

GEOGRAPHICAL DISTRIBUTION OF FRESHWATER FISHES IN PAKISTAN: A REVIEW*

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Abstract: There are about 160 native species of freshwater fishes belonging to 69 genera, 23 families, 11 orders, 4 superorders and 3 cohorts of the teleostean fishes found in Pakistan and Kashmir. Of these, about 60% species are South Asian, about 8% species are High Asian, about 4% species are West Asian and about 24% species are endemic to Pakistan and Kashmir. The remaining native species are widely distributed. In addition, there are several species of exotic fishes which are not discussed in this paper. On the basis of the distribution of the native freshwater fishes, Pakistan and Kashmir can be divided into 5 ichthyogeographical provinces: I. Hindukush-Karakoram-Himalayan Province including the Northern Areas and the adjoining parts of NWFP and Kashmir; II. Abasin-Kashmir Province including the northern montane area of North West Frontier Province and Kashmir south of the Great Himalayan Range; III. Yaghistan Province comprising the north eastern Baluchistan and upper parts of the Gomal and Kurram rivers and the middle part of the Kabul river in Pakistan and Afghanistan; IV. Mehran Province comprising the Indus Plain southeastern Baluchistan east of the Central Brahui and Hala ranges, and the submontane areas of Pakistan and Kashmir; and V. Gedrosian Province including the western Baluchistan and the adjoining parts of Afghanistan and Iran (Hingol river, Lora-Pishin river, Mashkel river, Dasht river and minor streams along the Makran coast). Of these, the Hindukush-Karakoram-Himalayan Province is a part of the High Asian Region; Abasin-Kashmir, Yaghistan and Mehran Provinces belong to the South Asian Subregion of the Oriental Region; while the Gedrosian Province may be included in the Southwest Asian or West Asian Transitional Region.

Key words: Freshwater fishes, ichthyogeographical provinces, fish fauna of Pakistan

INTRODUCTION

Pakistan and Kashmir lie roughly between 24° to 37°N and 60° to 80°E. Excepting the Indus Plain, most of the area is composed of fold mountains, and valleys and plateaus between them. In the north at the border of Pakistan, Afghanistan, Tajikistan and Sinkiang lies the Pamir knot. From here various mountain ranges radiate out in all directions. The Hindukush Range runs in the southwest along the Pak-Afghan border and then passes into Afghanistan. The Tianshan runs towards the northeast into China. The Kunlun Range passes towards the east into China. The Karakoram Range passes towards the east slightly curving towards the south. The Great Himalayas run towards the southeast. In addition, there are many minor ranges such as the Sufaid Koh, the Sulaiman, the Toba Kakar, the Kirthars, the Central Brahui, the Pub, the Hala and the central and coastal Makran ranges.

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Pakistan and Kashmir are drained mainly by the river Indus and its tributaries. The river Indus originates from the West Tibet and flows towards the west behind the Himalayan mountains. After receiving various tributaries in the Northern Areas and Kashmir, it takes a turn towards the southwest. It receives many small rivers such as the Kabul, the Kurram and the Gomal from the North West Frontier Province, and the Haro, the Soan, the Jhelum, the Chenab, the Ravi and the Sutlej from the Punjab and Kashmir. It ultimately falls into the Arabian Sea near Karachi. In addition, there are several small rivers in Baluchistan which are either endorheic (the Lora-Pishin and the Mashkhel) or fall into the Arabian Sea (the Hub, the Purali, the Hingol and the Dasht).

There are about 160 species of native freshwater fishes, belonging to 69 genera, 23 families, 11 orders, 4 superorders and three cohorts of the teleostean fishes. No higher taxon is endemic to Pakistan and Kashmir. Among the species about 60% are South Asian, which are found throughout except the trans-Himalayan parts of the Northern Areas; 8% are High Asian, 4% are West Asian, while about 24% are endemic. The remaining species are widely distributed. At the generic level, there are 45 South Asian, 9 High Asian and 2 West Asian genera, while the remaining 13 genera are widely distributed. No genus is endemic. There are about 65% South Asian, 13% High Asian, 3% West Asian and 13% widely distributed genera in the Palaeotropical regions, East Asia and Southwest Asia. It is remarkable that the genera *Aspidoparia*, *Crossocheilus*, *Schistura* and *Channa* are very widely distributed reaching the limits of Afghanistan in the north and Iran in the west. They are, however, absent in the trans-Himalayan areas.

Zoogeographical provinces of Pakistan and Kashmir

From the distribution of freshwater fishes in Pakistan, it appears that this country lies in the peripheral zone of the South Asian Subregion of the Oriental Region. Excepting the trans-Himalayan areas, which contain no representatives of the South Asian fishes, the South Asian genera are represented in almost all parts of this area. There is no genus among the freshwater fishes which could be regarded as endemic to Pakistan. Of 69 genera of freshwater fishes only 9 genera are High Asian and 2 West Asian, while most of the remaining genera are South Asian. A few genera of marine origin are widely distributed. On the basis of freshwater fishes, the following ichthyogeographical provinces of Pakistan may be recognized. In the delimitation of these provinces, the physiography also has been taken into consideration. The mountain ranges can serve as the effective barriers to the dispersal of fishes only if they serve as a watershed for the drainage systems on the two opposite sides and are not intersected by the water channels. In the absence of such a barrier, the environmental factors like the water current, temperature of water, nature of substratum, and the amount of dissolved oxygen and other materials, determine the dispersal of fishes. Thus most of the snow-carps are restricted to the trans-Himalayan parts of the Indus system and only a few come down to the submontane areas.

The limits of these ichthyogeographical provinces are more or less arbitrary as the faunas of the neighbouring ichthyogeographical provinces merge into one another often imperceptibly.

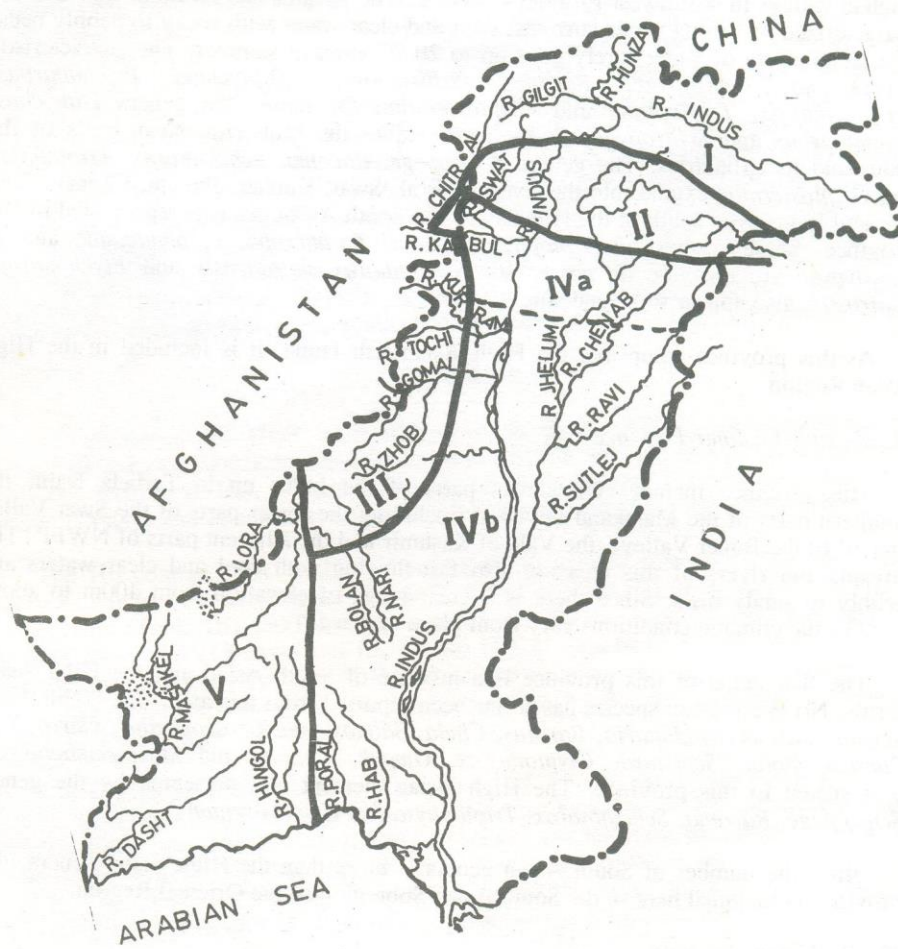


Fig. 1. Hydrography of Pakistan and Kashmir with Ichthyogeographical Provinces: I: Hindukush-Karakoram-Himalayan Province; II: Abasin-Kashmir Province; III: Yaghiestan Province; IV: Mehran Province; V: Gedrosian Province

I. Hindukush-Karakoram-Himalayan Province

This province comprises the northern montane areas of Pakistan and Kashmir above 1500m including the Northern Areas and the upper parts of the Chitral, Swat and Kaghan valleys in Northwest Frontier Province. The streams and rivers of this area are characterized by strong water currents, cool and clear water with rocky to pebbly beds. The temperature of water rarely goes up to 20 °C even in summer. The characteristic genera are *Schizopyge*, *Racoma*, *Schizothorax*, *Diptychus*, *Ptychobarbus*, *Schizopygopsis*, *Triplophysa* and *Glyptosternum*. Of these, the genera *Diptychus*, *Ptychobarbus* and *Schizopygopsis* are restricted to the trans-Himalayan parts of the Indus and its tributaries. The genera *Schizopyge*, *Racoma*, *Schizothorax*, *Triplophysa* and *Glyptosternum* extend into the rivers Chitral, Swat, Kunhar, Jhelum, Chenab, Ravi etc. and Indus even south of the Himalayas. No South Asian genus is represented in this province. Some species of *Triplophysa* such as *T. microps*, *T. tenuicauda* and *T. trewavasae* are endemic or nearly so. *Schizothorax skarduensis* and *Ptychobarbus conirostris* also appear to be endemic.

As this province comprises the High Asian fish fauna, it is included in the High Asian Region.

II. Abasin-Kashmir Province

This province includes Himalayan parts of the Indus up to Tarbela Dam, the southern parts of the Malakand Division (including the lower parts of the Swat Valley and all of the Buner Valley), the Vale of Kashmir and the adjacent parts of NWFP. The streams and rivers of this area are also fast-flowing with cool and clear waters and pebbly to sandy beds. Since there is a great range of elevation from 400m to above 1,000., the climatic conditions vary from place to place.

The fish fauna of this province is a mixture of South Asian and the High Asian forms. No West Asian species has so far been reported from this area. The South Asian genera, such as *Aspidoparia*, *Barilius*, *Chela*, *Salmostoma*, *Crossocheilus*, *Garra*, *Tor*, *Puntius*, *Botia*, *Schistura*, *Glyptothorax*, *Ompok*, *Channa* and *Mastacembelus* are represented in this province. The High Asian element is represented by the genera *Schizopyge*, *Racoma*, *Schizothorax*, *Triplophysa* and *Glyptosternum*.

Since the number of South Asian genera is more than the High Asian genera, this province is included here in the South Asian Subregion of the Oriental Region.

III. Yaghistan Province

This province includes the northeastern parts of Baluchistan comprising the Zhob river and the upper parts of the Nari river system, the northwestern mountains along the Pak-Afghan border (upper parts of the rivers Gomal, Kurram and the middle part of the river Kabul in Afghanistan). It is demarcated from rest of Pakistan by the Sulaiman Range in the east, Marri-Bugti hills in the south and the Central Brahui Range in the southwest. There is no sharp boundary in the north and northwest where this province

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extends into Afghanistan.

The fish fauna of this province is a mixture of South Asian, High Asian and West Asian forms. There are 6 species which appear to be endemic to this province. These are *Schizocypris brucei*, *Schistura arifi*, *S. harnaiensis*, *S. anambarensis* and *S. machensis* from the northeastern Baluchistan, and *Garra wanae* from South Waziristan. It is interesting that the genus *Schizocypris* in Pakistan is restricted to this province. It is also noteworthy that *Garra wanae* is endemic to the Wana Toi and has not been collected from the adjoining streams. The Wana Toi is a small tributary of the river Gomal in South Waziristan.

The South Asian genera are *Labeo*, *Tor*, *Naziritor*, *Garra*, *Crossocheilus*, *Chela*, *Salmostoma*, *Amblypharyngodon*, *Aspidoparia*, *Barilius*, *Puntius*, *Botia*, *Noemacheilus*, *Schistura*, *Ompok*, *Glyptothorax*, *Channa* and *Mastacembelus* etc. The High Asian genera are *Racoma*, *Schizothorax*, *Schizopyge*, *Schizocypris*. The genus *Schizopyge* is found in the river Kabul but not in other rivers of this province. The West Asian element is represented by the genus *Cyprinion* in the rivers Zhob, Gomal and Kurram (but not in the Kabul).

So this province also is included in the South Asian Subregion of the Oriental Region.

IV. Mehran Province

This province comprises about 50% area of Pakistan and Kashmir. It includes the Indus Plain and adjoining hills and the vale of Peshawar. The climatic conditions vary from marine type in the southwest with moderate temperature to subtropical type with cold winters and hot summers in other parts of this province.

The fish fauna as a whole is predominantly South Asian. In the hilly areas surrounding the Indus Plain in the north and west some West Asian forms, i.e., *Cyprinion watsoni* and *Aphanus dispar* are met with. *Aphanus dispar*, however, is restricted to the coastal areas in the southwestern parts of this province, while *Cyprinion watsoni* is widely distributed in the Baluchistan - Sindh hills, northeastern montane areas, Potowar plateau, Salt range, and in the southern parts of Azad Kashmir (Mirpur and Kotli districts). In the vale of Peshawar, northern Punjab and submontane areas of NWFP and Azad Kashmir three genera of the snow carps, i.e., *Racoma*, *Schizopyge* and *Schizothorax* are represented. High Asian genus *Triplophysa* is also represented in the Indus above Attock Khurd. The remaining genera are widely distributed in South Asia: *Notopterus*, *Chitala*, *Barilius*, *Salmostoma*, *Securicula*, *Amblypharyngodon*, *Catla* (= *Gibelion*), *Acanthocobitis*, *Ailia*, *Sisor*, *Rita*, *Aplocheilus*, *Xenentodon*, *Sicamugil* etc., South and South East Asia: *Chela*, *Brachydanio*, *Danio*, *Barbodes*, *Osteobrama*, *Esomus*, *Puntius*, *Cirrhinus*, *Botia*, *Lepidocephalus*, *Noemacheilus*, *Ompok*, *Wallago*, *Batasio*, *Amblyceps*, *Bagarius*, *Clupisoma*, *Eutropiichthys*, *Pseudeutropius*, *Heteropneustes*, *Colisa*, *Nandus*, *Badis*, *Macrognathus*, etc.

Still other genera are widely distributed in South Asia, South East Asia, East Asia,

Southwest Asia and even Africa: *Rasbora*, *Aspidoparia*, *Crossocheilus*, *Garra*, *Labeo*, *Tor*, *Schistura*, *Glyptothorax*, *Channa* and *Mastacembelus*. This is the only province where our major carps, viz., *Gibelion catla*, *Labeo rohita* and *Cirrhinus mrigala* are naturally found. In the Indus these fishes generally are found up to Kalabagh except *Cirrhinus mrigala* which has been recorded up to Khushhalgarh. This species can tolerate cold water to some extent. The limits of this Province in the east extend into India up to Aravalli range, which is the waterdivide between the Indus and the Ganges river systems. The fish fauna of the Indus and the Ganges river systems is quite similar but there are some families and many genera and species of fishes found in the Ganges river system, which do not extend into the Indus system. Only a few West Asian genera found in the Indus system are not represented in the Ganges system (Mirza, 1989).

Within this province two divisions can be recognized:

IV a. Submontane Indus Division, in which the major carps are absent and the snow carps and mahasheer are common. This division comprises the Vale of Peshawar, Kohat Valley, Potowar Plateau and the Salt Range and adjoining hilly areas.

IV b. Indus Plain Division, in which the major carps are common and the snow carps are absent. The mahasheer is rarely found. The palla (*Tenualosa ilisha*) is found in the lower part of the Indus. Several other such species are also found.

This province also is a part of the South Asian Subregion of the Oriental Region.

V. Gedrosian Province

This province comprises the western Baluchistan west of the Central Brahui and Hala ranges. Topographically, it varies from the high mountain areas in the east and the arid basins with a few marshy lakes in the inner Baluchistan. The temperature also varies greatly. In the northern part of this province, drained by the Lora-Pishin river and its tributaries, only a few species belonging to the South Asian genus *Crossocheilus*, West Asian *Discognathus* (subgenus of *Garra*), *Cyprinion* and *Schistura* and High Asian *Triplophysa* are found. It is interesting to note that none of the *Schizothoracine* genera distributed in the river Zhob in the east and the river Helmand in the north of the Lora-Pishin river is found in this river. In the river Mashkel, the South Asian genera *Aspidoparia*, *Labeo*, and *Channa*, and the West Asian genus *Aphanius* are added but the High Asian genus *Triplophysa* is not represented. In the coastal areas, the fish fauna is represented by the South Asian genera *Aspidoparia*, *Crossocheilus*, *Puntius*, *Tor* and *Channa* along with the West Asian genera *Cyprinion* and *Aphanius*. In addition, there are several fishes of marine origin that frequently enter the streams and rivers in the coastal areas.

It is noteworthy that the South Asian genera such as *Notopterus*, *Danio*, *Salmostoma*, *Mystus*, *Gudusia* and *Mastacembelus*, which are found in the river *Porali* in the east of the Hala range, have not so far been collected from the rivers west of this range. There are only three endemic species: *Labeo gedrosicus* is endemic to the river Rakhshan, while *Labeo macmohoni* is endemic to the river Dasht, *Cyprinion milesi* is also endemic to this province.

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The fish fauna is mainly South Asian and West Asian with one species of High Asian genus *Triplophysa* (restricted to the river Lora-Pishin). So the transitional aspect is apparent and hence this province may be included in the Southwest Asian Transitional Region.

DISCUSSION AND CONCLUSION

The freshwater fish fauna of Pakistan is predominantly South Asian. Some High Asian genera, *Schizopyge*, *Racoma*, *Schizothorax*, *Diptychus*, *Ptychobarbus*, *Schizopygopsis*, *Triplophysa* and *Glyptosternum*, however, have penetrated into the northern montane areas. Of these, the genera *Racoma* and *Schizothorax* extend into the northwestern mountains up to the northeastern Baluchistan. Two snow-carp species, viz., *Racoma labiata* and *Schizothorax plagiostomus*, descend into the upper parts of the rivers of the Punjab sporadically. The genus *Schizocypris* is not found in the Northern Areas but is restricted to the Yaghistan Province. This is in contrast to the other *Schizothoracine* genera. One West Asian genus (*Cyprinion*) has been able to disperse into Baluchistan and the submontane areas surrounding the Indus Plain up to the Sufaid Koh and Kala Chitta ranges in the north, and into submontane areas of Azad Kashmir. The West Asian subgenus *Discognathus* of the genus *Garra* is restricted to the northwestern Baluchistan (in Lora-Pishin and Mashkhel rivers).

Thus, the fish fauna of Pakistan is composed of three elements: the South Asian, the High Asian and the West Asian. Among these, the South Asian element is predominant. Excepting the trans-Himalayan parts, which contain exclusively the High Asian genera, the South Asian genera are represented in all the areas of Pakistan. At the species level there are about 60% South Asian, 8%, High Asian, 4% West Asian and 24% endemic forms among the freshwater fishes; while the remaining forms are widely distributed in the Oriental Region.

The fish faunas of the South Asia and the High Asia originated from the same ancestral South-East Asian stock. The present dissimilarity between them is "probably due to their differentiation in different geological ages, long isolation and resulting segregation" (Hora, 1937). The fish fauna of High Asia belongs to three basic groups: *Schizothoracinae*, *Noemacheilidae* and *Glyptosternum*. Among these, the *Schizothoracinae* are specially modified "Oriental Barbels", the *Noemacheiline* loaches have evolved from the South-East Asian ancestral stock, and *Glyptosternum* is closely related to (and probably derived from) the Oriental *Glyptothorax*. The ancestors of these fishes migrated to the High Asian areas probably in the Pliocene and differentiated into the present forms after their isolation due to the Himalayan orogeny. Their dispersal from east to west had been possible through a system of interconnected water bodies forming a westward flowing river along the northern face of Himalayas. Thus the High Asian fauna has been able to penetrate as far as northeastern Iran up to Tehran. Regan (1922) included the Central Asia in the Palaearctic Region. Similarly, Berg (1940) recognized this area as the High Asian Subregion in the Holarctic Region. But according to Banarescu (1975), the High Asia should be included as a subregion in the Oriental Region. Mirza (1989, 90), however, recognized it as a separate region.

There is no controversy about the zoogeographical position of the South Asia. It has

been included in the Oriental Region by almost all the zoogeographers (Beaufort, 1951; Darlington, 1957).

There exists some controversy about the zoogeographical position of the West Asia. It was included in the Palaearctic Region by Regan (1922) and in the Mediterranean Subregion of the Holarctic Region by Berg (1940). According to Banarescu (1960), the freshwater fish fauna of West Asia has an indisputable South Asian (Indo-Malayan) character. He proposed the inclusion of this area as a subregion in the Oriental Region. Subsequently, however, he changed his view and was of the opinion that the fish fauna of the West Asia was closer to the Holarctic than to the Oriental Region (Banarescu, 1973). But the fish fauna of the West Asia shows a transition between the Oriental, the Palaearctic and perhaps the Ethiopian Regions. Darlington's (1957) conclusion that "the southwestern Asia is a region of double transition of fish faunas, the transition being from African to Oriental forms in one direction, and from tropical to northern forms in another" seems quite valid even today. The West Asia, therefore, should be treated as a transitional region (Mirza, 1975). Banarescu (1992) has now come to the same conclusion.

From the above discussion it follows that the freshwater fish fauna of Pakistan is predominantly Oriental and that the Hindukush - Karakoram - Himalayan Provinces should be included in the High Asian Region; the Abasinh-Kashmir Province, the Yaghistan Province and the Mehran Province belong to the South Asian Subregion of the Oriental Region; while the Gedrosian Province may be included in the West Asian Transitional Region as defined by Mirza (1990).

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Table I. Distribution of higher taxa of freshwater fishes in the Ichthyogeographical Provinces of Pakistan

Name of Taxa	Ichthyogeographical Provinces					Status
	I	II	III	IV	V	
CLASS ACTINOPTERYGII						
SUBCLASS NEOPTERYGII						
INFRAClass TELEOSTEI						
COHORT ARCHAEOPHYLCES	-	-	-	+	-	Tropicopolitan

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Name of Taxa	Ichthyogeographical Provinces					Status
	I	II	III	IV	V	
SUPERORDER						
OSTEOGLOSSOMORPHA	-	-	-	+	-	Tropicopolitan
I. ORDER OSTEOGLOSSIFORMES	-	-	-	+	-	Tropicopolitan
FAMILY (1) NOTOPTERIDAE	-	-	-	+	-	Palaeotropical
1. Genus <i>Chitala</i>	-	-	-	+	-	Oriental
2. <i>Notopterus</i>	-	-	-	+	-	Oriental
COHORT CLUPEOCEPHALA	-	-	-	+	+	World-wide
SUPERORDER CLUPEOMORPHA	-	-	-	+	+	World-wide
II. ORDER CLUPEIFORMES	-	-	-	+	+	World-wide
FAMILY (2) CLUPEIDAE	-	-	-	+	+	World-wide
3. <i>Gudusia</i>	-	-	-	+	+	Oriental
4. <i>Tenualosa</i>	-	-	-	+	+	Oriental
COHORT EUTELEOSTEI	+	+	+	+	+	World-wide
SUPERORDER OSTARIOPHYSI	+	+	+	+	+	World-wide
III. ORDER CYPRINIFORMES	+	+	+	+	+	Megagaic
FAMILY (3) CYPRINIDAE	+	+	+	+	+	Megagaic
SUBFAMILY CULTRINAE	-	+	+	+	-	Eurasian
5. <i>Chela</i>	-	+	+	+	-	Oriental
6. <i>Salmostoma</i>	-	+	+	+	-	Oriental
7. <i>Securicula</i>	-	-	-	+	-	Oriental

Name of Taxa	Ichthyogeographical Provinces					Status
	I	II	III	IV	V	
SUBFAMILY RASBORINAE	-	+	+	+	+	Palaeotropical
8. <i>Amblypharyngodon</i>	-	-	+	+	-	Oriental
9. <i>Aspidoparia</i>	-	+	+	+	+	Oriental
10. <i>Barilius</i>	-	+	+	+	-	Oriental
11. <i>Brachydanio</i>	-	-	-	+	-	Oriental
12. <i>Danio</i>	-	-	-	+	-	Oriental
13. <i>Esomus</i>	-	-	-	+	-	Oriental
14. <i>Rasbora</i>	-	-	-	+	-	Oriental
SUBFAMILY GARRINAE	-	+	+	+	+	Palaeotropical
15. <i>Crossocheilus</i>	-	+	+	+	+	Oriental
16. <i>Garra</i>	-	+	+	+	+	Palaeotropical
SUBFAMILY BARBINAE	-	+	+	+	+	Palaeotropical
17. <i>Cirrhinus</i>	-	-	-	+	-	Oriental
18. <i>Cyprinion</i>	-	-	+	+	+	West Asian
19. <i>Gibelion</i> (= <i>Catla</i>)	-	-	-	+	-	Oriental
20. <i>Labeo</i>	-	+	+	+	+	Palaeotropical
21. <i>Naziritor</i>	-	-	+	+	-	Oriental
22. <i>Osteobrama</i>	-	-	-	+	-	Oriental
23. <i>Puntius</i>	-	+	+	+	+	Oriental

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Name of Taxa	Ichthyogeographical Provinces					Status
	I	II	III	IV	V	
24. <i>Tor</i>	-	+	+	+	+	Oriental
SUBFAMILY SCHIZOTHORACINAE	+	+	+	+	-	High Asian
25. <i>Diptychus</i>	+	-	-	-	-	High Asian
26. <i>Ptychobarbus</i>	+	-	-	-	-	High Asian
27. <i>Racoma</i>	+	+	+	+	-	High Asian
28. <i>Schizocypris</i>	-	-	+	-	-	West Asian
29. <i>Schizopyge</i>	+	+	+	+	-	High Asian
30. <i>Schizopygopsis</i>	+	-	-	-	-	High Asian
31. <i>Schizothorax</i>	+	+	+	+	-	High Asian
FAMILY (4) COBITIDAE	-	+	+	+	-	Oriental & Palaeartic
32. <i>Botia</i>	-	+	+	+	-	Oriental
33. <i>Lepidocephalus</i>	-	-	-	+	-	Oriental
FAMILY (5) NOEMACHEILIDAE	+	+	+	+	+	Oriental, East Asian, High Asian, West Asian & Palaeartic
34. <i>Acanthocobitis</i>	-	-	+	+	-	Oriental
35. <i>Noemacheilus</i>	-	-	+	+	-	Oriental
36. <i>Schistura</i>	-	+	+	+	+	Oriental
37. <i>Triplophysa</i>	+	+	-	+	+	High Asian

Name of Taxa	Ichthyogeographical Provinces					Status
	I	II	III	IV	V	
IV. ORDER SILURIFORMES	+	+	+	+	+	World-wide
FAMILY (6) BAGRIDAE	-	-	-	+	-	Palaeotropical
38. <i>Aorichthys</i>	-	-	-	+	-	Oriental
39. <i>Batasio</i>	-	-	-	+	-	Oriental
40. <i>Mystus</i>	-	-	-	+	-	Oriental
41. <i>Rita</i>	-	-	-	+	-	Oriental
FAMILY (7) SISORIDAE	+	+	+	+	-	Eurasian
42. <i>Bagarius</i>	-	-	-	+	-	Oriental
43. <i>Gagata</i>	-	-	-	+	-	Oriental
44. <i>Glyptosternum</i>	+	+	-	-	-	High Asian
45. <i>Glyptothorax</i>	-	+	+	+	-	Eurasia
46. <i>Nangra</i>	-	-	-	+	-	Oriental
47. <i>Sisor</i>	-	-	-	+	-	Oriental
FAMILY (8) SILURIDAE	-	+	+	+	-	Oriental & Palaeartic
48. <i>Ompok</i>	-	+	+	+	-	Oriental
49. <i>Wallago</i>	-	-	-	+	-	Oriental
FAMILY (9) SCHILBEIDAE	-	-	-	+	-	Palaeotropical
50. <i>Alia</i>	-	-	-	+	-	Oriental
51. <i>Clupisoma</i>	-	-	-	+	-	Oriental

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Name of Taxa	Ichthyogeographical Provinces					Status
	I	II	III	IV	V	
52. <i>Eutropiichthys</i>	-	-	-	+	-	Oriental
53. <i>Pseudeutropius</i>	-	-	-	+	-	Oriental
FAMILY (10) HETEROPNEUSTIDAE	-	-	-	+	-	Oriental
54. <i>Heteropneustes</i>	-	-	-	+	-	Oriental
FAMILY (11) AMBLYCIPITIDAE	-	-	-	+	-	Oriental
55. <i>Amblyceps</i>	-	-	-	+	-	Oriental
SUPERORDER ACANTHOPTERYGII	-	-	-	+	+	World-wide
SERIES MUGILOMORPHA	-	-	-	+	+	World-wide
V. ORDER MUGILIFORMES	-	-	-	+	+	World-wide
FAMILY (12) MUGILIDAE	-	-	-	+	+	World-wide
56. <i>Sicamugil</i>	-	-	-	+	+	Oriental
SERIES ATHERINOMORPHA	-	-	-	+	+	World-wide
VI. ORDER BELONIFORMES	-	-	-	+	+	World-wide
FAMILY (13) BELONIDAE	-	-	-	+	+	World-wide
57. <i>Xenentodon</i>	-	-	-	+	-	Oriental
VII. ORDER CYPRINODONTIFORMES	-	-	-	+	+	Tropicopolitan
FAMILY (14) APLOCHEILIDAE	-	-	-	+	-	Tropicopolitan
58. <i>Aplocheilus</i>	-	-	-	+	-	Oriental
FAMILY (15) CYPRINODONTIDAE	-	-	-	+	+	Tropicopolitan
59. <i>Aphanius</i>	-	-	-	+	+	West Asian & Mediterranean

Name of Taxa	Ichthyogeographical Provinces					Status
	I	II	III	IV	V	
SERIES PERCOMORPHA	-	-	-	+	+	World-wide
VIII. ORDER CHANNIFORMES	-	-	-	+	+	Palaeotropical
FAMILY (16) CHANNIDAE	-	-	-	+	+	Palaeotropical
60. <i>Channa</i>	-	-	-	+	+	Palaeotropical
IX. ORDER SYNBRANCHIFORMES	-	-	-	+	-	World-wide
FAMILY (17) SYNBRANCHIDAE	-	-	-	+	-	World-wide
61. <i>Monopterus</i>	-	-	-	+	-	Oriental
X. ORDER MASTACEMBELIFORMES	-	+	+	+	-	Palaeotropical
FAMILY (18) MASTACEMBELIDAE	-	+	+	+	-	Palaeotropical
62. <i>Macrognathus</i>	-	-	-	+	-	Oriental
63. <i>Mastacembelus</i>	-	+	+	+	-	Oriental & West Asian
XI. ORDER PERCIFORMES	-	-	-	+	+	World-wide
SUBORDER PERCOIDEI	-	-	-	+	+	World-wide
FAMILY (19) CHANDIDAE	-	-	-	+	-	World-wide
64. <i>Chanda</i>	-	-	-	+	-	Oriental
65. <i>Parambassis</i>	-	-	-	+	-	Oriental
FAMILY (20) NANDIDAE	-	-	-	+	-	Tropicopolitan
66. <i>Nandus</i>	-	-	-	+	-	Oriental
FAMILY (21) BADIDAE	-	-	-	+	-	Oriental

GEOGRAPHICAL DISTRIBUTION OF FISHES

Name of Taxa	Ichthyogeographical Provinces					Status
	I	II	III	IV	V	
67. <i>Badis</i>	-	-	-	+	-	Oriental
SUBORDER GOBIOIDEI	-	-	-	+	+	World-wide
FAMILY (22) GOBIIDAE	-	-	-	+	+	World-wide
68. <i>Glossogobius</i>	-	-	-	+	+	Tropicopolitan
SUBORDER ANABANTOIDEI	-	-	-	+	-	Palaeotropical
FAMILY (23) BELONTIIDAE	-	-	-	+	-	Oriental
69. <i>Colisa</i>	-	-	-	+	-	Oriental

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