



Research Paper

Danionid fishes of Dehradun (Uttarakhand)

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Received: 08/08/2018

Revised: 13/08/2018

Accepted: 14/09/2018

Abstract: The present communication deals with updating the present taxonomic status of danionid fishes found in Doon Valley (Dehra Dun), besides their other features, distribution, conservation status and threats. These belong to 13 species under 8 genera, viz. *Barilius* Hamilton, 1822, *Cabdio* Hamilton, 1822, *Danio* Hamilton, 1822, *Opsarius* McClelland, 1838, *Raiamas* Jordan, 1919, *Devario* Heckel, 1843, *Esomus* Swainson, 1839 and *Rasbora* Bleeker, 1859. Some of which are interesting for their aesthetic value and trade in aquarium keeping.

Keywords: Danionids of Dehra Dun.

INTRODUCTION

The general fish fauna of Dehra Dun has attracted the attention of various workers (Fowler, 1924; Hora & Mukerji, 1936; Das, 1961; Lal & Chatterjee, 1963; Singh, 1964; Tilak & Husain, 1973, 1976, 1977a,b, 1978, 1990; Grover, 1970; Grover et al., 1994; Singh & Gupta, 1979; Husain, 1975, 1995, 2003, 2010, 2012, 2015; Husain & Tilak, 1995; Negi & Malik, 2005; Gupta et al., 2006; Gupta & Rana, 2009; Uniyal & Kumar, 2006; Uniyal & Mehta, 2007; Uniyal, 2010; Badola, 2009; Rauthan et al., 2009; Rana & Gupta, 2017a,b; Rana et al. (RGR),

2017; Rana et al. (RBMB), 2017) during the past but no update account on danionid fishes is available and hence this study is taken up.

DEHRA DUN: STUDY SITE

Dehra Dun district, lying between 29°58' and 31°02'N Latitude and 77°35' and 78°20' E Longitude, is one of the districts under Uttarakhand state, located in Himalayan region and nestled mainly between rivers Ganga on the east and Yamuna and Tons on the west with their tributaries (Song, Suswa of Ganga and Asan, Tons of Yamuna). The district is bounded in the north and north-east by Uttarkashi, in the east by Tehri, in south-east by Pauri and in south and south-west by Haridwar and Uttar Pradesh and in west and north-west by Himachal Pradesh. It is divisible into three distinct physiographic zones, viz. Lesser Himalaya in north, Doon Valley in centre and Siwalik range in south. The topography constitutes the southern slopes of Himalaya with an altitude ranging between 790 and 2,661 m. The climate is slightly milder with good rainfall and green cover.

DANIONIDS OF DEHRA DUN WITH SYSTEMATICS, DISTRIBUTION,

CONSERVATION STATUS AND THREATS

Class: Actinopterygii Woodward, 1891
Subclass: Neopterygii Regan, 1923
Order: Cypriniformes Rafinesque, 1810
Suborder: Cyprinoidei Rafinesque, 1810
Family: Danionidae Bleeker, 1863
Subfamily: Chedrinae Bleeker, 1863
Genus: *Barilius* (subgenus of *Cyprinus*)
Hamilton, 1822

Barilius (subgenus of *Cyprinus*) Hamilton, 1822. Fish Ganges: 266, 384 (type-species: *Cyprinus barila* Hamilton, 1822, by subsequent designation, Bleeker, 1863a,b).

***1. Barilius bendelisis* (Hamilton, 1807)**

Hamilton's Barila

Cyprinus bendelisis 1807. *A journey from Madras through the countries of Mysore, Canara and Malabar*. 3: 345, pl. 32 (type-locality: Cedavati= Vedavati stream, headwaters of Krishna river near Heriuru, Mysore, India).

Barilius bendelisis, Shrestha, 1978. *Journal of Natural History Museum, Tribhuvan University*, 5 (1-4): 34.

Vernacular Names: *Chaldi, Chilwa, Chedra, Dhau, Sunarar* (Dehra Dun); *Angura, Bhareli, Dudhnea, Gheur, Glar* (Hindi), *Chiple-faketa, Fageta, Guder, Gurdere, Jhojho, Khasri-chala* (Nepali), *Burreah, Dahrah, Kandri, Kunnul, Paktah, Puckwahri* (Punjabi).

Diagnostic Features: Male larger with dorsal and paired fins enlarged, snout, lower jaw with thorny tubercles, body scales with fine tubercles; female lacks these characters.

Fin rays and Lateral line scales: D. 2/7, P.1/12-14, V. 1/8, A. 2-3/7-8, C.19 (10/9). L. 1. 40-45.

Colouration: Silvery with 9-12 vertical grey bands and two black dots at lateral line scales.

Length: 22.7 cm in total length (Rahman, 1989).

Distribution:

Uttarakhand:

DehraDun:

Eastern Doon Valley: Song river at Maldevta, Gular Ghati, Lachhiwala, Doiwala, Kansrao and Satyanarain; Ganga river at Gaurighat near Satyanarain; Rispana nadi at Kotalgaon near Rajpur; Baldi nadi and Bang khala at Sahastradhara; Motichur rao at Motichur; Stream at Asarori; Suswa river at Phandowala and Clement town.

Western Doon Valley: Asan river above Kunja Grant, below Dhalipur Barrage, villages Partitpur and Bairagiwala near Herbertpur, Sahaspur, Sabhawala, village Bhurpur near Jhajra and at Chandrabani, seepage nala below Asan Barrage and Asan reservoir; Swarna nadi, Bhaowala; Karwapani, Asarori; Naro nadi near village Langha and at Bhurgaon near Bansiwala; Tons nadi at Premnagar, village Chandrauti, Bijapur and Robber's Cave; Birhani nadi near Panditwari; Nimi nadi, Paundha; Nun nadi, Jaintanwala; Nalota nala at village Chandrauti and village Malsi on lower Mussoorie road; Kiarkuli nadi and Bhtarli nadi near village Khera and Jaspur; small stream (Manaksidh rao); Karwapani, Asarori Forest.

Elsewhere in Uttarakhand: Chamoli, Dehra Dun, Haridwar, Pauri, Tehri and Uttarkashi, Almora, Nainital and Pithoragarh districts; Rajaji Tiger Reserve. Rest of India: Throughout.

Outside India: Bangladesh, Bhutan, Myanmar, Nepal, Pakistan, Sri Lanka and Thailand

Habitat: Streams and rivers along base of hills with pebbly and sandy bottom.

Conservation Status: IUCN Red List Category- Least Concern.

Threats: Over-exploitation and habitat destruction.

***2. Barilius dimorphicus* Tilak & Husain, 1990**

Barilius dimorphicus Tilak & Husain, 1990. *J. Bombay nat. Hist. Soc.*, 87 (1): 102-105, figs. 1-4 (type-locality: Song

river near its union with Teenpani nala, Satyanarain, Eastern Doon Valley, Rajaji National Park, District Dehra Dun; Ghasi Ram sot stream near Chila Forest Rest House, Chila-Hardwar road, Rajaji National Park, District Pauri-Garhwal, both tributaries of river Ganga).

Vernacular Name: Not available.

Diagnostic Features: In male 1st branched ray of pectoral fin thickened, lower jaw and area between mandibles and branchiostegal rays covered with spiny tubercles and scales on anterior part of body studded with fine tubercles, female lacks these characters.

Fin rays and Lateral line scales: D. 2/6-7, P. 1/12-13, V. 1/7-8, A. 3/10-11. C. 17-19 (8-10/9), L. 1. 60-66.

Colouration: Silvery with 2-4 irregular rows of bluish-black spots of varying sizes.

Length: 18.5 cm in total length (Tilak & Husain, 1990, Menon, 1999).

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley, Dehra Dun: Song river near its union with Teenpani nala, Satyanarain (tributary of river Ganga).

Western Doon Valley: No record.

Elsewhere in Uttarakhand: Pauri district and Rajaji Tiger Reserve.

Rest of India: No other record.

Outside India: No record.

Habitat: Hill streams with gravelly bottom.

Conservation Status: IUCN Red List Category- Vulnerable.

Threats: Not affected by specific threats as it is mostly being within Rajaji Tiger Reserve other than continuing decline in habitat quality from sedimentation due to deforestation and agricultural practice. However, being known from a small area makes it vulnerable to any future threat.

3. *Barilius lanceolatus* Husain, 2010

Song Baril

Barilius lanceolatus Husain, 2010. *Journal of Research & Development*, Srinagar, 10: 3-8 (type-locality: Song river, a tributary of Ganga river, Satyanarain, district Dehra Dun).

Vernacular Names: *Chilwa*, *Dhaur* (Dehra Dun).

Diagnostic Features: Body lanceolate and compressed, lower jaw slightly prominent, two pairs of short barbels, eye large and diameter slightly more than snout length, 3rd sub-orbital slightly wider than uncovered part of cheek below, dorsal fin origin midway between middle of eye and caudal fin base and its 1st ray extending just above 1st anal fin ray, pectoral fins not reaching pelvic fin base, pelvic fins not reaching anal opening and anal fin not to caudal base.

Fin rays: D. 3/7, P. 1/13, V. 1/8, A. 3/10, C. 19, L.1. 4.5, L.1. 61.

Colouration: Silvery with upper 1/3rd brownish, 14-17 short dark bars on body descending from above but remain above lateral line, dorsal fin greyish except for tips of anterior few rays, lower caudal lobe also greyish.

Length: 5.3 cm in total length (Husain, 2010).

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song river at Satyanarain.

Western Doon Valley: No record.

Elsewhere in Uttarakhand: No other record.

Rest of India: No record.

Outside India: No record.

Conservation Status: IUCN Red List Category- Not assessed, may be Vulnerable being rare.

Threats: Water pollution.

Remarks: It is closely allied to *Barilius radiolatus* Gunther, 1868 but can easily be distinguished from it in a number of characters like length of head, eye diameter, origin of dorsal fin, pectoral fin

rays (13 v/s 16 branched rays), Pelvic fin length, body depth, number of scales between lateral line and pelvic fin base (4.5 v/s 2 rows) and lateral line transverse scales (12.5/7.5 v/s 9-10/6 rows).

4. *Barilius pectoralis* Husain, 2012

Tons Baril

Barilius pectoralis Husain, A., 2012. *Journal of New Biological Reports*, 1 (1): 21-24 (type-locality: Tons river, Haripur near Kalsi, District Dehra Dun).

Vernacular Names: Chilwa, Dhaur (Dehra Dun).

Diagnostic Features: Snout broadly obtuse, upper jaw longer, maxilla reaching slightly beyond anterior edge of eye, 3rd sub-orbital as deep as uncovered part of cheek; dorsal origin midway between nasal opening and caudal base; pectoral fins fan-shaped with a deep notch at 3rd ray, outer three rays strongly thickened with 3rd one shortest; pelvic fins fleshy, middle rays of pelvic fin thickened, last two rays united; 4-5 rows scales between lateral line and pelvic fin base, 29 pre-dorsal scales.

Fin rays and Lateral line scales: D. 3/7, P. 1/14, V. 1/8, A. 3/8, C. 17, L. 1. 58-59.

Colouration: Silvery with 9-10 short and indistinct lateral bars, not extending beyond dark colouration of back, fins pale, except for lower half of caudal which is grey.

Length: 10 cm in total length (Husain, 2012).

Distribution;

Uttarakhand:

Dehra Dun:

Western Doon Valley: Tons river, Haripur near Kalsi.

Eastern Doon Valley: No record.

Elsewhere in Uttarakhand: No record.

Rest of India: No record.

Outside India: No record.

Habitat: Torrential streams with very cold water, stony and rocky bed.

Conservation Status: IUCN Red List Category- Not assessed.

Threats: Likely habitat degradation due to silt and pollution.

Remarks: It differs from its closest ally, *Barilius shacra* Hamilton, 1822 in a number of characters, especially in lesser number of scales between lateral line and pelvic fin base (4-5 v/s 7 rows of scales).

5. *Barilius vagra* (Hamilton, 1822)

Vagra Baril

Cyprinus vagra Hamilton, 1822. *Fish. Ganges*: 269-270, 385 (type-locality: Ganges river about Patua= Patna, India).

Barilius vagra, Shrestha, 1978. *Journal of Natural History Museum*, Tribhuvan University, 5 (1-4): 34.

Vernacular Names: *Chalra*, *Childi*, *Dhaur*, *Popta* (Dehra Dun); *Dudhnea*, *Gheur*, *Glar* (Hindi); *Lam faketa* (Nepali).

Diagnostic Features: Rostral barbel longer than eye diameter.

Fin rays and Lateral line scales: D. 2/7, P. 1/13, V. 1/8, A. 3/10, C. 19 (10/9), L. 1. 43-44.

Colouration: Silvery with 8-11 steel blue band on sides, fins yellowish.

Length: 15.2 cm (Day, 1878); 12.5 cm (Husain, 2015); 12.8 cm in total length (Mir et al., 2015).

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song river at Maldevta, near Raipur, Gular Ghati, Doiwala, Lachhiwala, Kansrao, Raiwala and Satyanarain; Baldi river at Sahastradhara; Raipur canal; Bandal nadi at village Sairki near Maldevta; union of Baldi and Song rivers near Maldevta; Dulhani nadi at Harrawala; pond at Mianwala near Harrawala; Reh river at Koal kundi, Lachhiwala; Bhaniawala rao on Lachhiwala-Kansrao-Shimla road crossing; Chandarbhaga river at Rishikesh; Golapani nala at Golatappar near Satyanarain; Motichur rao at Motichur; Suswa rive at Phandowala and Clement town.

Western Doon Valley: Asan river at Herbertpur, above Kunja Grant, below its Barrage and Asan reservoir; Swarna nadi, Bhaowala; Nun nadi, Jaintanwala; Naro nadi near village Langha.

Elsewhere in Uttarakhand: Chamoli, Dehra Dun, Haridwar, Pauri, Tehri, Uttarkashi, Almora, Nainital and Pithoragarh districts; Rajaji Tiger Reserve.

Rest of India: Assam, Bihar, Himachal Pradesh and Uttar Pradesh (Brahmaputra, Ganga and Indus river systems).

Outside India: Afghanistan, Bangladesh, Nepal, Pakistan and Sri Lanka.

Habitat: Hill streams with gravelly and rocky beds.

Conservation Status: IUCN Red List Category- Least Concern.

Threats: Destructive fishing.

Genus: *Cabdio* (subgenus of *Cyprinus*) Hamilton, 1822

Cabdio (subgenus of *Cyprinus*) Hamilton, 1822. *Fish. Ganges*: 333, 392 (type-species: *Cyprinus (Cabdio) jaya* Hamilton, 1822, by subsequent designation, Jordan, 1917).

Aspidoparia Heckel, 1847. *Reisen in Europa, Asien und Africa*, 2 (3): 288 (type-species: *Aspidoparia sardine* Heckel, 1847, by subsequent designation, Bleeker, 1863a, 1863-64).

6. *Cabdio jaya* (Hamilton, 1822)

Carp-let, Jaya

Cyprinus (Cabdio) jaya Hamilton, 1822. *Fish. Ganges*: 333, 392 (type-locality: Northern Behar, India).

Aspidoparia jaya, Shrestha, 1978. *Journal of Natural History Museum*, Tribhuvan University, 5 (1-4): 34.

Cabdio jaya, Eschmeyer et al., 2018, *Catalogue of Fishes*, Electronic version updated 2 July.

Vernacular Names: *Chal*, *Chilwa* (Dehra Dun); *Bhegna*, *Mara* (Nepali).

Diagnostic Features: Jaws short, pharyngeal teeth in two rows, mouth

inferior, barbels absent, scales deciduous, lateral line almost straight.

Fin rays: D. 3/7, P. 1/12-13, V. 1/7-8, A. 3/7, C. 19, L. 1. 46-53.

Colouration: Silvery.

Length: 15 cm in total length (Talwar & Jhingran, 1991; Husain, 2015).

Altitudinal Range: Upto 1,769 m altitude (Husain, 2015).

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song river and Suswa river at Doiwala-Kansrao, Kansrao-Nepali Farm (Rana & Gupta, 2017; Rana et al., 2017).

Western Doon Valley: Asan river, Herbertpur (Husain, 2015).

Elsewhere in Uttarakhand: Dehra Dun, Haridwar and Nainital districts; Rajaji Tiger Reserve.

Rest of India: Assam and Uttar Pradesh.

Outside India: Afghanistan, Bangladesh and Nepal.

Habitat: streams and ponds in plains and base of hills.

Conservation Status: IUCN Red List Category- Least Concern.

Threats: Ornamental value, pollution and destructive fishing for food.

7. *Cabdio morar* (Hamilton, 1822)

Aspidoparia, Morari

Cyprinus morar Hamilton, 1822. *Fish. Ganges*: 264, 384, pl. 31, fig. 75 (type-locality: Yamuna and Tista rivers, India).

Aspidoparia morar, Shrestha, 1978. *Journal of Natural History Museum*, Tribhuvan University, 5 (1-4): 34.

Cabdio morar, Liao et al., 2011. *Zootaxa*, 2880: 31.

Vernacular Names: *Chal*, *Chilwa* (Dehra Dun); *Chakale*, *Karangi* (Nepali).

Diagnostic Features: Jaws short, pharyngeal teeth in three rows, mouth inferior, barbels absent, scales fairly deciduous, lateral line slightly curved.

Fin rays and Lateral line scales: D. 2/7, P. 1/12-13, V. 1/7-8, A. 3/9, C. 19 (10/9), L. 1.36-38.

Colouration: Silvery-yellowish with a burnished lateral band.

Length: 17.5 cm (Husain, 2015); 20 cm (Vidhayanon, et al., 2005).

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song river and Suswa river (Doiwala, Kansrao, Nepali Farm) (Rana & Gupta, 2017; Rana et al., 2017).

Western Doon Valley: Asan river above Kunja Grant and below its Barrage.

Elsewhere in Uttarakhand: Dehra Dun (Western Doon Valley) and Nainital districts.

Rest of India: Throughout northern parts.

Outside India: Afghanistan, Bangladesh, China, Iran, Myanmar, Nepal, Pakistan and Thailand. Viet Nam (introduced).

Habitat: Streams, rivers and ponds in plains and base of hills.

Conservation Status: IUCN Red List Category- Least Concern.

Threats: Exploitation for aesthetic value and food, habitat degradation and water pollution.

Remarks: Scatter their eggs after spawning.

Genus: *Opsarius* McClelland, 1838

Opsarius McClelland, 1838: 944 (type-species: *Opsarius maculatus* McClelland, 1839, by subsequent designation, Jordan, 1919).

8. *Opsarius barna* (Hamilton, 1822)

Barna Baril *Cyprinus barna* Hamilton, 1822. *Fish. Ganges*: 268-269, 384 (type-locality: Yamuna and Brahmaputra rivers).

Barilius jayarami Barman, 1985. *J. Bombay nat. Hist. Soc.*, 82 (1): 170, fig. 1 (type-locality: Namdapha Wildlife Sanctuary, Tirap district, Arunachal Pradesh, India).

Opsarius barna, Kullander et al., 1999. *The Fishes of Kashmir Valley*: 99-116. In: L. Nyman (ed). *River Jhelum, Kashmir Valley. Impacts on the aquatic environment*. Swedmar, Goteborg; Conway et al., 2011.

Vernacular Names: *Childi, Dhaur, Popta* (Dehra Dun); *Dudhnea, Galar, Gheur* (Hindi), *Pati-patture, Titar kane-faketa* (Nepali).

Diagnostic Features: Males larger with deeper body and fine tubercles on jaw, head and body, outer few rays of pectoral and outer few rays of pelvic fins thickened, dorsal and anal fins expanded; female lacks these sexual characters.

Fin Formula and Lateral line scales: D. 3/7, P. 2/12-13, V.2/7, A. 3/10-11, C. 19 (10/9). L. 1. 40.

Colouration: Silvery with 7-10 bluish vertical bands on sides of body, crossing lateral line.

Length: 12.7 cm (Day, 1878); 15 cm in total length (Shrestha, 1990).

Altitudinal Range: Up to 2,000 m (IUCN Red List).

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song river at Maldevta, Gular Ghati, Doiwala, Kansrao and Satyanarain; Golapani nala at Golatappar near Satyanarain; Bangala nala at Shampur; Motichur rao at Motichur; Reh r at Lachhiwala; Suswa river at Phandowala; Kalapani nala at Rishikesh.

Western Doon Valley: Asan river above Kunja Grant, below its Barrage at Dhalipur, Herbertpur, Fatehpur and Partitpur villages near Herbertpur, Bhairagiwala, Sahaspur, Bhurpur near Jhajra and Chandrabani and Asan Reservoir.

Elsewhere in Uttarakhand: Chamoli, Dehra Dun, Pauri, Tehri, Uttarkashi, Almora, Nainital and Pithoragarh districts; Rajaji Tiger Reserve; Corbett Tiger Reserve.

India: Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Meghalaya, Odisha, Sikkim, Uttar Pradesh and West Bengal (Brahmaputra, Ganges and Mahanadi river systems).

Outside India: Bangladesh, Bhutan, Laos, Myanmar and Nepal.

Habitat: Clear hill streams with gravelly substratum, and large rivers.

Conservation Status: IUCN Red List Category- Least Concern.

Threats: Destructive fishing methods, over-exploitation, loss of habitat and siltation.

Remarks: The present name is followed here after Eschmeyer et al. (2018- Catalog of Fishes).

Genus: *Raiamas* Jordan, 1919

Raiamas Jordan, 1919: 344 (type-species: *Cyprinus bola* Hamilton, 1822, by being a replacement name).

9. *Raiamas bola* (Hamilton, 1822)

Indian Trout, Trout Barb

Cyprinus bola Hamilton, 1822. *Fish. Ganges*: 274-275, 385 (type-locality: Brahmaputra).

Raiamas bola, Talwar & Jhingran, 1991. *Inland fishes of India and adjacent countries*: 384.

Vernacular Names: *Balala*, *Bhola*, *Bola Gulabi Machli*, *Naulia* (Dehra Dun); *Bhola bola*, *Butte Chala*, *Chipali Faketa*, *Goha* (Nepali).

Diagnostic Features: In male snout, lower jaw, outer rays of pectoral and scaled on sides of body covered with tubercles
Fin rays and Lateral line scales: D. 3/8, P.1/14, V. 2/8, A. 3/10, C.19 (10/9). L.1. 87-90.

Colouration: Silvery with dark spots.

Length and Weight: 30 cm (Day, 1878; IUCN Red List); 35 cm in total length (Rahman, 1989), weight

Weight: 2.3 kg (Talwar & Jhingran, 1991); 2.26 kg, usually below 1 kg (IUCN Red List).

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song River at Goolar Ghati, Doiwala and Satyanarain; Reh river at Koal Kundi.

Western Doon Valley: Asan river at Herbertpur, Fatehpur and Partitpur villages near Herbertpur and Bhurpur near Jhajra.

Elsewhere in Uttarakhand: Chamoli, Dehra Dun, Haridwar, Pauri; Nainital and Pithoragarh; Rajaji Tiger Reserve; Corbett Tiger Reserve.

Rest of India: Arunachal Pradesh, Assam, Bihar, Haryana, Himachal Pradesh, Odisha, Punjab, Uttar Pradesh and West Bengal. Maharashtra (introduced).

Outside India: Bangladesh, Bhutan, Myanmar, Nepal and Thailand.

Habitat: Rivers and streams of northern and north eastern India, with clear water and rocky beds.

Conservation Status: IUCN Red List Category: Least Concern.

Threats: Destructive fishing methods.

Subfamily: Danioninae Bleeker, 1863

Genus: *Danio* (subgenus of *Cyprinus*) Hamilton, 1822

Danio (subgenus of *Cyprinus*) Hamilton, 1822. *Fish. Ganges*: 321, 390 (type-species: *Cyprinus (Danio) dangila* Hamilton, 1822, by subsequent designation, Bleeker, 1863).

10. *Danio rerio* (Hamilton, 1822)

Zebra Danio, Zebra Fish

Cyprinus rerio Hamilton, 1822. *Fish. Ganges*: 323-324, 390 (type-locality: Kosi river, Uttar Pradesh).

Brachydanio rerio, Talwar & Jhingran, 1991. *Inland fishes of India and adjacent countries*: 360.

Danio rerio, Shrestha, 1978. *Journal of Natural History Museum*, Tribhuvan University, 5 (1-4): 35.

Vernacular Names: *Dharidaar*, *Dharidaar Salari*, *Salari* (Dehra Dun); *Anju* (Hindi); *Zebra Macha* (Nepali).

Diagnostic Features: Rostral barbel short, maxillary extending beyond eye but short of operculum.

Fin rays and Vertebrae: D. 2/6-7, P. 1/11, V. 1/5; A. 2-3/10-13, C. 18 (9/9), L. 1. 26-30.

Length: 5.1 cm (Day, 1878); 3.8 cm in standard length (Menon, 1999; Husain, 2015); 4.5 cm in length (IUCN Red List).

Colouration: 4-5 indigo-blue horizontal stripes separated by narrower yellowish lines on lateral side, extending onto end of caudal fin rays; anal fin striped; Male blue and slimmer, female deeper in colour and with bulging on sides.

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song river at Gular Ghati, Doiwala, Kansrao and Raiwala; Reh river at Koal Kundi near Lachhiwala; Dulhani river at Nakraunda and Harrawala; Baldi river, Sahatradhara; Lalpani nala at Golatappar near Satyanarain; stream at Banbah near Kansrao; Bhaniawala on Lachhiwala-Kansrao road; Motichur rao at Motichur; Suswa river at Kansrao, Mothrowala and Clement town; Clement town khala.

Western Doon Valley: Asan river above Kunja Grant, at Dhalipur, Herbertpur, Sabhawala and Jhajra, seepage nala below Barrage and Asan Reservoir; small stream, culvert No. 28/2, Ridapur near Sahaspur; Swarna nadi, Bhaowala; Naro nadi, Langha; Kalughat khala, near village Doonga; Nimi nadi, Paundha; Nun nadi Jaintanwala; small stream (Manaksidh rao); Karwapani, Asarori.

Elsewhere in Uttarakhand: Haridwar, Pauri, Almora and Nainital districts; Rajaji Tiger Reserve; Corbett Tiger Reserve.

Rest of India: Arunachal Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Haryana, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Meghalaya, Nagaland, Odisha,

Punjab, Rajasthan, Uttar Pradesh, Tripura and West Bengal.

Outside India: Bangladesh, Bhutan, Myanmar, Nepal and Pakistan.

Cambodia, France (Martinique), Japan, Philippines, Singapore, Sri Lanka and USA (introduced).

Habitat: Streams, small rivers, canals, ponds, ditches, lakes, rice fields and lower reaches of streams and rivulets at plains and foot hills.

Conservation Status: IUCN Red List Category- Least Concern.

Threats: Over exploitation for aquarium trade.

Genus: *Devario* Heckel, 1843

Devario Heckel, 1843: 1015 (type-species: *Cyprinus devario* Hamilton, 1822, by absolute tautonymy, Art. 30.2.4).

11. *Devario devario* (Hamilton, 1822)

Devario Danio, Sind Danio

Cyprinus devario Hamilton, 1822. *Fish. Ganges*: 341-342, 393, pl. 6, fig. 94 (type-locality: rivers and pond of Bengal) (spelled *devarid* on plate).

Devario buchani Bleeker, 1860. *Acta Societatis Regiae Scientiarum Indo-Neerlandicae*, 7 (2): 283 (type-locality: Bengal).

Danio devario, Shrestha, 1978. *Journal of Natural History Museum*, Tribhuvan University, 5 (1-4): 35.

Devario devario, Fang, 2001. *Phylogeny and species diversity of the South and Southeast Asian cyprinid genus Danio* Hamilton (*Teleostei, Cyprinidae*): 16. Dept. Zool. Stockholm University, Sweden.

Vernacular Names: *Chand*, *Dhano*, *Dhono* (Dehra Dun).

Diagnostic Features: Body deep, barbells absent.

Fin rays and Lateral line scales: D. 3/15, P. 1/12, V. 1/7, A. 3/16, C. 19 (10/9), L. 1. 46. Length: 10.2 cm (Day, 1878); 10 cm in total length (Talwar & Jhingran, 1991; Husain, 2015).

Colouration: Silvery with greenish-blue above, sides with blue and yellow reticulations, bluish lines (separated by yellow) extend to upper half of caudal fin.

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song river at Maldevta, Gular ghati, Lachhiwala, Doiwala, Kansrao, Raiwala, Satyanarain and Pritinagar near Gaurighat; union of baldi and Song rivers near Maldevta; Gulri khala near Raipur; Dulhani nadi at Harrawala and Nakraonda village; Reh river at Koal kundi near Lachhiwala; Bangali nala at Shampur; Kalapani nala at Pashulokee and Rishikesh; Suswa river at Cement town, Mothrowala, Jhabrawala (near Doiwala); Clement town khala.

Western Doon Valley: Asan river above Kunja Grant, below its Barrage at Dhalipur, Herbertpur, Partitpur and Bairagiwala villages near Herbertput, Bhaironwala, Sabhawala and Bhurpur village near Jhajra, seepage nala below Barrage and Asan Reservoir; Swarna rao, Bhaowala; small stream, Culvert No. 19/2, Selakui.

Elsewhere in Uttarakhand: Dehra Dun, Pauri and Nainital districts; Rajaji Tiger Reserve.

Rest of India India: Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Gujarat, Jharkhand, Madhya Pradesh, Meghalaya, Odisha, Rajasthan, Uttar Pradesh, Tripura and West Bengal.

Outside India: Afghanistan, Bangladesh, Nepal and Pakistan.

Habitat: Rivers, streams, canals, ponds, lakes, inundated fields and marshes in plains and sub-montane regions.

Conservation Status: IUCN Red List Category- Least Concern.

Threats: Destructive fishing and water pollution.

Genus: *Esomus* (subgenus of *Leuciscus*) Swainson, 1839

Esomus (subgenus of *Leuciscus*) Swainson, 1839: 185, 285 (type-species: *Esomus vittatus* Swainson, 1839=*Cyprinus danrica* Hamilton 1822, by monotypy).

Nuria Valenciennes in Cuvier & Valenciennes, 1842. *Histoire naturelle des poissons*, 17: 209 (type-species: *Nuria thermoicos* Valenciennes, 1842, by subsequent designation).

12. *Esomus danricus* (Hamilton, 1822)

Flying Barb

Cyprinus (Danio) danrica Hamilton, 1822. *Fish. Ganges*: 325-326, 390, pl. 16, fig. 88 (type-locality: ponds and ditches of Bengal).

Esomus malabaricus Day, 1867. *Proceedings of Zoological Society of London*, 1867 (2): 299 (type-locality: Trichur, Kerala, India).

Nuria danrica graham Chaudhuri, 1912. *Rec. Indian Mus.*, 7 (5): 440, pl. 39, fig. 3 (type-locality: Kali nadi, Meerut, Uttar Pradesh, India).

Esomus lineatus Ahl, 1924. *Mitteilungen aus dem Zoologischen Museum in Berlin*, 11 (1): 42 (type-locality: Calcutta, India and Sri Lanka).

Esomus danricus jabalpurensis Rao & Sharma, 1972. *J. Bombay nat. Hist. Soc.*, 69 (2): 434, fig. 1 (type-locality: Pariat river near Jabalpur, Jabalpur district, Madhya Pradesh, India).

Esomus manipurensis Tilak & Jain, 1990. *J. Bombay nat. Hist. Soc.*, 86 (3): 408, figs. 1-2 (type-locality: stream near Imphal, Manipur, India).

Vernacular Names: *Chal* (Dehra Dun); *Dendu*, *Kuriahdehwee*, *Soomarah* (Hindi); *Dorai*, *Dedhawa* (Nepali).

Diagnostic Features: Maxillary barbel long, extending to middle of pectoral fin; outer ray of paired fins prolonged.

Fin rays and Lateral line scales: D. 2/6, P. 1/10-12, V. 1/6-7, A. 3/5, C. 18-19 (9-10/9), L. 1. 27-34.

Colouration: Silvery with a prominent lateral stripe from snout to caudal base.

Length: 12.7 cm (Day, 1878); 13 cm in total length (Axelrod et al., 1991; Husain, 2015).

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song river at Satyanarain; Suswa river at Mothrowala.

Western Doon Valley: Asan river at Jhajra, Herbertpur, above Kunja Grant, seepage nala below Barrage and Asan Reservoir; pond at Selakui.

Elsewhere in Uttarakhand: Dehra Dun, Haridwar, Pauri, Nainital and Udham Singh Nagar districts; Rajaji Tiger Reserve; Corbett Tiger Reserve.

Rest of India: Andaman & Nicobar Islands, Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand, Odisha, Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal.

Outside India: Afghanistan, Bangladesh, Myanmar, Nepal, Pakistan and Sri Lanka. Cambodia and Thailand (doubtful).

Habitat: Ponds, tanks, weedy ditches and irrigation canals.

Conservation Status: IUCN Red List Category- Least Concern.

Threats: Currently none.

Subfamily: Rasborinae Gunther, 1868

Genus: *Rasbora* Bleeker, 1859

Rasbora Bleeker, 1859: 361, 371 (type-species: *Leuciscus cephalotaenia* Bleeker, 1852/1859).

13. *Rasbora daniconius* (Hamilton, 1822)

Black-line Rasbora, Slender Rasbora, Striped Rasbora

Cyprinus daniconius Hamilton, 1822. *Fish. Ganges*: 327-328, 391, pl. 15, fig. 89 (type-locality: rivers of southern Bengal).

Parluciosoma daniconius, Talwar & Jhingran, 1991. *Inland fishes of India and adjacent countries*: 382.

Rasbora daniconius, Kottelat & Pethiyagoda, 1991. Description of three new species of cyprinid fishes from Sri Lanka: 298-313, Appendix 1. In: Pethiyagoda, R., *Freshwater fishes of Sri Lanka*. Wildlife Heritage Trust of Sri Lanka, Colombo.

Vernacular Names: *Bhurata*, *Bhuri*, *Dharidaar* (Dehra Dun); *Daniconius*, *Dedua*, *Dehra* (Nepali); *Charl*, *Chinodolah*, *Raankaalle* (Punjabi).

Diagnostic Features: Lateral line nearly complete, with only last few scales lacking pore.

Fin rays and Lateral line scales: D. 2/7, P. 1/11-13, V. 2/8, A. 2/5-7, C. 19. L. 1. 27-34.

Colouration: Black stripe from eye to caudal fin.

Length: 15 cm in total length, commonly 8 cm (Pethiyagoda, 1991).

Distribution:

Uttarakhand:

Dehra Dun:

Eastern Doon Valley: Song river at Maldevta, Gular Ghati, Lachhiwala, Doiwala, Bhaniawala (near Doiwala), Kansrao, Raiwala, Satyanarain and Pritinagar near Gaurighat, and Gaurighat; union of Baldi and Song rivers near Maldevta; Reh river at Koal kundi near Lachhiwala; Dulhani river Nakraunda; Kalapani nala at Pahulok and Rishikesh; Motichur rao at Motichur; Suswa river at Clement town, Jhabrawala near Doiwala; Clement town khala; pond at Mianwala near Harrawala.

Western Doon Valley: Asan river above Kunja Grant, below its Barrage at Dhalipur, Herbertpur, villages Prtitpur and Bairagiwala near Herbertpur, Sabhawala and village Bhurpur near Jhajra, seepage nala below Barrage, small stream near Asan Barrage, Dhalipur and Asan Reservoir; small stream between Sahaspur and Herbertpur; Swarna rao, Bhaowala; ponds at village Jassowala near Sahaspur and Selakui.

Elsewhere in Uttarakhand: Dehra Dun, Haridwar, Pauri, Tehri; Almora, Nainital and Udham Singh Nagar; Rajaji Tiger Reserve; Corbett Tiger Reserve.

Rest of India: Andaman & Nicobar Islands, Andhra Pradesh, Assam, Bihar, Gujarat, Madhya Pradesh, Odisha, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal,

Outside India: Afghanistan, Bangladesh, Bhutan, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand and Viet Nam.

Habitat: Streams, rivers, Ponds, ditches, canals, inundated fields.

Conservation Status: IUCN Red List Category: Least Concern.

Threats: Not threatened.

Conclusion: All of 13 species found in Doon waters belong to three subfamilies under family Danionidae, viz. Chedridae (8 spp.), Danioninae (4 spp.) and Rasborinae (1sp.). *Opsarius barna* is presently accepted name for *Barilius barna*. As regards their conservation status under IUCN ((International Union for Conservation of Nature) Red List, *Barilius dimorphicus* has been assessed as 'Vulnerable' while *Barilius bendelisis*, *B. vagra*, *Cabdio jaya*, *C. morar*, *Opsarius barna*, *Raiamas bola*, *Danio rerio*, *Devario devario*, *Esomus danricus* and *Rasbora daniconius* under 'Least Concern' category. *Barilius lanceolatus* and *B. pectoralis* have not yet been assessed for their status, being new to science but may fall into 'Vulnerable' category as being rare species.

Acknowledgement: Author feels thankful to the Director, Zoological Survey of India, Kolkata for encouragement and the Officer-in-Charge, Northern Regional Centre, ZSI, Dehra Dun for library facility.

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