

FAUNA OF INDIA CHECKLIST

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ARTHROPODA: BRANCHIOPODA: DIPLOSTRACA

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

ARTHROPODA: BRANCHIOPODA: DIPLOSTRACA

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Introduction: The Diplostraca or Cladocera, actually a super-order in the taxonomic hierarchy, are popularly known as water fleas for their characteristic jerky movements. It is an ancient group of aquatic microscopic organisms having its origin in the Palaeozoic era. Phylogenetically it is more closely related to the Conchostraca or clamp shrimps than to other large branchiopod crustacean groups like Anostraca and Notostraca. The apomorphic character of this group is the presence of a covering on both sides of the body called carapace which is open ventrally. Majority of the Cladocera reproduce by cyclic parthenogenesis, interchangeably with longer asexual reproduction period with less frequent sexual production, accompanied by resting egg formation. They exhibit greater diversity in the littoral zone of lentic bodies like lakes, reservoirs than in running waters like streams and rivers. Cladocera is a group of planktonic, phytophilic, and benthic species having maximum diversity in the tropics.

Global diversity: Diplostraca or Cladocera encompasses around 620 species described under 95 genera and 17 families and four orders distributed globally.

Diversity in India: As on date, 139 species belonging to 55 genera and 12 families in four orders are recorded with several taxa recorded as *sensu lato* indicating presence of cryptic species that needs authentication.

Diversity in States (Table)

Sl. No.	State/UT	No. of Species	No. of Endemic Species
	INDIA TOTAL	139	06
1	Andhra Pradesh	48	0
2	Arunachal Pradesh	20	0
3	Assam	86	0
4	Bihar	41	0
5	Chhattisgarh	4	0
6	Gujarat	18	0
7	Goa	45	0
8	Haryana	4	0
9	Himachal Pradesh	9	0
10	Jharkhand	22	0
11	Karnataka	37	0
12	Kerala	50	0
13	Madhya Pradesh	68	0
14	Maharashtra	72	1

Sl. No.	State/UT	No. of Species	No. of Endemic Species
15	Manipur	56	0
16	Meghalaya	63	0
17	Mizoram	10	0
18	Nagaland	3	0
19	Odisha	9	0
20	Punjab	20	0
21	Rajasthan	65	1
22	Sikkim	5	0
23	Tamil Nadu	82	1
24	Telangana	42	0
25	Tripura	49	0
26	Uttar Pradesh	8	0
27	Uttarakhand	26	0
28	West Bengal	77	0
29	Andaman & Nicobar	27	0
30	Chandigarh	2	0
31	Dadra Nagar Haveli, Daman & Diu	0	0
32	Delhi	13	0
33	Jammu & Kashmir	62	0
34	Ladakh	9	0
35	Lakshadweep	0	0
36	Puducherry	0	0

Endemism: Five species are endemic to India. Out of which, only two species namely *Indialona ganapati*, and *Bosmina tripurae* are present in multiple states while each of the remaining three species are restricted to three separate states only.

Habitat: Cladocera inhabit all forms of aquatic habitats but they are primarily dominant in the freshwater bodies. Some species inhabit both fresh as well as marine water while some truly freshwater and some are truly marine. Some species also inhabit brackish water while very few species can be found in the semi-terrestrial and subterranean environments.

Ecological Significance: They are an important component of aquatic, especially freshwater forming a critical link between the primary producers and the secondary consumers, with a mix of benthic, pelagic, littoral, and plant-associated taxa showing extreme sensitivity to fast changing environmental conditions.

Human Significance: Cladocera are widely used in biomonitoring of aquatic ecosystems including toxicity of pesticides and other environmental pollutants.

Threatened species: No threatened species in Indian waters.

Protected Species as per WPA (2022): No Cladocera taxa are listed under any schedules of Wildlife Protection Act (2022).

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

Invasive alien species: No Cladocera species are reported to be invasive in Indian waters.

Gap areas: Cladocera are poorly documented from many states like Chattisgarh, Haryana, Nagaland, Sikkim. Virtually, nothing is known about the Cladocera diversity of the Union territories like Lanshwadeep, Puducherry. Most of the Indian taxa are recorded as *sensu lato* which needs re-validation to ascertain the actual species.

Systematic list:

Class Branchiopoda

Superorder Diplostraca (=Cladocera)

Order Ctenopoda Sars, 1865

Family Sididae Baird 1850

Subfamily Sidinae Baird, 1850

Genus *Diaphanosoma* Fischer, 1850

1. *Diaphanosoma brachyurum* (Lieven, 1848) s. lat.
2. *Diaphanosoma celebensis* Stingelin, 1900
3. *Diaphanosoma dubium* Manuilova, 1964
4. *Diaphanosoma excisum* Sars, 1885
5. *Diaphanosoma sarsi* Richard, 1895
6. *Diaphanosoma senegal* Gauthier, 1952
7. *Diaphanosoma tropicum* Korovchinsky, 1998
8. *Diaphanosomama volzi* Stingelin, 1905

Genus *Latona* Straus, 1820

9. *Latona tiwari* Biswas, 1964

Genus *Latonopsis* Sars, 1888

10. *Latonopsis australis* Sars, 1888 s. lat.

Genus *Penilia* Dana, 1852

11. *Penilia avirostris* Dana, 1849

Genus *Pseudosida* Herrick, 1884

12. *Pseudosida szalayi* (Daday, 1898)

Genus *Sarsilatona* Korovchinsky, 1985

13. *Sarsilatona fernandoi* (Rane, 1983)
14. *Sarsilatona serricauda* (Sars, 1901)

Genus *Sida* Straus, 1820

15. *Sida crystallina* (O.F. Müller, 1776) s. lat

Family Holopediidae Sars, 1865

Genus *Holopedium* Zaddach, 1855

16. *Holopedium gibberum* Zaddach, 1855 s. lat.

Order Anomopoda Sars, 1865

Family Daphniidae Straus, 1820 (emend. Schödler, 1858)

Subfamily Daphniinae Dumont and Pensaert 1983

Genus *Ceriodaphnia* Dana, 1853

17. *Ceriodaphnia cornuta* G.O. Sars, 1885
18. *Ceriodaphnia dubia* Richard, 1894 s.lat.
19. *Ceriodaphnia laticaudata* (P. E. Müller, 1867)
20. *Ceriodaphnia pulchella* Sars, 1862
21. *Ceriodaphnia quadrangula* (O.F. Müller, 1785)
22. *Ceriodaphnia reticulata* (Jurine, 1820)

Genus *Daphnia* O. F. Müller, 1785**Subgenus *Ctenodaphnia* Dybowski & Grochowski, 1895**

23. *Daphnia (Ctenodaphnia) carinata* King, 1853
24. *Daphnia (Ctenodaphnia) cephalata* King, 1853 s. lat
25. *Daphnia (Ctenodaphnia) fusca* Gurney, 1906
26. *Daphnia (Ctenodaphnia) magna* Straus, 1820
27. *Daphnia (Ctenodaphnia) similis* Claus, 1876 s. lat
28. *Daphnia (Ctenodaphnia) similoides* Hudec, 1991
29. *Daphnia (Ctenodaphnia) tibetana* (Sars, 1903)

Subgenus *Daphnia* s. str. O. F. Müller, 1785

30. *Daphnia (Daphnia) longispina* O. F. Muller, 1776 s. lat
31. *Daphnia (Daphnia) lumholtzi* Sars, 1885
32. *Daphnia (D.) obtusa* Kurz, 1874
33. *Daphnia (D.) pulex* Leydig, 1860

Genus *Simocephalus* Schoedler, 1858**Subgenus *Aquipiculus* Orlova-Bienkowskaja, 1995**

34. *Simocephalus (Aquipiculus) heilongjiangensis* Shi & Shi, 1994
35. *Simocephalus (Aquipiculus) latirostris* Stingelin, 1906

Subgenus *Coronocephalus* Orlova-Bienkowskaja, 1995

36. *Simocephalus (Coronocephalus) serrulatus* (Koch, 1841)

Subgenus *Echinocaudus* Orlova-Bienkovskaja, 1995

37. *Simocephalus (Echinocaudatus) acutirostratus* (King, 1853)
38. *Simocephalus (Echinocaudatus) expinosus* (De Geer, 1778)

Subgenus *Simocephalus* s. str. Schödler, 1858

39. *Simocephalus (Simocephalus) elizabethae* (King, 1853)
40. *Simocephalus (Simocephalus) mixtus* Sars, 1903
41. *Simocephalus (Simocephalus) vetuloides* Sars, 1898
42. *Simocephalus (Simocephalus) vetulus* (O.F. Müller, 1776) s. lat.

Subfamily Scapholeberinae Dumont and Pensaert 1983**Genus *Scapholeberis* Schödler, 1858**

43. *Scapholeberis kingii* Sars, 1888

Family Bosminidae Baird, 1845**Genus *Bosmina* Baird, 1845****Subgenus *Bosmina* s.str. Baird, 1845**

44. *Bosmina (B.) longirostris* (O. F. Müller, 1776)
45. *Bosmina (Bosmina) tripurae* Kořinek, Saha & Bhattacharya, 1999

Subgenus *Eubosmina* Seligo, 1900

46. *Bosmina (Eubosmina) coregoni* Baird, 1857 s.lat.

Subgenus *Liederobosmina* Brtek, 1997

47. *Bosmina (Liederobosmina) meridionalis* Sars, 1904 s.lat.

Genus *Bosminopsis* Richard 1896

48. *Bosminopsis dietersi* Richard 1895

Family Moinidae Goulden 1968**Genus *Moina* Baird 1850**

49. *Moina belli* Gurney, 1904
50. *Moina brachiata* (Jurine, 1820)
51. *Moina dubia* Guerne & Richard, 1892

52. *Moina hemanti* Padhye & Dumont (2014)
 53. *Moina macrocopa* (Straus, 1820)
 54. *Moina micrura* Kurz, 1874
 55. *Moina oryzae* Hudec, 1987
 56. *Moina weismanni* Ishikawa, 1896

Genus *Moinodaphnia* Herrick, 1887

57. *Moinodaphnia macleayi* (King, 1853)

Family Macrothricidae Norman and Brady 1867

Genus *Grimaldina* Richard, 1892

58. *Grimaldina brazzai* Richard, 1892

Genus *Guernella* Richard, 1892

59. *Guernella raphaelis* Richard, 1892

Genus *Macrothrix* Baird, 1843

60. *Macrothrix hirsuticornis* Norman & Brady, 1867
 61. *Macrothrix laticornis* (Jurine, 1820) s. lat.
 62. *Macrothrix odiosa* Gurney, 1916
 63. *Macrothrix spinosa* King, 1853
 64. *Macrothrix triserialis* Brady, 1886

Genus *Streblocerus* Sars, 1862

65. *Streblocerus serricaudatus* Fischer, 1849 s. lat.

Family Ilyocryptidae Smirnov 1992

Genus *Ilyocryptus* Sars, 1862

66. *Ilyocryptus bhardwaji* Battish, 1981
 67. *Ilyocryptus sordidus* (Liévin, 1848) s. lat.
 68. *Ilyocryptus spinifer* Herrick, 1882

Family Euryceridae Kurz, 1875 sensu Dumont et Silva-Briano, 1998

Genus *Eurycercus* Baird, 1843

Subgenus *Eurycercus* Baird, 1843

69. *Eurycercus (E.) lamellatus* (O. F. Müller, 1776)

Family Chydoridae Dybowski and Grochowski 1894

Subfamily Aloninae Dybowski and Grochowski 1894

Tribe Alonini s. Str.

Genus *Acroperus* Baird, 1843

70. *Acroperus angustatus* Sars, 1863
 71. *Acroperus harpae* (Baird, 1834) s. lat.

Genus *Alona* Baird, 1843

72. *Alona affinis* (Leydig, 1860) s. lat.
 73. *Alona guttata* G.O. Sars, 1862
 74. *Alona intermedia* G.O. Sars, 1862
 75. *Alona kotovi* Sinev, 2012
 76. *Alona quadrangularis* (O.F. Müller, 1776) s. lat.
 77. *Alona sarasinorum* Stingelin 1900

Genus *Anthalona* Van Damme, Sinev & Dumont, 2011

78. *Anthalona harti harti* Van Damme, Sinev et Dumont, 2011

Genus *Camptocercus* Baird, 1843

79. *Camptocercus australis* Sars, 1896
 80. *Camptocercus rectirostris* Schoedler, 1862
 81. *Camptocercus uncinatus* Smirnov, 1971

Genus *Celsinotum* Frey, 1991

82. *Celsinotum macronyx* (Daday, 1898)

Genus *Coronatella* Dybowski & Grochowski, 1894

83. *Coronatella monacantha* (Sars, 1901) s. lat.
 84. *Coronatella rectangula* (Sars, 1862)

Genus *Euryalona* Sars, 190185. *Euryalona orientalis* (Daday, 1898)**Genus *Flavalona* Sinev & Dumont, 2016**86. *Flavalona cheni* (Sinev, 1999)87. *Flavalona cf. costata* (Sars, 1862)**Genus *Graptoleberis* Sars, 1862**88. *Graptoleberis testudinaria* (Fischer, 1851) s. lat.**Genus *Karualona* Dumont and Silva-Briano 2000**89. *Karualona karua* (King, 1853)**Genus *Kurzia* Dybowski & Grochowski, 1894**90. *Kurzia brevilabris* Rajapaksa & Fernando, 198691. *Kurzia latissima* (Kurz, 1875) s.lat.92. *Kurzia longirostris* (Daday, 1898)**Genus *Leberis* Smirnov, 1989**93. *Leberis diaphanus* (King, 1853)94. *Leberis punctatus* (Daday, 1898)**Genus *Leydigia* Kurz, 1875**95. *Leydigia acanthocercoides* (Fischer, 1854) s.lat.96. *Leydigia ceylonica* (Daday, 1898)97. *Leydigia ciliata* (Gauthier, 1939)98. *Leydigia leydigi* (Schoedler, 1863) s.lat.**Genus *Leydigiopsis* Sars, 1901**99. *Leydigiopsis curvirostris* Sars, 1901 s.lat.**Genus *Notoalona* Rajapaksa & Fernando, 1987**100. *Notoalona globulosa* (Daday, 1898)**Genus *Ovalona* Van Damme & Dumont, 2008**101. *Ovalona cambouei* (Guerne & Richard, 1983) Sinev, 2015102. *Ovalona cf. pulchella* (King, 1983)**Genus *Oxyurella* Dybowski & Grochowski, 1894**103. *Oxyurella singalensis* (Daday, 1898)104. *Oxyurella tenuicaudis* (Sars, 1862)**Tribe *Indialonini* Kotov, 2000****Genus *Indialona* Petkovski, 1966**105. *Indialona ganapati* Petkovski, 1966**Subfamily *Chydorinae* Dybowski and Grochowski 1894****Genus *Alonella* Sars, 1862****Subgenus *Alonella* s.str. Hudec 2010**106. *Alonella (A.) clathratula* Sars, 1896107. *Alonella (A.) excisa* (Fischer, 1854)108. *Alonella (A.) exigua* (Lilljeborg, 1853)**Subgenus *Nanoalonella* Hudec 2010**109. *Alonella (N.) nana* (Baird, 1850)**Genus *Chydorus* Leach, 1816**110. *Chydorus angustirostris* Frey, 1987111. *Chydorus eurynotus* G.O. Sars, 1901112. *Chydorus invaginatus* Frey, 1982113. *Chydorus parvus* Daday, 1898114. *Chydorus pubescens* Sars, 1901115. *Chydorus reticulatus* Daday, 1898116. *Chydorus sphaericus* (O. F. Müller, 1776)117. *Chydorus ventricosus* Daday, 1898**Genus *Dadaya* Sars, 1901**118. *Dadaya macrops* (Daday, 1898)

Genus *Disparalona* Fryer, 1968

119. *Disparalona caudata* Smirnov, 1996
 120. *Disparalona hamata* Birge, 1879 s. lat
 121. *Disparalona rostrata* (Koch, 1841) s.lat.

Genus *Dunhevedia* King, 1853

122. *Dunhevedia crassa* King, 1853
 123. *Dunhevedia serrata* Daday, 1898

Genus *Ephemeroporus* Frey, 1982

124. *Ephemeroporus barroisi* (Richard, 1894)

Genus *Picripleuroxus* Frey 1993

125. *Picripleuroxus denticulatus* (Birge, 1879) s.lat.
 126. *Picripleuroxus laevis* Sars, 1862 s. lat.
 127. *Picripleuroxus quasidenticulatus* (Smirnov, 1996)
 128. *Picripleuroxus similis* Vavra, 1900 s. lat.

Genus *Pleuroxus* Baird, 1843

129. *Pleuroxus aduncus* (Jurine, 1829)
 130. *Pleuroxus annandalei* (Daday, 1908)
 131. *Pleuroxus trigonellus* (O. F. Müller, 1776)

Genus *Pseudochydorus* Fryer, 1968

132. *Pseudochydorus globosus* (Baird, 1843)

Order Onychopoda Sars, 1865**Family Podonidae Mordukhai-Boltovskoi, 1968****Genus *Evadne* Loven, 1836**

133. *Evadne spinifera* P.E. Müller, 1867

Genus *Pleopis* Dana, 1853

134. *Pleopis polyphemoides* (Leuckart, 1859)

Genus *Podon* Lilljeborg, 1853

135. *Podon intermedius* Lilljeborg, 1853
 136. *Podon leuckarti* (Sars, 1862)

Genus *Pseudevadne* Claus, 1877

137. *Pseudevadne tergestina* Claus, 1877

Family Polyphemidae Baird, 1845**Genus *Polyphemus* O. F. Mueller, 1785**

138. *Polyphemus pediculus* (Linnaeus, 1761)

Order Haplopoda Sars, 1865**Family Leptodoridae Lilljeborg, 1861****Genus *Leptodora* Lilljeborg, 1861**

139. *Leptodora kindti* (Focke, 1844)

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