

ZSI e-NEWS

The Monthly Electronic Newsletter of Zoological Survey of India

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NEW

Check-list of Fauna of India

Headquarters, Kolkata

Seven survey parties proceeded for field surveys in the states of Uttar Pradesh, Assam, Jharkhand, Maharashtra and the Satkosia Wildlife Sanctuary in Orissa. A Status survey of the Swamp deer was conducted in Dudhwa National Park.

Identification of 800 specimens of different animal groups was completed. 14 enquiries pertaining to the identity of



Skin of leopard received for identification

the animal specimens submitted by outside parties were attended, besides identifying 3 samples of skins of leopard received from DFO WL (11) Division- Jalpaiguri and 8 pieces of antlers of deer received from RDD, WCCA, Nizam Palace.

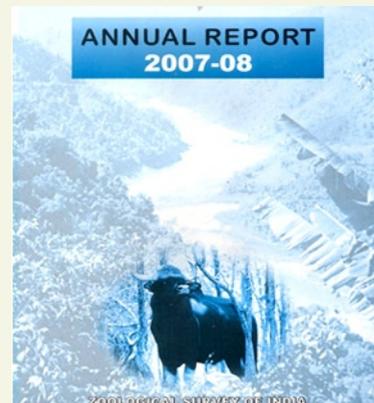
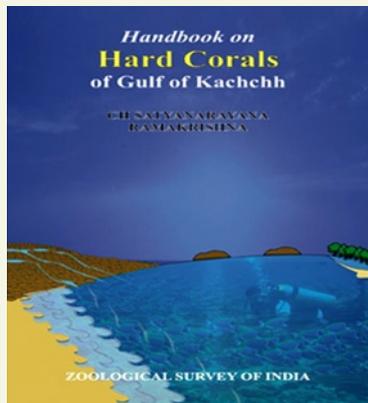
Headquarters office conducted the half- yearly monitoring meeting for evaluating the progress of work on the assigned research programmes and a meeting for screening the proposed Annual Programme of work for 2009 2010.

The important publications include, *Handbook of the hard corals of Gulf of Kachchh*, *Fauna of Lonar Wildlife Sanctuary* and the *Annual report of ZSI for the year 2007 2008*.

From the Director's Desk

The readers are aware that from January 2009 we have started bringing out the *ZSI e-NEWS* covering in brief, the activities of the Headquarters office at Kolkata and the 16 Regional / Field stations of the Survey located in various parts of the country. In this issue apart from presenting the various activities of the Survey carried out during the month, we are also presenting two faunal checklists one on Nepomorpha (Hemiptera: Insecta) and the other, on fresh water prawns of the country. I am glad to release the second issue.

Dr. Ramakrishna,
Director,
Zoological Survey of India,
Kolkata



Publications brought out by scientists of ZSI, Kolkata

Southern Regional Station, Chennai

Updated checklists of (a) Water bugs (Nepomorpha: Hemiptera: Insecta) of India, dealing with 154 species under 35 genera of 10 families and (b) Freshwater Prawns (Crustacea: Decapoda: Atyidae and Palaemonidae) of India, comprising of 81 species under 2 genera and 2 families are prepared and presented in the check-list section of this *e-News*.

Further progress on the preparation of the document on *Fauna of Karnataka* has been made, incorporating information on 509 species of avian elements.

The station represented in the 4th World Congress on Leishmaniasis held at Lucknow from 3rd to 7th, and a scientist of the station presented 2 papers.

Identification & Advisory service was rendered on a species of anuran Amphibia to a local college.



Lethocerus indicus
(Hemiptera: Insecta)



Macrobrachium latimanus
(Crustacea: Decapoda)

Northern Regional Station, Dehra Dun

Two extensive faunistic surveys were conducted during the month in Haryana and collected 3372 exs. of various faunal elements, besides 2 intensive surveys in Kalesar National Park and Dehra Dun & environs. The local (intensive) surveys yielded a collection of 107 exs. of faunal elements belonging to 14 groups.

During the month, 3 species of Trematodes, 5 species of nematodes and 12 species of

Lepidoptera (Insecta) were identified.

Prof. S.K. Malhotra, Dept. of Zoology, Allahabad University deposited Type specimens of 2 species of nematodes in the station's faunal depository.

A research paper dealing with 2 new species of amphibian nematodes from Bhadra Wildlife Sanctuary, Western Ghats, India has been published in the foreign journal, *ZOOTAXA*.

3 research manuscripts (Aves, Mammals and Butterflies) pertaining to the fauna of Uttarakhand have been submitted.

4 Scientists of the station attended the National Seminar on *Status of Bio-diversity and Conservation* on 27th and 28th at Gurukula Kangri University, Haridwar and presented 2 papers.

A lecture on *Molecular Taxonomy* was delivered to the students of Dolphin Institute of Biomedical Sciences, Dehra Dun on 12th by a scientist of the station.

Under the *e-granthalaya* documentation, 1800 entries of library books were made.

Publication:

A. N. Rizvi, 2009. Two new species of amphibian nematodes from Bhadra Wildlife Sanctuary, Western Ghats, India. *Zootaxa*, 2013: 5868.



Black winged Stilt, *Himantopus himantopus* (an indicator of degrading wetland) at Panipat



Yellow monitor lizard, *Varanus flavescens*, sighted at Dharsuy (district Mahendargarh)

Estuarine Biological Station, Gopalpur-on-sea

A faunistic survey tour to Nuanai Estuary, Puri District, Orissa has been undertaken from 25th for collection of estuarine faunal components. 394 examples of various groups such as fishes, crustaceans, mollusks, coelenterates *etc.* have been collected during the survey.

6 species of fishes belonging to 4 genera under 3 families and 3 species of crabs belonging to 2 genera were identified from Nuanai estuary, besides 5

species of fishes under two genera from Kauveri Estuary, Tamilnadu.

250 data entries of estuarine fauna have been made during the month.

1 research paper has been published.

Publication:

D.V. Rao. 2009. Checklist of Fishes of Andaman & Nicobar Islands, Bay of Bengal. *Environment and Ecology*, 27(1A):334-353.



Mouth of Kauveri Estuary



A Porcupine fish

Arunachal Pradesh Field Station, Itanagar

A survey tour to D'Ering Memorial Wildlife Sanctuary was undertaken from 11th to 18th and various invertebrate samples collected. Besides, calls and songs of different species of birds were recorded and observations made on the avifauna. Some rare species of birds observed during the survey in the Sanctuary were, the Slender-billed Vulture, *Gyps tenuirostris*; White-rumped

Vulture, *Gyps bengalensis*; Fire-capped Tit, *Cephalopyrus flammiceps* and Spot-winged Grosbeak, *Mycerobas melanozanthos*. Another survey tour to Tawang has been initiated from 21st to study the water birds of Arunachal Pradesh with reference to the birds of high altitude wetlands.

Scientists of the station attended the inception Workshop of UNDP-GEF-GOI funded Project, "Mainstreaming conservation & Sustainable use



White-rumped Vulture,
Gyps bengalensis

of Medicinal Plant Diversity", organized by the State Medical Plants Board, Arunachal Pradesh on 27th.

Freshwater Biological Station, Hyderabad

A Field survey was conducted at Himayat Sagar and Miralam Tank, under the periodic monitoring surveys of lakes in and around Hyderabad, and collected 60 exs. of aquatic insects. Besides, an extensive survey of Kollereu Lake, Andhra Pradesh, has also been initiated from 24th.

22 species of aquatic Insects

were identified out of the station's collections. 45 species of aquatic Coleoptera belonging to 30 genera and five families were also identified out of the collections received from Central Regional Station, ZSI, Jabalpur.

One paper was published and 4 papers submitted.

A talk on the faunal diversity of

the country and the role of ZSI was delivered at the Lotus National School, Hyderabad on 23rd by a scientist of the station.

The station observed the WORLD WETLAND DAY, on 2nd in order to generate awareness among students, about the values of wetlands, the ecosystem services they provide and about the need to conserve the wetlands. The topics discussed were, 'Aquaculture and freshwater

productivity', 'Lake Conservation methods',

'Wetlands and fish farming' and 'Aquatic vegetation, productivity of aquatic plants and their uses'. About 50 participants shared their views during the interactive session.

Publication:

Chandrasekhar, S.V. A. 2009. Recreational value of Wyra Lake waters, A.P. *Environment & Ecology* 26(4c):2347-2349.



The World Wetland Day observed by ZSI, Hyderabad

Andaman & Nicobar Regional Station, Port Blair

An extensive Survey was conducted in the Inglis Island Sanctuary during the month and 20 species of Corals, 29 species of Molluscs, 2 species of Annelids, 2 species of Crustaceans, 12 species of Echinoderms, 7 species of Reptiles, 45 species of Fishes, 21 species of Birds and 3 species of Mammals were identified.

One research paper has been published.

Publication:

Sivaperuman, C. and E. A. Jayson. 2009. Population dynamics of wetland birds in the Kole wetlands of Kerala, India. *Journal of Scientific Transactions in Environment and Technovation* 2(3):152-162.

Western Regional Station, Pune

A research document entitled, "Fauna of Lonar Wildlife Sanctuary, Dist. Buldhana, Maharashtra State" was published under the Conservation Area Series of ZSI. The document provides information on Odonata (Insecta), Mollusca, Rotifera, Ostracoda, Arachnida, Scolopendromorpha, Amphibia, Reptilia, Aves and Mammalia found in the Lonar Wildlife Sanctuary.

The second survey to Radhanagari Wildlife Sanctuary and Chandoli National Park has been in progress during the month.

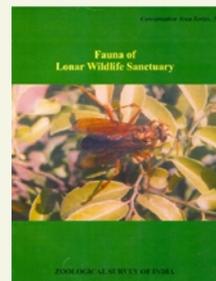
Identification & Advisory services were rendered to the Director, Govt. Vidarbha Institute of Science and Humanities, Amaravati, Maharashtra, on 4 species of bats (Chiroptera); Head, Dept. of Zoology, Ramkrishna More College, Akurdi, Pune on a species of fish and

Head, Dept. of Zoology, K.T.H.M. College, Nashik, on a species of Mollusca and a species of Crustacea: Decapoda.

The station represented in the State wildlife board meeting on 20th, held at Mumbai.

Publication:

Fauna of Lonar Wildlife Sanctuary, Dist. Buldhana, Maharashtra State, Conservation Area Series, No. 37 : 1-208pp., 2009., Published by Director, Zoological Survey of India, Kolkata.



A document on the Fauna of Lonar WLS brought out by the scientists of ZSI, Pune

Gangetic Plains Regional Station, Patna

Four local surveys were undertaken in the Agroecosystems of Patna and adjacent districts and 110 exs. of insects collected.

22 species of Mollusca under 13 genera were identified from river Subernarekha and 13 species of moths (Insecta) belonging to 10 genera were identified from Dalma Wildlife Sanctuary, Jharkhand. 3 species of chalcids (Hymenoptera: Insecta) and 3 species of Mantodea (Insecta) were identified from Bihar. 1 species of Hymenoptera (Pteromlaidae) and 1 species of Mantodea

have been collected for the first time from Bihar. The Great stone Plover (Great thick-knee) *Esacus magnirostris recurvirostris* (Cuvier, 1829) has been observed for the first time in the environs of Gandak River, Bihar.

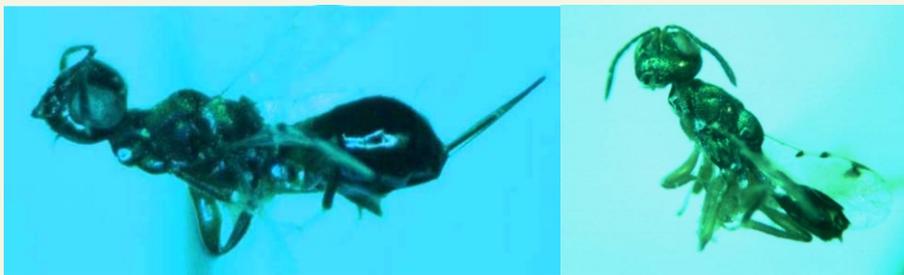
A new species of Pteromalidae (Hymenoptera: Insecta) *viz. Heydenia gibsoni* from Sri Lanka has been described, based on the specimens received on loan from University of California, USA.

Two research manuscripts, one dealing with 24 species of Mantodea: Insecta with new records of 8 species from Bihar

and Jharkhand and the other dealing with the first record of Great stone Plover (Great thick-knee) from Bihar, were submitted for publication.

3 exs. of Hymenoptera (Pteromalidae) belonging to a new species received from ZSI, Kolkata were identified and identification service rendered. 1 research manuscript on Hymenoptera was reviewed for *Records of Zoological Survey of India* and advisory service rendered.

Heydenia gibsoni Sureshan, 2009



Female

Male

Publication:

Sureshan, P. M. 2009. A new species of *Heydenia* Forster (Hymenoptera: Chalcidodidea: Pteromalidae) from Sri Lanka with a key to species of the Indian subcontinent. *Journal of Threatened taxa* 1 (2): 114-116.

Marine Biological Station, Chennai

5 species of sponges, 14 species of Mollusca, 5 species of echinoderms, 1 species of turtle and 9 species of fishes were identified from the station's collection, during the month.

The Scientists of the station participated in the *Chennai Science Festival 2009* organized by Science City, Anna University, Chennai, from 19th to 23rd, setting up a stall displaying a marine aquarium tank containing ornamental species, posters on marine animals and some rare specimens, depicting the activities of the station with an objective to create awareness on marine faunal diversity, among the visitors.

A scientist of the station attended the Training Programme on "Advances in DNA Marker Techniques" conducted by the National Bureau of Fish Genetic Resources (NBFGR), Cochin Unit, Kerala from 17th to 28th.

Identification & Advisory Service was rendered to a Forest Consultant of Pondicherry on 26 species of fishes.



Stall of Marine Biological Station in the Chennai Science Festival 2009



A marine aquarium with ornamental animals exhibited in the Chennai Science Festival

High Altitude Zoology Field Station, Solan

One survey tour to Churdhar Wildlife sanctuary has been conducted during the month.

7 species of Rhopalocera (Lepidoptera), Orthoptera, Pisces and Amphibians have been studied and identified from Churdhar Wildlife Sanctuary. From Pangri Valley, 3 species of Rhopalocera have been identified which turned out to be new records for this area. 2 species of Orthoptera have been identified from Ladakh.

River Beas and its drainages were surveyed for snow trouts (Pisces) and 2 species of *Schizothorax* were identified. The association of snow trouts with other hill stream fishes and threats faced by

the snow trouts has also been studied.

One paper entitled "Taxonomic notes on the Genus *Euchrysops* Butler (Insecta: Lepidoptera: Lycaenidae) from North West India" has been submitted.

Scientists of the station attended the International Conference on Entomology, held from 20th to 22nd at Patiala, and presented 2 papers.

Eastern Regional Station, Shillong

Nokrek Biosphere Reserve, Garo Hills, Meghalaya was surveyed and 364 exs. of representative fauna and 3 tubes of plankton samples were collected.

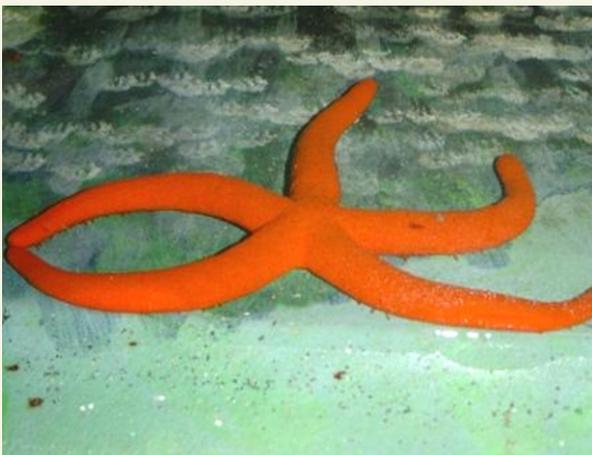
3 species of aquatic Hemiptera, 2 species of Rotifera and 3 species of Cladocera were identified and registered from Nokrek Biosphere Reserve. Besides, 2 species of Rotifera and 5 species of Cladocera from Deepor beel, Kamrup district Assam were also identified and registered. 4 Rotifera and 8 Cladocera were slide mounted.

Marine Aquarium & Research Centre, Digha

An average of 750 visitors per day visited the aquarium. The main attractions to the visitors were Star & Stripe puffer (*Arothron hispidus*), Horned cowfish (*Lactoria cornuta*) and Clarke's anemone fishes (*Amphiprion clarkii*) along with anemones (*Stichodactyla mertensii*). Advisory services were rendered to various college and school students who visited the aquarium during the month.

Efforts were made to refurbish the aquarium tanks in view of the forthcoming beach festival during the next month at Digha.

The live animals collected through local surveys were, Bamboo shark (*Chiloscyllium confusum*), Horseshoe crab (*Carcinoscorpius rotundicauda*), Mantis shrimp (*Squilla* sp.) and different varieties of crabs viz. Hermit Crab (*Clibanarius humulis*), Cross Crab (*Charybdis feriata*),



Red finger star (*Linckia laevigata*)

Sunderban Field Research Station, Canning

A research paper on "Mangrove Associated Gobies (Teleostei: Gobioidi) of Sunderbans" has been submitted for publication in the departmental journal. The work contains the review of the Gobioid fishes of Sunderbans including redescription of *Awouichthyes menoni* Chatterjee. Forty seven species under two families (Eleotridae and Gobiidae) have been incorporated in this work. Taxonomic keys to the species and the geographical distribution of the species occurring in this region have been furnished, besides information on Ecology of the Gobioid fishes.

Compilation of faunal information (6,602 data entries of 132 species of various fauna) present in the faunal depository of the station has been completed and the data sheet sent to the Headquarters office.



Clarke's anemone fishes (*Amphiprion clarkii*)

Swimmer crab (*Mutata lonaris*), Red crab (*Uca moriones*), Sand crab (*Portunus sonquinoilendus* and *Uca*) and the Neptune Crab (*Neptunus pelagicus*). Various types of fresh water ornamental fish varieties viz. Lion-head goldfish, Moore goldfish (*Carassius* sp.), Angel fish (*Pterophyllum* sp.), Bristol Shubunkin, different cat fishes and crocodile fishes were procured for the freshwater section.

One research paper was revised and submitted to the *Journal of Bombay Natural History Society*.

Central Regional Station, Jabalpur

A manuscript entitled, '*Checklist of Orthoptera (Insecta) of India*' comprising of 1035 species has been submitted for publication.

A paper on '*Study on the Species Composition and Diversity of Orthoptera in Achanakmar Wildlife Sanctuary, Chhattisgarh*' was presented during the Vigyan Sammelan held at Home Science College, Jabalpur on 21st.

A senior scientist of the station participated in the National Workshop to discuss the draft of India's Fourth National Report (FNR) to the Convention on Biological Diversity (CBD) at the UNDP Campus, New Delhi on 24th.

Scientists of the station reviewed scientific papers for various journals. Identification and advisory services were rendered to Principal, Nachiketa H. S. School, Jabalpur and Geer Foundation, Indroda Nature Park, Gandhinagar, Gujarat.



South Indian Rock-Gecko, *Cyrtodactylus collegalensis*, a vulnerable species located in Kanha Tiger Reserve.

Desert Regional Station, Jodhpur

Sardar Samand Reservoir, Rajasthan was surveyed during the month and 9 species of Reptiles, 88 species of Aves and 14 species of Mammals were identified. Scientists of the station also identified 6 species of Odonata (Insecta) of Aravalli Range, 8 species of Odonata and 7 species of Lepidoptera (Insecta) of Kumbhalgarh Wildlife Sanctuary, besides 8 species of Coleoptera (Insecta) of Rajasthan and 4 species of nematodes of Gujarat.

Photoplates of 150 species of Plant and Soil Nematodes of Rajasthan were prepared.

2 research papers were published, 1 submitted and 2 written.

Identification and Advisory service was rendered on Odonata for a Ph.D work, on request from the Dept. of Zoology, Ethiraj College for Women, Chennai.

300 students visited the station's museum.

Publications:

1. Sharma, Gaurav, Kumar, R., Pathania P.C. and Ramamurthy V.V. 2008. Biodiversity of lepidopterous insects associated with vegetables in India A study. *Indian Journal of Entomology*. 70(4): 369-384 (Journal released in Feb. 2009).
2. Kumar, R., Sharma, Gaurav and Ramamurthy V.V. 2008. Biosystematics of *Psara basalis* Walker (Lepidoptera: Crambidae: Spilomelinae) on Spinach. *Indian Journal of Entomology*. 70(4): 408-410 (Journal released in Feb. 2009).



A view of Sardar Samand Reservoir, Rajasthan



Great Thick-knee & White-necked stork

Western Ghats Field Research Station, Kozhikode (Calicut)

An extensive field survey was conducted in Bhadra Wildlife Sanctuary, Karnataka and collected 3328 exs. of representative faunal samples. A one- day faunistic survey was also conducted at Muthappanpuzha (Kozhikode Dt.; Kerala), a part of Western Ghats to study the entomofauna.

A senior scientist of the station delivered 2 invited talks, one on '*Biodiversity: Concepts, Facts and Figures*', at the Orientation Programme for Lecturers (UGC), at Academic Staff College, University of Calicut, Kerala, on 9th, and the other on '*Parasitic Hymenoptera: 'Our Valuable Bioresource'*', at National Conference on Biotechnological Approaches for Ecofriendly Insect Pest Management, on 27th, at the Department of Zoology, University of Madras, Chennai.

Two research papers entitled, (1) "New discoveries of Amphibia from Western Ghats, India, in the new millennium" and (2) "Descriptions of new taxa in Thoronini (Scelioninae: Platygasteridae: Hymenoptera: Insecta) from India have been accepted for oral presentation at the National Symposium on Recent Advances in Biodiversity of Indian subcontinent (11th to 13th March 2009), organised by MoEF (New Delhi)

and ZSI, Portblair, Andamans. Proof of a research paper on Odonata (Insecta) was corrected and returned to the publication division for publishing.

Scientists of the station reviewed 9 research papers and rendered advisory services.

A senior scientist of the station chaired the screening committee meeting for scrutinising the proposed Annual Programme of work for 2009 2010, at ZSI Headquarters, Kolkata.

During the month, 2554 visitors paid their visits to the museum.



Ichthyophis kodaguensis
(Gymnophiona: Amphibia) with egg-clutch,
photographed during a field survey in Western Ghats

Check-list of Fauna of India

Checklist of Nepomorpha (Hemiptera: Heteroptera) from India

G.Thirumalai

Southern Regional Station,

Zoological Survey of India, Chennai - 600 028

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ORDER	:	HEMIPTERA
SUBORDER	:	HETEROPTERA
INFRAORDER	:	NEPOMORPHA POPOV, 1968
Superfamily	:	Nepoidea Latreille, 1802
FAMILY	:	NEPIDAE LATREILLE, 1802
Subfamily	:	Nepinae Latreille, 1802
Tribe	:	Nepini Latreille, 1802
Genus	:	<i>Laccotrephes</i> Stål, 1866
Subgenus	:	<i>Laccotrephes</i> Stål, 1866

1. *Laccotrephes elongatus* Montandon , 1907
2. *Laccotrephes fabricii fabricii* Stål , 1868
3. *Laccotrephes griseus* (Güerin-Méneville , 1844)
4. *Laccotrephes grossus* (Fabricius, 1787)
5. *Laccotrephes maculatus* (Fabricius, 1775)
6. *Laccotrephes pfeiferiae* (Ferrari, 1888)
7. *Laccotrephes ruber* (Linnaeus, 1764)

Genus : *Montonepa* Lansbury, 1973

8. *Montonepa erutus* (Montandon, 1910)

Subfamily : Ranatrinae Douglas & Scott, 1865

Tribe : Ranatrini Douglas & Scott, 1865

Genus : *Cercotmetus* Amyot & Serville, 1843

9. *Cercotmetus asiaticus* Amyot & Serville, 1843
10. *Cercotmetus brevipes* Montandon, 1909
11. *Cercotmetus fumosus* Distant, 1904
12. *Cercotmetus pilipes* (Dallas) 1850

Genus : *Ranatra* Fabricius, 1790

Subgenus : *Ranatra* Fabricius, 1790

13. *Ranatra chinensis* Mayr, 1865
14. *Ranatra digitata* Hafiz & Pradhan , 1947
15. *Ranatra distanti* Montandon , 1910
16. *Ranatra elongata* Fabricius , 1790
17. *Ranatra feana* Montandon, 1903
18. *Ranatra filiformis* Fabricius, 1790
19. *Ranatra gracilis* Dallas , 1850
20. *Ranatra longipes thai* Lansbury , 1972
21. *Ranatra parmata* Mayr, 1865
22. *Ranatra titilaensis* Hafiz & Pradhan , 1947
23. *Ranatra varipes atropha* Montandon , 1903
24. *Ranatra varipes varipes* Stål , 1861

FAMILY : BELOSTOMATIDAE LEACH, 1815

Subfamily : Belostomatinae Leach, 1815

Genus : *Diplonychus* Laporte, 1833

25. *Diplonychus annulatus* (Fabricius, 1781)
26. *Diplonychus molestus* (Dufour, 1863)
27. *Diplonychus rusticus* (Fabricius, 1781)

Subfamily: Lethocerinae Lauck & Menke, 1961

Genus : *Kirkaldyia* Montandon, 1909

28. *Kirkaldyia deyrolli* (Vuillefroy, 1864)

Genus : *Lethocerus* Mayr, 1853

Subgenus : *Lethocerus* Mayr, 1853

29. *Lethocerus indicus* (Lepeletier & Serville, 1825)

30. *Lethocerus patruelis* (Stål, 1854)

Superfamily: Ochteroidea Kirkaldy, 1906

FAMILY : GELASTOCORIDAE KIRKALDY, 1897

Subfamily : Nerthrinae Kirkaldy, 1906

Genus : *Nerthra* Say, 1832

31. *Nerthra asiatica* (Horvath, 1892)

32. *Nerthra indica* (Atkinson, 1888)

33. *Nerthra spissa* (Distant, 1910)

34. *Nerthra unguistyla* Todd, 1957

FAMILY : OCHTERIDAE KIRKALDY, 1906

Genus : *Ochterus* Latreille, 1807

Subgenus : *Ochterus* Latreille, 1807

35. *Ochterus marginatus marginatus* (Latreille, 1804)

Superfamily: Corixoidea Leach, 1815.

FAMILY : CORIXIDAE LEACH, 1815

Subfamily : Corixinae Leach, 1815

Tribe : Agraptocorixini Hungerford, 1948

Genus : *Agraptocorixa* Kirkaldy, 1898

36. *Agraptocorixa hyalinipennis hyalinipennis* (Fabricius, 1803)

Tribe : Corixini Leach, 1815

Genus : *Callicorixa* B-White, 1873

37. *Callicorixa gebleri* (Fieber, 1848)

Genus : *Corixa* Geoffroy, 1762

38. *Corixa affinis* Leach, 1818

39. *Corixa punctata* (Illiger, 1807)

Genus : *Hesperocorixa* Kirkaldy, 1908

40. *Hesperocorixa oculata* (Lundblad, 1929)

Genus : *Sigara* Fabricius, 1775

Subgenus : *Sigara* Fabricius, 1775

41. *Sigara seistanensis* (Distant, 1920)

Subgenus : *Tropocorixa* Hutchinson, 1940

42. *Sigara distorta* (Distant, 1910)

43. *Sigara graveleyi* (Hutchinson, 1940)

44. *Sigara hoggarica* Poisson,1929
45. *Sigara horana* (Hutchinson,1940)
46. *Sigara indica* (Hutchinson,1940)
47. *Sigara nilgirica* (Hutchinson,1940)
48. *Sigara paivai* Lundblad,1928
49. *Sigara promontoria* (Distant,1910)
50. *Sigara pruthiana* (Hutchinson,1940)

Subgenus : *Vermicorixa* Walton, 1940

51. *Sigara kempfi* (Hutchinson,1940)
52. *Sigara lateralis* (Leach,1818)
53. *Sigara annandalei* (Paiva and Dover,1922)
54. *Sigara rambhaensis* (Paiva and Dover,1922)

Subfamily : Cymatinae Walton, 1940

Genus : ***Cymatia* Flor, 1860**

55. *Cymatia apparens* (Distant , 1910)

Subfamily : Micronectinae Jaczewski, 1924

Genus : ***Micronecta* Kirkaldy, 1897**

Subgenus : *Basilonecta* Hutchinson, 1940

56. *Micronecta scutellaris scutellaris* (Stål , 1858)
57. *Micronecta siva* (Kirkaldy,1897)

Subgenus : *Dichaetonecta* Hutchinson, 1940

58. *Micronecta albifrons* (Motschoulsky,1863)
59. *Micronecta desertana desertana* Distant,1920
60. *Micronecta eucosmeta* Hutchinson,1940
61. *Micronecta janssoni* Thirumalai,1989
62. *Micronecta flavens* Wróblewski,1960
63. *Micronecta prashadana* Hutchinson,1940
64. *Micronecta sanctae-catherine* Hutchinson,1940
65. *Micronecta* sp.

Subgenus : *Indonectella* Hutchinson, 1940

66. *Micronecta grisea* (Fieber,1844)

Subgenus : *Unguinecta*, Nieser, Chen, and Yang. 2005.

67. *Micronecta khasiensis* Hutchinson,1940
68. *Micronecta waltoniana* Hutchinson,1940

Subgenus : *Micronecta* Kirkaldy, 1897

69. *Micronecta anatolica anatolica* Lindberg,1922
70. *Micronecta decorata* Lundblad,1934

71. *Micronecta daedala* Distant,1910
 72. *Micronecta* sp. (prox *wui* & *anatolica*)

Subgenus : *Pardanecta* Wroblewski, 1962

73. *Micronecta punctata* Horvath,1904
 74. *Micronecta* (*Dichaetonecta*?) *punctinotum* Chen,1960

Subgenus : *Sigmonecta* Wroblewski, 1962

75. *Micronecta altera* Wróblewski 1972
 76. *Micronecta quadristrigata* Breddin, 1905
 77. *Micronecta fieberi* Wróblewski, 1968
 78. *Micronecta fulva* Paiva, 1918
 79. *Micronecta ludibunda ludibunda* Breddin, 1905
 80. *Micronecta ludibunda langkana*, Wróblewski 1968
 81. *Micronecta ovivora* (Westwood, 1871)
 82. *Micronecta tarsalis* Chen, 1960

Genus : *Synaptonecta* Lundblad, 1934

83. *Synaptonecta issa* (Distant,1910)

Superfamily: Naucoroidea Leach, 1815

FAMILY : APHELOCHEIRIDAE FIEBER, 1851

Genus : *Aphelocheirus* Westwood, 1833

Subgenus : *Aphelocheirus* Westwood, 1833

84. *Aphelocheirus boukali* Zettel, 2000
 85. *Aphelocheirus narmadaensis* Thirumalai, 2008
 86. *Aphelocheirus nathani* La Rivers, 1971
 87. *Aphelocheirus pradhanae* Zettel, 1998.

Subgenus : *Micraphelocheirus* Hoberlandt & Stys, 1979

88. *Aphelocheirus pygmaeus* LaRivers, 1971
 89. *Aphelocheirus signatus* Zettel, 1998

FAMILY : NAUCORIDAE LEACH, 1815

Subfamily : Cheirochelinae Montandon, 1897

Genus : *Cheirochela* Hope, 1840

90. *Cheirochela assamensis* Hope, 1841

Genus : *Gestroiella* Montandon, 1897

91. *Gestroiella insignis* Distant, 1910

Subfamily : Laccocorinae Stål, 1876

Genus : *Diaphorocoris* Montandon, 1897

92. *Diaphorocoris dubreuili* Montandon, 1908

Genus : *Heleocoris* Stål, 1876

Subgenus : *Heleocoris* Stål, 1876

93. *Heleocoris acutus* (Spinola, 1837)
 94. *Heleocoris bengalensis bengalensis* Montandon, 1910
 95. *Heleocoris bergrothi* Montandon, 1897
 96. *Heleocoris breviceps* Montandon, 1897
 97. *Heleocoris elongatus* Montandon, 1897
 98. *Heleocoris indicus* Montandon, 1897
 99. *Heleocoris majusculus* Montandon, 1908
 100. *Heleocoris obliquatus* (Spinola, 1837)
 101. *Heleocoris rotundatus* Montandon, 1908
 102. *Heleocoris strabus* Montandon, 1897
 103. *Heleocoris vicinus* Montandon, 1910

Subfamily : Naucorinae Leach, 1815

Tribe : Naucorini Leach, 1815

Genus : *Naucoris* Geoffroy, 1762

104. *Naucoris scutellaris* Stål, 1859

Genus : *Nanonaucoris* Zettel, 2001

105. *Nanonaucoris boukali* Zettel, 2001
 106. *Nanonaucoris minimus* Zettel, 2001

Superfamily : Notonectoidae Latreille, 1802

FAMILY : NOTONECTIDAE LATREILLE, 1802

Subfamily : Anisopinae Hutchinson, 1929

Tribe : Anisopini Hutchinson, 1929

Genus : *Anisops* Spinola, 1837

107. *Anisops barbatus* Brooks, 1951
 108. *Anisops bouvieri* Kirkaldy, 1904
 109. *Anisops breddini* Kirkaldy, 1901
 110. *Anisops campbelli* Brooks, 1951
 111. *Anisops cavifrons* Brooks, 1951
 112. *Anisops crinitus* Brooks, 1951
 113. *Anisops exiguus* Horvath, 1919
 114. *Anisops extendofrons* Brooks, 1951
 115. *Anisops kuroiwaie* Matsumura, 1915
 116. *Anisops lipovskyi* Brooks, 1951
 117. *Anisops naustus* Fieber, 1851
 118. *Anisops nigrolineatus* Lundblad, 1934
 119. *Anisops niveus* (Fabricius, 1775)
 120. *Anisops paranigrolineatus* Brooks, 1951
 121. *Anisops sardeus sardeus* Herrich Shaffer, 1850
 122. *Anisops stali* Kirkaldy, 1904

123. *Anisops tahitiensis* Lundblad, 1934
 124. *Anisops varius* Fieber, 1851
 125. *Anisops waltairensis* Brooks, 1951
 126. *Anisops* sp. Polhemus & Starmuhlner, 1990

Subfamily : Notonectinae Latreille, 1802
 Tribe : Notonectini Latreille, 1802
Genus : *Enithares* Spinola, 1837

127. *Enithares ciliata* (Fabricius, 1798)
 128. *Enithares fusca* Brooks, 1948
 129. *Enithares hungerfordi* Brooks, 1948
 130. *Enithares intha* Paiva, 1918
 131. *Enithares lineatipes* Horvath, 1889
 132. *Enithares mandalayensis* Distant, 1910
 133. *Enithares rogersi* Distant, 1910
 134. *Enithares triangularis* (Guerin - Meneville, 1844)

Genus : ***Notonecta* Linnaeus, 1758**
 Subgenus : *Notonecta* Linnaeus, 1758

135. *Notonecta viridis* Delcourt, 1909
 136. *Notonecta montandoni* Kirkaldy, 1897

Tribe : Nychini Hungerford, 1934
Genus : *Nychia* Stål, 1860

137. *Nychia sappho* Kirkaldy, 1901

Superfamily : Pleoidea Fieber, 1851
 FAMILY : PLEIDAE FIEBER, 1851
Genus : *Paraplea* Esaki & China, 1928

138. *Paraplea buenoi* Kirkaldy, 1904
 139. *Paraplea frontalis* (Fieber, 1844)
 140. *Paraplea indistinguenda* (Matsumura, 1905)
 141. *Paraplea liturata* (Fieber, 1844)

FAMILY : HELOTREPHIDAE ESAKI & CHINA, 1927
 Subfamily : Helotrephinae Esaki & China, 1927
 Tribe : Limnotrephini Polhemus, 1990
Genus : *Limnotrephes* Esaki & China, 1928

142. *Limnotrephes campbelli* Esaki & China, 1928

Genus : *Mixotrephes* Papáček, Stys et Tonner, 1989

143. *Mixotrephes bengalensis* Papacek & Zettel, 2003
 144. *Mixotrephes heissi* Papacek & Zettel, 2003
 145. *Mixotrephes kumaonis* (Polhemus, 1990)

Genus : Nanotrepbes Papàček & Zettel, 2001

146. *Nanotrepbes boukali* Papàček & Zettel, 2001
 147. *Nanotrepbes duplicaturus* Papàček & Zettel, 2001
 148. *Nanotrepbes idiomorphus* Papàček & Zettel, 2001
 149. *Nanotrepbes minutissimus* (Zettel, 1997)
 150. *Nanotrepbes tuberculatus* Papàček & Zettel, 2001

Genus : Tiphotrephes Esaki & China, 1928

151. *Tiphotrephes indicus* (Distant, 1910)

Subfamily : Fischerotrephinae Zettel, 1994**Genus : Fischerotrephes Zettel, 1994**

152. *Fischerotrephes indicus* Zettel, 1997

Subfamily : Idiocorinae Esaki & China, 1927**Genus : Indotrephes Zettel, 1997**

153. *Indotrephes bufula* Zettel, 1997
 154. *Indotrephes latus* Papàček & Zettel, 2001

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A checklist of Freshwater Prawns of the families: Atyidae and Palaemonidae, reported from India

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Phylum	:	Arthropoda
Subphylum	:	Crustacea
Class	:	Malacostraca
Subclass	:	Eumalacostraca
Superorder	:	Eucarida
Order	:	Decapoda Latreille, 1803
Suborder	:	Pleocyemata Burkenroad, 1963
Infraorder	:	Caridea Dana, 1852
Superfamily	:	Atyoidea De Man, 1849
Family	:	Atyidae De Haan, 1849
Genus	:	<i>Caridina</i> H. Milne Edwards

1. *Caridina babaulti* Bouvier, 1918
2. *Caridina bengalensis* de Man, 1908
3. *Caridina carli* J. Roux, 1931
4. *Caridina cavaleriei industana* J. Roux, 1931
5. *Caridina excavata* Kemp, 1913
6. *Caridina fernandoi* Arudpragasam and Costa, 1962
7. *Caridina gracilipes* de Man, 1942
8. *Caridina gracilirostris* de Man, 1892
9. *Caridina gurneyi* Jalihal, Shenoy and Sankolli, 1984
10. *Caridina hodgarti* Kemp, 1913
11. *Caridina jalihali* Mariappan and Richard, 2006
12. *Caridina kempii* Jalihal, Shenoy and Sankolli, 1984
13. *Caridina kunnathurensis* Richard and Chandran, 1994
14. *Caridina laevis* Heller, 1862
15. *Caridina natarajani* Tiwari and Pillai, 1968
16. *Caridina panikkari* Jalihal, Shenoy and Sankolli, 1984
17. *Caridina propinqua* de Man, 1908
18. *Caridina rajadhari* Bouvier, 1918
19. *Caridina shenoyi* Jalihal and Sankolli, 1984
20. *Caridina sumatrensis* de Man, 1892
21. *Caridina typus* H. Milne Edwards, 1837
22. *Caridina weberi* de Man, 1892
23. *Caridina williamsoni* Jalihal, Shenoy and Sankolli, 1984

Superfamily : Palaemonoidea Rafinesque, 1815
 Family : Palaemonidae Rafinesque, 1815
Genus : *Macrobrachium* Bate, 1868

1. *Macrobrachium aemulum* (Nobili, 1906)
2. *Macrobrachium agwi* Klotz, 2008
3. *Macrobrachium altifrons altifrons* (Henderson, 1893)
4. *Macrobrachium andamanicum* Tiwari, 1952
5. *Macrobrachium assamense assamense* (Tiwari, 1955)
6. *Macrobrachium assamense peninsularae* (Tiwari, 1955)
7. *Macrobrachium australe* (Guerin-Meneville, 1838)
8. *Macrobrachium bombayense* Almelkar and Sankolli, 2006
9. *Macrobrachium banjarae* (Tiwari, 1958)
10. *Macrobrachium birmanicum* (Schenkel, 1902)
11. *Macrobrachium canarae* (Tiwari, 1958)
12. *Macrobrachium cavernicola* (Kemp, 1924)
13. *Macrobrachium dayanum* (Henderson, 1893)
14. *Macrobrachium divakarani* Jayachandran, 2001
15. *Macrobrachium elatum* Jayachandran, 1987
16. *Macrobrachium equidens* (Dana, 1852)
17. *Macrobrachium gangeticum* Bate, 1868
18. *Macrobrachium gurudeve* Jayachandran & Raji, 2005
19. *Macrobrachium hendersoni hendersoni* (Tiwari, 1952)
20. *Macrobrachium hendersoni cacharensis* (Tiwari, 1952)
21. *Macrobrachium hendersoni hendersoni* (De Man, 1906)
22. *Macrobrachium hendersoni platyrostre* (Tiwari, 1952)
23. *Macrobrachium idea* (Heller, 1862)
24. *Macrobrachium idella idella* (Hilgendorf, 1898)
25. *Macrobrachium idella georgi* Jayachandran and Joseph, 1985
26. *Macrobrachium indicum* Jayachandran and Joseph, 1986
27. *Macrobrachium javanicum* (Heller, 1862)
28. *Macrobrachium jayasreei* Jayachandran and Raji, 2005
29. *Macrobrachium johnsoni* Ravindranath, 1979
30. *Macrobrachium josephi* Jayachandran, 2001
31. *Macrobrachium kempii* (Tiwari, 1947)
32. *Macrobrachium kistnense* (Tiwari, 1952)
33. *Macrobrachium kulkarni* Almelkar and Sankolli, 2006
34. *Macrobrachium kulsiense* Jayachandran, Lal Mohan and Raji, 2007
35. *Macrobrachium kunjuramani* Jayachandran and Raji, 2005
36. *Macrobrachium lamarrei lamarrei* (H. Milne Edwards, 1837)
37. *Macrobrachium lamarrei lamarroides* (Tiwari, 1952)
38. *Macrobrachium lar* (Fabricius, 1798)
39. *Macrobrachium latidactylus* (Thallwitz, 1891)
40. *Macrobrachium latimanus* (Von Martens, 1868)

41. *Macrobrachium malcolmsonii* (H. Milne Edwards, 1844)
42. *Macrobrachium manipureense* (Tiwari, 1952)
43. *Macrobrachium mirabile* (Kemp, 1917)
44. *Macrobrachium naso* (Kemp, 1918)
45. *Macrobrachium nobilii* (Henderson and Matthai, 1910)
46. *Macrobrachium novaehollandiae* (De Man, 1908)
47. *Macrobrachium ornatus* Jayachandran and Raji, 2004.
48. *Macrobrachium peguense* (Tiwari, 1952)
49. *Macrobrachium rosenbergii* (De Man, 1879)
50. *Macrobrachium rude* (Heller, 1862)
51. *Macrobrachium sankollii* Jalihal and Shenoy, 1988
52. *Macrobrachium scabriculum* (Heller, 1862)
53. *Macrobrachium siwalikense* (Tiwari, 1952)
54. *Macrobrachium sulcatus* (Henderson and Matthai, 1910)
55. *Macrobrachium tiwarii* Jalihal, Shenoy and Sankolli, 1988
56. *Macrobrachium unikarnatakae* Jalihal, Shenoy and Sankolli, 1988
57. *Macrobrachium veliense* Jayachandran and Joseph, 1985
58. *Macrobrachium villosimanus* (Tiwari, 1947)

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