 1968
H. paraconcavus Rashid & Khan, 1974
H. discocephalus Firoza & Maqbool, 1993
H. egyptiensis Tarjan, 1964
H. erythrinae (Zimmermann, 1904) Golden, 1956
 syn. *Tylenchus erythrinae* Zimmermann, 1904
Tylenchorhynchus erythrinae (Zimmermann) Balley & Reydon, 1931
Anguillulina erythrinae (Zimmermann) Goodey, 1932
Rotylenchus erythrinae (Zimmermann) Goodey, 1951
R. melancholicus Lordello, 1955
H. melancholicus (Lordello) Andrassy, 1958
H. spicaudatus Tarjan, 1964
H. exallus Sher, 1966

- syn. *H. regularis* Phillips, 1971
- H. falcatus* Eroshenko & Nguen Vu Thanh, 1981
H. goodi Tikyani, Khera & Bhatnagar, 1969
H. gulabi Jain, Siddiqui & Aruna Parihar, 2000
H. handooi Khan, Ghazi & Soomro, 2008
H. indicus Siddiqi, 1963
H. jasminii Jain, Siddiqui & Aruna Parihar, 2000
H. lemoni Firoza & Maqbool, 1996
H. lucernis Khan & Ahmad, 1970
H. macronatus Mulk & Jairajpuri, 1975
H. martini Sher, 1966
H. meloni Firoza & Maqbool, 1994
H. microcephalus Sher, 1966
H. microdorus Prasad, Khan & Chawla, 1965
H. microlobus Perry in Perry, Darling & Thorne, 1959
H. microtylus Firoza & Maqbool, 1993
H. multicinctus (Cobb, 1893) Golden, 1956
 syn. *Tylenchus multicinctus* Cobb, 1893
Tylenchorhynchus multicinctus (Cobb) Micoletzky, 1922
Anguillulina multicincta (Cobb) Goodey, 1932
Rotylenchus multicinctus (Cobb) Filipjev, 1936
R. iperoiguensis Carvalho, 1956
Helicotylenchus iperoiguensis (Carvalho) Andrassy, 1958
H. obliquus Maqbool & Shahina, 1986
H. oscephalus Anderson, 1979
H. platyurus Perry in Perry, Darling & Thorne, 1959
H. pseudorobustus (Steiner, 1914) Golden, 1956
 syn. *Tylenchus robustus* var. *pseudorobustus* Steiner, 1914
H. seshadrii Singh & Khera, 1980
H. siddiqii Zarina & Akhter, 2016
H. striatus Firoza & Maqbool, 1994
H. thornei Roman, 1965
H. urobelus Anderson, 1978
H. verecundus Zarina & Maqbool, 1991
H. wajihii Sultan, 1981
H. willmottae Siddiqi, 1972

Rotylenchulinae Husain & Khan, 1967

- Rotylenchulus*** Linford & Oliveira, 1940
- R. parvus* (Williams, 1960) Sher, 1961
 syn. *Helicotylenchus parvus* Williams, 1960
- R. reniformis* Linford & Oliveira, 1940
 syn. *Tetylenchus nicotiana* Yokoo & Tanaka in Tanaka & Tsumagori, 1954
Rotylenchulus nicotiana (Yokoo & Tanaka in Tanaka & Tsumagori)
 Baker, 1962
Rotylenchus elisensis Carvalho, 1957
Helicotylenchus elisensis (Carvalho) Carvalho, 1959
Rotylenchulus elisensis (Carvalho) Siddiqi, 1986

- Spyrotylenchus queirozi* Lordello & Cesnik, 1958
Rotylenchulus queirozi (Lordello & Cesnik) Sher, 1961
Leiperotylenchusleiperi Das, 1960
Rotylenchulus leiperi (Das) Loof & Oostenbrink, 1961
R. stakmani Husain & Khan, 1965

Heteroderidae Filipjev & Schuurmans Stekhoven, 1941

Heteroderinae Filipjev & Schuurmans Stekhoven, 1941

Heterodera Schmidt, 1871

- H. avenae* Wollenweber, 1924
 syn. *H. schachtii* var. *avenae* Wollenweber, 1924
H. bideraavenae (Wollenweber, 1924) Krall & Krall, 1978
H. bergeniae Maqbool & Shahina, 1988
H. cajani Koshy, 1967
H. cruciferae Franklin, 1945
 syn. *H. vigni* Edward & Misra, 1968
H. cynodontis Shahina & Maqbool, 1989
H. fici Kirjanova, 1954
H. mani Mathews, 1971
 syn. *Bidera mani* (Mathews, 1971) Krall & Krall, 1978
H. mothi Khan & Husain, 1965
H. oryzae Luc & Berdon Brizuela, 1961
H. pakistanensis Maqbool & Shahina, 1986
H. sacchari Luc & Merny, 1963
H. schachtii Schmidt, 1871
 syn. *Tylenchus schachtii* (Schmidt, 1978) Orley, 1880
Heterodera schachtii minor Schmidt, 1930
H. zeae Koshy, Swarup & Sethi, 1971

Globodera Skarbilovich, 1959

- G. pallida* (Stone, 1973) Behrens, 1975
 syn. *Heterodera pallida* Stone, 1973
G. rostochiensis (Wollenweber, 1923) Skarbilovich, 1959
 syn. *Heterodera schachtii rostochiensis* Wollenweber, 1923
H. achachtii solani Zimmermann, 1927
G. tabacum tabacum (Lownsbery & Lownsbery, 1954) Skarbilovich, 1959
 syn. *H. tabacum* Lownsbery & Lownsbery, 1954

Meloidogyninae Skarbilovich, 1959

Meloidogyne Goeldi, 1892

- M. arenaria* (Neal, 1889) Chitwood, 1949
 syn. *Anguillula arenaria* Neal, 1889
Tylenchus arenarius (Neal, 1889) Cobb, 1890
Heterodera arenaria (Neal, 1889) Marchinowski, 1909
M. arenaria arenaria (Neal, 1889) Chitwood, 1946
M.arenaria thamesi Chirwood in Chitwood, Specht & Havis, 1952
M. thamesi (Chirwood in Chitwood *et al.*, 1952) Goodey, 1963
M. graminicola Golden & Birchfield, 1965

- M. hapla* Chitwood, 1949
M. incognita (Kofoid & White, 1919) Chitwood, 1949
 syn. *Oxyuris incognita* (Kofoid & While, 1919)
Heterodera incognita (Kofoid & While, 1919) Sandground, 1923
M. incognita incognita (Kofoid & While, 1919) Chitwood, 1949
M. incognita acrita Chitwood, 1949
M. acrita (Chitwood, 1949) Esser, Perry, and Tylor, 1976
M. incognita inornata Lordello, 1956
M. elegans da Ponte, 1977
M. graham Golden & Slana, 1978
M. incognita wartellei Golden & Birchfield, 1978
M. inornata Lordello, 1956
M. javanica (Treub, 1885) Chitwood, 1949
 syn. *Heterodera javanica* Treub, 1885, Cobb, 1890
Anguillula javanica (Treub, 1885) Lavergne, 1901
M. javanica javanica (Treub, 1885) Chitwood, 1949
M. javanica bauruensis Lordello, 1956
M. bauruensis (Lordello, 1956) Esser, Perry & Taylor, 1976
M. lucknowica Singh, 1969
M. lordelloi da Ponte, 1969
M. pakistanica Shahina, Nasira, Salma, Mehreen & Bhatti, 2015

Dolichodoroidea (Chitwood in Chitwood & Chitwood, 1950) Siddiqi, 1986

Dolichodoridae (Chitwood in Chitwood & Chitwood, 1950) Skarbilovich, 1959

Telotylenchinae Siddiqi, 1960

- Tylenchorhynchus* Cobb, 1913
T. annulatus (Cassidy, 1930) Golden, 1971
 syn. *Tylopharynx annulatus* Cassidy, 1930
Anguillulina annulata (Cassidy, 1930) Googey, 1932
Chitinotylenchus annulatus (Cassidy, 1930) Filipjev, 1936
Ditylenchus annulatus (Cassidy, 1930) Sher, 1970
Tylenchorhynchus martini Fielding, 1956
T. brassicae Siddiqi, 1961
T. clarus Allen, 1955
 syn. *T. tener* Erzhanova, 1964
T. claytoni Steiner, 1937
 syn. *Tessellus claytoni* (Steiner, 1937) Jairajpuri & Hunt, 1984
T. crassicaudatus Williams, 1960
T. cylindricus Cobb, 1913
 syn. *Tylenchus* (*Tylenchorhynchus*) *cylindricus* (Cobb) Filipjev, 1934
Anguillulina cylindrical (Cobb) Thorne, 1935
T. elegans Siddiqi, 1961
T. ewingi Hooper, 1959
T. fatimae Khan, Saeed & Akhter, 2004
T. gossypii Nasira & Maqbool, 1996
T. handooi Khan, 2004
T. intervallatus (Tobar-Jimenez, 1970) Fortunr & Luc, 1987
T. kegasawai Minagawa, 1995

- T. leviterminalis* Siddiqi, Mukherjee & Dasgupta, 1982
T. madrasensis Gupta & Uma, 1981
 syn. *Divittus madrasensis* (Gupta & Uma, 1981) Jairajpuri, 1984
T. manubriatus Litvinova, 1946
T. mashhoodi Siddiqi & Basir, 1959
T. nudus Allen, 1955
T. obscurisulcatus Andrassy, 1959
T. penniseti Gupta & Uma, 1980
T. qasimii Mussarat, Handoo & Shahina, 2008
T. quaidi Golden, Maqbool & Handoo, 1987
T. rosei Zarina & Maqbool, 1991
T. striatus Allen, 1955
T. swatiensis Nasira, Shahina & Maqbool, 1991
T. trilineatus Timm, 1963
T. tritici Golden, Maqbool & Handoo, 1987
T. tuberoses Zarina & Maqbool, 1993

- Bitylenchus*** (Filipjev, 1934) Siddiqi, 1986
B. brevilineatus (Williams, 1960) Siddiqi, 1986
 syn. *Tylenchorhynchus brevilineatus* Wiliams, 1960
T. indicus Siddiqi, 1961
Bitylenchus indicus (Siddiqi) Siddiqi, 1986
B. canalis (Thorne & Melak, 1968) Siddiqi, 1986
B. capsicumi Akhter & Zarina, 2014
 syn. *Tylenchorhynchus canalis* Thorne & Malek, 1968
B. clavicaudatus (Seinhorst, 1963) Siddiqi, 1986
 syn. *Tylenchorhynchus clavicaudatus* Seinhorst, 1963
T. clavicauda Seinhorst, 1968
B. goffarti (Sturhan, 1966) Siddiqi, 1986
 syn. *Tylenchorhynchus goffarti* Sturhan, 1966
B. maximus (Allen, 1955) Siddiqi, 1986
 syn. *Tylenchorhynchus maximus* Allen, 1955
B. maximus pakistanensis Zarina, Siddiqi & Shahina, 2004
B. parvus (Allen, 1955) Siddiqi, 1986
 syn. *Tylenchorhynchus parvus* Allen, 1955
B. vulgaris (Upadhyay, Swarup & Sethi, 1972) Siddiqi, 1986
 syn. *Tylenchorhynchus vulgaris* Upadhyay, Swarup & Sethi, 1972

- Dolichorhynchus*** Mulk & Jairajouri, 1974
D. motiaii Zarina & Maqbool, 1998
D. phaseoli (Sethi & Swarup, 1968) Mulk & Jairajpuri, 1974
D. tuberosus Maqbool, Ghazala & Fatima, 1984

- Neodolichorhynchus*** Jairajpuri & Hunt, 1984
N. (Mulkorhynchus) indicus Erum, Mussarat & Shahina, 2011

- Paratrophurus*** Arias, 1970

P. anomalus Kleynhans & Heyns, 1983

***Quinisulcius* Siddiqi, 1971**

- Q. acutoides* (Thorne & Malek, 1968) Siddiqi, 1971
syn. *Tylenchorhynchus acutoides* Thorne & Malek, 1968
Q. acutus (Allen, 1955) Siddiqi, 1971
syn. *Tylenchorhynchus acutus* Allen, 1955
Q. capitatus (Allen, 1955) Siddiqi, 1971
syn. *Tylenchorhynchus capitatus* (Allen, 1955)
T. acti Hopper, 1959
Q. acti (Hopper) Siddiqi, 1971
T. nilgiriensis Seshadri, Muthukrishnan & Shunmugam, 1967
Q. nilgiriensis (Seshadri, Muthukrishnan & Shunmugam, 1967)
Siddiqi, 1971
Q. himalayae Mahajan, 1974
Q. curvus (Williams, 1960) Siddiqi, 1970
syn. *Tylenchorhynchus curvus* Williams, 1960
Q. quaidi Zarina & Maqbool, 1992
Q. solani Maqbool, 1982

***Telotylenchus* Siddiqi, 1960**

- T. indicus* Siddiqi, 1960

***Merliniinae* Siddiqi, 1071**

***Merlinius* Siddiqi, 1970**

- M. adakensis* Bernard, 1984
M. alboranensis (Tobar-Jimenez, 1970) Tarjan, 1973
M. bavaricus (Sturhan, 1966) Siddiqi, 1970
syn. *Tylenchorhynchus bavaricus* Sturhan, 1966
M. bilqueesae Khan & Khan, 1995
M. brevidens (Allen, 1955) Siddiqi, 1970
syn. *Tylenchorhynchus brevidens* Allen, 1955
M. indicus Zarina & Maqbool, 1995
M. microdorus (Geraert, 1966) Siddiqi, 1970
syn. *Tylenchorhynchus microdorus* Geraert, 1966
M. montanus Maqbool & Shahina, 1987
M. nagerensis Sagir & Erum, 2017
M. nanus (Allen, 1955) Siddiqi, 1970
syn. *Thylenchorhynchus nanus* Allen, 1955
M. niazae Maqbool, Fatima & Hashmi, 1983
M. nothus (Allen, 1955) Siddiqi, 1970
M. pistaciei Fatima & Farooq, 1992
M. pseudobavaricus Saltukoglu, Geraert & Coomans, 1976
M. pyri Fatima & Farooq, 1992

***Amplimerlinius* Siddiqi, 1976**

- A. parbati* Zarina & Maqbool, 1990

***Nagelus* Thorne & Malek, 1968**

N. saifulmulukensis Maqbool & Shahina, 1987
N. varians (Thorne & Malek, 1968) Siddiqi, 1986

Scutylenchus Jairajpuri, 1971
 S. baluchensis Maqbool, Ghazala, Fatima & Qasim, 1985
 S. fici Farooq & Fatima, 1994
 S. koreanus (Choi & Geraert, 1971) Siddiqi, 1979
 syn. *Merlinius koreanus* Choi & Geraert, 1971
 S. quettensis Maqbool, Ghazala & Fatima, 1984
 S. rugosus Siddiqi, 1963

Tetylenchus Filipjev, 1936
 Tetylenchus spp.

Belonolaiminae Whitehead, 1960

Belonolaimus Steiner, 1949
 B. gracilis Steiner, 1949
 B. longicaudatus Rau, 1958

Psilenchidae (Paramonov, 1967) Khan, 1969

Psilenchinae Paramonov, 1967

Psilenchus de Man, 1921
 P. aestuarius Andrassy, 1962
 P. hilarulus de Man, 1921
 P. hilarus Siddiqi, 1963
 syn. *P. neoformis* Jairajpuri & Siddiqi, 1963
 P. iranicus Kheiri, 1970
 P. khuzarensis Khan, Batool & Khatoon, 2004
 P. minor Siddiqi, 1963
 syn. *P. pratensis* Doucet, 1996

Atetylenchus Khan, 1973

A. amiri (Maqbool & Shahina, 1984) Geraert & Raski, 1987
 syn. *Leipotylenchus amiri* Maqbool & Shahina, 1984
 A. metoporus Erum & Shahina, 2008

Pratylenchidae (Thorne, 1949) Siddiqi, 1963

Pratylenchinae Thorne, 1949

Pratylenchus Filipjev, 1936
 P. allenii Ferris, 1961
 P. brachyurus (Godfrey, 1929) Filipjev & Schuurmans Stekhoven, 1941
 syn. *P. pratensis* apud Thorne, 1940
 P. leiocephalus Steiner, 1949
 P. steineri Lordello, Zamith & Boock, 1954
 P. coffeae (Zimmermann, 1898) Filipjev & Schuurmans Stekhoven, 1941
 syn. *P. musicola* (Cobb, 1919) Filipjev, 1936
 P. mahogany (Cobb, 1920) Filipjev, 1936
 P. pratensis apud Yokoo, 1956

- P. crenatus* Loof, 1960
syn. *P. clavicaudatus* Baranovskaya & Haque, 1968
P. delatterei (Luc, 1958) Handoo & Golden, 1989
P. flakkensis Seinhorst, 1968
P. goodeyi Sher & Allen, 1953
P. hexincisus Taylor & Jenkins, 1957
P. kralli Ryss, 1982
P. neglectus (Rensch, 1924) Filipjev & Schuurmans Stekhoven, 1941
syn. *P. minyus* Sher & Allen, 1953
P. capitatus Ivanova, 1968
P. neocapitatus Khan & Singh, 1975
P. similis Khan & Singh, 1975
P. penetrans (Cobb, 1917) Filipjev & Schuurmans Stekhoven, 1941
syn. *Tylenchus gulosus* Kuhn, 1890
P. globulicola Romaniko, 1960
P. portulactus Zarina & Maqbool, 1998
P. pratensis (de Man, 1880) Filipjev, 1936
syn. *P. helophilus* Seinhorst, 1959
P. irregularis Loof, 1960
P. pseudofallax, Café-Filo & Huang, 1989
P. pseudopratensis Seinhorst, 1968
P. roseus Zarina & Maqbool, 1998
P. sacchari (Soltwedel, 1888) Filipjev, 1936
P. scribneri Steiner in Sherbakoff & Stanley, 1943
P. sefaensis Fortuner, 1973
P. similis Khan & Singh, 1975
P. sudanensis Loof & Yassin, 1971
P. thornei Sher & Allen, 1953
P. vulnus Allen & Jensen, 1951
P. zae Graham, 1951

Zygotylenchus Siddiqi, 1963
Z. guevarai (Tobar-Jimenez, 1963) Braun & Loof, 1966

- Hirschmanniellinae** Fotedar & Handoo, 1978
Hirschmanniella Luc & Goodey, 1964
H. gracilis (de Man, 1880) Luc & Goodey, 1964
syn. *Tylenchus gracilis* de Man, 1880
Tylenchorhynchus gracilis (de Man, 1880) Micoletzky, 1925
Anguillulina gracilis (de Man, 1880) Goodey, 1932
Chitinotylenchus gracilis (de Man, 1880) Hirschmann, 1955
Radopholus gracilis (de Man, 1880) Allen, 1955
Radopholus gigas Andrassy, 1954
Hirschmanniella gigas (Andrassy, 1954) Sher, 1968
H. magna Siddiqi, 1966
syn. *Hirschmanniella dubia* Khan, 1972
H. mexicana (Chitwood, 1951) Sher, 1968
syn. *Halenchus mexicanus* Chitwood, 1951

- Hirschmanniella caudacrena* Sher, 1968
H. mucronata (Das, 1960) Khan, Siddiqi, Khan, Hussian & Saxena, 1964
 syn. *Radopholus mucronatus* Das, 1960
Hirschmanniella mucronata (Das, 1960) Timm, 1965
Hirschmanniella mangalorensis Mathur & Prasas, 1971
Hirschmanniella indica Ahmad, 1974
H. oryzae (van Breda de Haan, 1902) Luc & Goodey, 1964
 syn. *Tylenchus oryzae* van Breda de Haan, 1902
Anguillulina oryzae (van Breda de Haan, 1902)
Radopholus oryzae (van Breda de Haan, 1902) Filipjev & Schuurmans Stekhoven, 1941
Tylenchus apapillatus Imamura, 1931
Anguillulina apapillata (Imamura, 1931) Goodey, 1932
Rotylenchus apapillatus (Imamura, 1931) Filipjev, 1936
Hirschmanniella apapillata (Imamura, 1931) Sher, 1968
Hirschmanniellana Siddiqi, 1966
Hirschmanniella exigua Khan, 1972
H. spinicaudata (Schuurmans Stekhoven, 1944) Luc & Goodey, 1964
 syn. *Tylenchorhynchus spinicaudatus* Schuurmans Stekhoven, 1944
Radopholus lavabri Luc, 1957
Hirschmanniella lavabri (Luc, 1957) Sher, 1968

Radopholinae Allen & Sher, 1967

- Radopholus*** Thorne, 1949
R. allius Shahina & Maqbool, 1996
R. brassicae Shahina & Maqbool, 1996
R. similis (Cobb, 1893) Thorne, 1949
 syn. *Tylenchus similis* Cobb, 1893
Anguillulina similis (Cobb, 1893) Goodey, 1932
Rotylenchus similis (Cobb, 1893) Filipjev, 1936
Tylenchus granulosus Cobb, 1893
Anguillulina granulose (Cobb, 1893) Goodey, 1932
Tetylenchus granulosus (Cobb, 1893) Filipjev, 1936
Radopholus granulosus (Cobb, 1893) Siddiqi, 1986
Tylenchus acutocaudatus Zimmermann, 1898
Anguillulina acutocaudata (Zimmermann, 1898) Goodey, 1932
Tylenchorhynchus acutocaudatus (Zimmermann, 1898) Filipjev, 1934
Radopholus acutocaudatus (Zimmermann, 1898) Siddiqi, 1986
Tylenchus biformis Cobb, 1909
Anguillulina biformis (Cobb, 1909) Goodey, 1932
Radopholus biformis (Cobb, 1909) Siddiqi, 1986
R. similis similis in Siddiqi, 1986

Pratylenchoides Winslow, 1958

- P. maqsoodi* Maqbool & Shahina, 1989

Criconematoidea Taylor, 1936

Criconematidae Taylor, 1936

Criconematinae Taylor, 1936

Criconema Hofmanner & Menzel, 1914

Subgenus *Nothocriconemella* (Ebsary, 1981) Siddiqi, 1986

C. (N.) mutabile (Taylor, 1936) Raski & Luc, 1985

syn. *Nothocriconema mutabile* (Taylor) de Grisse & Loof, 1965

Nothocriconemella mutabilis (Taylor) Ebsary, 1981

Nothocriconema kovaci (Andrassy) de Grisse & Loof, 1965

Nothocriconemella kovacsi (Andrassy) Ebsary, 1981

Criconema kovacsi (Andrassy) Siddiqi, 1986

Criconemoides raskii Goodey, 1963

Criconema raskii (Goodey) Siddiqi, 1986

Criconemoides siddiqi Khan, 1964

Criconema siddiqi (Khan) Siddiqi, 1986

Criconemoides magnolia Edward & Misra, 1964

Criconema magnolia (Edward & Misra) Siddiqi, 1986

Cricinemoides californicus Diab & Jenkins, 1966

Criconema californicum (Diab & Jenkins) Siddiqi, 1986

Criconemoides kashmirensis Mahajan & Bijral, 1973

Criconema kashmirensis (Mahajan & Bijral) Siddiqi, 1986

Criconemoides mutabilis Taylor, 1936

Ogma Southern, 1914

O. multiannulata Shahina & Maqbool, 1991

O. qamari Shahina & Maqbool, 1991

O. sadabhari Shahina & Maqbool, 1991

Macoposthoniinae Skarbilovich, 1959

Criconemoides Taylor, 1936

Subgenus *Criconemoides* Taylor, 1936

C. (C.) afghanicus Shahina & Maqbool, 1993

C. (C.) bakeri Wu, 1965

syn. *Criconemella bakeri* (Wu, 1965) Luc & Raski, 1981

C. (C.) brevistylus Singh & Khera, 1976

syn. *Criconemella brevistylus* (Singh & Khera, 1976) Luc & Raski, 1981

C. (C.) curvatus Raski, 1952

syn. *Criconemella curvata* (Raski, 1952) Luc & Raski, 1981

Macroposthonia coomansi de grisse, 1967

C. (C.) kamaliei Khan, 1971

C. (C.) onoensis Luc, 1959

syn. *Criconemella onoensis* (Luc, 1959) Luc & Raski, 1965

C. (C.) parvulus Siddiqi, 1961

syn. *Criconemella parvula* (Siddiqi, 1961) de Grisse & Loof, 1965

C. (C.) pruni (Siddiqi, 1961) Raski & Golden, 1966

syn. *Criconemella pruni* (Siddiqi, 1961) Luc & Raski, 1981

Criconema pruni Siddiqi, 1961

C. (C.) sphaerocephalus Taylor, 1936

syn. *Criconemella sphaerocephala* (Taylor, 1936) Luc & Raski, 1981

C. (C.) xenoplax Raski, 1952

syn. *Criconemella xenoplax* (Raski, 1952) Luc & Raski, 1981

Pakcriconemeoides Shahina & Maqbool, 1993

P. anastomoides (Maqbool & Shahina, 1985) Shahina & Maqbool, 1993

syn. *Criconemella anastomoides* Maqbool & Shahina, 1985

Macroposthonia anastomoides (Maqbool & Shahina, 1985)

Siddiqi, 1986

Mesocriconema anastomoides (Maqbool & Shahina, 1985)

Loof & de Grisse, 1989

Macroposthonia de Man, 1880

M. (curvata) alpina Shahina & Maqbool, 1993

M. coomansi De Grisse, 1967

Hemicriconemoidinae Andrassy, 1979

Hemicriconemoides Chitwood & Birchfield, 1957

H. brachyurus (Loos, 1949) Chitwood & Birchfield, 1957

H. cocophillus (Loos, 1949) Chitwood & Birchfield, 1957

syn. *Criconemoides cocophillus* Loos, 1949

Hemicycliophora cocophilla (Loos) Goodey, 1963

Criconema mangiferum Edward & Misra, 1963

Hemicriconemoides mangiferus (Edward & Misra) Siddiqi, 1986

H. communis Edward & Misra, 1964

H. gaddi (Loos, 1949) Chitwood & Birchfield, 1957

syn. *Criconemoides gaddi* Loos, 1949

Hemicycliophora gaddi (Loos) Goodey, 1963

H. ghaffari Maqbool, 1982

H. mangiferae Siddiqi, 1961

syn. *H. litchi* Edward & Misra, 1964

H. birchfieldi Edward, Misra & Singh, 1965

H. aberrans Phukan & Sanwal, 1983

H. strictathecatus Esser, 1960

syn. *Hemicycliophora strictathecata* (Esser) Goodey, 1963

Hemicycliophoroidea (Skarbilovich, 1959) Siddiqi, 1980

Hemicycliophoridae (Skarbilovich, 1959) Geraert, 1966

Hemicycliophorinae Skarbilovich, 1959

Hemicycliophora de Man, 1921

H. gracilis Thorne, 1955

H. veechi Maqbool, Shahina & Zarina, 1986

Aulosphora Siddiqi, 1980

A. karachiensis Maqbool, Shahina & Zarina, 1986

A. penetrans (Thorne, 1955) Siddiqi, 1980

syn. *Hemicycliophora penetrans* Thorne, 1955

Tylenchuloidea (Skarbilovich, 1947) Raski & Siddiqi, 1975

Tylenchulidae (Skarbilovich, 1947) Kirjanova, 1955

Tylenchulinae Skarbilovich, 1947

Tylenchulus Cobb, 1913

T. semipenetrans Cobb, 1913

Paratylenchidae (Thorne, 1949) Raski, 1962

Paratylenchinae Thorne, 1949

Paratylenchus Micoletzky, 1922

P. hamatus Thorne & Allen, 1950

P. holdemani Raski, 1975

P. italiensis Raski, 1975

P. karachiensis Zarina & Akhter, 2016

P. manilkarii Erum, Nasir, Nasira & Shahina, 2019

P. nainianus Edward & Misra, 1963

P. nanus Cobb, 1923

P. projectus Jenkins, 1956

syn. *P. amblycephalus* Reuver, 1959

P. salubris Raski, 1975

P. sindhicus Erum, Nasir, Nasira & Shahina, 2019

P. tateae Wu & Townshend, 1973

Gracilacus Raski, 1962

G. musae Shahina & Maqbool, 1993

Hexatylina Siddiqi, 1980

Neotylenchoidea (Thorne, 1941) Jairajpuri & Siddiqi, 1969

Neotylenchidae Thorne, 1941

Neotylenchinae Thorne, 1941

Neotylenchus Steiner, 1931

Neotylenchus spp.

Deladinae Siddiqi, 1986

Deladenus Thorne, 1941

D. cocophilus Nasira, Shahina & Firoza, 2013

D. imperialis Bedding, 1974

D. pakistanensis Shahina & Maqbool, 1992

Fergusobiinae Goodey, 1963

Fergusobia Currie, 1937

F. indica (Jairajpuri, 1962) Siddiqi, 1986

syn. *Boleodorus indicus* Jairajpuri, 1962

Dorsalla indica (Jairajpuri) Jairajpuri, 1966

Anguinoidea Nicroll, 1935

Anguinidae Nicroll, 1935

Anguininae Nicroll, 1935

Anguina Scopoli, 1777

A. tritici (Steinbuch, 1799) Filipjev, 1936

- syn. *Vibrio tritci* Steinbuch, 1799
Rhabditis tritici (Steinbuch) Dujardin, 1875
Anguillula tritici (Steinbuch) Grube, 1849
Anguillulina tritici (Steinbuch) Gervais & Van Beneden, 1859
Tylenchus tritici (Steinbuch) Bastian, 1865
Anguillula scandens Schneider, 1866
Tylenchus scandens (Schneider) Cobb, 1890
Anguillulina scandens (Schneider) Goodey, 1932

Subanguina Paramonov, 1967
S. balochia Erum, Shahina & Siddiqi, 2008

- Ditylenchus*** Filipjev, 1936
- D. anchilisposomus* (Tarjan, 1958) Fortuner, 1982
 syn. *Pseudhalenchus anchilisposomus* Tarjan, 1958
Safianema anchilisposomus Tarjan, 1958
D. angustus (Butler, 913) Filipjev, 1936
 syn. *Tylenchus angustus* Butler, 1913
Anguillulina angusta (Butler, 1913) Goodey, 1932
D. bilqueese Khan, Batool & Khan, 2004
D. clarus Thorne & Malek, 1968
D. destructor Thorne, 1945
D. dipsaci (Kuhn, 1857) Filipjev, 1936
 syn. *Anguillula dipsaci* Kuhn, 1857
Anguillulina dipsaci (Kuhn, 1857) Gervais Van Beneden, 1859
Tylenchus dipsaci (Kuhn, 1857) Bastian, 1965
Anguillulina dipsaci var. *allocates* Steiner, 1934
D. allocates (Steiner, 1934) Filipjev & Schuurmans Stekhoven, 1941
Anguillulina dispisci var. *communis* Steiner & Scott, 1935
D. dipsaci var. *narcissi* de Bruyn Ouboter, 1930
Anguillula devastatrix Kuhn, 1869
Tylenchus devastatrix (Kuhn, 1869) Orley, 1880
Anguillulina devastatrix (Kuhn, 1869) Neveu-Lemaire, 1913
D. devastatrix (Kuhn, 1969) tarjan, 1960
Anguillula secalis Nitschke, 1869
Anguillulina secalis (Nitschke, 1869) Goodey, 1932
D. secalis (Nitschke, 1869) Siddiqi, 1986
Tylenchus allii Beijerinck, 1883
D. allii (Beijerinck, 1883) Tarjan, 1960
Tylenchus havensteinii Kuhn, 1881
Anguillulina hyacinthi (Prillieux, 1881) Goodey, 1932
D. havensteinii (Kuhn, 1881) Siddiqi, 1986
Tylenchus hyacinthi Prillieux, 1881
Anguillulina hyacinthi (Prillieux, 1881) Goodey, 1932
D. dipsaci var. *hyacinthi* (Prillieux, 1881) Fillipjev &
 Schuurmans Stekhoven, 1941
Tylenchus puterfaciens Kuhn, 1879
D. putrefaciens (Kuhn, 1879) Tarjan, 1967

- Tylenchus tobaensis* Schneider, 1937
D. tobaensis (Schneider, 1937) Kirjanova, 1951
D. phloxidis Kirjanova, 1951
D. fragariae Kirjanova, 1951
D. galeopsidis Paramonov, 1970
D. sonchophilus Paramonov, 1970
D. dipsaci falcariae Poghosyan, 1967
D. emus Khan, Chawla & Prasad, 1969
D. geraerti (Paramonov, 1970) Bello & Geraert, 1972
syn. (*Tylenchus geraerti*) Paramonov, 1970
D. kheirii Fortuner & Maggenti, 1987
syn. *Nothotylenchus geraerti* Kheiri, 1971
D. medicaginis Wasilewska, 1965
D. myceliophagus Goodey, 1958

Nothotylenchinae Thorne, 1941

- Nothotylenchus*** Thorne, 1941
N. basiri Khan, 1965
N. goldeni Maqbool, 1982

Paurodontidae (Thorne, 1941) Massey, 1967

- Paurodontinae*** Thorne, 1941
Paurodontus Thorne, 1941
P. similis Siddiqi, 1961

Paurodontella Husain & Khan, 1968

- P. balochistanica* Handoo, Erum, Nasira & Shahina, 2010
P. myceliophaga Handoo, Erum, Nasira & Shahina, 2010
P. sohailai Maqbool, 1982

Stiptylus Thorne, 1941

- Stiptylus* spp.

Aphelenchida Siddiqi, 1980

- Aphelenchina*** (Fuchs, 1937) Geraert, 1966
Aphelenchoidea (Fuchs, 1937) Thorne, 1949
Aphelenchidae (Fuchs, 1937) Steiner, 1949
Aphelenchinae (Fuchs, 1937) Schuurmans Stekhoven & Teunissen, 1938
Aphelenchus Bastian, 1865
A. avenae Bastian, 1865
A. eremitus Thorne, 1961
A. isomerus Anderson & Hooper, 1980
A. sacchari (Akhtar, 1962) Goodey & Hooper, 1965
syn. *Metaphelenchus sacchari* Akhtar, 1962

Aphelenchoidoidea Skarbilovich, 1947 (Siddiqi, 1980)

- Aphelenchoididae*** (Skarbilovich, 1947) Paramonov, 1953

- Aphelenchoidinae*** Skarbilovich, 1947

Aphelenchoides Fischer, 1894

- A. aligarhiensis* Siddiqi, Husain & Khan, 1967
A. asterocaudatus Das, 1960
A. besseyi Christie, 1942
A. bicaudatus (Imamura, 1931) Filipjev & Schuurmans Stekhoven, 1941
A. blastophthorus Franklin, 1952
A. caprifici (Gasparrini, 1864) Filipjev, 1934
A. dactylocercus Hooper, 1958
A. goodeyi Siddiqi & Franklin, 1967
A. helicosoma Maslen, 1979
A. involutus Minegawa, 1992
A. parietinus (Bastian, 1865) Steiner, 1932
 syn. *Aphelenchus parietinus* Bastian, 1865
A. richardsoni Grewal, Siddiqi & Atkey, 1992
A. ritzemabosi (Schwartz, 1911) Steiner, 1932
 syn. *Aphelenchus ritzemabosi* Schwartz, 1911
Tylenchus ribes Taylor, 1917
Aphelenchus ribes (Taylor) Goodey, 1923
Aphelenchoides ribes (Taylor) Goodey, 1933
Aphelenchus phyllophagus Stewart, 1921
A. rutgersi Hooper & Myers, 1971
A. sacchari Hooper, 1958
A. siddiqi Fortuner, 1970
A. turnipi Israr, Shahina & Nasira, 2017
A. unisexus Jain & Singh, 1984
A. winchesi Paesler, 1957

Parasitaphelenchidae Rhum, 1956 (Siddiqi, 1980)

- Rhadinaphelenchinae** Paramonov, 1962
Rhadinaphelenchus Goodey, 1960
R. cocophilus (Cobb, 1919) Goodey, 1960

Seinuridae (Hussain & Khan 1967) Baranovskaya, 1981

- Seinurinae** Hussain & Khan, 1967
Seinura Fuchs, 1931
S. nagini Husain & Khan, 1965
S. oostenbrinki Husain & Khan, 1967

Paraphelenchidae Goodey, 1951

- Paraphelenchinae** Goodey, 1951
Paraphelenchus Micoletzky, 1922
P. litoralis Akhtar, 1962
P. sacchari Husain & Khan, 1967
Paraphelenchus spp.

Rhabditida Chitwood, 1933

- Rhabditina** Andrassy, 1974
Rhabditoidea Orley, 1880

Rhabditidae Orley, 1880

Rhabditinae Orley, 1880

Rhabditis Durjardin, 1845

R. karachiensis Khan, Seema, Khan, Qamar & Anwarullah, 1992

R. longicaudatus (Bastian, 1865) Osche, 1952

R. marious Maupas, 1899

R. producta (Schneider, 1866) Linstow, 1878

R. terricola Dujardin, 1845

Rhabditis spp.

Cuticularia Van der Linde, 1938

C. regenfussi (Sudhaus, 1980) Andrassy, 1983

Rhitis Andrassy, 1983

R. luci (Andrassy, 1982) Andrassy, 1983

Oscheius Andrassy, 1976

O. andrassi Tabassum & Shahina, 2008

O. citri Tabassum, Shahina, Nasira & Erum, 2016

O. cobbi Tabassum, Shahina, Nasira & Erum, 2016

O. cynodonti Tabassum, Shahina, Nasira & Erum, 2016

O. esculentus Tabassum, Shahina, Nasira & Erum, 2016

O. karachiensis Tabassum & Nasir, 2018

O. maqbooli Tabassum & Shahina, 2002

O. niazii Tabassum & Shahina, 2010

O. punctata Tabassum, Shahina, Nasira & Erum, 2016

O. sacchari Tabassum, Shahina, Nasira & Erum, 2016

O. shamimi Tehseen & Nisa, 2006

O. siddiqi Tabassum & Shahina, 2010

Diploscapteridae Micoletzky, 1922

Diploscapter Cobb, 1913

D. cornata (Cobb, 1893) Cobb, 1913

Mesorhabditidae Andrassy, 1976

Bursillinae Andrassy, 2005

Bursilla Andrassy, 1976

B. monhystera Butscili, 1873

Mesorhabditinae Andrassy, 1976

Crustorhabditis Sudhaus, 1974

C. scanica (Allgen, 1949) Andrassy, 1983

Cruzema Artigas, 1927

C. brzeskii (Brzeski, 1989) Sudhaus & Hooper, 1994

C. tripartitum (Linstow, 1906) Zullini, 1982

Distolabrellus Anderson, 1983

D. veechi Anderson, 1983

D. pakistanensis Tabassum, Shahina, Firoza & Siddiqi, 2005

Mesorhabditis (Osche, 1952) Dougherty, 1953

M. cranganorensis (Khera, 1968) Sudhaus, 1976

M. minuta Bostrom, 1991

M. striatica Dassonville & Heyns, 1984

Teratorhabditis (Osche, 1952), Dougherty, 1955

T. andrassyi Tahseen & Jairajpuri, 1988

Peloderidae Andrassy, 1986

Pellioiditinae Andrassy, 2005

Pellioidites (Dougherty, 1953) Timm, 1960

P. typica (Stefanchi, 1922) Dougherty, 1955

Dolichorhabditis Andrassy, 1983

D. dolichura (Schneider, 1866) Andrassy, 1983

Heterorhabditidae Pionar, 1976

Heterorhabditis Pionar, 1976

H. bacteriophora Poinar, 1976

H. indica Pionar, Karunakar & David, 1992

H. pakistanense Shahina, Tabassum, Salma, Mehreen & Knoetze, 2016

Steinernematidae Chitwood & Chitwood, 1937

Steinernema Travassos, 1927

S. abbasi Elawad, Ahmad & Reid, 1997

S. affine (Bovien, 1937) Wouts, Mracek, Gerdin & Bedding, 1982

S. asiaticum Anis, Shahina, Reid, & Rowe, 2002

S. balochiense Shahina, Tabassum, Shaukat, Sarwar, Mehreen & Salma, 2015

S. bifurcatum Shahina, Yan, Qui, Han, Mehreen, Tabassum & Salma, 2014

S. carpopcapsae (Weiser, 1955) Wouts, Mracek, Gerdin & Bedding, 1982

S. cholashanense Nguyen, Puza & Mracek, 2008

S. feltiae (Filipjev, 1934) Wouts, Mracek, Gerdin & Bedding, 1982

S. litorale Yoshida, 2004

S. maqbooli Shahina, Tabassum, Mehreen & Salma, 2013

S. pakistanense Shahina, Anis, Reid, Rowe & Maqbool, 2001

S. siamkayai Stock, Somsook & Reid, 1998

Cephalobina Andrassy, 1974

Cephaloboidea Filipjev, 1934

Cephalobidae Filipjev, 1934

Cephalobinae Filipjev, 1934

Cephalobus Bastian, 1865

syn. *Paracephalobus* Akhter, 1962

C. litoralis (Akhter, 1962) Andrassy, 1984

syn. *P. litoralis* Akhter, 1962

C. nanus de Man, 1880
C. persignis Bastian, 1865
C. sacchari Shahina & Tabassum, 2002

Acrobeles Von Linstow, 1877
A. complaxus Thorne, 1925
A. geraerti Rashid, Heyns & Coomans, 1990
A. mariannae Andrassy, 1968
A. ornatus Thorne, 1925

Acobeloides Cobb, 1924
A. bodenhemeri (Steiner, 1936) Thorne, 1937
A. enoploides Loof, 1971
A. gossypii Ashfaque, Shahina & Nasira, 2019
A. saeedi Siddiqi, Ley & Khan, 1992

Eucephalobus Steiner, 1935
Eucephalobus spp.

Chiloplacus Thorne, 1937
C. longiuterus Rashid & Heyns, 1990
Chiloplacus spp.

Pseudoacrobeles Steiner, 1928
Pseudoacrobeles spp.

Cervidellus Thorne, 1937
Cervidellus spp.

Acobelinae
Zeldia Thorne, 1937
Z. punctata (Thorne, 1925) Thorne, 1937

Family Osstellidae Heyns, 1962
Subfamily Drilocephalobinae Ali, Suryawanshi & Chisty, 1973
Drilocephalobus Coomans & Goodey, 1965
D. alykhani Siddiqi, 2001

Panagrolaimoidea Thorne, 1937
Panagrolaimidae Thorne, 1937
Panagrolaiminae Thorne, 1937
Panagrolaimus Fuchs, 1937
P. rigidis (Schneider, 1866) Thorne, 1937
Panagrolaimus spp.

Tricephalobus Steiner, 1936
T. longicaudatus (Butschli, 1873) Steiner, 1936

Propanagrolaimus Andrassy, 2005
P. hygrophilus (Bassen, 1940) Andrassy, 2005

Brevibuccinae Paramonov, 1956
Brevibucca Goodey, 1935
B. saprophaga Goodey, 1935

Chambersiellidae Thorne, 1937
Macrolaiminae Sanwal, 1971
Macrolaimus Maupas, 1900
Macrolaimus spp.

Alloionematidae Chitwood & McIntosh, 1934
Rhabditophanes Fuchs, 1930
R. brassicae Fuchs, 1930

Diplogasterida Maggenti, 1981
Diplogasterina Micoletzky, 1922
Diplogasteroidea Micoletzky, 1922
Diplogasteridae Micoletzky, 1922
Diplogaster Schultze in Carus, 1857
Diplogaster spp.

Demaniella Steiner, 1914
D. cibourgensis Steiner, 1914

Neodiplogasteridae Paramonov, 1952
Neodiplogasterinae Paramonov, 1952
Neodiplogaster Cobb, 1924
Neodiplogaster spp.

***Mononchoides* Rahm, 1928**
M. andrassyi Timm, 1961

Class: Adenophorea von Kinstow, 1905
syn. **Aphasmidia** Chitwood & Chitwood, 1933
Subclass: Enoplia Pearse, 1942

Dorylaimida Pearse, 1942
Dorylaimina Pearse, 1936
Dorylaimoidea (de Man, 1876) Thorne, 1934
Longidoridae (Thorne, 1935) Meyl, 1961
Xiphinematinae Dalmasso, 1969
Xiphinema Cobb, 1913
X. americanum Cobb, 1913
syn. *Tylencholaimus americanus* (Cobb, 1913) Micoletzky, 1922
X. neoamericanum Saxena, Chabra & Joshi, 1973
X. basiri Siddiqi, 1959

- syn. *X. cobbi* Sharma & Saxena, 1981
X. hayati Javed, 1983
X. bergeri Luc, 1973
X. bolandium Coomans & Heyns, 1985
X. brevicolle Lordello & Da Costa, 1961
 syn. *X. americanum* apud Carvalho, 1955, 1962
X. saopaoeloense Khan & Ahmad, 1975
X. californicum Lamberti & Bleve-Zacheo, 1979
X. chambersi Thorne, 1939
X. cynodontis Nasira & Maqbool, 1994
X. diversicaudatum (Micoletzky, 1927) Thorne, 1939
X. elongatum Schuurmans Stekhoven & Teunissen, 1938
 syn. *X. campinense* Lordello, 1951
X. hydrabadense Qureshi & Das, 1984
X. nagarjunense Khan, 1982
X. pretense Loos, 1949
X. uasi Edward & Sharma, 1982
X. incognatum Lamberti & Bleve-Zacheo, 1979
X. index Thorne & Allen, 1950
X. insigne Loos, 1949
 syn. *X. indicum* Siddiqi, 1959
X. neodimorphicaudatum Khan, 1982
X. tugeawai Darekar & Khan, 1983
X. intermedium Lamberti & Bleve-Zacheo, 1979
X. karachiense Nasira, Firoza & Maqbool, 1992
X. machoni Hunt, 1980
X. oxycaudatum Lamberti & Bleve-Zacheo, 1979
X. pachtaicum (Tulaganov, 1938) Kirjanova, 1951
 syn. *X. mediterraneum* Martelli & Lamberti, 1967
X. neoelongatum Bajaj & Jairajpuri, 1077
X. pachydermum Sturhan, 1983
X. pakistanensis Nasira & Maqbool, 1998
X. radicicola Goodey, 1936
 syn. *X. australiae* Mcleod & Khair, 1971
X. pararadicicola Phukan & Sanwal, 1982
X. rivesi Dalmasso, 1969
X. rotundatum Schuurmans Stekhoven & Teunissen, 1938
X. thornei Lamberti & Golden, 1986

Longidorinae Thorne, 1935

- Longidorus*** (Micoletzky, 1922) Filipjev, 1934
L. africanus Merny, 1966
L. elongatus (de Man, 1876) Thorne & Swanger, 1936
 syn. *Dorylaimus elongatus* de Man, 1876
D. (Longidorus) elongatus (de Man, 1876) Micoletzky, 1922
Trichodorus elongatus (de Man, 1876) Filipjev, 1921
D. tenuis Linstow, 1879
L. pisi Edward, Misra & Singh, 1964

- syn. *Brevinema pisi* (Edward, Misra & Singh, 1964) Stegarescu, 1980
L. siddiqi Aboul Eid, 1970
Xiphinema brevicaudatum Siddiqi, 1959
nec. Schuurmans Stekhoven, 1951
L. lectocephalus Lambarti, Choleva & Agostinelli, 1983
L. trapezoides Nasira & Maqbool, 1995
- Paralongidorus** Siddiqi, Hooper & Khan, 1963
P. beryllus Siddiqi & Husain, 1965
P. citri (Siddiqi, 1959) Siddiqi, Hooper & Khan, 1963
syn. *Xiphinema citri* Siddiqi, 1959
L. citri (Siddiqi, 1959) Thorne, 1961
P. lemoni Nasira, Shahina, Firoza & Maqbool, 1993
P. major Verma, 1973
P. xiphinemoides Heyns, 1965
- Dorylaimidae** de Man, 1876
- Dorylaiminae** de Man, 1876
- Dorylaimus** Dujardin, 1845
D. bastiani Butschli, 1873
D. biroi Daday, 1899
D. granuliferus Cobb, 1893
D. stagnalis Dujardin, 1845
D. subsimilis Cobb, 1893
- Afrodorylaiminae** Andrassy, 1969
- Paradorylaimus** Andrassy, 1969
P. dorsocaudali Nasira, Israr & Shahina, 2017
- Laimydorinae** Andrassy, 1969
- Mesodorylaimus** Andrassy, 1959
M. aberrans Loof, 1969
M. bastiani (Butschli, 1873) Anrassy, 1959
M. clavicaudatus (Thorne & Swanger, 1936) Andrassy, 1959
M. mehraniensis Khan & Saeed, 1986
- Prodorylaimus** Andrassy, 1959
Prodorylaimus spp.
- Laimydorus** Siddiqi, 1969
L. pseudostagnalis (Micoletzky, 1927) Siddiqi, 1969
L. wirisi Tabassum, Shahina & Nasira, 2006
- Thornenematinae** Siddiqi, 1969
- Timminema** Khan, 1977
T. pakisticum Khan, 1977
- Thornenema** Andrassy, 1959
T. maruitianum (Williams, 1959) Baqri & Jairajpuri, 1969

Aporcelaimidae Heyns, 1965

Aporcelaiminae Heyns, 1965

Aprocelaimellus Heyns, 1965

A. goldeni Khan & Fatima, 1980

A. obscurus (Thorne & Swanger, 1936) Heyns, 1965

A. obtusicaudatus (Bastian, 1865) Altherr, 1960

A. sacchari Khan, 1989

A. taylori Yeates, 1967

Aprocelaimus Thorne & Swanger, 1936

A. cocophilus Loos, 1949

A. digitalis Loos, 1949

A. spiralis (Cobb, 1913) Thorne & Swanger, 1936

Qudsianematidae Jairajpuri, 1965

Qudsianematinae Jairajpuri, 1965

Labronema Thorne, 1939

L. digitatum Sakul, Das & Mitra, 1975

L. mauritiense Williams, 1959

Eudorylaimus Andrassy, 1959

E. andersoni Khan, 1989

E. magestri Andrassy, 1986

E. major

E. minusculus (Loos, 1946) Siddiqi, 1969

E. subjunctus Loof, 1971

E. varians Thorne, 1974

Eudorylaimus spp.

Thonus Thorne, 1974

T. saccatus Thorne, 1974

Ecumenicus Thorne, 1974

E. monohystera (de Man, 1880) Thorne, 1974

Allodorylaimus Andrassy, 1986

A. americanus Andrassy, 1986

Microdorylaimus Andrassy, 1986

M. miser (Thorne & Swanger, 1936) Andrassy, 1986

Talanema Andrassy, 1991

T. mauritiense (Williams, 1959) Andrassy, 1990

Thorniinae De Coninck, 1965

Nygolaimoides Meyl, 1960

Nygolaimoides spp.

Chrysonematinae Siddiqi, 1969
Chrysonema Thorne, 1929
C. mauritiana Williams, 1959

Discolaiminae Siddiqi, 1969
Discolaimum Thorne, 1939
D. australe (Yeates, 1967) Andrassy, 1990
D. brachyurum Husain & Siddiqi, 1967
D. capitulum Shahina, Mussarat & Siddiqi, 2005
D. gracile Thorne, 1939
D. pakisticum Timm, 1963
D. upum Baqri & Jairajpuri, 1968

Discolaimus Cobb, 1913
D. acuticapitatus Furstenberg & Heyns, 1966
D. bulbiferus (Cobb, 1906) Thorne & Swanger, 1936
D. lahorensis Khan, 1998
D. major Thorne, 1939
D. pakistanense Nasira, Shahina & Erum, 2008
D. similis Thorne, 1939
D. texanus Cobb, 1913

Latocephalus Patil & Khan, 1982
L. smithi (Heyns, 1963) Patil & Khan, 1982

Lordellonematinae Siddiqi, 1969
Lordellonema Andrassy, 1960
L. subannulatum Tabassum, Shahina & Siddiqi, 2005

Moshajia Siddiqi, 1982
M. qasmi Zarina & Shahina, 2007
M. teres Tabassum, Shahina & Siddiqi, 2005

Poronemella Siddiqi, 1969
P. divulgata Tabassum, Shahina & Siddiqi, 2005

Nordiidae Jairajpuri & Siddiqi, 1964
Nordiinae Jairajpur i& Siddiqi, 1964
Longidorella Thorne, 1939
L. (Kantbhala) allii Suryawanshi, 1971
L. (Saevadorella) tharensis Nasira, Shahina & Firoza, 2010
Longidorella spp.

Actinolaimoidinae Jairajpuri & Ahmad, 1992
Paroriverutus Carbonell & Coomans, 1982
P. timmi Khan, 1994

Pungentinae Siddiqi, 1969
Pungentus Thorne & Swanger, 1936
P. engadinensis Alterr, 1950
Pungentus spp.

Enchodelus Thorne, 1939

E. arcuatus Thorne, 1939

E. macrodorus (de Man, 1880) Thorne, 1939

Heterodorus Altherr, 1952

H. longidens (Jairajpuri & Loof, 1968) Andrassy, 2009

Actinolaimoidea Thorne, 1939

Cchararolaimidae Thorne, 1967

Cchararolaiminae Thorne, 1967

Cchararolaimus Thorne, 1939

Cchararolaimus spp.

Belondiroidea Thorne, 1939

Belondiridae Thorne, 1939

Belondirinae Thorne, 1939

Belondira Thorne, 1939

B. paraclava Jairajpuri, 1964

Belondira spp.

Amphibelondira Rahman, Jairajpuri, Ahmad & Ahmad, 1987

A. sindhicus Ashfaque, Nasira & Shahina, 2019

Axonchium Cobb, 1920

A. gigas Thorne, 1939

A. indicum Siddiqi, 1964

A. mauritiense Williams, 1958

A. oostenbrinki Khan & Ahmad, 1970

Dorylaimellinae Jairajpuri, 1964

Dorylaimellus Cobb, 1913

D. clavicaudatus Williams, 1958

D. vexator Heyns, 1963

Axodorylaimellus Siddiqi, 1983

A. aghai Siddiqi, 1983

Elongidorylaimellus Siddiqi, 1983

E. lauceolatus Siddiqi, 1983

Jamilius Siddiqi, 1983

J. adenophorus Siddiqi, 1983

J. jamali Siddiqi, 1983

Sindellus Siddiqi, 1983

S. sindi Siddiqi, 1983

Rashidanema Siddiqi, 1983

R. cognatum (Siddiqi, 1983) Jairajpuri & Ahmad, 1992

- Tylencholaimoidea** Filipjev, 1934
Tylencholaimidae Filipjev, 1934
Tylencholaiminae Filipjev, 1934
Tylencholaimus de Man, 1876
 T. cynodonti Nasira, Erum & Shahina, 2005
 T. gertii Kruger, 1965
 T. nagauriensis Baqri & Bohra, 2001
 T. proximus Thorne, 1939
 Tylencholaimus spp.
- Discomyctus* Thorne, 1939
Discomyctus spp.
- Mydonomidae** Thorne, 1964
Dorylaimoides Thorne & Swanger, 1936
 D. (Acridorylaimoides) arcuatus Siddiqi, 1964
 D. (Digidorylaimoides) pakistanensis Siddiqi, 1964
 D. (Dorylaimoides) parateres Siddiqi, 1964
- Xiphinemellinae** Jairajpuri, 1964
Xiphinemella Loos, 1950
 X. ornata (Loos, 1949) Loos, 1950
- Leptonchidae** Thorne, 1935
Leptonchiniae Thorne, 1935
Leptonchus Cobb, 1920
 L. granulosus Cobb, 1920
 Leptonchus spp.
- Belonenchiniae** Thorne, 1964
Basirotyleptus Jairajpuri, 1964
 B. (Basirotyleptus) basiri (Jairajpuri, 1964) Jairajpuri & Ahmad, 1992
- Tylencholaimellinae** Jairajpuri, 1964
Doryllium Cobb, 1920
 D. minor Jairajpuri, 1963
 Doryllium spp.
- Nygolaimina** Ahmad & Jairajpuri, 1979
Nygolaimoidea Thorne, 1935
Nygolaimidae Thorne, 1935
Nygolaiminae Thorne, 1935
Nygolaimus Cobb, 1913
 N. gigantus Shahina, Erum & Siddiqi, 2005
 N. neominimus Shahina, Erum & Siddiqi, 2005
 N. vulgaris Thorne, 1930

Solididentinae Ahmad & Jairajpuri, 1982

Solididens Heyns, 1968

S. swatiensis Nasira, Shahina & Maqbool, 1999

Nygolaimellidae Clark, 1961

Nygolaimellinae Clark, 1961

Nygolaimellus Loos, 1949

N. abnormis Loos, 1949

Alaimina Clark, 1971

Alaimidae Miocoletzky, 1922

Alaimus de Man, 1880

A. minor Cobb, 1893

Bathyodontina Coomans & Loof, 1970

Cryptonchidae Chitwood, 1937

Cryptonchus Cobb, 1930

Cryptonchus spp.

Triplonchida Cobb, 1920

Diphtherophorina Coomans & Loof, 1970

Diphtherophoroidea Miocoletzky, 1922

Diphtherophoridae Miocoletzky, 1922

Diphtherophora de Man, 1880

Diphtherophora spp.

Trichodoroidea (Thorne, 1935) Siddqi, 1974

Trichodoridae (Thorne, 1935) Siddqi, 1961

Trichodorus Cobb, 1913

T. obtusus Cobb, 1913

T. pakistanensis Siddqi, 1962

Paratrichodorus Siddqi, 1974

P. faisalabadensis Nasira & Maqbool, 1994

P. minor (Colbran, 1956) Siddqi, 1974

syn. *Trichodorus minor* Colbran, 1956

P. christiei (Allen, 1957) Siddqi, 1974

P. obesus (Rasjivin & Penton, 1975) Rodriguez & Bell, 1978

P. mirzai (Siddqi, 1960) Siddqi, 1974

syn. *Trichodorus mirzai* Siddqi, 1960

T. musaambi Edward & Misra, 1970

P. psidii Nasira & Maqbool, 1994

P. renifer Siddqi, 1974

Tobrilina Tsalolikhin, 1976

Prismatolaimoidea Miocoletzky, 1922

Prismatolaimidae Miocoletzky, 1922

Prismatolaimus de Man, 1980

P. intermedius (Butschli, 1873) de Man, 1980

Mononchida Jairajpuri, 1969

Mononchina Kirjanova & Krall, 1969

Mononchoidea Chitwood, 1937

Mononchidae Chitwood, 1937

Mononchinae Chitwood, 1937

Mononchus Bastian, 1865

M. aquaticus Coetzee, 1968

M. pappilatus Bastian, 1865

Mononchus spp.

Prionchuliniae Andrassy, 1976

Clarkus Jairajpuri, 1970

C. papillatus (Bastian, 1865) Jairajpuri, 1970

Mylonchulidae Jairajpuri, 1969

Mylonchuliniae Jairajpuri, 1969

Mylonchulus (Cobb, 1916) Altherr, 1953

M. amurus Khan & Jairajpuri, 1979

M. brachyuris Butschli, 1873

M. contractus Jairajpuri, 1970

M. lacustis (Cobb in Cobb, 1915) Andrassy, 1958

M. minor (Cobb, 1893) Andrassy, 1958

M. nainitalensis Jairajpuri, 1970

M. paitensis Yeates, 1992

M. rosensis Khan, 1975

M. sigmaturus (Cobb, 1916) Altherr, 1953

Mylonchulus spp.

Pakmylonchulus Khan & Saeed, 1987

P. amurus Khan & Saeed, 1987

Anatonchoidea Jairajpuri, 1969

Anatonchidae Jairajpuri, 1969

Anatonchinae Jairajpuri, 1969

Anatonchus (Cobb, 1916) de Coninck, 1939

A. valitangiensis Khan & Saeed, 1987

Miconchinae Andrassy, 1976

Miconchus Andrassy, 1958

M. dalhousiensis Jairajpuri, 1969

Enoplida Filipjev, 1929

Enopliina Chitwood & Chitwood, 1937

Thoracostomopsidae Filipjev, 1927

Enoplolaimus de Man, 1893

E. karachiensis Maqbool, Nasira & Turpeenniemi, 1999

Enchelidiidae Filipjev, 1918

Eurystomina Filipjev, 1921

E. indica Yoshimura, 1980
Eurystomina spp.

Pareuryystomina Micoletzky, 1930
P. vaughtae Keppner, 1989

Bathyeuryystomina Lampshead & Platt, 1979
B. minima Nasira, Shahina & Shamim, 2014

Belbolla Andrassy, 1973
B. longispiculata Nasira, Shahina & Shamim, 2014

Oncholaimidae Filipjev, 1921
Oncholaimus Dujardin, 1845
O. oxyuris Ditlevsen, 1911
O. paraoxyuris Salma, Nasira, Saima & Shahina, 2017

Dentolaimoides Khan, 1994
D. papillifer Khan, 1994

Metoncholaimus Filipjev, 1918
M. medispiculatum Salma, Nasira, Saima & Shahina, 2017
M. siddiqii Shahina, Nasira & Shamim, 2015

Viscosia de Man, 1890
V. elegans Kreis, 1924

Oxystominidae (Filipjev, 1918) Chitwood, 935
Oxystomina Filipjev, 1921
O. elongata Butschli, 1874

Halalaimus de Man, 1888
H. gidanensis Nasira & Turpeenniemi, 2002

Anoplostomatidae Gerlach & Riemann, 1974
Anoplostoma Butschli, 1874
A. sunderbanae Timm, 1967

Pelagonematidae Andrassy, 1976
Pelagonema Cobb, 1894
Pelagonema spp.

Ironidae de Man, 1876
Ironus Bastian, 1865
I. dentifurcatus Agro & Heyns, 1972

Syringolaimus de Man, 1888
S. brevicaudatus Micoletzky, 1922

Thalassironus de Man, 1889

T. qatarense Nasira, Kamran, Shahina & Kazmi, 2006

Trissonchulus Cobb, 1920

T. benepapillous Schulz, 1935

T. lichenii Nasira & Turpeenniemi, 2002

T. oceanus Cobb, 1920

Leptosomatidae Filipjev, 1916

Leptosomatum Bastian, 1865

L. ranjhai Timm, 1960

Tripyloidina de Coninck 1965

Tripyloididae Filipjev, 1918

Bathylaimus Cobb, 1894

B. australis Cobb, 1894

Trefusiida Lorenzen, 1981

Trefusiidae Gerlach, 1966

Trefusia de Man, 1893

Trefusia spp.

Sub Class: Chormadaria (Pearse, 1942) Filipjev, 1929

Chromadorida Filipjev, 1929

Chromadorina Filipjev, 1918

Microlaimidae Micoletzky, 1922

Microlaimus de Man, 1880

M. arenicola Schulz, 1938

M. amphidius Kamran, Nasira & Shahina, 2009

M. karachiensis Kamran, Nasira & Shahina, 2009

M. sonmianensis Nasira, Maqbool, Turpeenniemi & Zarina, 2000

Calomicrolaimus Lorenzen, 1976

C. arenarius Blome, 1982

Cinctonema Cobb, 1920

C. papillata Timm, 1962

Comesomatidae Filipjev, 1918

Paracomesoma Hope & Murphy, 1972

P. longispiculum Timm, 1961

***Sabatieria Rouville*, 1903**

S. microsetosa Timm, 1967

Chromadoridae Filipjev, 1927

Hypodontolaimus de Man, 1886

Hypodontolaimus spp.

Graphonema Cobb, 1898
Graphonema spp.

Endeolophos Boucher, 1976
E. minutus Gerlach, 1967

Chromadora Bastian, 1865
C. nudicapitata Bastian, 1865

Spilophorella Filipjev, 1917
S. candida Gerlach, 1951

Ptycholaimellus Cobb, 1920
P. sindicus Turpeenniemi, Nasira & Maqbool, 2001

Trichromadorita Timm, 1961
T. arinus Khan, 1991

Panduripharynx Timm, 1961
Panduripharynx spp.

Achromadoridae Gerlach & Riemann, 1973
Achromadorinae Gerlach & Riemann, 1973
Achromadora Cobb, 1913
A. ruricola (de Man, 1880) Micoletzky, 1925
Achromadora spp.

Cyatholaimidae Filipjev, 1918
Paracanthonchus Micoletzky, 1924
P. sandspitensis Nasira, Kamran & Shahina, 2007
P. hawaiiensis Allgen, 1951

Cyatholaimus Bastain, 1865
Cyatholaimus spp.

Marylynnia Hopper, 1977
M. musharafii Nasira, Kamran & Shahina, 2007

Selachinematidae Cobb, 1915
Choanolaimus de Man, 1880
Choanolaimus spp.

Halichoanolaimus de Man, 1886
H. balochiensis Turpeenniemi, Nasira & Maqbool, 2001
Synonchium Cobb, 1920
S. marina Kamran, Nasira & Shahina, 2009
S. oblongus Kamran, Nasira & Shahina, 2009
S. pakistanense Kamran, Nasira & Shahina, 2009

Desmodoridae Filipjev, 1922

Desmodora de Man, 1889

D. (Pseudochromadora) clifteensis Turpeenniemi, Nasira & Maqbool, 2001

Metachromadora Filipjev, 1918

M. (Metachromadoroides) remanei Gerlach, 1951

Spirinia Gerlach, 1963

S. (Perspirnia) striatica caudata (Timm, 1962) Wieser & Hooper, 1967

Onyx Cobb, 1891

O. balochiensis Nasira, Rehmat & Shahina, 2011

Monoposthidae Filipjev, 1934

Monoposthia de Man, 1889

Monoposthia spp.

Ethmolaimidae Filipjev & Stekhoven, 1941

Paraethmolaimus Jensen, 1994

P. appendix caudatus Jensen, 1994

Leptolaimina Lorenzen, 1981

Leptolaimidae Orley, 1880

Diodontolaimus Southern, 1914

D. karachiensis Nasira, Kamran & Shahina, 2005

Leptolaimus de Man, 1876

L. luridus Timm, 1963

Camacolaimus de Man, 1889

C. tardus de Man, 1889

Camacolaimus spp.

Ionema Cobb, 1920

I. cobbi Timm, 1963

Chronogaster Cobb, 1913

C. typica (de Man, 1921) de Coninck, 1937

Stephanolaimus Ditlevsen, 1914

Stephanolaimus spp.

Paraphanolaimus Micoletzky, 1923

P. granuliferus Timm, 1963

Halaphanolaimus Southern, 1914

H. marinus Kamran, Nasira & Shahina, 2010

Rhabdolaimidae Chitwood, 1961

Rogerinae Andrassy, 1976

Rogerius Hoepli & Chu, 1934
syn. *Greenenema* Andrassy, 1959
Rogerius spp.

Aulolaimidae Jairajpuri & Hooper, 1968
Aulolaimus de Man, 1880
A. mubarakvilli Salma, Saima, Nasira & Shahina, 2018
A. rashidae Shahina, Hunt & Siddiqi, 1996

Heliplectidae Chitwood, 1951
Heliplectus Cobb, 1913
H. dorsalis Cobb in Chitwood, 1956
H. gracilis Shahina, Siddiqi & Nasira, 2014
H. minor Shahina, Siddiqi & Nasira, 2014
H. monodelphis Shahina, Siddiqi & Nasira, 2014
H. pakistanensis Shahina, Siddiqi & Nasira, 2014
H. paradorsalis Shahina, Siddiqi & Nasira, 2014
H. robustus Shahina, Siddiqi & Nasira, 2014
Haliplectus spp.

Aegialoalaimidae Lorenzen, 1981
Aegialoalaimus de Man, 1907
Aegialoalaimus spp.

Odontolaimidae Gerlach & Riemann, 1974
Odontolaimus de Man, 1880
Odontolaimus spp.

Monochromadorinae Andrassy, 1958
Monochromadora Goodey, 1951
Monochromadora spp.

Desmoscolecina Filipjev, 1934
Desmoscolecidae Shipley 1896
Desmosoclex Claparedé, 1863
Desmoscolex spp.

Triconema Cobb, 1893
Triconema spp.

Draconematidae Filipjev, 1918
Dracograllus Allen & Noffsinger, 1978
D. demanii Allen & Noffsinger, 1978

Monhysterida Filipjev, 1929
Monhysterina Chitwood & Chitwood, 1950
Monhysteridae de Man, 1876
Monhystera Bastian, 1865
M. karachiensis Timm, 1963
M. parelegantula de Coninck, 1943

Geomonhystera Andrassy, 1981

G. dubia Siddiqi & Shahina, 2004

G. karuni Siddiqi & Shahina, 2004

Monhystrella Cobb, 1918

Monhystrella spp.

Diplolaimella Allgen, 1929

D. dievengatensis Jacobs, Velde, Geraert & Vranken, 1990

Diplolaimelloides Meyl, 1954

D. delyi Andrassy, 1958

Xyalidae Chitwood, 1951

Arabanema Turpeenniemi, Nasira & Maqbool, 2001

A. pakistanensis Turpeenniemi, Nasira & Maqbool, 2001

Cobbia de Man, 1907

C. macrostoma Timm, 1963

Daptonema Cobb, 1920

Daptonema spp.

Megalolaimus Timm, 1961

Megalolaimus spp.

Paramonohystera Steiner, 1916

P. (Leptogastrella) pellucida Cobb, 1920

P. (Paramonohystera) longicaudata Timm, 1963

Rhynchonema Cobb, 1920

R. scutatum Lorenzen, 1971

Goniochonus Cobb, 1920

G. arabica Nasira & Turpeenniemi, 2003

Steineria Micoletzky, 1922

S. simplex Timm, 1963

S. pilosa brevisetosa Timm, 1957

Theristus Bastian, 1865

T. cylindricus Salma, Nasira, Saima & Shahina, 2017

T. flevensis Stekhoven, 1935

T. (Penzancia) karachiense Salma, Nasira, Saima & Shahina, 2017

T. longisetifer Kito & Aryuthaka, 1998

T. otoplanobius Gerlach, 1951

T. (Cylindrotheristus) poloris Cobb, 1914

T. (Cylindrotheristus) normandicus de Man, 1890

Thrichotheristus Weiser, 1956
T. floridanus Wieser & Hopper, 1967
Trichotheristus spp.

Sphaerolaimidae Filipjev, 1918
Sphaerolaimus Bastian, 1865
S. gracilis de Man, 1876
S. maeoticus Filipjev, 1922

Linhomoeidae Filipjev, 1922
Eleutherolaimus Filipjev, 1922
E. inglisi Timm, 1967
E. longus Filipjev, 1922
E. obtusicaudatus Allen, 1947

Terschellingia de Man, 1888
T. longicaudata de Man, 1907
T. communis de Man, 1888
T. lissa Timm, 1962
T. longissimicaudata Timm, 1962
T. magna Timm, 1962
syn. *T. communis* Gerlach, 1955
T. mora Gerlach, 1954

Metalinhomoeus de Man, 1907
M. karachiensis Timm, 1962

Megadesmolaimus Wieser, 1954
M. controtus Timm, 1962

Paralinhomoeus de Man, 1907
P. dubius Timm, 1961

Linhomoeus Bastian, 1865
syn. *Anticyclus* Cobb, 1920
Linhomoeus spp.

Axonolaimidae Filipjev, 1918
Pseudolella Cobb, 1920
P. granulifera Cobb, 1920
Odontophora Butschli, 1874
O. hawksbiensis Turpeenniemi, Nasira & Maqbool, 2001

Parodontophora Timm, 1963
P. cobbi Timm, 1963
P. pacifica (Allgen, 1947) Timm, 1963

Diplopeltidae Filipjev, 1918
Araeolaimus de Man, 1888

A. elegans de Man, 1888
A. taxianus Chitwood, 1951

Plectida Malakhov, 1982
Plectoidea Orley, 1880
Plectidae Orley, 1880
Plectinae Orley, 1880
Plectus Bastian, 1865
Plectus (Ceratoplectus) armatus (Butschli, 1873) Andrassy, 1984
P. karachiensis Shahina, Tabassum & Maqbool, 2001
P. perietinus Bastian, 1865
P. raabei Brzeski, 1961
P. tenuis Bastian, 1865
Plectus spp.

Willsonematinae Chitwood, 1951
Willsonema Cobb, 1913
W. promissum Khan, Seema & Khan, 1990

References

- Aatika, S., Nasira, K. & Shahina, F. (2017). Description of *Filenchus maqbooli* n. sp., and redescriptions of five new records of plant parasitic nematodes of maize crops from Punjab, Pakistan. *Pakistan Journal of Nematology*, 35, 47-64.
- Ahmed, W. & Jairajpuri, M. S. (2010). *Mononchida: The Predatory Soil Nematodes* (Edt. by David, H. & Roland, N. P., Brill, Leiden- Boston, pp. 298.
- Akhtar, S. A. (1962). *Metaphelenchus sacchari* sp. n., (Nematoda: Aphelenchoidea Fuchs, 1937) associated with the roots of sugarcane. *Nematologica*, 7, 53-56.
DOI: 10.1163/18752926X00738
- Akhtar, S. A. (1962). *Paracephalobus* (Nematoda: Cephalobidae) a new genus of soil inhabiting nematodes. *Proceedings of Helminthological Society of Washington*, 29, 207-210.
- Akhter, S. & Zarina, B. (2014). *Bitylenchus capsicumi* sp. n. and one known species of the genus *Aphelenchus* from chilli plants in Sindh, Pakistan. *International Journal of Biology Research*, 2, 135-141.
- Andrassy, I. (1984). *Klasse Nematoda: Ordnungen Monhysterida, Desmoscolecida*,

- Araeolaimida, Chromadorida, Rhabditida*. Fischer, Akademie-Verlag, Stuttgart, Germany, pp.1-509.
- Andrássy, I. (2005). *Free-living nematodes of Hungary (Nematoda erratia)*. Vol. 1. In: *Pedozoologica Hungarica No. 3*. (Edt. by). Csuzdi, C. and Mahunka, S. Hungarian Natural History Museum and Systematic Zoology Research Group of the Hungarian Academy of Sciences, Budapest, 518 pp.
- Andrassy, I. (2007). *Free-living nematodes of Hungary (Nematoda errantia)*, Vol. 2. In: *Pedozoologica Hungarica No. 4*. (Edt. by). Csuzdi, C. and Mahunka, S. Hungarian Natural History Museum and Systematic Zoology Research Group of the Hungarian Academy of Sciences, Budapest, 496 pp.
- Anis, M., Shahina, F., Reid, A. P. & Rowe, J. (2002). *Steinernema asiaticum* sp. n., (Rhabditida: Steinernematidae) from Pakistan. *International Journal of Nematology*, 12, 220-231.
- Ashfaq, A. N., Shahina, F. & Nasira, K. (2019). New and known nematodes associated with cotton plantation in Sindh, Pakistan. *Pakistan Journal of Zoology*, 51, 1309-1314.
DOI://http://dx.doi.org/10.17582/journal.pjz/PJZ/2019.51.4.1299.1307

- Ashfaq, A. N., Nasira, K. & Shahina, F. (2019). Description of *Amphibelondira sindhicus* with observation on *Belondira paraclava* Jairajpuri, 1964 of the family Belondiridae from Sindh, Pakistan. *Pakistan Journal of Zoology*, 51(Accepted).
- Erum, Y. I. & Shahina, F. (2008). Description of *Atetylenchus metaporus* sp. n. (Nematoda: Psilenchidae) from Pakistan. *Journal of Nematode Morphology & Systematics*, 11, 129-135.
- Erum, Y. I., Shahina, F. & Siddiqi, M. R. (2008). *Subanguina balochia* sp. n., forming stem galls on grasses in Balochistan, Pakistan. *International Journal of Nematology*, 18, 169-173.
- Erum, Y. I., Nasir, M., Nasira, K. & Shahina, F. (2019). Description of *Paratylenchus manilkarii* n. sp., *P. sindhicus* n. sp., and observation of *Pratylenchus kralli* Ryss, 1982 from chikoo (*Manilkara zapota* L. van Royen) orchards of Balochistan and Sindh, Pakistan. *Pakistan Journal of Zoology*, 51(In press).
- Erum, Y. I., Mussarat, R. & Shahina, F. (2011). Description of *Neodolichorhynchus indicus* sp. n., from Pakistan, with a key to species of the sub genus *Neodolichorhynchus* (*Mulkorhynchus*). *Journal of Nematode Morphology & Systematics*, 14, 55-62.
- Eyualem-Abebe, Traunspurger, W. & Andrassy, I. (2006). Freshwater nematodes: Ecology & Taxonomy. CABI Publishing, Wallingford, UK, pp. 752.
- Farooq, M. & Fatima, N. (1994). A new species of genus *Scutylenchus* Jairajpuri, 1971 (Nematoda: Marliniinae). *Proceedings of Pakistan Congress of Zoology*, 14, 147-150.
- Farooq, M., Fatima, N. & Khan, H. A. (1991). *Tylenchus pakistanensis* n.sp., (Nematoda: Tylenchinae) a parasite of bird cherry (*Prunus cornuta*) in Murree hills, Pakistan. *Proceeding of Parasitology*, 11, 16-21.
- Fatima, N. & Farooq, M. (1992). Two new species of subfamily Merliniinae Siddiqi, 1971 (Nematoda: Dolichodoridae) from Balochistan. *Pakistan Journal of Zoology*, 24, 317-319.
- Firoza, K. & Maqbool, M. A. (1994). Descriptions of *Helicotylenchus meloni* n. sp., and *H. striatus* n. sp., (Nematoda: Hoplolaimidae) from Pakistan. *Pakistan Journal of Nematology*, 12, 109-116.
- Firoza, K. & Maqbool, M. A. (1991). Description of *Rotylenchus capsicum* n. sp., and morphometric data on five known species of the genus *Helicotylenchus* Steiner, 1945 (Nematoda: Hoplolaimidae) recorded from Pakistan. *Pakistan Journal of Nematology*, 9, 71-78.
- Firoza, K. & Maqbool, M. A. (1993). Three new species of the subfamily Hoplolaiminae (Nematoda: Hoplolaimidae) from Pakistan. *Pakistan Journal of Nematology*, 11, 69-78.
- Firoza, K. & Maqbool, M. A. (1996). Description of *Helicotylenchus lemoni* n. sp., (Nematoda: Hoplolaimidae) with a key to species of Pakistan. *Pakistan Journal of Nematology*, 14, 83-88.
- Firoza, K., Nasira, K. & Maqbool, M. A. (1990). Description of *Hoplolaimus tabacum* n. sp., (Nematoda: Hoplolaimidae) from Pakistan with morphometric data on *H. aegypti*. *Pakistan Journal of Nematology*, 8, 1-5.
- Fortuner, R. (1987). A reappraisal of Tylenchina (Nemata). 8. The family Hoplolaimidae Filip'ev, 1934. *Revue de Nematologie*, 10, 219-232.
- Geraert, E. & Raski, D. J. (1987). A_reappraisal of Tylenchina (Nemata). 3. The family Tylenchidae Orley, 1880. *Revue de Nematologie*, 10, 143-161.
- Golden, A. M., Maqbool, M. A. & Handoo, Z. A. (1987). Descriptions of two new species of *Tylenchorhynchus* Cobb, 1913 (Nematoda: Tylenchida), with details on morphology and variation of *T. claytoni*. *Journal of Nematology*, 19, 58-68.
- Goodey, J. B. & Hooper, D. J. (1965). A Neotype of *Aphelenchus avenae* Bastian, 1865 and the rejection of *Metaphelenchus* Steiner, 1943. *Nematologica*, 11, 55-65.

DOI: 10.1163/187529265X00474

- Handoo, Z. A., Iqbal, E. Y. Nasira, K. & Shahina, F. (2010). Two new species of *Pauromontella* Husain & Khan, 1968 (Nematoda: Sphaerulariidae) associated with wheat and a diagnostic compendium to the genus. *Nematology*, 12, 181-192.
- Hunt, D. J. (1993). *Aphelenchida, Longidoridae and Trichodoridae: Their Systematics and Bionomics*. CAB International, 352 pages.
- Israr, M., Shahina, F. & Nasira, K. (2017). Description of *Aphelenchooides turnipi* n. sp. and redescription of *A. siddiqii* with notes on *A. bicaudatus* (Nematoda: Aphelenchoididae) from Pakistan. *Pakistan Journal of Nematology*, 35, 03-12.
- Jairajpuri, M. S. & Ahmad, W. (1992). *Dorylaimida: Free-living, predaceous and plant parasitic nematodes*. Oxford and IBH Publishing Company Private Limited, New Delhi, India, 458 pp.
- Kamran, M., Nasira, K. & Shahina, F. (2009). Three new species of the genus *Synonchium* Cobb, 1920 (Chromadorida: Selachinematidae) from mangrove areas of Pakistan. *Pakistan Journal of Nematology*, 27, 129-144.
- Kamran, M., Nasira, K. & Shahina, F. (2009). Two new species of marine nematodes *Microlaimus amphidius* sp. n., and *M. karachiensis* (Chromadorida) from Arabian Sea of Pakistan. *International Journal of Nematology*, 19, 167-172.
- Kamran, M., Nasira, K. & Shahina, F. (2010). Description of *Halaphanolaimus marius* sp. n. (Nematoda: Chromadorida) from Arabian Sea of Pakistan. *International Journal of Nematology*, 20, 69-74.
- Khan, A. & Bilquees, F. M. (1993). *Basiria bajorensis* n. sp., (Nematoda: Tylenchida) from Pakistan. *Proceedings of Parasitology*, 15/16, 14-16.
- Khan, A. & Khan, H. A. (1995). *Merlinius bilqueesae* n. sp., (Nematoda: Merliniinae) from apple *Malus pumila* (Mill.). *Proceedings of Parasitology*, 19, 29-33.
- Khan, A. (2004). *Tylenchorhynchus handooi* n. sp., (Nematoda: Tylenchida) from Khuzdar, Balochistan. *Proceedings of Parasitology*, 38, 57-61.
- Khan, A., Khan, H. A. & Bilquees, F. M. (1992). *Aglenchus siddiqii*, a new nematode species (Tylenchinae) from Karachi, Pakistan. *Pakistan Journal of Zoology*, 24, 21-222.
- Khan, A., Batool, S. K. & Nasira, K. (2004). Two new species of Tylenchidae, *Psilenchus khuzdarensis* n. sp., and *Ditylenchus bilqueesae* n. sp., (Nematoda: Tylenchidae). *Proceedings of Parasitology*, 38, 81-87.
- Khan, A., Ghazi, R. R. & Soomro, M. H. (2008). A new species of the genus *Helicotylenchus* Steiner, 1945 (Nematoda: Hoplolaiminae) from Balochistan, Pakistan. *Proceedings of Parasitology*, 46, 87-91.
- Khan, H. A. & Fatima, I. (1980). *Aporcelaimellus goldeni* n. sp., and *Aporcelaimellus obscurus* (Thorne & Swanger, 1936) Heyns, 1965 (Aporcelaimidae: Nematoda) from Sindh with comments on *Thonus saccatus* (Eudorylaiminae, new subfamily), *Discolaimus* Cobb, 1913 and *Discolaimum* Thorne, 1939. *Proceedings of 1st Pakistan Congress of Zoology*, pp. 383-389.
- Khan, H. A. & Ahmad, M. (1970). *Axonchium oostenbrinki* sp. nov., Belondiridae (Nematoda) from West Pakistan with its revised key. *Agriculture Pakistan*, 21, 201-204.
- Khan, H. A. & Ahmad, M. (1970). New species of *Helicotylenchus* (Steiner, 1945) with the description of *Helicotylenchus buxophilus* from West Pakistan. *Agriculture Pakistan*, 21, 215-221.
- Khan, H. A. & Saeed, M. (1986). Studies on Dorylaimid nematodes from the Indus delta. 1. *Mesodorylaimus mehraniensis*. *Bangladesh Journal of Zoology*, 14, 117-122.
- Khan, H. A. & Saeed, M. (1987). Description of *Anatonchus valitangiensis* n. sp., and a note on nematodes of restricted mountainous pass of Balochistan. *Proceedings of Parasitology*, 3, 42-47.
- Khan, H. A. & Saeed, M. (1987). *Pakmylonchulus* n. gen., (Mononchida: Mylonchulidae) with notes on *Mylonchulus nainitalensis* Jairajpuri, 1970; *M. sigmaturus* (Cobb, 1917) Altherr, 1953 from Pakistan. *Pakistan Journal of Zoology*, 19, 313-320.

- Khan, H. A. (1971). *Circonemoides kamaliei* n. sp. (Criconematidae: Nematoda) from Sindh region. *Pakistan Journal of Scientific and Industrial Research*, 14, 514-517.
- Khan, H. A. (1975). A new species of the genus [*Mylonchulus* (*Mylenchulus*)] (Cobb, 1916) Altherr, 1953 (Enopliida: Mononchidae) from Karachi. *Pakistan Journal of Zoology*, 7, 143-144.
- Khan, H. A. (1977). *Timminema pakistanicum* n. gen., and n. sp., (Nematoda: Dorylaimidae) from Sindh, Pakistan. *Pakistan Journal of Zoology*, 9, 157-159.
- Khan, H. A. (1989). *Eudorylaimus andersoni* and *Aporcelaimellus sacchari* n. sp., from Pakistan. *Pakistan Journal of Scientific and Industrial Research*, 32, 684-687.
- Khan, H. A. (1991). A new species of the genus *Trichromadorita* Timm, 1963 (Nematoda: Hypodontolaimidae) with amended diagnosis of *Megalolaimus* and *Panduri pharynx* Timm, 1961. *Sarhad Journal of Agriculture*, 7, 603-606.
- Khan, H. A. (1994). Biosystematic studies on *Dentolaimoides papillifer* n. gen., n. sp., (Nematoda: Oncholaimidae) with the description of *Paroriverutus timmi* n. sp., around the root of grasses. *Science Khyber*, 7, 29-36.
- Khan, H. A. (1998). A new species of *Discolaimus* Cobb (Nematoda: Discolaimidae) with the description of two other species from Pakistan. *Bangladesh Journal of Zoology*, 26, 13-18.
- Khan, H. A., Saeed, H. & Akhter, M. (2004). A new species of *Tylenchorhynchus* with comments of *Geocenamus rugosus* (Thorne and Malek, 1968) Brezeski, 1991 from Sindh. *Pakistan Journal of Scientific and Industrial Research*, 47, 446-450.
- Khan, H. A., Seema, N. & Khan, S. A. (1990). Preliminary studies on free-living nematodes from Indus Delta. *Pakistan Journal of Scientific and Industrial Research*, 33, 439-443.
- Khan, H. A., Seema, N., Khan, S. A., Qamar, F. & Anwarullah, M. (1992). Preliminary observations on morphology and embryogenesis of *Rhabditis karchiensis* n. sp., from Pakistan. *Pakistan Journal of Scientific and Industrial Research*, 35, 338-341.
- Lorenzen, S. (1981). Entwurf eines phylogenetischen Systems der freilebenden Nematoden. *Veröffentlichungen des Institut für Meeresforschungen Bremerhaven* 7 (Suppl.), 472 pp.
- Maqbool, M. A. & Shahina, F. (1984). Description of *Leipotylenchus amiri* n. sp., (Nematoda: Tylenchida) from Pakistan. *Revue de Nematologie*, 7, 363-365.
- Maqbool, M. A. & Shahina, F. (1985). Two new and two known species of the genus *Malenchus* Andrassy, 1968 (Nematoda: Tylenchidae) from Pakistan. *Pakistan Journal of Nematology*, 3, 1-7.
- Maqbool, M. A. & Shahina, F. (1985). *Epicharinematinae* n. subfam. and *Karachinema elongatum* n. gen., n.sp. (Tylenchida: Nematoda) from Pakistan. *Pakistan Journal of Nematology*, 3, 53-60.
- Maqbool, M. A. & Shahina, F. (1985). *Criconemella anastomoides* n. sp., (Nematoda: Criconematina) from Pakistan. *Journal of Nematology*, 17, 236-239.
- Maqbool, M. A. & Shahina, F. (1985). Two new species of the genus *Ottolenchus* Husain & Khan, 1967 (Nematoda: Tylenchidae) with a key to the species and observation on *O. facultativus* (Szczygiel, 1969) Brzeski, 1982 from Pakistan. *Revue de Nematologie*, 8, 329-333.
- Maqbool, M. A. & Shahina, F. (1986). Four new species of the family Hoplolaimidae (Nematoda) with notes on *Rotylenchus cypriensis* Antoniou from Pakistan. *Nematologia Mediterranea*, 14, 117-128.
- Maqbool, M. A. & Shahina, F. (1986). New species of cyst nematode *Heterodera pakistanensis* (Nematoda: Heteroderidae) attacking wheat in Pakistan. *Journal of Nematology*, 18, 541-548.
- Maqbool, M. A. & Shahina, F. (1987). Description of two new and data on three known species of the genus *Tylenchus* Bastian, 1865 (Nematoda: Tylenchidae) from Pakistan with a

- key to the species of *Tylenchus*. *Pakistan Journal of Nematology*, 5, 53-67.
- Maqbool, M. A. & Shahina, F. (1987). Nematodes of northern areas in Pakistan. Description of *Nagelus saifulmulukensis* n. sp., and *Merlinius montanus* n. sp., (Nematoda: Merliniinae) with notes on three species of *Tylenchorhynchus* Cobb, 1913. *Revue de Nematologie*, 10, 289-294.
- Maqbool, M. A. & Shahina, F. (1988). Nematodes of northern areas in Pakistan *Heterodera bergeniae* sp. n., (Nematoda: Heteroderidae) a parasite of *Bergenia ciliata*. *Revue de Nematologie*, 11, 121-127.
- Maqbool, M. A. & Shahina, F. (1989). Nematode of northern areas in Pakistan. Description of *Neothada major* n. sp., and *Pratylenchoides maqsoodi* n. sp., (Nematoda: Tylenchina). *Revue de Nematologie*, 12, 211-216.
- Maqbool, M. A. & Ghazala, P. (1984). Studies on *Orientylus karachiensis* n. sp., (Nematoda: Hoplolaimidae) and observations on *Orientylus siddiqui* from Pakistan. *Pakistan Journal of Nematology*, 2, 15-18.
- Maqbool, M. A. & Ghazala, P. (1986). Description of *Boleodorus arachis* n. sp., and *Cephalenches longicaudatus* n. sp., (Nematoda: Tylenchida) with observations on some new records from northern areas of Pakistan. *Pakistan Journal of Nematology*, 4, 51-58.
- Maqbool, M. A. (1982). Description of *Quinisulcius solani* n. sp., (Nematoda: Tylenchorhynchidae) with a key to the species and data on *Scuttylenchus koreanus* from Pakistan. *Journal of Nematology*, 14, 221-225.
- Maqbool, M. A. (1982). Studies on some Criconematoidea (Nematoda) from Pakistan with a description of *Hemicriconemoides ghaffari* n. sp. *Revue de Nematologie*, 5, 257-260.
- Maqbool, M. A. (1982). Three new species of the super family Neotylenchoidea (Nematoda: Tylenchida) from Pakistan. *Journal of Nematology*, 14, 317-323.
- Maqbool, M. A. (1983). Description of *Paktylenchus tuberosus* gen. n., sp. n., (Nematoda: Tylenchinae) from Pakistan. *Pakistan Journal of Nematology*, 15, 76-79.
- Maqbool, M. A., Zarina, B. & Ghazala, P. (1987). Description of *Tylenchus naranensis* n. sp., (Nematoda: Tylenchinae). *Pakistan Journal of Nematology*, 5, 1-4.
- Maqbool, M. A., Shahina, F. & Zarina, B. (1986). Two new species of Hemicycliophorinae Skarbilovich, 1959 (Nematoda: Criconematidae) from Pakistan. *Pakistan Journal of Nematology*, 4, 43-49.
- Maqbool, M. A., Shahina, F. & Firoza, K. (1990). Description of *Boleodorus azadkashmirensis* n. sp., (Nematoda: Tylenchidae) and observation on *Filenchus vulgaris* (Brzeski, 1963) Lownsbery & Lownsbery, 1985 from Pakistan. *Pakistan Journal of Nematology*, 8, 43-48.
- Maqbool, M. A., Nasira, K. & Turpeenniemi, T. A. (1999). Description of free-living marine nematode *Enoplolaimus karachiensis* sp. nov., and five known species (Nematoda: Enoplia; Monhysterida) from Arabian Sea. *Pakistan Journal of Nematology*, 17, 105-123.
- Maqbool, M. A., Fatima, N. & Hashmi, S. (1983). *Merlinius niazei* n. sp., (Nematoda: Merliniinae) and the occurrence of some members of Merliniinae and Tylenchorhynchinae in Pakistan. *Pakistan Journal of Nematology*, 1, 111-121.
- Maqbool, M. A., Ghazala, P. & Fatima, N. (1984). Two new species of the family Dolichodoridae (Nematoda: Tylenchida) from Pakistan. *Pakistan Journal of Nematology*, 2, 61-67.
- Maqbool, M. A., Ghazala, P., Fatima, N. & Qasim, M. (1985). *Pararotylenchus microstylus* n. sp., and *Scuttylenchus baluchiensis* n. sp., with observations on some new records from Pakistan. *Pakistan Journal of Nematology*, 3, 61-67.
- Maqbool, M. A., Shahina, F. & Zarina, B. (1984). *Aglenchus mardanensis* n. sp., a new nematode species (Tylenchinae) from Pakistan. *Pakistan Journal of Nematology*, 2, 19-22.
- Maqbool, M. A., Fatima, N. & Shahina, F. (1984). Three new species of the family

- Tylenchidae (Nematoda: Tylenchida) from Pakistan with comments on the genus *Basiroides*. *Pakistan Journal of Nematology*, 2, 49-59.
- Maqbool, M. A. & Shahina, F. (2001). *Distribution and Systematics: Biodiversity of Nematode Fauna in Pakistan*. National Nematological Research Centre, University of Karachi, Karachi, pp 179.
- Musarrat, R., Handoo, Z. A. & Shahina, F. (2008). Description of *Tylenchorhynchus qasimii* sp. n. with a new report of *T. kegasawai*, 1995 from Pakistan. *Journal of Nematology*, 40, 20-25.
- Nasir, M. & Tabassum, K. A. (2018). Description of *Oscheius karachiensis* n.sp. (Nematoda: Rhabditidae), a new entomopathogenic nematode from chicko (*Manilkara zapota*), Saeedabad, Sindh, Pakistan. *International Journal of Scientific & Engineering Research*, 9, 530-33.
- Nasira, K. & Maqbool, M. A. (1994). Two new species of *Paratrichodorus* Siddiqi, 1974 (Nematoda: Trichodoridae) with observation on *P. mirzai* (Siddiqi, 1960) Siddiqi, 1974 and *P. renifer* Siddiqi, 1974 from Pakistan. *Fundamental and Applied Nematology*, 17, 323-332.
- Nasira, K. & Maqbool, M. A. (1994). *Xiphinema cynodontis* n. sp., (Nematoda: Longidoridae) from Pakistan. *Pakistan Journal of Nematology*, 12, 99-107.
- Nasira, K. & Maqbool, M. A. (1995). Description of *Longidorus trapezoides* n. sp., and morphometric data on *L. elongatus* (de Man, 1876) Thorne & Swanger, 1936 (Dorylaimida: Longidoridae) from Pakistan. *Pakistan Journal of Nematology*, 13, 51-60.
- Nasira, K. & Maqbool, M. A. (1996). Description of *Tylenchorhynchus gossypii* n. sp., (Nematoda: Dolichodoridae) with observation on *T. elegans* Siddiqi, 1961 from Pakistan. *Pakistan Journal of Nematology*, 14, 33-40.
- Nasira, K. & Maqbool, M. A. (1998). Description of *Xiphinema pakistanensis* n. sp., and the male of *X. oxycaudatum* Lamberti & Bleve-Zacheo, 1979 with observation on *X. thornei* Lamberti & Golden, 1986 (Nematoda: Longidoridae) from Pakistan. *Pakistan Journal of Nematology*, 16, 1-12.
- Nasira, K. & Turpeenniemi, T. A. (2002). Description of *Trissonchulus lichenii* n. sp., and *Halalaimus gidanensis* n. sp., with observations on three known species (Nematoda: Enoplogida) from northern Arabian Sea. *Pakistan Journal of Nematology*, 20, 1-16.
- Nasira, K. & Turpeenniemi, T. A. (2003). New and known marine nematodes of the family Xyalidae (Nematoda: Monhysterida) from Arabian Sea of Pakistan. *Pakistan Journal of Nematology*, 21, 1-9.
- Nasira, K., Rehmat, B. & Shahina, F. (2011). Description of *Onyx balochiensis* n. sp., (Nematoda: Chromadorida) with a compendium of the genus *Onyx* Cobb, 1891 from Pakistan. *Pakistan Journal of Nematology*, 29, 1-13.
- Nasira, K., Shahina, F. & Firoza, K. (2010). Description of *Longidorella (Saevadorella) tharensis* sp. n., (Nematoda: Dorylaimida) from Sindh, Pakistan. *International Journal of Nematology*, 20, 135-140.
- Nasira, K., Shahina, F. & Firoza, K. (2013). *Deladenus cocophilus* n. sp. (Nematoda: Hexatylina): A mycetophagous and entomoparasitic nematode in infested coconut fruits from Balochistan, Pakistan. *Journal of Nematology*, 45, 106-111.
- Nasira, K., Shahina, F. & Maqbool, M. A. (1991). *Tylenchorhynchus swatiensis* n. sp., (Nematoda: Tylenchida) from the Swat area of Pakistan. *Pakistan Journal of Nematology*, 9, 1-5.
- Nasira, K., Shahina, F. & Maqbool, M. A. (1999). Description of *Solididens swatiensis* n. sp., (Dorylaimida: Nygolaimoidea) with observations on four known species from Pakistan. *Pakistan Journal of Nematology*, 17, 1-14.
- Nasira, K., Shahina, F. & Kamran, M. (2005). Description of *Diodontolaimus karachiensis* n. sp., (Chromadorida: Leptolaimidae) from Arabian Sea of Pakistan. *Pakistan Journal of Nematology*, 23, 115-118.

- Nasira, K., Shahina, F. & Erum, Y. I. (2008). Description of *Discolaimus pakistanense* n. sp., (Nematoda: Dorylaimida) with a compendium of the genus *Discolaimus* Cobb, 1913 from Pakistan. *Pakistan Journal of Nematology*, 26, 107-124.
- Nasira, K., Shahina, F., Firoza, K. & Maqbool, M. A. (1993). Description of *Paralongidorus lemoni* n. sp., and redescription of *P. major* Verma, 1973 (Nematoda: Longidoridae) from Pakistan with SEM observation. *Pakistan Journal of Nematology*, 11, 79-91.
- Nasira, K., Erum, Y. I. & Shahina, F. (2005). Description of *Tylencholaimus cynodonti* n. sp., with observation on four known species (Nematoda: Dorylaimida) from Pakistan. *Pakistan Journal of Nematology*, 23, 189-202.
- Nasira, K., Firoza, K. & Maqbool, M. A. (1992). Description of *Xiphinema karachiense* sp. n., and morphometric data on *Enchodelus macrodorus* (de Man, 1880), Thorne, 1939 (Nematoda: Dorylaimida) from Pakistan. *Fundamental and Applied Nematology*, 15, 421-426.
- Nasira, K., Maqbool, M. A., Turpeenniemi, T. A. & Zarina, B. (2000). Description of *Microlaimus sonmianensis* n. sp., with observation on *Microlaimus arenicola* Schulz, 1938 and *Calomicrolaimus arenarius* Blome, 1982 (Chromadorida: Microlaimidae) from Arabian Sea of Pakistan. *Pakistan Journal of Nematology*, 18: 1-10.
- Nasira, K., Israr, M. & Shahina, F. (2017). Description of *Paradorylaimus dorsocaudali* new species (Nematoda: Dorylaimida) with notes on *Plectus* (*Ceratoplectus armatus*) from Pakistan. *Pakistan Journal of Zoology*, 49, 2043-2049.
- Nasira, K., Kamran, M. K. & Shahina, F. (2007). Two new species of free-living marine nematodes of the family Cyatholaimidae (Nematoda: Chromadorida) from Arabian Sea of Pakistan. *Pakistan Journal of Nematology*, 25, 91-98.
- Nasira, K., Kamran, M., Shahina, F. & Kazmi, Q. B. (2006). Description of marine nematode *Thalassironus qatarense* n. sp., (Enoplida: Ironidae) from Arabian Gulf, Qatar. *Pakistan Journal of Nematology*, 24, 139-144.
- Nasira, K., Shahina, F. & Shamim, S. (2014). Descriptions of *Bathyeuryystomina minima* sp. n. and *Belbolla longispiculata* sp. n. with observations on *Pareuryystomina vaughtae* and *Euryystomina indica* (Enoplida: Enchelidiidae) from Pakistan. *International Journal of Nematology*, 24, 87-96.
- Nguyen, K. B. & Hunt, D. (2007). *Entomopathogenic Nematodes: Systematics, Phylogeny and Bacterial Symbionts*. Brill, Leiden, The Netherland, 816 pp.
- Platt, H. M. & Warwick, R. M. (1983). Free-living marine nematodes, Part 1. British Enoplids, *Synopses of the British Fauna (New series)*. No 28, Cambridge University Press. 307 pp.
- Platt, H. M. & Warwick, R. M. (1988). Free-living marine nematodes. Part II. British Chromadorids *Synopsis of the British fauna (New series)* No. 38, 502 pp. Leiden, Netherlands, Brill.
- Sagir, H. & Erum Y. I. (2017). Description of new stunt nematode species, *Merlinius nagerensis* n. sp. and new records of plant parasitic nematodes from Gilgit-Baltistan, Pakistan. *Pakistan Journal of Nematology*, 35, 13-35.
- Salma, J., Nasira, K., Saima, M. & Shahina, F. (2017). Morphological and molecular identification of four new species of marine nematodes *Pakistan Journal of Nematology*, 35, 113-150.
- Salma, J., Saima, M., Nasira, K. & Shahina, F. (2018). Description of *Aulolaimus mubaraki* new species (Nematoda: Aulolaimidae) with observation on *Heterodorus longidens* from Pakistan. *Pakistan Journal of Zoology*, 50, 325-328.
- Sattar, A. & Hafiz, A. (1952). *Researches on plant diseases of the Punjab*. Scientific Monograph No. 1. Association for the Advancement of Science, Lahore, pp. 158.
- Shahina F., Yan, X., Qui, L., Han, R., Mehreen, G., Tabassum, K. A. & Salma, J. (2014). A new entomopathogenic nematode, *Steinernema bifurcatum* n. sp. (Rhabditida:

- Steiner nematidae) from Punjab, Pakistan. *Nematology*, 16, 821-836.
- Shahina, F. & Tabassum, K. A. (2002). Description of *Cephalobus sacchari* n. sp., and redescription of *C. nanus* De Man, 1880 (Nematoda: Cephalobidae) from Pakistan. *Pakistan Journal of Nematology*, 20, 17-24.
- Shahina, F. & Maqbool, M. A. (1989). *Heterodera cynodontis* n. sp., (Nematoda: Heteroderidae) from *Cynodon dactylon* (L.) in Pakistan. *Revue de Nematologie* 12, 395-400.
- Shahina, F. & Maqbool, M. A. (1990). Studies on the genus *Neopsilenchus* (Nematoda: Tylenchidae) with description of *Acusilenchus* n. sub gen. and three new species. *Pakistan Journal of Nematology*, 8, 49-63.
- Shahina, F. & Maqbool, M. A. (1991). Description of three new species of the genus *Ogma* Southern, 1914 (Nematoda: Criconematidae) from Pakistan. *Revue de Nematologie*, 14, 221-229.
- Shahina, F. & Maqbool, M. A. (1992). Description of *Deladenus pakistanensis* n. sp., (Nematoda: Tylenchida) from Pakistan. *Pakistan Journal of Nematology*, 10, 1-6.
- Shahina, F. & Maqbool, M. A. (1993). *Gracilaculus musae* n. sp., (Nematoda: Paratylenchinae) from banana field in Sindh, Pakistan. *Pakistan Journal of Nematology*, 11, 1-5.
- Shahina, F. & Maqbool, M. A. (1993). *Pakcriconemoides anastomoides* (Maqbool & Shahina) gen. n. comb. n., *Criconemoides afghanicus* sp. n., and *Macroposthonia curvata alpina* sub sp. n., (Nematoda: Criconematidae). *Afro-Asian Journal of Nematology*, 3, 188-195.
- Shahina, F. & Maqbool, M. A. (1994). Description of *Filenchus sindhicus* sp. n., and observations on three known species (Nematoda: Tylenchidae) on banana in Pakistan. *Nematologica*, 40, 69-77. <https://doi.org/10.1163/003525994X00058>
- Shahina, F. & Maqbool, M. A. (1996). Two new species of the genus *Radopholus* Thorne, 1949 (Nematoda: Pratylenchidae) from Pakistan. *Fundamental and Applied Nematology*, 19, 289-292.
- Shahina, F., Musarrat, A. R. & Siddiqi, M. R. (2005). *Discolamium capitulum* sp. n., and observations on *D. brachyurum* Siddiqi and *D. upum* Baqri & Jairajpuri (Nematoda: Dorylaimida). *Pakistan Journal of Nematology*, 23, 29-40.
- Shahina, F., Hunt, D. J. & Siddiqi, M. R. (1996). Three new species of *Aulolaimus* de Man (Chromadorida: Aulolaimidae). *Afro-Asian Journal of Nematology*, 6, 78-84.
- Shahina, F., Tabassum, K. A. & Maqbool, M. A. (2001). Description of *Plectus karachiensis* n. sp., (Nematoda: Plectidae) with observation on *P. raabei* Brzeski, 1963 from Pakistan. *Pakistan Journal of Nematology*, 19, 33-40.
- Shahina, F., Nasira, K. and Shamim, S. (2015). Description of *Metoncholaimus siddiqii* n. sp. (Nematoda: Oncholaimidae) from Pakistan. *International Journal of Nematology*, 25, 35-38.
- Shahina, F., Nasira, K., Salma, J., Mehreen, G. & Bhatti, M. I. (2015). Description of a new root-knot nematode, *Meloidogyne pakistanica* sp. n. (Nematoda: Meloidogynidae). *International Journal of Nematology*, 25, 135-144.
- Shahina, F., Tabassum, K. A. & Nasira, K. (2006). *Laimydorus wirisi* n. sp. with notes on *Aporcelaimellus obtusicaudatus* and *Allodorylaimus americanus* (Nematoda: Dorylaimida) from Pakistan. *Pakistan Journal of Nematology*, 24, 129-138.
- Shahina, F., Tabassum, K. A., Mehreen, G. & Salma, J. (2013). *Steinernema maqbooli* n. sp. (Rhabditida: Steinernematidae) a species of the 'bicornutum' group from Pakistan *International Journal of Nematology*, 23, 59-72.
- Shahina, F., Tabassum, K. A., Salma, J., Mehreen, G. & Knoetze, R. (2016). A new entomopathogenic nematode, *Heterorhabditis pakistanense* n.sp. (Rhabditida: Heterorhabditidae) from Pakistan. *Journal of Helminthology*, 1-14. doi: 10.1017/S0022149X16000158
- Shahina, F., Anis, M., Reid, A. P. Rowe, J. & Maqbool, M. A. (2001). *Steinernema pakistanense* sp. n., (Rhabditida: Steinernematidae) from Pakistan. *International Journal of Nematology*, 11, 124-133.

- Shahina, F., Siddiqi, M. R. & Nasira, K. (2014). Six new species of *Haliplectus* Cobb, 1913 (Nematoda: Haliplectidae) from mangroves of Karachi, Pakistan. *International Journal of Nematology*, 24, 68-80.
- Shahina, F., Erum, Y. I. & Siddiqi, M. R. (2005). Studies on the genus *Nygolaimus* Cobb, 1913 (Nematoda: Nygolaimidae) with description of two new species from Pakistan. *Pakistan Journal of Nematology*, 23, 21-28.
- Shahina, F., Tabassum, K.A. Shaukat, A., Solangi, G.S., Mehreen, G. & Salma, J. (2015). A new entomopathogenic nematode, *Steinernema balochiense* n.sp. (Rhabditida: Steinernematidae) from Pakistan. *Zootaxa*, 3904, 387-402. DOI: 10.11646/zootaxa.3904.3.4
- Siddiqi, M. R. & Shahina, F. (2004). *Geomonhystera karuni* sp. n., and *G. dubia* sp. n., (Nematoda: Monhysterida) from Karachi, Pakistan. *International Journal of Nematology*, 14, 169-173.
- Siddiqi, M. R. (1962). *Trichodorus pakistanensis* n. sp., (Nematoda: Trichodoridae) with observations on *T. porosus* Allen, 1957, *T. mirzai* Siddiqi, 1960 and *T. minor* Colbran, 1956 from India. *Nematologica*, 8, 193-200. <http://dx.doi.org/10.1163/187529262X00422>.
- Siddiqi, M. R. (1963). *Boleodorus pakistanensis* n. sp., (Nematoda: Tylenchida), found associated with pine roots in Abbottabad, Pakistan. *Science Culture*, 29, 562-563.
- Siddiqi, M. R. (1963). Three new species of *Dorylaimoides* Thorne & Swanger, 1936, with a description of *Xiphinema orbum* n. sp. (Nematoda: Dorylaimida). *Nematologica*, 9, 626-634.
- Siddiqi, M. R. (1983). Taxonomy of the subfamily Dorylaimellinae (Nematoda: Dorylaimida). *Pakistan Journal of Nematology*, 11, 1-38.
- Siddiqi, M. R. (1986). *Tylenchida: Parasites of plant and insects*. CABI, Sent Albans, UK, 645 p
- Siddiqi, M. R. (2000). *Tylenchida parasites of plants and insects*. 2nd Edition.CABI Publishing, Wallingford, UK, 833pp. <http://doi.org/10.1079/9780851992020.0000>
- Siddiqi, M. R. (2001). Six new species of the genus *Drilocephalobus* (Nematoda: Cephaloboidea). *International Journal of Nematology*, 11, 260-269.
- Siddiqi, M. R., Ley, P. D. & Khan, H. A. (1992). *Acobeloides saeedi* sp.n., from Pakistan and redescription of *A. bodenheimeri* (Steiner) and *Placodira lobata* Thorne (Nematoda: Cephalobidae). *Afro-Asian Journal of Nematology*, 2, 5-16.
- Tabassum, K. A. & Shahina, F. (2002). *Oscheius maqbooli* n. sp. and observations on three known Rhabditid species (Nemata: Rhabditida) from sugarcane fields of Balochistan, Pakistan. *Pakistan Journal of Nematology*, 20, 1-21.
- Tabassum, K. A. & Shahina, F. (2008). *Oscheius andrassyi* n. sp., (Nematoda: Rhabditida) with its key and embryonic and post-embryonic development from Jhang, Pakistan. *Pakistan Journal of Nematology*, 26, 125-140.
- Tabassum, K. A. & Shahina, F. (2010). *Oscheius siddiqii* and *O. niazii* two new entomopathogenic nematode species from Pakistan, with observations on *O. shamimi*. *International Journal of Nematology*, 20, 75-84.
- Tabassum, K. A., Shahina, F. & Siddiqi, M. R. (2005). Description of *Lordellonema subannulatum* sp. n., *Poronemella divulgata* sp. n., and *Moshajia teres* sp. n., (Dorylaimida: Lordellonematinae) from Pakistan. *International Journal of Nematology*, 15, 163-168.
- Tabassum, K. A., Shahina, F., Firoza, K. & Siddiqi, M. R. (2005). Description, embryonic and post embryonic development of *Distolabrellus pakistanensis* sp. n., (Rhabditida: Mesorhabditinae), a new insect parasitic nematode from Pakistan. *Pakistan Journal of Nematology*, 23, 9-20.
- Tabassum, K.A., Shahina, F. Nasira, K. and Erum, Y. I. (2016). Description of six new species of *Oscheius*, Andrassy, 1976 (Nematoda: Rhabditida) from Pakistan with a key and diagnostic compendium of the genus. *Pakistan Journal of Nematology*, 107-159.

Overview of the nematode fauna of Pakistan

- Timm, R. W. (1960). A new species of *Leptosomatum* (Nematoda) from the Arabian Sea. *Journal of Helminthology*, 34, 217-220.
- Timm, R. W. (1962). Marine nematodes of the family Linhomoeidae from the Arabian Sea at Karachi. *Canadian Journal of Zoology*, 40, 165-178. <http://doi.org/10.1139/Z62-021>
- Timm, R. W. (1963). A redescription of *Demaniella cibourgensis* Steiner, 1914 (Nematoda: Diplogasteridae). *Biologia Lahore*, 9, 49-51.
- Timm, R. W. (1963). *Discolaimum pakistanicum* n. sp., (Nematoda: Dorylaimidae), with a key to the species of *Discolaimum*. *Biologia Lahore*, 9, 53-56.
- Timm, R. W. (1963). Marine nematodes of suborder Monhysterina from the Arabian Sea at Karachi. *Proceedings of Helminthological Society of Washington*, 30, 34-49.
- Timm, R. W. (1963). *Tylenchorhynchus trilineatus* n. sp., from West Pakistan with notes on *T. nudus* and *T. martini*. *Nematologica*, 9, 262-266. DOI: <https://doi.org/10.1163/187529263X00467>.
- Turpeenniemi, T. A., Nasira, K. & Maqbool, M. A. (2001). A new genus, five new and five known species of free-living marine nematodes (Nematoda: Monhysterida; Chromadorida) from Arabian Sea of Pakistan. *Pakistan Journal of Nematology*, 19, 1-31.
- Zarina, B. & Akhter, S. (2016). Description of two new species *Helicotylenchus siddiqii* n. sp. and *Paratylenchus (Paratylenchus) karachiensis* n. sp. (Nematoda: Tylenchida) from Sindh, Pakistan. *International Journal of Biology and Biotechnology*, 13, 490-501.
- Zarina, B. & Shahina, F. (2007). Description of *Moshajia qasimii* sp. n., (Nematoda: Dorylaimida) from Pakistan. *International Journal of Nematology*, 17, 225-228.
- Zarina, B. & Maqbool, M. A. (1994). Description of *Tylenchorhynchus tuberosus* n. sp., and observations on *Dolichorhynchus phaseoli* (Nematoda: Dolichodoridae) from ornamental plants of Karachi, Pakistan. *Pakistan Journal of Nematology*, 12, 51-57.
- Zarina, B. & Maqbool, M. A. (1990). Description of *Amplimerlinius parbati* n. sp., (Nematoda: Tylenchida) with observation on *Merlinius adakensis* from northern areas of Pakistan. *Pakistan Journal of Nematology*, 8, 7-12.
- Zarina, B. & Maqbool, M. A. (1991). Description of *Helicotylenchus verecundus* n. sp., and *Tylenchorhynchus rosei* n. sp., (Nematoda: Tylenchida) from Pakistan. *Pakistan Journal of Nematology*, 9, 79-86.
- Zarina, B. & Maqbool, M. A. (1992). Description of *Quinisulcius quaidi* n. sp., and additional morphometrics of two known species of Tylenchorhynchinae (Nematoda: Dolichodoridae) from Pakistan. *Pakistan Journal of Nematology*, 10, 7-13.
- Zarina, B. & Maqbool, M. A. (1995). Description of *Merlinius indicus* n. sp., and observations on two species (Nematoda: Tylenchida) from ornamental plants in Pakistan. *Pakistan Journal of Nematology*, 13, 61-68.
- Zarina, B. & Maqbool, M. A. (1998). Description and observations on two new and two known species of the genus *Pratylenchus* Filipjev, 1936 (Nematoda: Pratylenchidae) from Pakistan. *Pakistan Journal of Nematology*, 16, 13-24.
- Zarina, B. & Maqbool, M. A. (1998). Description of *Dolichorhynchus (Dolichorhynchus) motiabii* n. sp., (Nematoda: Tylenchida) and observations on *Basirolaimus dubius* (Chaturvedi & Khera, 1979) Siddiqi, 1986 from Pakistan. *Pakistan Journal of Nematology*, 16, 85-93.
- Zarina, B., Siddiqi, M. R. & Shahina, F. (2004). *Bitylenchus microcephalus* sp. n., and *B. maximus pakistanensis* sub sp. n., (Nematoda: Telotylenchidae). *International Journal of Nematology*, 14, 85-90.