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

ARTHROPODA: BRANCHIOPODA: CLADOCERA Latreille, 1829

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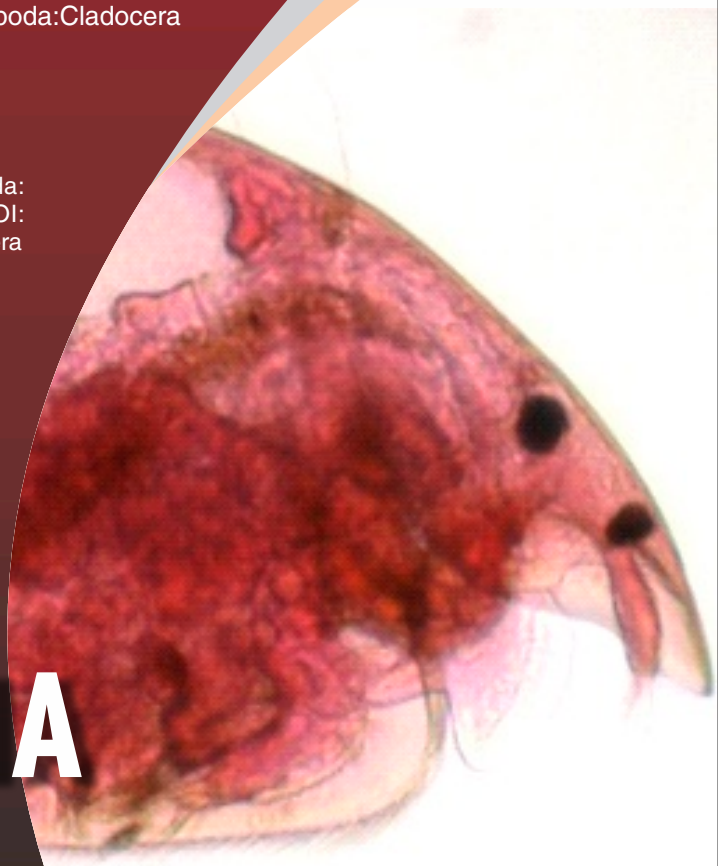

FAUNA OF INDIA CHECKLIST

ARTHROPODA: BRANCHIOPODA: CLADOCERA

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Introduction: The 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 Cladocerns 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: Cladocera encompasses around 620 species described under 95 genera and 17 families and four orders distributed globally.

Diversity in India: As on date, 141 species belonging to 56 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/Union Territory	No. Species	No. Endemic Species
1	Andhra Pradesh	49	0
2	Arunachal Pradesh	39	0
3	Assam	86	0
4	Bihar	42	0
5	Chhattisgarh	4	0
6	Gujarat	18	0
7	Goa	45	0
8	Haryana	5	0
9	Himachal Pradesh	10	0
10	Jharkhand	22	0
11	Karnataka	39	0
12	Kerala	51	0
13	Madhya Pradesh	68	0

Sl.No.	State/Union Territory	No. Species	No. Endemic Species
14	Maharashtra	73	2
15	Manipur	57	0
16	Meghalaya	64	0
17	Mizoram	10	0
18	Nagaland	42	0
19	Odisha	9	0
20	Punjab	20	0
21	Rajasthan	66	1
22	Sikkim	5	0
23	Tamil Nadu	83	1
24	Telangana	42	0
25	Tripura	49	0
26	Uttar Pradesh	8	0
27	Uttarakhand	27	0
28	West Bengal	78	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	63	0
34	Ladakh	9	0
35	Lakshadweep	0	0
36	Puducherry	0	0
	INDIA TOTAL	**141**	**06**

Endemism: Six 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 four 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, Odisha, Sikkim, Uttar Pradesh and Chandigarh and Ladakh. Virtually, nothing is known about the Cladocera diversity of the Union territories like Dadra Nagar Haveli, Daman & Diu, Lakshwadeep and Puducherry. Most of the Indian taxa are recorded as *sensu lato* which needs re-validation to ascertain the actual species.

Systematic list:

Phylum Arthropoda
Subphylum Crustacea
Class Branchiopoda
Superorder Cladocera (=Diplostraca)
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) ambigua* Scourfield 1947	
		31. *Daphnia (Daphnia) longispina* O. F. Muller, 1776 s. lat	
		32. *Daphnia (Daphnia) lumholtzi* Sars, 1885	
		33. *Daphnia (Daphnia) obtusa* Kurz, 1874	
		34. *Daphnia (Daphnia) pulex* Leydig, 1860	
		Genus ***Simocephalus*** Schoedler, 1858	
		Subgenus ***Aquipiculus*** Orlova-Bienkowskaja, 1995	
		35. *Simocephalus (Aquipiculus) heilongjiangensis* Shi & Shi, 1994	
		36. *Simocephalus (Aquipiculus) latirostris* Stingelin, 1906	
		Subgenus ***Coronocephalus*** Orlova-Bienkowskaja, 1995	
		37. *Simocephalus (Coronocephalus) serrulatus* (Koch, 1841)	
		Subgenus ***Echinocaudus*** Orlova-Bienkovskaja, 1995	
		38. *Simocephalus (Echinocaudatus) acutirostratus* (King, 1853)	
		39. *Simocephalus (Echinocaudatus) expinosus* (De Geer, 1778)	
		Subgenus ***Simocephalus*** s. str. Schödler, 1858	
		40. *Simocephalus (Simocephalus) elizabethae* (King, 1853)	
		41. *Simocephalus (Simocephalus) mixtus* Sars, 1903	
		42. *Simocephalus (Simocephalus) vetuloides* Sars, 1898	
		43. *Simocephalus (Simocephalus) vetulus* (O.F. Müller, 1776) s. lat.	
		Subfamily **Scapholeberinae** Dumont and Pensaert 1983	
		Genus ***Scapholeberis*** Schödler, 1858	
		44. *Scapholeberis kingii* Sars, 1888	
	Family **Bosminidae** Baird, 1845		
		Genus ***Bosmina*** Baird, 1845	
		Subgenus ***Bosmina*** s.str. Baird, 1845	
		45. *Bosmina (B.) longirostris* (O. F. Müller, 1776)	

		46. *Bosmina (Bosmina) tripurae* Kořínek, Saha & Bhattacharya, 1999
		Subgenus ***Eubosmina*** Seligo, 1900
		47. *Bosmina (Eubosmina) coregoni* Baird, 1857 s.lat.
		Subgenus ***Liederobosmina*** Brtek, 1997
		48. *Bosmina (Liederobosmina) meridionalis* Sars, 1904 s.lat.
		Genus ***Bosminopsis*** Richard 1896
		49. *Bosminopsis dietersi* Richard 1895
	Family **Moinidae** Goulden 1968	
		Genus ***Moina*** Baird 1850
		50. *Moina belli* Gurney, 1904
		51. *Moina brachiata* (Jurine, 1820)
		52. *Moina dubia* Guerne & Richard, 1892
		53. *Moina hemanti* Padhye & Dumont (2014)
		54. *Moina macrocopa* (Straus, 1820)
		55. *Moina micrura* Kurz, 1874
		56. *Moina oryzae* Hudec, 1987
		57. *Moina weismanni* Ishikawa, 1896
		Genus ***Moinodaphnia*** Herrick, 1887
		58. *Moinodaphnia macleayi* (King, 1853)
	Family **Macrothricidae** Norman and Brady 1867	
		Genus ***Grimaldina*** Richard, 1892
		59. *Grimaldina brazzai* Richard, 1892
		Genus ***Guernella*** Richard, 1892
		60. *Guernella raphaelis* Richard, 1892
		Genus ***Macrothrix*** Baird, 1843
		61. *Macrothrix hirsuticornis* Norman & Brady, 1867
		62. *Macrothrix laticornis* (Jurine, 1820) s. lat.
		63. *Macrothrix odiosa* Gurney, 1916
		64. *Macrothrix spinosa* King, 1853
		65. *Macrothrix triserialis* Brady, 1886
		Genus ***Streblocerus*** Sars, 1862
		66. *Streblocerus serricaudatus* Fischer, 1849 s. lat.
	Family **Ilyocryptidae** Smirnov 1992	
		Genus ***Ilyocryptus*** Sars, 1862
		67. *Ilyocryptus bhardwaji* Battish, 1981
		68. *Ilyocryptus sordidus* (Liévin, 1848) s.lat.
		69. *Ilyocryptus spinifer* Herrick, 1882
	Family **Eurycercidae** Kurz, 1875 sensu Dumont et Silva-Briano, 1998	
		Genus ***Eurycercus*** Baird, 1843
		Subgenus *Eurycercus* Baird, 1843
		70. *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
		71. *Acroperus angustatus* Sars, 1863
		72. *Acroperus harpae* (Baird, 1834) s. lat.
		Genus ***Alona*** Baird, 1843
		73. *Alona affinis* (Leydig, 1860) s. lat.
		74. *Alona guttata* G.O. Sars, 1862
		75. *Alona intermedia* G.O. Sars, 1862
		76. *Alona kotovi* Sinev, 2012
		77. *Alona quadrangularis* (O.F. Müller, 1776) s. lat.
		78. *Alona sarasinorum* Stingelin 1900
		Genus ***Bryospilus*** Frey, 1980
		79. *Bryospilus (Indobryospilus) bharaticus* Van Damne & Padhye, 2024
		Genus ***Anthalona*** Van Damme, Sinev & Dumont, 2011
		80. *Anthalona harti harti* Van Damme, Sinev et Dumont, 2011
		Genus ***Camptocercus*** Baird, 1843
		81. *Camptocercus australis* Sars, 1896
		82. *Camptocercus rectirostris* Schoedler, 1862
		83. *Camptocercus uncinatus* Smirnov, 1971
		Genus ***Celsinotum*** Frey, 1991
		84. *Celsinotum macronyx* (Daday, 1898)
		Genus ***Coronatella*** Dybowski & Grochowski, 1894
		85. *Coronatella monacantha* (Sars, 1901) s.lat.
		86. *Coronatella rectangula* (Sars, 1862)
		Genus ***Euryalona*** Sars, 1901
		87. *Euryalona orientalis* (Daday, 1898)
		Genus ***Flavalona*** Sinev & Dumont, 2016
		88. *Flavalona cheni* (Sinev, 1999)
		89. *Flavalona cf. costata* (Sars, 1862)
		Genus ***Graptoleberis*** Sars, 1862
		90. *Graptoleberis testudinaria* (Fischer, 1851) s. lat.
		Genus ***Karualona*** Dumont and Silva-Briano 2000
		91. *Karualona karua* (King, 1853)
		Genus ***Kurzia*** Dybowski & Grochowski, 1894
		92. *Kurzia brevilabris* Rajapaksa & Fernando, 1986
		93. *Kurzia latissima* (Kurz, 1875) s.lat.
		94. *Kurzia longirostris* (Daday, 1898)
		Genus ***Leberis*** Smirnov, 1989
		95. *Leberis diaphanus* (King, 1853)
		96. *Leberis punctatus* (Daday, 1898)
		Genus ***Leydigia*** Kurz, 1875
		97. *Leydigia acanthocercoides* (Fischer, 1854) s.lat.
		98. *Leydigia ceylonica* (Daday, 1898)
		99. *Leydigia ciliata* (Gauthier, 1939)
		100. *Leydigia leydigi* (Schoedler, 1863) s.lat.

		Genus ***Leydigiopsis*** Sars, 1901
		101. *Leydigiopsis pulchra* Van Damme & Sinev, 2013
		Genus ***Notoalona*** Rajapaksa & Fernando, 1987
		102. *Notoalona globulosa* (Daday, 1898)
		Genus ***Ovalona*** Van Damme & Dumont, 2008
		103. *Ovalona cambouei* (Guerne & Richard, 1983) Sinev, 2015
		104. *Ovalona cf. pulchella* (King, 1983)
		Genus ***Oxyurella*** Dybowski & Grochowski, 1894
		105. *Oxyurella singalensis* (Daday, 1898)
		106. *Oxyurella tenuicaudis* (Sars, 1862)
		Tribe **Indialonini** Kotov, 2000
		Genus ***Indialona*** Petkovski, 1966
		107. *Indialona ganapati* Petkovski, 1966
		Subfamily **Chydorinae** Dybowski and Grochowski 1894
		Genus ***Alonella*** Sars, 1862
		Subgenus ***Alonella*** s.str. Hudec 2010
		108. *Alonella (A.) clathratula* Sars, 1896
		109. *Alonella (A.) excisa* (Fischer, 1854)
		110. *Alonella (A.) exigua* (Lilljeborg, 1853)
		Subgenus ***Nanoalonella*** Hudec 2010
		111. *Alonella (N.) nana* (Baird, 1850)
		Genus ***Chydorus*** Leach, 1816
		112. *Chydorus angustirostris* Frey, 1987
		113. *Chydorus eurynotus* G.O. Sars, 1901
		114. *Chydorus invaginatus* Frey, 1982
		115. *Chydorus parvus* Daday, 1898
		116. *Chydorus pubescens* Sars, 1901
		117. *Chydorus reticulatus* Daday, 1898
		118. *Chydorus sphaericus* (O. F. Müller, 1776)
		119. *Chydorus ventricosus* Daday, 1898
		Genus ***Dadaya*** Sars, 1901
		120. *Dadaya macrops* (Daday, 1898)
		Genus ***Disparalona*** Fryer, 1968
		121. *Disparalona caudata* Smirnov, 1996
		122. *Disparalona hamata* Birge, 1879 s. lat
		123. *Disparalona rostrata* (Koch, 1841) s.lat.
		Genus ***Dunhevedia*** King, 1853
		124. *Dunhevedia crassa* King, 1853
		125. *Dunhevedia serrata* Daday, 1898
		Genus ***Ephemeroporus*** Frey, 1982
		126. *Ephemeroporus barroisi* (Richard, 1894)
		Genus ***Picripleuroxus*** Frey 1993
		127. *Picripleuroxus denticulatus* (Birge, 1879) s.lat.
		128. *Picripleuroxus laevis* Sars, 1862 s. lat.

			129. *Picripleuroxus quasidenticulatus* (Smirnov, 1996)
			130. *Picripleuroxus similis* Vavra, 1900 s. lat.
		Genus ***Pleuroxus*** Baird, 1843	
			131. *Pleuroxus aduncus* (Jurine, 1829)
			132. *Pleuroxus annandalei* (Daday, 1908)
			133. *Pleuroxus trigonellus* (O. F. Müller, 1776)
		Genus ***Pseudochydorus*** Fryer, 1968	
			134. *Pseudochydorus globosus* (Baird, 1843)
	Order **Onychopoda** Sars, 1865		
	Family **Podonidae** Mordukhai-Boltovskoi, 1968		
		Genus ***Evadne*** Loven, 1836	
			135. *Evadne spinifera* P.E. Müller, 1867
		Genus ***Pleopis*** Dana, 1853	
			136. *Pleopis polyphemoides* (Leuckart, 1859)
		Genus ***Podon*** Lilljeborg, 1853	
			137. *Podon intermedius* Lilljeborg, 1853
			138. *Podon leuckarti* (Sars, 1862)
		Genus ***Pseudevadne*** Claus, 1877	
			139. *Pseudevadne tergestina* Claus, 1877
	Family **Polyphemidae** Baird, 1845		
		Genus ***Polyphemus*** O. F. Mueller, 1785	
			140. *Polyphemus pediculus* (Linnaeus, 1761)
	Order **Haplopoda** Sars, 1865		
	Family **Leptodoridae Lilljeborg, 1861**		
		Genus ***Leptodora*** Lilljeborg, 1861	
			141. *Leptodora kindti* (Focke, 1844)

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Daphnia ambigua

Flavalona cheni