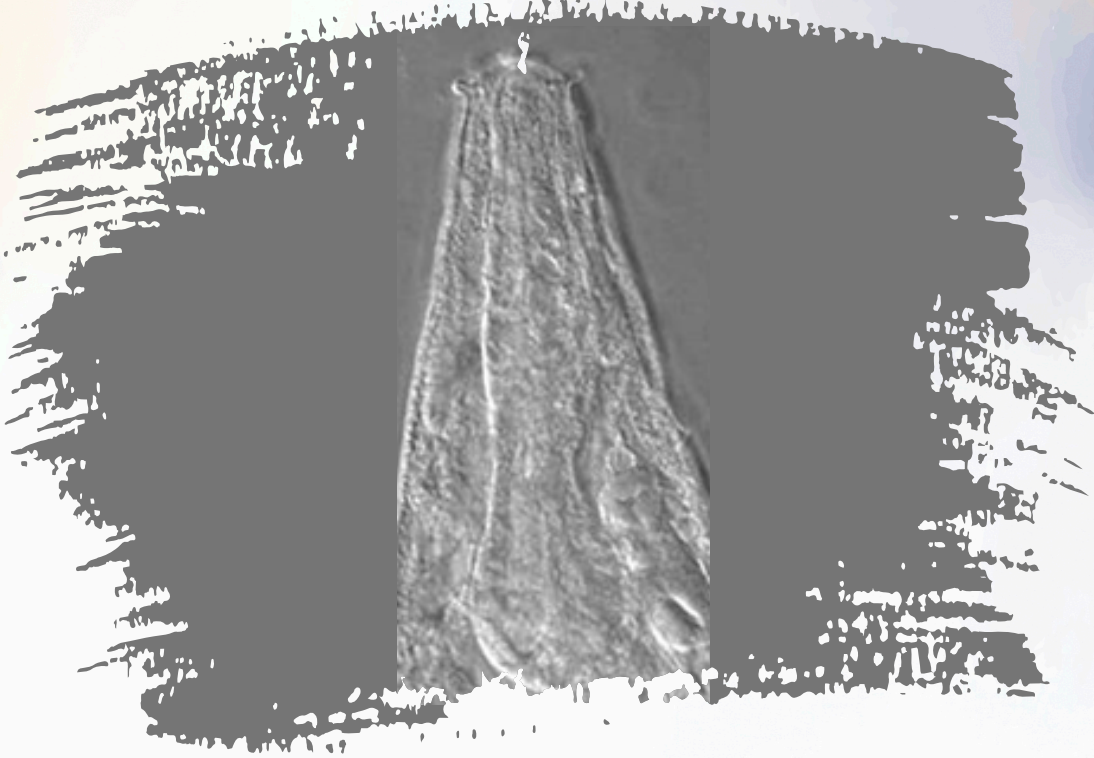


FAUNA OF INDIA CHECKLIST

JULY, 2024

ONLINE VERSION 1.0



NEMATODA: Part 3: ARTHROPOD PARASITIC NEMATODE

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Key words: Parasitic nematodes, arthropod parasitic, checklist, India

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Comments on the checklist:

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ZOOLOGICAL SURVEY OF INDIA
Ministry of Environment, Forest & Climate Change

NEMATODA: Part 3: ARTHROPOD PARASITIC NEMATODE

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Introduction: Nematodes parasitic in arthropods occur naturally in soil environments and find their host due to carbon dioxide, vibration and other chemical cues (Kaya and Gaugler, 1993). The arthropod hosts include Diptera, Hymenoptera, Thysanoptera, Coleoptera, Dictyoptera, Orthoptera, Diplopoda and Chilopoda. The relationships between nematodes and its arthropod hosts vary from temporary to obligatory parasitism. Arthropod nematode associations can be grouped into three basic types: Phoretic relationship, facultative parasitism and obligate parasitism (Poinar, 1975). The work on arthropod parasitic nematodes in India was initiated by Iyenger (1927), he reported mermithids as an obligate parasite from mosquitoes. Some of the important contributions include Ayyar (1940), Basir (1940 - 1956), Rao (1965-1980), Reddy and Rao (1984-1987), Parveen and Jairajpuri (1981-1985), Rizvi and Jairajpuri (1995-2000), Shah and coworkers (2003-2004), Gantait and Coworkers (2005- 2013) and few others.

Global diversity:

Diversity in India: In India, 95 species belonging to 35 genera, 14 families, 5 orders and 2 classes are recorded.

Diversity in States (Table)

Sl.No.	State/Union Territory	No. Species
1	Andhra Pradesh	33
2	Arunachal Pradesh	0
3	Assam	3
4	Bihar	0
5	Chhattisgarh	0
6	Gujarat	2
7	Goa	0
8	Haryana	1
9	Himachal Pradesh	1
10	Jharkhand	0
11	Karnataka	5
12	Kerala	3
13	Madhya Pradesh	1
14	Maharashtra	5
15	Manipur	9
16	Meghalaya	3
17	Mizoram	0

Sl.No.	State/Union Territory	No. Species
18	Nagaland	0
19	Odisha	0
20	Punjab	3
21	Rajasthan	0
22	Sikkim	0
23	Tamil Nadu	5
24	Telangana	39
25	Tripura	0
26	Uttar Pradesh	39
27	Uttarakhand	8
28	West Bengal	2
29	Andaman & Nicobar	0
30	Chandigarh	0
31	Dadra Nagar Haveli, Daman & Diu	0
32	Delhi	5
33	Jammu & Kashmir	0
34	Ladakh	0
35	Lakshadweep	0
36	Puducherry	0
	INDIA TOTAL	95

Endemism: No endemism reported in Nematodes

Habitat: Mainly parasitic in arthropod hosts like Diptera, Hymenoptera, Thysanoptera, Coleoptera, Dictyoptera, Orthoptera, Diplopoda and Chilopoda.

Ecological Significance: They are mainly utilized as biological control agents for controlling harmful insects.

Human Significance: Nil

Threatened species as per IUCN: Species of Nematodes are not assessed for IUCN threat categories.

Protected Species as per WPA (2022): Nematodes are not listed under any schedules of Wildlife Protection Act (2022).

Species under CITES: are not listed under any appendices of CITES.

Invasive alien species: Not assessed

Gap areas: Except for a few states, Andhra Pradesh, Telangana and Uttar Pradesh, the number of arthropod parasitic nematodes reported is very less. Most of the states and UTs of India remains unexplored for this group.

Systematic list:

- Phylum NEMATODA Cobb, 1932
 Class ENOPLEA Inglis, 1983
 Order MERMITHIDA Hyman, 1951
 Family MERMITHIDAE Braun, 1883
 Genus *Romanomermis* Coman, 1961
 1. *R. manjeerensis* Reddy & Rajsekher, 1996
 Class CHROMADOREA Inglis, 1983
 Order RHABDITIDA Chitwood, 1933
 Family HETERORHABDITIDAE Poinar, 1975
 Genus *Heterorhabditis* Poinar, 1976
 2. *H. bacteriophora* Poinar, 1976
 3. *H. indica* Poinar *et al.*, 1977
 Order SPIRURIDA Railliet, 1915
 Family THELASTOMATIDAE Travassos, 1929
 Genus *Blatticola* Schwenck, 1926
 4. *B. blattae* (Graeffe, 1860) Chitwood, 1932
 5. *B. supellaimae* Rao & Rao, 1965
 Genus *Blattellicola* Schwenck, 1926
 6. *B. blattellicola* Basir, 1940
 7. *B. guptai* Duggal & Aulakh, 1988
 Genus *Blattophila* Cobb, 1920
 8. *B. indica* Rao & Rao, 1965
 9. *B. spellaima* Basir, 1941
 Genus *Cameronia* Basir, 1948
 10. *C. aspiculata* (Farooqui, 1970) Adamson & Waerebeke, 1992
 11. *C. basiri* Rizvi & Jairajpuri, 2002
 12. *C. biovata* Basir, 1948
 13. *C. conoides* Shanjay & Gambhir, 2021
 14. *C. klossi* Parveen & Jairajpuri, 1948
 15. *C. meerutensis* Singh, Rastogi & Singh, 2014
 16. *C. multiovata* Leibersperger, 1960
 17. *C. triovata* Shah, 2007
 Genus *Cephalobellus* Cobb, 1920
 18. *C. brevicaudatum* (Leidy, 1851) Christie, 1933
 19. *C. singhi* Singhi & Singhi, 1989
 Genus *Coronostoma* Rao, 1958
 20. *C. singhi* Rao, 1958
 Genus *Gryllophila* Basir, 1942
 21. *G. basiri* Parveen & Jairajpuri, 1981
 22. *G. nihali* Rizvi *et al.*, 2002
 23. *G. skrjabini* (Sergiev, 1923) Basir, 1956
 Genus *Hammerschmidtella* Chitwood, 1932
 24. *H. basiri* Singh & Kaur, 1988
 25. *H. diesingi* (Hammerschmidt, 1838) Chitwood, 1932
 26. *H. singhi* Roa & Rao, 1965
 Genus *Linstowiella* Basir, 1956
 27. *L. basiri* Soota & chaturvedi, 1971
 Genus *Leidynema* Schwenck in Travassos, 1929
 28. *L. appendiculatum* (Leidy, 1850) Chitwood, 1932
 29. *L. periplaneti* Farooqui, 1967

30. *L. corydium* Rao, 1970
Genus **Protrellina** Chitwood, 1932
31. *P. phyllodromi* (Basir, 1942) Basir, 1956
Genus **Schwenkiella** Basir, 1956
32. *S. basiri* Parveen & Jairajpuri, 1980
33. *S. icemi* (Schwenk, 1926) Basir, 1956
34. *S. indica* Rao & Rao, 1966
35. *S. periplaneticola* Parveen & Jairajpuri, 1981
Genus **Thelastoma** Leidy, 1849
36. *T. guptai* Duggal & Aulakh, 1989
37. *T. kherai* Duggal & Aulakh, 1989
38. *T. indica* Rao, 1958
Family TRAVASSOSINEMATIDAE Rao, 1958
Genus **Binema** Travassos, 1925
39. *B. anulinervus* Shah & Rizvi, 2004
40. *B. chauhani* Singh & Singh, 1989
41. *B. korsakowi* (Sergiev, 1923) Basir, 1956
42. *B. mirzaia* (Basir, 1942) Basir, 1956
43. *B. ornata* Travassos, 1925
44. *B. parva* Parveen & Jairajpuri, 1985
45. *B. striatum* Rizvi & Jairajpuri, 2000
Genus **Chitwoodiella** Basir, 1948
46. *C. longicardia* Shah, 2008
47. *C. tridentata* Rizvi *et al.*, 1998
48. *C. ovoides* Basir, 1948
Genus **Isobinema** Rao, 1958
49. *I. dimorphicauda* Parveen & Jairajpuri, 1982
50. *I. flagellocerca* Rao, 1958
51. *I. neoflagellocerca* Paddaja & Bharatha Lakshmi, 1994
Genus **Mirzaiella** Basir, 1942
52. *M. alii* Farooqui, 1967
53. *M. asiatica* Basir, 1942
54. *M. haroldi* Farooqui, 1968
Genus **Pteronemella** Rao, 1958
55. *P. macropapillata* Rao, 1958
Genus **Psilocephala** Rao, 1958
56. *P. psilocephala* Rao, 1958
Genus **Singhiella** Rao, 1958
57. *S. singhi* Rao, 1958
Genus **Travassosinema** Rao, 1958
58. *T. travassosi* Rao, 1958
Family PROTRELLOIDIDAE Chitwood, 1932
Genus **Protrellus** Cobb, 1920
59. *P. shamimi* Shah *et al.*, 2005
60. *P. indicus* Rizvi *et al.*, 2002
Family PSEUDONYMIDAE Adamson & Van Waerebeke, 1992
Genus **Pseudonymus** Diesing, 1857
61. *P. basiri* Shah & Rizvi, 2004
62. *P. hydrophili* (Galeb, 1878) Stiles & Hassall, 1905
63. *P. islamabadi* (Basir, 1941) Basir, 1956
Genus **Zonothrix** Todd, 1942
64. *Z. alata* Shah & Rizvi, 2004

Order RHIGONEMATIDA van Waerebeke 1984

Family CARNOYIDAE Filipjev, 1934 (Travassos & Kloss, 1960)

Genus **Rondonema** Artigas, 1926

65. *R. spirostreptum* Rao & Kumari, 1967

Order PANAGROLAIMIDA Hodda, 2007

Family STEINERNEMATIDAE Filipjev, 1934 (Chitwood & Chitwood, 1937)

Genus **Steinernema** Travassos, 1927

66. *S. abbasi* Elawad *et al.*, 1997

67. *S. bicornutum* Tallosi *et al.*, 1995

68. *S. carpocapsae* (Weiser, 1995) Wouts *et al.*, 1982

69. *S. dharanaii* Kulkarni *et al.*, 2012

70. *S. feltiae* (Filipjev, 1934) Wouts *et al.*, 1982

71. *S. glaseri* (Steiner, 1929) Wouts *et al.*, 1982

72. *S. indicum* Patil *et al.*, 2023

73. *S. masoodi* Ali *et al.*, 2005

74. *S. meghalayansis* Ganguly *et al.*, 2011

75. *S. riobrave* Cabanillas *et al.*, 1994

76. *S. seemae* Ali *et al.*, 2005

77. *S. siamkayaa* Stock *et al.*, 1998

78. *S. tami* Luc *et al.*, 2000

79. *S. thermophilum* Ganguly & Singh, 2000

Family APHELENCHOIDIDAE Skarbilovich, 1947 (Paramonov, 1953)

Genus **Schistonchus** Cobb, 1927

80. *S. racemosa* Reddy & Rao, 1986

Family ENTAPHELENCHIDAE Nickle, 1970

Genus **Praecocilenchus** Poinar, 1969

81. *P. ferruginophorus* Rao & Reddy, 1980

Family ALLANTONEMATIDAE Pereira, 1931 (Chitwood & Chitwood, 1937)

Genus **Howardula** Cobb, 1921

82. *H. aptini* (Sharga, 1932) Wachek, 1955

83. *H. belgaumensis* Raj & Reddy, 1989

84. *H. marginatis* Reddy & Rao, 1981

85. *H. mutilatus* Devi, Rao & Reddy, 1991

86. *H. phyllotreta* Oldham, 1933

Family NEOTYLENCHIDAE Thorne, 1949

Genus **Physitylenchus** Rao & Reddy, 1982

87. *P. aenea* Rao & Reddy, 1982

Family PARASITYLENCHIDAE Siddiqi, 1986

Genus **Parasitylenchus** Micoletzky, 1922

88. *P. coccinellae* Iperti & Waerebeke, 1968

Genus **Heterotylenchus** Bovien, 1937

89. *H. crassirostris* Reddy & Rao, 1981

90. *H. hydrabedensis* Reddy & Rao, 1980

91. *H. xanthomelas* Reddy & Rao, 1987

Family CEPHALOBIDAE Travassos & Kloss, 1960

Genus **Cephalobium** Cobb, 1920

92. *C. (Adenticum) aodus* Rao, 1982

93. *C. (Adenticum) caudatum* Gantait & Chatterjee, 2007

94. *C. (Denticum) gryllodes* Rao, 1980

95. *C. (Denticum) microvata* Rao & Rao, 1965

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