



JULY 2025
ONLINE VERSION 2.0

ZOOLOGICAL SURVEY OF INDIA

Ministry of Environment, Forest & Climate Change

ARTHROPODA: CRUSTACEA: OLIGOSTRACA: ICTHYOSTRACA: BRANCHIURA (FISH LICE)

K. Valarmathi

FPS Building, Zoological Survey of India, Kolkata-16 <https://orcid.org/0009-0004-6978-1252>
Email: valarkamacro@gmail.com *Corresponding author: valarkamacro@gmail.com

DOI : <https://doi.org/10.26515/Fauna/2/2025/Arthropoda:Crustacea:Oligostraca:Icthyostraca:Branchiura>

Key words: Arthropoda, Crustacea, Oligostraca, Icthyostraca, Branchiura, Fish Lice, India, Checklist.

Citation: Valarmathi, K. (2025). Fauna of India Checklist: Arthropoda: Crustacea: Oligostraca: Icthyostraca: Branchiura (Fish Lice). Version 2.0. Zoological Survey of India. DOI: <https://doi.org/10.26515/Fauna/2/2025/Arthropoda:Crustacea:Oligostraca:Icthyostraca:Branchiura>

Comments on the checklist:

E-mail your comments and suggestions to improve the checklist to zsfaunachecklists@gmail.com and valarkamacro@gmail.com

FAUNA OF INDIA CHECKLIST



ARTHROPODA: CRUSTACEA: OLIGOSTRACA: ICTHYOSTRACA: BRANCHIURA (FISH LICE)

K. Valarmathi

FPS Building, Zoological Survey of India, Kolkata-16 <https://orcid.org/0009-0004-6978-1252> Email: valarkamacro@gmail.com *Corresponding author: valarkamacro@gmail.com

Introduction: The Subclass Branchiura is a group of primarily freshwater parasitic crustaceans commonly known as 'carp-lice' or 'fish lice' and are primarily ectoparasites of fishes but occasionally live on amphibians or invertebrates, and they can move about freely on their hosts (Poly, 2008, Moller, 2015, Dev Roy, 2015). They are obligate parasites and utilize many different fish hosts from a wide range of families, e.g. carps, sticklebacks, perch, roach, and even predators such as pike (Moller, 2015). They occasionally increase in number and cause fish mortality in aquaculture operations, aquaria of ornamental fishes and rarely in wild populations (Nandi and Das, 1991, Dev Roy, 2015, Saha, 2016). The subclass Branchiura contains a single family, the Argulidae, and four valid genera namely *Argulus* Müller, *Chonopeltis* Thiele, *Dipteropeltis* Calman, and *Dolops*.

Global diversity: Globally the subclass Branchiura encompasses 156 species under four genera and a single family Argulidae of the Order Arguloida . The genus *Dipteropeltis* contains two valid species and occurs in South America; *Chonopeltis* has 12 valid species and is found only in Africa; and *Dolops*, with 12 valid species, has a Gondwanan distribution (South America, Africa, and Tasmania; Fryer 1969; Poly, 2009; Worms, 2023). The genus *Argulus* contains about 135 valid species and occurs on or around all continents, except Antarctica, in marine, estuarine, and freshwater habitats.

Diversity in India: In India the subclass Branchiura is represented by a single genus *Argulus* with 17 species and one subspecies.

Diversity in States (Table)

Sl.No.	State/Union Territory	No. Species	No. Endemic Species
1	Andhra Pradesh	1	1
2	Arunachal Pradesh	0	0
3	Assam	0	0
4	Bihar	2	1
5	Chhattisgarh	0	0
6	Gujarat	0	0
7	Goa	0	0
8	Haryana	0	0
9	Himachal Pradesh	1	0
10	Jharkhand	0	0
11	Karnataka	2	1
12	Kerala	1	1



Sl.No.	State/Union Territory	No. Species	No. Endemic Species
13	Madhaya Pradesh	2	1
14	Maharashtra	1	1
15	Manipur	0	0
16	Meghalaya	0	0
17	Mizoram	0	0
18	Nagaland	0	0
19	Odisha	0	0
20	Punjab	5	0
21	Rajasthan	0	0
22	Sikkim	0	0
23	Tamil Nadu	5	4
24	Telangana	0	0
25	Tripura	0	0
26	Uttarpradesh	0	0
27	Uttarakhand	0	0
28	West Bengal	7	2
29	Andaman & Nicobar	0	0
30	Chandigarh	0	0
31	Dadra Nagar Haveli, Daman & Diu	0	0
32	Delhi	0	0
33	Jammu & Kashmir	1	0
34	Ladakh	0	0
35	Lakshadweep	0	0
36	Puducherry	0	0

Endemism: Among the 17 species and one sub species of Indian Argulids and 10 species and one subspecies are exclusively available only in India (Dev Roy, 2015).

Habitat: Primarily they are ectoparasites of fishes but occasionally live on amphibians or invertebrates,

Ecological Significance: They mostly infect fishes of culture pond and aquarium species

Human Significance: They damage the commercially important edible and aquarium fishes. They are known to affect both wild and cultured fishes and cause fish mortality which leads to the economic loss in fishery industries

Protected Species as per WPA (2022): Nil

Threatened species: Species from India are not assessed for IUCN threat categories.

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

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

Invasive alien species: No Argulid species were reported as invasive in Indian waters.

Gap areas: The Branchiurans are not explored from many states. Out 36 states and Union Territories it is reported only from 10 states.



Systematic list:

Phylum ARTHROPODA Gravenhorst, 1843

Subphylum CRUSTACEA Brunnich, 1772

Superclass OLIGOSTRACA Zrzavy, Hypsa & Vlaskova, 1997

Superclass ICTHYOSTRACA Zrzavy, Hypsa & Vlaskova, 1997

Subclass BRANCHIURA Thorell, 1864

Order ARGULOIDA Yamaguti, 1963

Family ARGULIDAE Leach, 1819

Genus *Argulus* Muller O.F., 1785

1. *Argulus bengalensis* Ramakrishna, 1951*
2. *Argulus boli* Tripathi, 1975*
3. *Argulus cauveriensis* Thomas and Devaraj, 1975*
4. *Argulus coregoni* Thorell, 1865
5. *Argulus fluviatilis* Thomas & Devaraj, 1975*
6. *Argulus foliaceus* (Linnaeus, 1758)
7. *Argulus indicus* Weber, 1892
8. *Argulus japonicas* Thiele, 1900
9. *Argulus krishnagiriensis* Omprakasam and Manohar, 1992*
10. *Argulus mangalorensis* Natarajan, 1982*
11. *Argulus monodi* Fryer, 1959
12. *Argulus parsi* Tripathi, 1975*
13. *Argulus puthenveli* Ramakrishna, 1959*
14. *Argulus quadristriatus* Devaraj & Ameer Hamsa, 1977*
15. *Argulus schoutedeni* Monod, 1928 - Punjab
16. *Argulus siamensis siamensis* Wilson C.B., 1926
17. *Argulus siamensis peninsularis* Ramakrishna, 1951*
18. *Argulus vittatus* (Rafinesque-Schmaltz, 1814)*

(*species available only in India)



Argulus puthenveli Ramakrishna, 1959

References:

- Brar, M. and Battish, S.K. 1993. Systematics and bioecology of parasitic branchiura and copepod of fishes of India (Supervisor S.K. Battish) India biodiversity.
- Devaraj M and Ameer Hamsa K.M.S. 1977. A new species of *Argulus* (Branchiura) from a marine fish *Psammoperca waigiensis* (Cuvier), Crustaceana, **32**(2): 129-134.



- Dev Roy MK. 2015. A Synoptic list of Argulids (Crustacea: Branchiura: Argulidae) of India. *J. Environ & Sociobiol.*, **12**(2): 237-241.
- De Zoysa M, Ryu1 S Y, Kim H.C and Park B.K. 2017. A Scanning Electron Microscopic Study of *Argulus japonicus* (Crustacea: Branchiura) Isolated from Goldfish (*Carassius auratus*) in Korea. *Pakistan J. Zool.*, vol., **49**(2): 1-5, 2017. DOI: <http://dx.doi.org/10.17582/journal.pjz/2017.49.2.sc3>
- Fryer, G. 1969. A new freshwater species of the genus *Dolops* (Crustacea: Branchiura) parasitic on a galaxiid fish of Tasmania—with comments on disjunct distribution patterns in the southern hemisphere. *Australian Journal of Zoology*, **17**: 49-64.
- Hora, S.L. 1943. The fish louse *Argulus foliaceus* Linn. Causing heavy mortality among carp fisheries of Bengal. *Proc. Indian Sci. Congr.*, **39**: 66-67.
- Malaviya, R.B. 1955. Parasitism of *Ambassis ranga* H.B. by *Argulus simensis* susp. *peninsularis* Ramakrishna. *Curr. Sci.*, **24**(8): 275.
- Malaviya, R.B. 1955. Parasitism of *Ophicephalus gachua* Hamilton by the copepod *Argulus indicus* Weber. *J. Bombay. Nat. Hist. Soc.*, **55**(2): 370-371.
- Mallick, S.K., Shah, N., Pandey, N.N., Haldar, R.S. and Pande, A. 2010. Occurrence of fish louse (*Argulus* sp.) on Indian Snow Trout (*Schizothorax richardsonii*) and Golden Mahseer (*Tor putitora*) in subtropical Himalayan lake of Bhimtal, Uttarakhand, India. *Indian J. Anim. Sci.*, **80**(11): 1150-1156.
- Mikheev N, Pasternak A.F. and Valtonen E.T. 2015. Behavioural adaptations of argulid parasites (Crustacea: Branchiura) to major challenges in their life cycle. *Parasites & Vectors* **8**: 394. DOI 10.1186/s13071-015-1005-0.
- Moller OS. 2015. Class Branchiura, Order Arguloidea. *Revista IDE@ - SEA*, n° 103B: 1-8.
- Nandi, N.C. and Das, S.R. 1991. Argulosis causing juvenile mortality in some fishes at Kakdwip, West Bengal. *Indian J. Fish.*, **38**(2): 132-133.
- Natarajan, P. 1982. A new species of *Argulus* Müller (Crustacea: Branchiura) with a note on the distribution of different species of *Argulus* in India. *Proc. Acad. Anim. Sci.*, **91**(4): 375-380.
- Omprakasam, M and Manohar, L. 1992. Description of a new species of *Argulus* Müller (Crustacea: Branchiura) parasitic on Indian major carps. *Indian J. Parasitology*, **16**(2): 119-121.
- Poly, W.J. 2009. Branchiura (Crustacea) of the Gulf of Mexico, Pp. 837-840 in Felder, D.L. and D.K. Camp (eds.), *Gulf of Mexico—Origins, Waters, and Biota. Biodiversity*. Texas A & M University Press, College Station, Texas.
- Prabavathy, G and Sreenivasan, A. 1976. Occurrence of *Argulus japonicus* in brood fish ponds in Tamil Nadu. *J. Inland Fish Soc. India*, **8**: 131-133.
- Ramakrishna, G. 1951. Notes on the Indian species of the genus *Argulus* Müller (Crustacea: Copepoda) parasitic on fishes. *Rec. Indian Mus.*, **49**(2): 207-216.
- Ramakrishna, G. 1959. On a new species of *Argulus* Müller (Crustacea: Copepoda) from Kerala. *Proc. First All India Congr. Zool.*, 1959, pt. 2: 178-179.
- Sundari Bai, A. 1973. The occurrence of Branchiura parasite *Argulus* sp. (Arguloidea: Argulidae) on the carnivorous fish *Lebistes reticulatus* (Peters) in Mysore State. *Curr. Sci.*, **2**: 75-79.
- Tripathy, Y.R. 1975. Studies on Branchiura from Indian fishes. Dr. B. S. Chauhan commemoration Volume, pp.117-127. Zoological Society of India Publication.
- Thomas, M.M. 1962. Observations on the habits and post-embryonic development of a parasitic branchiuran *Argulus puthenveli*ensis Ramakrishna. *Journal of the Marine Biological Association of India* (for 1961) **3**: 75-86.



- Thomas, M.M. and Devaraj, M. 1975. Two new species of *Argulus* Müller (Crustacea: Branchiura) from River Cauvery with a key to Indian species. *Indian J. Fish.*, **22**(1&2): 215-220.
- Saha, M.M. and Bandyopadhyay P.K. 2015. First report of three species of *Argulus* (Crustacea: Branchiura) infesting on redcan Oranda gold fish (*Carassius auratus auratus*) in India. *Biolife.*, **3**(4): 813-819.
- Valarmathi, K. 2017. Crustacea : Branchiura : Argulidae (Fish lice). *In*: Kailash Chandra, Gopi, K.C., Rao, D.V., Valarmathi, K. and Alfred, J.R.B (Eds.) *Current Status of Freshwater Faunal Diversity in India*. Zoological Survey of India, Kolkata: **ISBN 978-81-8171-462-6**. 247-251

