

A LIST OF FISHES TAKEN IN TRAVANCORE
FROM 1901-1915

BY

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INTRODUCTION

The present paper on the Fishes of Travancore, with no claims to originality in respect of any of the facts, is the outcome of my studies, when as Curator to the Trevandrum Museum I was occupied in making a collection of local fishes, and in arranging the material for the Index to Fish in 1902, based on the notes taken by the late Capt. Harold S. Ferguson, F.L.S., F.Z.S., etc., Director, from the S. Kensington Natural History Museum. The latter, it is much to be regretted, is far from complete and has been in abeyance since 1915. This paper, as I have already mentioned in my note on the Travancore Cetaceans published in the *Journal of the Bombay Natural History Society* (No. 3, vol. xxxi, November, 1926), is intended as a continuation to the series of articles on the Vertebrate and Invertebrate Zoology of Travancore, which have appeared in the same Journal from time to time. When Capt. Ferguson retired in 1904, there was already the nucleus of a modest collection, confined to Trevandrum.

During the following six years, thanks to the liberality of Lt.-Col. F. W. Dawson, I.A., the then Director, who placed funds at my disposal for the purchase of specimens for the Museum, I availed myself of the opportunity to devote special attention to this group of the animal kingdom, both at Trevandrum and during collecting tours, with the result that in 1915, the collection comprised of 369 species referable to 74 families, the major portion being obtained from Trevandrum and Cape Comorin.

I may venture to think that if at this rate the other districts of Travancore, with its sea-board, its fresh and brackish-water lagoons, the chain of back-water, stretching along the coast and communicating with the sea in different places, and the tanks and rivers, were systematically investigated, and the results published as Administration Reports, as had been the case from 1900 to 1909 (during the greater part of which the Museum and Public Gardens were under a Committee of Management, invariably presided over by the British Residents), considerable additions to the local collections would

have been made, and many interesting and rare finds brought to light.

On this point, a reference to the Administration Reports of the departments referred to above, will bear ample testimony to the fact that there are 5 Mammals, 6 Reptiles, 11 Batrachians and 20 Arthropods from Travancore, described as new to science, beside the new species of Oligochætes, Porifera and Polyzoa, etc., subsequently embodied in the volumes of the '*Fauna of British India*' series.

Of the 20 fishes recently added to the local collection, one ray found for the first time in Travancore, was determined by the late Dr. Nelson Annandale, D.Sc., F.R.S., Director, Zoological Survey of India, Calcutta, as the adult of *Raia powellii*, sp. n., on the evidence of a solitary immature ray, taken in the Gulf of Martaban.

It may be safely asserted that Dr. Day's '*Fauna of British India, Fishes*,' 2 vols., 1880, which is an abridgment of his original monumental work, '*The Fishes of India*,' 1876-1878, and which hitherto has been the only work of reference, may be regarded as more or less out of date in the light of the recent advances made by our knowledge of Indian Ichthyology during the last two decades in various parts of India, notably in the Indian Museum, Calcutta. Here among the innumerable additions to the Genera and Species, the acquisition of *Gobius alcockii*, (about $\frac{1}{2}$ an inch long) one of the smallest of vertebrates, found in association with the common fresh-water sponge (*Spongilla carteri*), forms an important and interesting discovery.

Furthermore, the recent researches of the rising generation of naturalists, both in India and abroad, have effected such remarkable changes in the classification that numerous Genera have come to be recognized as Families.

The vernacular names of fishes, dealt with in these notes, form subjects for controversy, in that, they are neither reliable nor significant, and vary according to the age and color of fishes, as well as to their sex and locality, so that some of the names are indiscriminately applied to fishes of different families, which is more or less a source of confusion. Since the information herein contained, is entirely popular, and has already appeared in a large number of zoological publications, I have not thought it desirable to quote references to authorities.

In conclusion the kind reception, accorded to my note on Travancore Cetaceans by the Bombay Natural History Society, has prompted me to prepare the present one, more with a view to presenting to the public, for the first time, almost all the fishes recorded in Travancore, than under any misapprehension as to the completeness of the collection: but however imperfect this attempt may be, I shall feel amply rewarded, if this will serve as a starting-point for further investigation and its defects treated with indulgence by the scientific public.

CLASS. FISHES

The Animal Kingdom is divided into several groups or subkingdoms, in each of which the members have some affinity in

common. To one of these groups belongs the class of Fishes, which constitutes one of the main divisions into which the Craniate Vertebrates are classified.

The shape of the body is more or less like that of a spindle, tapering at each end, and varies according to the different modes and habits of life. For example, it is cylindrical, elongate and serpentiform in the Eels (*Muraenidæ*); compressed and leaf-like, with the eyes on one side of the head, in the Flat-fishes (*Pleuronectidæ*); depressed and discoidal, with a whip-like tail, furnished with a serrated spine, in the Rays (*Trygonidæ*); depressed and elongate in the Skates (*Rhinobatidæ*); compressed and band-like in the Ribbon-fishes (*Trichypteridæ*); compressed and strap-like, with the tail ending in a filament, in the Hair-tails and Scabbard fishes, (*Trichiuridæ*); more or less round and trunk-like, in the Box-fishes (*Ostraciontidæ*); the head and body depressed and enlarged in the Frog-fishes (*Pediculati*); the head abnormally developed into two hammer-shaped lobes in the Hammer-head Sharks (*Sphyrnidæ*); the head and body resembling the knight of the chess-board in the Sea-horse (*Hippocampus*); and like the stalk or blade of grass, in the Pipe-fishes (*Syngnathidæ*).

The body is covered with scales, which are of four different types, namely:—

1. *Cycloid*, which are thin horny plates, with the edges smooth.
2. *Ctenoid*, which are thick horny plates, with the posterior margin serrated or comb-shaped.
3. *Ganoid*, which are hard bony plates, covered with enamel.
4. *Placoid*, which are detached bony plates or tubercles, resembling the teeth of sharks and rays.

The limbs of fishes, which correspond with the anterior and posterior extremities of the higher vertebrates, are modified into fins and are called the *pectoral* and *ventral* fins respectively. The former, are situated on either side, behind the gill-openings, and the latter behind the pectorals. These are *paired*, and like the *unpaired ones* (*dorsal, anal and caudal*), which are also present, are furnished with supporting fin-rays. The *pectoral* fins are constantly placed high up or down below the sides of the body, on the dorsal aspect, of the gill openings. They are absent in some Eels, though abnormally developed in the Flying-fishes and the Paradise or Mango-fishes of India, the lower portion of the pectoral fins in the latter case being modified into long slender filaments. —The *ventral* fins are smaller and far more variable in position than the *pectorals*. They are absent in the Eels, and when present in the *Physostomi*, are situated far back on the belly, behind the *pectorals* (*abdominal*). In the *Percidæ*, they are situated far forward, under or just behind the pectorals (*thoracic*) and in the Cod-fish, on the throat, in front of the pectorals (*jugular*). The caudal fin is often forked. Locomotion is effected by the action of the tail and the caudal fin, the function of the other fins being only of secondary importance.

The first pair of gill arches is modified into jaws and the embryo develops without any amnion or allantois, which constitute one

of the most important appendages for the safe reception and protection of the embryo.

Breathing in the majority is effected solely by gills, though some fresh-water forms possess a lung in addition. The heart is situated behind the gills, and consists of only two chambers. Like the Reptiles and Amphibians, fishes are *cold-blooded*, that is to say, they have not the power of generating heat of themselves and withstanding the rise and fall of the temperature of their environment, owing to the absence of a controlling nervous mechanism.

The eyes are destitute of true eye-lids, and there are no external traces of an ear-opening. The nasal pits have no communication with the mouth cavity, and there is usually a lateral line of sense organs on both sides of the body, extending from the back of the head to the tail. The scales that cover this, are found on a closer examination, to be channelled and perforated, showing the presence of nerve-endings, like the loreal pit of Pit-vipers.

Subclass I. CHONDROPTERYGII

Sharks, Rays and Chimæras

Order 1. PLAGIOSTOMI

Suborder 1. *Selachoidei*

Family I. SCYLLIIDÆ

The Dog-fishes are sharks of predacious habits, having a wide range of distribution. They are oviparous, i.e. the young are hatched out, after the extrusion of the eggs.

1. *Stegostoma tigrinum*. Tiger-shark. Vern. : 'Udoomboosorah'.

Trevandrum, December.

A fairly common edible fish, said to reach a length of 18 ft. ; it is a source of endless trouble to fishermen, destroying their nets and their contents.

2. *Chiloscyllium griseum*. Dog-fish. Vern. : 'Korangu-sorah'.

Trevandrum, November.

A shallow-water shark, not recorded in Dr. Day's *Fauna of British India*.

Family II. CARCHARIIDÆ

Viviparous sharks without dorsal spines.

3. *Carcharias laticaudatus*. Shark. Vern. : 'Aul-pidiyan'.
- Trevandrum, November.
4. *Carcharias walbeemi*. Shark. Vern. : 'Perum Sorah'.
- Trevandrum, December.
5. *Carcharias melanopterus*. Shark. Vern. : 'Ramen Sorah'.
- Cape Comorin, December.
6. *Galeocerdo rayneri*. Zebra-shark. Vern. : 'Valluvan Sorah'.

Trevandrum, July.

It is said to grow to upwards of 12 ft. in length.

The fins of sharks are exported from Travancore to foreign countries, where isinglass is prepared from them. The rough skin (*Shagreen*) is used by artificers for polishing wood, and the oil extracted from the liver is used in medicine as an efficient substitute for cod-liver oil.

Family III. SPHYRNIDÆ

These fierce and voracious creatures are called the Hammer-head Sharks, from the abnormal lateral expansion of the head into two depressed hammer-shaped lobes, at the distal extremities of which the eyes are situated and the nostrils along the margin. They are said to grow to 15 ft. in length, and to occur in almost all warm seas. The flesh is much esteemed.

7. *Zygæna malleus*. Hammer-head Shark. Vern.: 'Chattithalayan'.

Trevandrum, March.

8. *Zygæna tudes*. Hammer-head Shark. Vern.: 'Madayan Sorah'.

Trevandrum, March.

Family IV. RHINODONTIDÆ

The Basking-Shark, otherwise known as Whale-Shark or Basker, is so called from its fondness for lying at the surface of the sea in warm weather, as if basking in the sun's rays with the upper part of the body exposed.

9. *Rhinodon typicus*. Basking-Shark. Vern.: 'Pulli-udombu'.

Trevandrum.

A carcase of this shark was stranded at Trevandrum in 1900, measuring 29 ft. with the greatest circumference of the body 11 ft. 3 in. and the largest tail-fin 6 ft. 3 in.

A specimen 13 ft. 7 in., reproduced as a painted plaster cast, is exhibited in the Fish-Gallery, Trevandrum Museum.

This shark is hunted for the large quantity of oil it contains; it is said to reach a length of 50 ft. to 70 ft. It is not aggressive unless molested.

Suborder 2. *Batoidei*

Family I. PRISTIDÆ

The head of the Saw-fish is prolonged into a flat tapering snout, armed with quadrangular saw-like teeth along both edges, each tooth being firmly fixed in a socket. Its real teeth are minute and obtuse. The Saw-fish frequent estuaries of rivers and lagoons and are dreaded by fishermen and bathers on account of their saw-like weapon with which, they can inflict deadly wounds beside destroying the nets. They are known to reach a length of 20 ft. and to occur in the tropical and temperate seas.

10. *Pristis cuspidatus*. Saw-fish. Vern. : 'Vaul-sorah'.
Trevandrum, August.
During the winter of 1905, while engaged in making a collection of migratory birds, for the Trevandrum Museum, along the coast of the Vembanad Lagoon, N. Travancore, I observed from a boat a Saw-fish about 5 ft. long, lying in ambush at the bottom, and rendered almost invisible by the color of the mud, which resembled its own. The flesh is excellent.
11. *Pristis perrottetti*. Saw-fish. Vern. : 'Komben-sorah'.
Trevandrum, June.
There is a record of this fish obtained by the Indian Museum, Calcutta, measuring 21 ft. long.

Family II RHINOBATIDÆ

The Skates are intermediate forms between the sharks and rays, the body forming a depressed disc.

12. *Rhynchobatus djeddensis*. Mud-skate. Vern. : 'Poonthisorah'.
Trevandrum, February.
The first specimen received by the Museum was a donation from Dr. A. Willey, F.R.S., Director, Colombo Museum, obtained during his Zoological Mission into Travancore in 1906.
13. *Rhynchobatus ancylotomus*. Mud-skate. Vern. : 'Kal-poonthi'.
Trevandrum, March.
14. *Rhinobatus granulatus*. Mud-skate. Vern. : 'Kal-poonthi'.
Trevandrum, March.
The skates are viviparous and their flesh is not savoury.

Family III. RAIIDÆ

The rays are destitute of electric organs and are armed with a barbed caudal spine. In defending themselves, they are said to bend their bodies in a bow and let themselves spring back with great force, causing serious wounds on the body of the victim with the spikes.

These are bottom fishes, and the genus with one species was recorded in Travancore for the first time in 1912.

15. *Ratia powellii* sp. n. Powell's Ray. Vern. : 'Thirandi'.
Trevandrum.
Dr. Nelson Annandale, to whom this ray was forwarded for specific identification, determined it as *R. powellii* sp. n. on the evidence of an immature ray obtained from the Gulf of Martaban.

Family IV. TORPEDINIIDÆ

The family comprises the Electric Rays, which are voracious edible fishes. The electrical organs are composed of vertically placed hexagonal prisms, situated between the head and the pectoral fins and are controlled by several nerve trunks.

16. *Narcine timlei*. Electric Ray. Vern. : ' Ullooku '.
Cape Comorin, December.
A specimen fresh from the net obtained at Cape Comorin, on being handled, produced a peculiarly numbing sensation when in a dying condition ; it is a widely distributed species and is good eating.
17. *Astrape dipterygia*. Electric Ray. Vern. : ' Thanni-thirukay '.
Cape Comorin, June.

Family V. TRYGONIDÆ

These are the Sting-rays, having a flat disk-shaped body with the pectoral fins confluent with the snout. The tail is long and slender and whip-like, and armed near the base with a sharp serrated spine. The sting-rays are in the habit of enveloping prey within the folds of the tail, and forcing it on to the deadly spine, which is poisoned by the slime with which it is bathed. The teeth are flat and pavement-like.

18. *Trygon sephen*. Sting-ray. Vern. : ' Adavaulen-thirukay '.
Trevandrum, June.
A specimen of this ray stranded at Trevandrum in 1906 measured 5 ft. across the disk.
19. *Trygon walga*. Sting-ray. Vern. : ' Thirachi '.
Trevandrum, June.
20. *Trygon pastinacea*. Common Sting-ray. Vern. : ' Thirukay '.
Cape Comorin, November.
Recorded in Travancore since the publication of the *Fauna of British India, Fishes*, by Dr. Day. This fish occurs off the coast of Norway and the British Isles, through the Atlantic and Indian Oceans to Japan.
21. *Pteroplatea micrura*. Short-tailed Sting-ray. Vern. : ' Meen-thirukay '.
Trevandrum, June.
Not uncommon at Cape Comorin.
Dr. Jerdon has recorded a specimen, 3 ft. long by 6 ft. across the disk. The sting-rays are oviparous.

Family VI. MYLIOBATIDÆ

The Mill-stone rays, otherwise known as Devil-rays or Eagle-rays, are named after the peculiar structure of their jaws, which are paved with hexagonal teeth, adapted for crushing the hard shells of molluscs and crustaceans on which they feed. The tail is flexible, long and lash-like and armed with one or more serrated spines. By means of the bat-like expansion of the pectoral fins, the Eagle-rays envelope pearl-divers under water and drown them. They are edible and viviparous.

22. *Myliobatis neiuhoffi*. Devil-ray. Vern. : ' Sappa-thirukay '.
Quilon, December.
23. *Aetobatis narinari*. Eagle-ray. Vern. : ' Pulli Kaka-thirukay '.
Trevandrum, August.
An eagle-ray, taken at Trevandrum in 1906, was 6 ft. 4 in. from tip of snout to root of tail, 4 ft. 9 in. across

the disk ; but the tail, which appeared to have been bitten off and healed, was 14 in. The tail of an immature fish, subsequently obtained, was 3 ft. long and the expanse of the disk 1 ft. 6 in.

24. *Rhinoptera javanica*. Bishop-ray. Vern. : ' Kaka-thirukay '.
Quilon, March.
25. *Dicerobatis ereegoodoo*. Mill-stone Ray. Vern. : ' Kombenthirukay '.
Trevandrum, March.
Full grown rays, are said to measure 18 ft. across the disk.

Order II. HOLOCEPHALA

The family *Chimæridæ*, consists of only one living species, not represented in the Indian Ocean, though there are traces of their having, at one time, existed in the Bay of Bengal. The order forms a connecting link with the Ganoids.

Subclass II. DIPNOI

The *Lepidosirens* are known as double-breathers and possess a single lung and gills throughout life. Owing to certain structural peculiarities, many Zoologists are inclined to assign them to a separate class, intermediate between the Amphibians and Fishes. They are not represented in India.

Subclass III. TELEOSTOMI

This subclass comprises the true fishes, and is contrasted with the *Selachians* (Sharks), and includes both Teleosteans and Ganoids.

Order I. GANOIDEA

The *Ganoids*, which are known as plated fishes, are covered with hard bony plates, having a smooth surface, coated with enamel. They are not known to occur in India, though some are found in Central Asia and China. Comparative anatomy shows that they are descended from the *Selachians* (Sharks) and the bony fishes (*Teleosteans*) from the Ganoids. The living forms include the Sturgeons and the Pike.

Order II. TELEOSTEI

Suborder I. *Malacopterygii*

Family I. ELOPIDÆ

The species are very few, though widely distributed in tropical and subtropical seas, sometimes entering fresh-water.

26. *Elops saurus*. Ten-pounder or Big-eyed Herring.
Trevandrum, November.

A handsome elongate silvery fish, occurring in the West Indian region, at the Cape of Good Hope, and off the shores of East Africa and in Oriental seas.

27. *Megalops cyprinoides*. Ox-eye. Vern. : ' Nanchil '.
Trevandrum, January.
Distinguished by the large scales, and the curiously elongated last ray of the dorsal fin. The Ox-eye often leaps out of the water, after the manner of Grey Mullet. The scales are over 2 inches in diameter, and are valued for fancy work. The young are ribbon-shaped.

Family II. CHIROCENTRIDÆ

Edible fishes with the body elongate and compressed, covered with deciduous scales. A single genus peculiar to the Indian Ocean and seas of Japan and China.

28. *Chirocentrus dorab*. Vern. : ' Thuppoo-vahlay '.
Trevandrum, October
The flesh is palatable.

Family III. CLUPEIDÆ

The Herrings and Sardines are migratory fishes, swimming in shoals generally near shores and estuaries. They are either dried in the sun or salted or smoked. Large quantities of oil are extracted from them, both in Travancore and on the Malabar Coast, from October to January.

29. *Clupea atricauda*. Herring. Vern. : ' Keeri-charlay '.
Trevandrum, October.
30. *Clupea longiceps*. Oil Sardine. Vern. : ' Pay-charlay '.
Trevandrum, December.
31. *Clupea fimbriata*. Oil Sardine. Vern. : ' Matthi-charlay '.
Trevandrum, January.
32. *Clupea sindensis*. Herring. Vern. : ' Vatta-kanni '.
Trevandrum, August.
Also occurs in the Seychelles.
33. *Clupea kanagurta*. Herring. Vern. : ' Ayalay '.
Trevandrum, June.
34. *Clupea toli*. Herring. Vern. : ' Oolum '.
Trevandrum, June.
35. *Pellona elongata*. Herring. Vern. : ' Matthi '.
Trevandrum, June.
36. *Pellona brachysoma*. Herring. Vern. : ' Matthi '.
Trevandrum, September.
37. *Opisthopterus tartoor*.
Cape Comorin, November.
38. *Chatoessus chacunda*. Herring or Shad.
Trevandrum, June.
An estuary fish found in the rivers of Central India and Central America ; usually sold dry in markets.
39. *Chatoessus nasus*. Indian Herring. Vern. : ' Pananjaulay '.
Trevandrum, June.
40. *Engraulis hamiltoni*. Anchovy. Vern. : ' Charlay '.
Trevandrum, October.

41. *Engraulis malabaricus*. Anchovy. Vern. : ' Poor-relan ' .
Trevandrum, October.
42. *Engraulis mystax*. Sardine.
Trevandrum, October.
43. *Engraulis dussumieri*. Sardine.
Trevandrum, October.
44. *Engraulis parava*. Sardine. Vern. : ' Kutthavoo ' .
Trevandrum, November.
45. *Engraulis commersonianus*. White-bait. Vern. : ' Netholi ' .
Trevandrum, November.
46. *Engraulis indicus*. White-bait. Vern. : ' Co-netholi ' .
Trevandrum, November.
47. *Dussumeria acuta*. Malabar Sardine. Vern. : ' Charlay ' .
Trevandrum, December.
48. *Spratelloides malabaricus*.
Alleppy, December.
49. *Chanos salmonesus*. Milk-fish. Vern. : ' Poomeen ' .
Trevandrum, October.
This is the White-Mullet of Europeans ; the flesh is much
esteemed and the adult is said to weigh 20 lbs. to
30 lbs.

Suborder 3. *Ostariophysii*

Family I. CYPRINIDÆ

Exclusively fresh-water fishes, noted for the small toothless mouth, which is more or less protractile and furnished with barbels; they are the least carnivorous of fishes and form objects of important culture in parts of the continent, and contribute largely to the food-supply of the people in Europe and Asia ; but in America very few are of economic importance.

The Mahseer and Gold-fish are members of this family.

50. *Nemachilus botius*. Loach. Vern. : ' Auttu-meen ' .
Tenmalai, November.
According to Dr. Day the Loach is not found on the
Malabar Coast, nor south of the Krishna River.
51. *Nemachilus triangularis*. Loach. Vern. : ' Kal-nakki ' .
Tenmalai, November.
Travancore Hills only. *F.B.I.*
52. *Homaloptera maculata*. Loach.
Tenmalai, November.
53. *Discognatha lamta*. Loach. Vern. : ' Koravai ' .
Trevandrum, November.
54. *Discognatha jerdoni*. Loach. Vern. : ' Kal-nakki ' .
Tenmalai, November.
55. *Amblypharyngodon mola*. Carp. Vern. : ' Oolari ' .
Shencotta, November.
56. *Amblypharyngodon microlepis*. Carp.
Alleppy, December.
57. *Amblypharyngodon melittina*. Carp. Vern. : ' Airay ' .
Sasthancotta, November.

58. *Labeo dussumieri*. Carp. Vern. : 'Toolee'.
Alleppy, December.
59. *Barbus pinnauratus*. Carp. Vern. : 'Panchala-kylie'.
Trevandrum, November.
60. *Barbus tor*. Carp.
Parappan River, November.
61. *Barbus curmuca*. Carp. Vern. : 'Kadi-meen'.
Trevandrum, October.
62. *Barbus lithopidos*. Carp.
Trevandrum, October.
63. *Barbus wynaadensis*. Carp.
Tenmalai, November.
64. *Barbus malabaricus*. Carp. Vern. : 'Auttu-kendai'.
Tenmalai, November.
65. *Barbus melanampyx*. Carp. Vern. : 'Kylie'.
Shoralacode, June.
66. *Barbus parrah*. Carp. Vern. : 'Kylie'.
Trevandrum, November.
67. *Barbus burmanicus*. Carp. Vern. : 'Sappauli-kendai'.
Cape Comorin, November.
68. *Barbus denisonii*. Carp. Vern. : 'Kendai'.
Mundakayam, December.
69. *Barbus melanostigma*. Carp. Vern. : 'Kendai'.
Cape Comorin, November.
70. *Barbus amphibiis*. Carp. Vern. : 'Urulen-kendai'.
Trevandrum, August.
71. *Barbus arulius*. Carp. Vern. : 'Kendai'.
Kulathupuzha, November.
72. *Barbus mahecola*. Carp. Vern. : 'Poovaulen-kendai'.
Tenmalai, November.
73. *Barbus conchoniis*. Carp.
Trevandrum, November.
74. *Barbus stigma*. Carp. Vern. : 'Unda-kanni'.
Karumaudi, October.
75. *Barbus vittatus*. Carp.
Tenmalai, November.
Said to be destructive to mosquito larvæ.
76. *Rasbora daniconius*. Carp. Vern. : 'Parava-kendai'.
Trevandrum, October.
77. *Rasbora nilgiriensis*. Carp. Vern. : 'Parava-kendai'.
Trevandrum, October.
78. *Rohtee bakeri*.
Kottayam, November.
79. *Barilius bakeri*.
Tenmalai, November.
80. *Danio malabaricus*. Vern. : 'Cheela-pauray'.
Parappan, November.
81. *Perilamphus laubuca*.
Vellany, February.
Not found in Southern India. *F.B.I.*
82. *Cheela boopis*.
Cape Comorin, November.

Family II. SILURIDÆ

The Cat-fishes belong to a large family of fresh-water forms, and include a few marine species (*Plotosus* and *Arius*). The majority are edible, though according to some authors, the Mahomedans do not eat them. They are coarse feeders, and thrive well in muddy water, and their maws yield isinglass. Some build nests for the reception of eggs, others, particularly the males, carry the eggs within their capacious mouths and retain them there till they are hatched. The Siluroids are of world-wide distribution.

83. *Plotosus canius*. Cat-fish. Vern. : 'Vari-choongum'.
Trevandrum, September.
84. *Plotosus arab*. Cat-fish. Vern. : 'Choongum'.
Trevandrum, September.
Wounds inflicted by the dorsal and pectoral spines of these fish, are as intolerable as the sting of a scorpion.
85. *Clarias magur*. Mugger. Vern. : 'Yeri-vahlay'.
Trevandrum, April.
86. *Saccobranchus fossilis*. Scorpion-fish. Vern. : 'Theyli'.
Trevandrum, November.
The Scorpion-fish is credited with causing serious wounds, by means of the pectoral fins, resulting in blood-poisoning and gangrene, sometimes necessitating amputation of the affected limb.
87. *Wallago attu*. Cat-fish. Vern. : 'Auttu-vahlay'.
Trevandrum, November.
A cosmopolitan fish much prized for food, attaining a length of 6 feet.
The Cat-fishes are so called from the barbels which resemble the whiskers of a cat.
88. *Callichrous bimaculatus*. Dragonet. Vern. : 'Chotta-vahlay'.
Cape Comorin, November.
89. *Callichrous malabaricus*. Dragonet. Vern. : 'Manjavahlay'.
Alleppy, November.
90. *Pseudotropius sykesii*. Vern. : 'Nauy-kelithi'.
Alleppy, October.
91. *Macrones chryseus*. Cat-fish. Vern. : 'Moongil'.
Trevandrum, November.
92. *Macrones gulio*. Cat-fish. Vern. : 'Kadel-kelithi'.
Trevandrum, November.
93. *Macrones vittatus*. Cat-fish. Vern. : 'Kallen-coori'.
Sasthancotta, November.
One of the commonest of food-fishes, protected by the religious sentiments of the people at Sasthancotta, particularly in that portion of the fresh-water lagoon on the temple premises, where devotees and pilgrims feed them with rice and handle them with impunity.
94. *Macrones oculatus*. Cat-fish. Vern. : 'Theydoo'.
Alleppy, October.
95. *Macrones montanus*. Cat-fish. Vern. : 'Vari Kallen-coori'.
Trevandrum, November.

96. *Macrones malabaricus*. Cat-fish. Vern. : ' Kallen-coori',
Quilon, August.
97. *Arius cælatus*. Cat-fish. Vern. : ' Kelithi',
Trevandrum, March.
98. *Arius subrostratus*. Cat-fish. Vern. : ' Theydoo',
Trevandrum, March.
99. *Arius thalassinus*. Cat-fish. Vern. : ' Theydoo',
Trevandrum, May.
100. *Arius talcarius*. Cat-fish. Vern. : ' Theydoo',
Alleppy, October.
101. *Arius jatius*. Cat-fish. Vern. : ' Mooken-theydoo',
Trevandrum, March.
102. *Arius dussumieri*. Cat-fish. Vern. : ' Kazhu-theydoo',
Trevandrum, March.
103. *Ostrogeniosus militaris*. Cat-fish. Vern. : ' Pon-kelithi',
Cape Comorin, November.

Suborder 3. *Apodes*

Family I. ANGUILLIDÆ

Typical Eels with serpentiform bodies, some undergoing metamorphosis. The strongly compressed transparent *Leptocephalus* which for a long time had been a puzzle to naturalists, has at last been discovered to be the larval form of the Eel.

104. *Anguilla bicolor*. Fresh-water Eel. Vern. : ' Kuruttoo-vilangu',
Trevandrum, November.
105. *Murænesox cinereus*. Marine Eel. Vern. : ' Kadel-vilangu',
Trevandrum, November.
106. *Murænichthys schultzei*. Marine Eel. Vern. : ' Variyen-vilangu',
Cape Comorin, November.
107. *Ophichthys orientalis*. Marine Eel. Vern. : ' Kadel-vilangu',
Quilon, March.
108. *Ophichthys microcephalus*. Marine Eel. Vern. : ' Kadel-vilangu',
Trevandrum, November.

Family II. MURÆNIDÆ

Of predacious habits, these fishes inhabit the tropical and subtropical seas, especially about coral reefs ; some adapt themselves to a fresh-water life, others inhabit the deep sea, living in holes and crevices of rocks. They reach a length of 8 feet and weigh 60 lbs. Sometimes they become a nuisance to bathers.

109. *Muræna punctata*. Spotted Eel. Vern. : ' Pulli Anjaulay',
Trevandrum, October.
110. *Muræna tessellata*. Marine Eel. Vern. : ' Puli Anjaulay',
Cape Comorin, December.
111. *Muræna pseudothyrsoides*. Marine Eel. Vern. : ' Anjaulay',
Trevandrum, October.

112. *Muræna undulata*. Marine Eel. Vern. : 'Anjaulay'.
Cape Comorin, November.
113. *Muræna nebulosa*. Marine Eel. Vern. : 'Anjaulay'.
Cape Comorin, November.
The flesh of Marine Eels is inedible on account of its
rank and disagreeable odour.

Suborder 4. *Haplomi*

Family I. SCOPOLIDÆ

Pelagic or deep-sea fishes, the latter with luminous spots on the head and body. Not a favourite food-fish. A good number are extinct.

114. *Saurus myops*. Vern. : 'Naucaudi'.
Sasthancotta, November.
115. *Saurida tumbil*. Vern. : 'Kal-nama Kendai'.
Trevandrum, November.

Family II. CYPRINODONTIDÆ

These are small fresh-water fishes, with many brackish-water forms, the former being recognized by the flat head; the sexes in many instances differ, the females being larger and more beautifully coloured.

They occur in tropical America and Africa and in the Mediterranean.

116. *Haplochilus lineatus*. Vern. : 'Manathu-kanni'.
Sasthancotta, November.
117. *Haplochilus panchax*. Vern. : 'Manathu-kanni'.
Sasthancotta, November.

Suborder 5. *Catosteomi*

Family I. FISTULARIIDÆ

A single genus, comprising one species, found in the back-waters of the seas of India. Body elongated, snout long and tubiform, ending in a narrow mouth, set with minute villiform teeth.

The flesh is excellent and the fish is otherwise known as Flute-mouth, Sea-snipe or Tobacco-pipe Fish.

118. *Fistularia serrata*. Flute-mouth. Vern. : 'Kolauchi'.
Trevandrum, January.

Family II. AMPHISILIDÆ

An exception among fishes, for the fact that the body of this fish is much compressed and enclosed in a transparent shell of bony armour, which is fused with the endoskeleton. The snout is elongated and tubiform, ending in a toothless mouth.

119. *Amphisile scutata*. Needle-fish.
Trevandrum, February.

Family III. SYNGNATHIDÆ

Pelagic fishes, living in weedy rock-pools of the sea-shore. Body protected by an exoskeleton of bony rings. Snout much produced, tubiform with the mouth terminal.

120. *Syngnathus*. sp., Pipe-fish.
Cape Comorin, December.
121. *Hippocampus guttulatus*. Sea-horse. Vern.: 'Kadel-kuthiray'
Trevandrum, June.
The tail is destitute of a fin and is prehensile, being used for coiling round sea-weeds.
The name of the fish is suggested by the resemblance of the body to the model of the knight in chess. They swim with the body vertical. Found in warm seas.

Suborder 6. *Percesoces*

Family I. SCOMBRESOCIDÆ

Carnivorous marine fishes comprising the Gar-pikes, and Flying-fishes, which are mainly herbivorous, the diet consisting of green algæ. The bones of several species, are green and remain unaltered, even after cooking, and on this account many people refuse to eat the flesh; some are viviparous and adapt themselves to a fresh water existence. They occur in the tropical and temperate seas including the Mediterranean.

122. *Belone melanostigma*. Gar-pike. Vern.: 'Kolia-morel'.
Trevandrum, November.
123. *Belone choram*. Gar-pike. Vern.: 'Pilla-morel'.
Trevandrum, November.
124. *Belone liura*. Gar-pike. Vern.: 'Morel'.
Trevandrum, November.
125. *Belone strongylura*. Gar-pike. Vern.: 'Kolia-morel'.
Trevandrum, December.
126. *Belone cancila*. Gar-pike. Vern.: 'Koraulen'.
Trevandrum, November.
127. *Hemiramphus far*. Half-beak. Vern.: 'Morel'.
Trevandrum, July.
The lower jaw of the half-beaks is prolonged into a long weapon of offence.
128. *Hemiramphus xanthopterus*. Half-beak. Vern.: 'Paul-morel'.
Trevandrum, September.
129. *Hemiramphus buffonis*. Half-beak. Vern.: 'Morel'.
Trevandrum, September.
130. *Hemiramphus dispar*. Half-beak. Vern.: 'Karu-morel'.
Trevandrum, October.
131. *Exocætus micropterus*. Flying-fish. Vern.: 'Parava-charlay'.
Trevandrum, March.
132. *Exocætus evolans*. Flying-fish. Vern.: 'Parava-charlay'.
Trevandrum, January.

133. *Exocætus bahiensis*. Flying-fish. Vern.: 'Parava-charlay'.
Trevandrum, January.

Family II. AMMODYTIDÆ

Of small size, these fish are gregarious and are known as Sand launces, from their habit of diving into sand and living in sandy-beaches. They are employed in baiting fish-hooks and they occur in the Atlantic, the Southern Pacific and Indian Oceans.

134. *Ammodytes callolepis*. Sand-launce.
Cape Comorin, December.

Family III. ATHERINIDÆ

The Sand-smelts are carnivorous fishes, mostly marine. They are related to the *Sphyrænidæ* and the *Mugilidæ*.

135. *Atherina forskalli*. Sand-smelt. Vern.: 'Morel-kendai'.
Trevandrum, February.

Family IV. MUGILIDÆ

The Grey Mulletts are edible fishes, occurring in shoals in brackish water. They are found in the tropical and temperate seas, some of them being fresh-water immigrants.

136. *Mugil cumesius*. Grey Mullet. Vern.: 'Maula'.
Trevandrum, December.
137. *Mugil pæcilus*. Mullet. Vern.: 'Maula'.
Cape Comorin, December.
138. *Mugil amarulus*. Mullet. Vern.: 'Maula'.
Trevandrum, December.
139. *Mugil borneensis*. Mullet. Vern.: 'Maula'.
Trevandrum, December.
140. *Mugil troschellii*. Mullet.
Cape Comorin, March.

Family V. POLYNEMIDÆ

Edible marine and estuarine fishes, occurring in the seas of India and tropical Western Pacific. They easily take a bait, and are one of the chief sources of fish-maw. They are known as Topsi or Paradise-fish.

141. *Polynemus sextarius*. Mango-fish. Vern.: 'Manangu'.
Trevandrum, August.
142. *Polynemus indicus*. Paradise-fish. Vern.: 'Manangu'.
Trevandrum, August.
143. *Polynemus plebius*. Paradise-fish. Vern.: 'Manangu'.
Trevandrum, August.

Family VI. SPHYRÆNIDÆ

A small family of marine fishes of somewhat large size and extremely voracious habits. The flesh is not always edible on account of the poisonous properties developed at certain seasons. Specimens of abnormal size are injurious to people bathing.

144. *Sphyræna jello*. Barracoota. Vern. : 'Madavooli'.
Trevandrum, August.
145. *Sphyræna acutipinnis*. Barracoota. Vern. : 'Madavooli'.
Trevandrum, September.
146. *Sphyræna commersonii*. Barracoota. Vern. : 'Madavooli'.
Trevandrum, September.
147. *Sphyræna obtusata*. Barracoota. Vern. : 'Madavooli'.
Trevandrum, September.

Family VII. STROMATEIDÆ

Pelagic or deep-sea fishes, with the body oblong and compressed as in flat-fishes. They are good eating, and are found fairly common in Travancore from June to September.

148. *Stromateus sinensis*. White Pomfret. Vern. : 'Vellai Avoli'.
Trevandrum, November.
149. *Stromateus niger*. Black Pomfret. Vern. : 'Karutha Avoli'.
Trevandrum, September.
150. *Stromateus cinereus*. Pomfret. Vern. : 'Akoli'.
Quilon, November.
- Sold raw or salted and dried for markets.

Family VIII. OPHIOCEPHALIDÆ

A small family of fresh-water fishes occurring in shoals in tanks and rivers, and usually called 'Murrel' or Walking fish. In the dry season, they are known to bury themselves in mud in a condition of suspended animation, or to migrate to the adjoining pieces of water during the night : The males build nests for the reception of eggs and guard over them till they are hatched. They are suitable for stocking tanks, and are agreeable food-fishes.

151. *Ophiocephalus marulius*. Snake-head. Vern. : 'Pooviral'.
Trevandrum, January.
152. *Ophiocephalus leucopunctatus*. Walking-fish. Vern. : 'Pulliviral'.
Trevandrum, January.
153. *Ophiocephalus micropeltis*. Vern. : 'Karuvauhay'.
Covalum, February.
154. *Ophiocephalus striatus*. Vern. : 'Viral'.
Trevandrum, October.
155. *Ophiocephalus gachua*. Vern. : 'Para-koravai'.
Kulathupuzha, November.

Family IX. ANABANTIDÆ

The Climbing Perches, possess remarkable powers of moving over land surface, and climbing trees in search of insects, which is effected by means of the spines with which their gill-covers and ventral fins are armed. Owing to the peculiar structure of the supra-branchial organ, they are very tenacious of life and can live out of water like the Ophiocephali for considerable periods.

156. *Anabas scandens*. Climbing Perch. Vern.: 'Panayeri Kendai'.
Trevandrum, February.

Suborder 7. *Acanthopterygii*

Family I. BERYCIDÆ

The majority of the fishes of this family live at great depths and are related to the oldest Teleosteans; a good many are fossil forms.

Of the eight genera, hitherto known to be represented in India, two from Travancore contain shallow-water species.

157. *Myripristis murdjan*. Vern.: 'Manda-kann'.
Trevandrum, February.
158. *Holocentrum rubrum*. Vern.: 'Kadantha-mulli'.
Trevandrum, February.

Family II. PEMPHERIDÆ

Edible marine fishes of small size, inhabiting the tropical parts of the Pacific and Indian Oceans.

159. *Pempheris russellii*. Vern.: 'Kuthavoo'.
Trevandrum, August.

Family III. CYPHOSIDÆ

Herbivorous fishes occurring in the Pacific and Indian Oceans. Fins covered with scales.

160. *Pimelepterus vagiensis*. Vern.: 'Sathay-meen'.
Trevandrum, October.
161. *Pimelepterus cineraceus*. Vern.: 'Kandel'.
Trevandrum, October.
162. *Pimelepterus fuscus*.
Trevandrum, January.

Family IV. NANDIDÆ

Carnivorous marine and fresh-water fishes with a protractile mouth. The marine forms have not been recorded in Travancore, which contains, two fresh-water genera, said to be peculiar to India.

163. *Nandus marmoratus*. Vern.: 'Motahree'.
Trevandrum, January.
164. *Pristolepis fasciata*.
Alleppy, December.
165. *Pristolepis malabarica*. Vern.: 'Kalluringee'.
Cape Comorin, October.

Family V. SERRANIDÆ

Edible marine fishes of extremely voracious habits, living in still water; sometimes ascending rivers.

166. *Serranus areolatus*. Sea-perch. Vern. : ' Pulli-kalavai '.
Trevandrum, February.
167. *Serranus undulosus*. Sea-perch. Vern. : ' Kalavai '.
Trevandrum, February.
168. *Serranus sonnerati*. Sea-perch. Vern. . ' Kalavai '.
Cape Comorin, November.
169. *Serranus gilberti*. Sea-perch. Vern. : ' Kalavai '.
Cape Comorin, November.
170. *Serranus hexagonatus*. Sea-perch. Vern. : ' Aluvay '.
Cape Comorin, December.
171. *Serranus diacanthus*.
Cape Comorin, November.
172. *Serranus maculatus*. Sea-perch. Vern. : ' Pulli-kalavai '.
Trevandrum, October.
173. *Serranus lanceolatus*. Sea-perch.
Cape Comorin, November.
174. *Priacanthus holocentrum*. Sea-perch. Vern. : ' Pasuva '.
Trevandrum, October.
175. *Priacanthus indicus*.
Trevandrum, November.
176. *Lates calcarifer*. Sea-perch. Vern. : ' Narimeen '.
Trevandrum, November.
177. *Ambasis thomasi*. Sea-perch. Vern. : ' Mulloo-cheru '.
Cape Comorin, November.
178. *Ambasis nalu*. Sea-perch. Vern. : ' Sennel '.
Cape Comorin, November.
179. *Ambasis myops*. Sea-perch. Vern. : ' Kaka-sennel '.
Cape Comorin, November.
180. *Ambasis gymnocephalus*. Sea-perch.
Cape Comorin, November.
181. *Ambasis urotenia*. Sea-perch.
Trevandrum, October.
182. *Apogon hyalosoma*. Sea-perch.
Trevandrum, January.
183. *Lutjanus annularis*. Sea-perch. Vern. : ' Kalavai '.
Trevandrum, October.
184. *Lutjanus rivulatus*. Sea-perch.
Cape Comorin, January.
185. *Lutjanus argentimaculatus*. Sea-perch. Vern. : ' Chempalli '.
Trevandrum, October.
186. *Lutjanus fulvillamma*. Sea-perch. Vern. : ' Polay '.
Covalum, December.
187. *Lutjanus unimaculatus*. Sea-perch. Vern. : ' Kurumay '.
Cape Comorin, January.
188. *Lutjanus johni*. Sea-perch.
Trevandrum, November.
189. *Lutjanus marginatus*. Sea-perch.
Covalum, December.
190. *Lutjanus quinquelinearis*. Sea-perch.
Trevandrum, November.
191. *Lutjanus madras*. Sea-perch.
Cape Comorin, November.

192. *Therapon theraps*. Sea-perch.
Trevandrum, July.
193. *Therapon quadrilineatus*. Sea-perch.
Trevandrum, July.

Family VI. SILLAGINIDÆ

Contains a single genus, connecting the *Serranidæ* and *Sciænidæ*.

194. *Sillago sihama*. Whiting. Vern. : 'Kizhanga meen'.
Trevandrum, October. Edible.

Family VII. SCIÆNIDÆ

Of world wide distribution, these fish ascend rivers, where they do not live permanently.

195. *Umbrina dussumieri*. Thread-fish. Vern. : 'Koray'.
Trevandrum, August.
196. *Sciæna vogleri*. Thread-fish. Vern. : 'Koray'.
Trevandrum, June.
197. *Sciæna albida*. Thread-fish. Vern. : 'Koray'.
Alleppy, December.
198. *Sciæna sina*. Thread-fish. Vern. : 'Koray'.
Trevandrum, July.
199. *Sciæna diacanthus*. Thread-fish. Vern. : 'Kathalai'.
Cape Comorin, November.
200. *Sciæna aneus*. Thread-fish. Vern. : 'Penna-meen'.
Trevandrum, July.
201. *Otolithus argenteus*.
Cape Comorin, November.

Family VIII.—GERRIDÆ

Body compressed, jaws protractile, mouth toothless. Most of the species are of small size, occurring in all tropical and subtropical seas.

202. *Gerres filamentosus*. Vern. : 'Pulli-prauchi'.
Trevandrum, March.
203. *Gerres oyena*. Vern. : 'Oodan'.
Cape Comorin, November.
204. *Gerres lucidus*. Vern. : 'Oodan'.
Trevandrum, August.
205. *Gerres limbatus*. Vern. : 'Prauchi'.
Trevandrum, August.
206. *Gerres sp.* Vern. : 'Prauchi'.
Cape Comorin, November.
207. *Equula longimanus*. Vern. : 'Kauray'.
Cape Comorin, November.
208. *Equula edentula*. Vern. : 'Saluva-kauray'.
Trevandrum, July.
209. *Equula dussumieri*. Vern. : 'Nama-kauray'.
Trevandrum, July.
210. *Equula splendens*. Vern. : 'Kauna-kauray'.
Trevandrum, February.

211. *Equula insidiatrix*. Vern. : ' Pulli-kauray '.
Trevandrum, February.
212. *Equula fasciata*. Vern. : ' Kauray '.
Trevandrum, December.
213. *Gazza equulæformis*. Vern. : ' Kauray '.
Trevandrum, February.

Family IX.—LACTARIIDÆ

Carnivorous marine shore-fishes, covered with cycloid deciduous scales. The flesh is delicious and is salted and dried in abundance.

214. *Lactarius delicatulus*. Butter-fish. Vern. : ' Kuthippu '.

Family X—PRISTIPOMATIDÆ

215. *Pristipoma maculatum* Vern. : ' Pulli-pauray '.
Trevandrum, January.
216. *Pristipoma furcatum*. Vern. : ' Vari-pauray '.
Trevandrum, October.
217. *Pristipoma dussumieri*. Vern. : ' Kuthavoo '.
Trevandrum, January.
218. *Pristipoma argenteum*. Vern. : ' Pauray '.
Cape Comorin, December.
219. *Pristipoma gouraca*. Vern. : ' Konan-koray '.
Trevandrum, July.
220. *Diagramma crassispinum*. Vern. : ' Adayameen '.
Trevandrum, November.
221. *Diagramma griseum*. Vern. : ' Adayameen '.
Trevandrum, November.
222. *Diagramma pictum*. Vern. : ' Pulli-koray '.
Trevandrum, November.
223. *Diagramma punctatum*. Vern. : ' Pulli-koray '.

Family XI.—SPARIDÆ

A widely distributed family, consisting of carnivorous and herbivorous fishes inhabiting the tropical and temperate seas.

224. *Scolopsis vosmeri*. Vern. : ' Kallen-coori '.
Colachel, March.
225. *Pagrus spinifer*. Snapper. Vern. : ' Coori '.
Cape Comorin, November.
226. *Lethrinus karwa*. Sea-bream. Vern. : ' Karuva-meen '.
Parur, July.
227. *Chrysophrys datnia*. Grey-perch. Vern. : ' Kuruthalay '.
Trevandrum, January.
228. *Chrysophrys aries*. Grey-perch. Vern. : ' Matwa '.
Trevandrum, January.

Pagrus and *Chrysophrys* are found off the Atlantic coasts of N. America, in the Mediterranean and off the coasts of India.

Family XII. MULLIDÆ

The Red-mullets are carnivorous marine fishes, mainly feeding on decayed vegetable substances. They are amongst the choicest of food-fishes and are restricted to the tropical seas.

229. *Upeneoides vittatus*. Red Mullet. Vern. : 'Chennavarai'.
Trevandrum, May.
230. *Upeneoides sulphureus*. Red Mullet. Vern. : 'Navarai'.
Trevandrum, May.
231. *Upeneoides tragula*. Red Mullet. Vern. : 'Cheeral'.
Trevandrum, May.
232. *Upeneus macronema*. Red Mullet. Vern. : 'Kal-navarai'.
Cape Comorin, January.
233. *Upeneus indicus*. Red Mullet. Vern. : 'Pon-navarai'.
Cape Comorin, January.

Family XIII. CHÆTODONTIDÆ

Carnivorous marine, estuarine and river fishes, remarkable for the beauty and variety of their colour, which is more or less protective. The diet consists of the small invertebrates of the coral groves. Not a popular food-fish.

234. *Ephippus orbis*. Vern. : 'Thavanai kauray'.
Cape Comorin, August.
235. *Scatophagus argus*.
Trevandrum, June.
236. *Chætodon vagabundus*. Bristle-teeth. Vern. : 'Manja-kulimeen'.
Trevandrum, December.
237. *Chætodon collaris*. Bristle-teeth.
Cape Comorin, December.
238. *Heniochus macrolepidotus*. Vern. : 'Chutti-kanni'.
Trevandrum, August.
239. *Holacanthus nicobariensis*. Angel-fish. Vern. : 'Kannandimeen'.
Trevandrum, August.
240. *Holacanthus annularis*. Angel-fish. Vern. : 'Tharattai'.
Trevandrum, July.
241. *Holacanthus xanthurus*. Angel-fish. Vern. : 'Kalkasumeen'.
Trevandrum, August.
242. *Platax teira*. Sea-bat. Vern. : 'Vavvaul-meen'.
Trevandrum, July.

The Sea-bat is remarkable for the height and breadth of its body. It occurs in the Red Sea and the Indian and Pacific Oceans; the flesh is excellent. It is found fossil in the tertiary of Monte Bolca in Northern Italy.

Family XIV. DREPANIDÆ

A family of Scombroid fishes, related to the *Chætodontidæ* from which, it is distinguished by the falciform elongate pectoral fin.

243. *Drepane punctata*. Vern. : 'Payinthe-meen'.
Trevandrum, July.

Family XV. ACANTHURIDÆ

Mostly herbivorous fishes, living in shoals among coral reefs. The skin is rough and leathery, and there is a short spine situated

on either side of the tail by means of which the fish is capable of inflicting a deep cut on the hands of imprudent persons.

244. *Zanclus cornutus*.
Trevandrum, June.
245. *Acanthurus triostegus*. Surgeon-fish. Vern. : 'Vari-pauray'.
Cape Comcrin, February.
A widely distributed species.
246. *Acanthurus gahm*. Vern. : 'Koli-meen'.
Trevandrum, July.
247. *Acanthurus celebicus*. Vern. : 'Koli-meen'.
Trevandrum, July.
248. *Naseus unicornis*. Vern. : 'Ottay-komben'.
Trevandrum, July.

Family XVI. TEUTHIDIDÆ

A group of herbivorous fishes, found in the Indian and Pacific Oceans, among coral reefs.

249. *Teuthis java*. Vern. : 'Polay'.
Trevandrum, May.
250. *Teuthis nebulosa*.
Cape Comorin, December.
251. *Teuthis marmorata*.
Cape Comorin, December.
252. *Teuthis oramin*.
Trevandrum, December.

Family XVII. OSPHROMENIDÆ

Fresh-water fishes, which have much in common with the *Anabantidæ* or *Ophiocephalidæ*, and like them, have the power of withstanding removal from water and breathing air for a time, owing to the presence of a supra-branchial organ.

253. *Polyacanthus cupanus*. Vern. : 'Vannanthi-meen'.
Trevandrum, February.

Family XVIII. CICHLIDÆ

A small group of fresh and brackish water fishes, restricted to lagoons and rivers. Edible.

254. *Etroplus suratensis*. Vern. : 'Chauni-kendai'.
Trevandrum, October.
255. *Etroplus maculatus*. Vern. : 'Setha-kendai'.
Trevandrum, October.

Family XIX. POMACENTRIDÆ

Gorgeously coloured carnivorous marine fishes, confined to the coral reefs, where their diet consists of the medusæ of the reefs, as also vegetable organisms. They occur throughout the tropical parts of the Indo-Pacific, and off the Atlantic coasts of tropical America.

256. *Glyphidodon sordidus*. Vern. : 'Yeru-meen'.
Trevandrum, November.

257. *Glyphidodon bonang*.
Trevandrum, February.
258. *Glyphidodon caelestinus*.
Trevandrum, January.
259. *Glyphidodon leucogaster*.
Trevandrum, November.

Family XX. LABRIDÆ

A large family of marine fishes, partially carnivorous and partially herbivorous, of world wide distribution, and usually called the Wrasse. Teeth strong and parrot-like with the lips thick. They are all brilliantly coloured.

260. *Chærops anchorago*. Wrasse. Vern. : 'Kili-meen'.
Trevandrum, September.
261. *PlatyGLOSSUS marginatus*. Wrasse. Vern. : 'Kallurivi'.
Trevandrum, August.
262. *PlatyGLOSSUS dussumieri*. Wrasse. Vern. : 'Kallurivi'.
Trevandrum, September.
263. *Novacula* sp.
Trevandrum, August.

Family XXI. SCARIDÆ

Teeth coalescent, often forming a parrot-like beak. These fish feed on vegetable matter, corals and hard-shelled molluscs. Some are edible, others, reputed poisonous. They are closely allied to the *Labridæ*.

264. *PseudosCARUS ghobban*. Parrot-wrasse. Vern. : 'Kili-meen'.
Trevandrum, September.
265. *PseudosCARUS rivulatus*. Parrot-wrasse. Vern. : 'Kili-meen'.
Trevandrum, August.

Family XXII. CARANGIDÆ

The Horse-mackerels are predaceous migratory marine fishes for the most part edible. Owing to unwholesome diet some of them develop poisonous properties. They differ from the true mackerels in having fewer vertebræ.

266. *Caranx rottleri*. Horse-mackerel. Vern. : 'Vankaday'.
Trevandrum, February.
267. *Caranx jarra*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, August.
268. *Caranx carangus*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, February.
269. *Caranx hippos*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, December.
270. *Caranx sansun*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, January.
271. *Caranx gymnoSthetoides*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, January.
272. *Caranx crumenophthalmus*. Horse-mackerel. Vern. :
'Pauray'.

- Trevandrum, December.
273. *Caranx dejedaba*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, December.
274. *Caranx affinis*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, December.
275. *Caranx kalla*. Horse-mackerel. Vern. : 'Kalla-pauray'.
Trevandrum, December.
276. *Caranx atropos*. Horse-mackerel. Vern. : 'Thovu-pauray'.
Trevandrum, November.
277. *Caranx malabaricus*. Horse-mackerel. Vern. : 'Tholum-pauray'.
Trevandrum, December,
278. *Caranx armatus*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, January.
279. *Caranx gallus*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, February.
280. *Caranx ciliaris*. Horse-mackerel. Vern. : 'Malankylie'.
Trevandrum, February.
281. *Caranx nigripinnis*. Horse-mackerel. Vern. : 'Vari-pauray'.
Trevandrum, February.
282. *Caranx speciosus*. Horse-mackerel. Vern. : Puli-pauray'.
Trevandrum, February. Rare.
283. *Caranx xanthurus*. Horse-mackerel. Vern. : 'Pauray'.
Trevandrum, December.
284. *Caranx trachurus*. Horse-mackerel. Vern. : 'Koli-charlay'.
Trevandrum, February.
Not recorded in the Faunal volume.
285. *Seriolichthys bipinnulatus*. Vern. : 'Poonguzhal'.
Trevandrum, February.
286. *Chorinemus lysan* Vern. : 'Manja-pauray'.
Quilon, July.
The flesh of this fish is rather dry and insipid.
287. *Chorinemus toloo*. Vern. : 'Manja-pauray'.
Trevandrum, May.
288. *Chorinemus sp.* Vern. : 'Pauray'.
Trevandrum, July.
289. *Trachynotus bailloni*. Vern. : 'Valayodu'.
Trevandrum, February.
290. *Trachynotus russellii*. Vern. : 'Valayodu'.
Trevandrum, July.
291. *Mene maculata*. Vern. : 'Pulli-kauray'.
Trevandrum, November.

Family XXIII SCOMBRIDÆ

Active carnivorous fishes of pelagic habits, living in the open seas and comprising the true mackerels. They vary in form and color and are among the swiftest inhabitants of the sea. Some are migrants.

292. *Scomber macrolepidotus*. Mackerel. Vern. : 'Ayalay'.
Trevandrum, January.
293. *Thynnus thunnina*. Tunny. Vern. : 'Chooray'.

Trevandrum, January.

The Tunny reaches a length of 10 feet, though usually it is about 2 feet. It is about the only fish known to be *warmblooded*. At times its flesh is unfit for food, due to its bad and unwholesome diet.

294. *Thynnus pelamys*. Bonito. Vern.: 'Kutti-choora'.

Trevandrum, January.

295. *Cybium guttatum*. Seir-fish. Vern.: 'Ney-meen'.

Trevandrum, August.

One of the favourite palatable staple food-fishes, most delicious when it is 1½ ft. to 2 ft. in length. It grows to 6 ft. and occurs in profusion in Travancore from August to November.

296. *Cybium commersonii*. Seir-fish. Vern.: 'Mauvilasu'.

Trevandrum, January.

297. *Elacate nigra*. Vern.: 'Mothay'.

Trevandrum, October.

Family XXIV. TRICHIURIDÆ

The Hair-tails and Scabbard fishes devour their own kind. They are usually dried in the sun or salted and they occur in the W. Indies, the Atlantic and the Eastern seas from India to Japan.

298. *Trichiurus haumela*. Hair-tail. Vern.: 'Sunnambu-vahlay'.

Trevandrum, June.

299. *Trichiurus savala*. Scabbard-fish. Vern.: 'Kolla-vahlây'.

Trevandrum, July.

Family XXV. HISTIOPHORIDÆ

The Sword and Spear-fishes are members of this family. Their snout is prolonged to form a formidable weapon of offence, covered with innumerable minute teeth on the outer surface.

The sword-fishes are conspicuously aggressive and attack whales and other cetaceans, which they kill by repeated thrusts of the sword. Sometimes they attack ships right through their timbers, though sheathed with copper, under a mistaken idea of their being whales, and in consequence their snouts get fixed and broken. Portions of ships thus pierced, with the broken ends *in situ*, are exhibited both in the Indian Museum, Calcutta, and the Natural History Museum, S. Kensington.

These fish are said to attain a length of from 12 ft. to 15 ft. and to weigh from 300 lbs. to 400 lbs.

The flesh is palatable and nutritious.

The sword-fishes are the largest of the bony fishes and occur in the Atlantic, the Indian and Pacific Oceans and in the Mediterranean.

300. *Histiophorus gladius*. Sword-fish. Vern.: 'Myil-kola'.

Trevandrum, November.

It is known as 'Thalay' in Travancore.

The specimen exhibited in the Trevandrum Museum is a little over 9 ft. in length and its label bears the following legend:

'Cases of injury inflicted by this fish on unfortunate fishermen, have been treated in the General Hospital,

Trevandrum. In one of these about 9 inches of the sword, was taken from the fleshy part of the shoulder of one man, who while sitting on his catamaran had been wantonly attacked.'

301. *Histiophorus brevirostris*. Spear-fish. Vern.: 'Kattay-komben'. Trevandrum, March.

The spear-fish differs from the sword-fish in the moderately developed dorsal fin and in the presence of spines, representing the ventral fins. The Trevandrum specimen is a painted plaster cast, reproduced from the original which was 11 ft. 9 in. long.

Family XXVI. CORYPHÆNIDÆ

The Dolphins are swift, active and extremely voracious fishes, inhabiting the high seas of the warm regions. They are remarkable for their varying hues when taken out of water and on dying, and their diet chiefly consists of flying-fishes. They occur in the Atlantic and Indian Oceans and the Mediterranean

302. *Coryphæna hippurus*. Dolphin. Trevandrum, August.

Family XXVII. PLEURONECTIDÆ

'The Flat-fishes or Turbots live in sandy gravelly shores. The young are symmetrical in shape; but in the course of development there is a deviation from the bilateral symmetry characteristic of the Craniate Vertebrates. The body becomes laterally compressed, and the fish instead of turning over on one side, swims vertically; the eye of this side travels round till it comes close to the other eye, so that both eyes are on one side of the head. There is a distortion of the skull and a fusion of the dorsal and anal fins and there is also a blind side to the body, which is white, the upper being brown.'

Flat-fishes occur in all seas, some in estuaries and some exclusively in fresh-water. They are absent from rocky shores.

303. *Synaptura commersonianus*. Sole. Vern.: 'Nauku'. Trevandrum, August.
304. *Synaptura orientalis*. Sole. Vern.: 'Sappathi'. Trevandrum, August.
305. *Synaptura multifasciata*. Sole. Vern.: 'Sappathi'. Trevandrum, September.
306. *Cynoglossus dubius*. Sand-sole. Vern.: 'Sappathi'. Trevandrum, October.
307. *Cynoglossus brevis*. Sand-sole. Vern.: 'Nauku'. Alleppy, October.
Only in the Hoogly at Calcutta *F.B.I.*
308. *Cynoglossus brachyrhynchus*. Sand-sole. Vern.: 'Nauku'. Trevandrum, November.
309. *Cynoglossus bengalensis*. Sand-sole. Vern.: 'Nauku'. Trevandrum, October.
310. *Cynoglossus*, *sp.* Sand-sole. Vern.: 'Nauku'. Trevandrum, October.

311. *Psettodes erumei*. Flat-fish. Vern. : ' Yerumay-nauk ' .
Trevandrum, June.
312. *Pseudorhombus arsius*. Tile-fish. Vern. : ' Manangu ' .
Trevandrum, June.
313. *Pseudorhombus javanicus*. Tile-fish. Vern. : ' Manangu ' .
Trevandrum, September.
314. *Pseudorhombus triocellatus*. Tile-fish. Vern. : ' Pulli-manangu ' .
Trevandrum, September.
315. *Plagusia marmorata*. Tile-fish. Vern. : ' Olay-manangu ' .
Trevandrum, March.

Family XXVIII. GOBIIDÆ

A family of cosmopolitan fishes of carnivorous habits and small size, haunting rocky coasts. The pelvic fins are fused together to form a ventral suction disk, which enables the fish to attach itself to rocks and withstand the force of raging waves.

Some are marine, some brackish-water forms and some fresh-water immigrants.

316. *Elcotris fusca*. Goby. Vern. : ' Kuthira-vaulay ' .
Trevandrum, November.
317. *Eleotris butis*. Goby. Vern. : ' Kuthira-vaulay ' .
Trevandrum, November.
318. *Gobius giurus*. Goby. Vern. : Poonthy ' .
Trevandrum, September.
319. *Gobius tentacularis*. Goby. Vern. : ' Poonthy ' .
Quilon, April.
320. *Gobius striatus*. Goby. Vern. : ' Kadel Uluvay ' .
Trevandrum, January.
321. *Gobius personata*. Goby. Vern. : ' Uluvay ' .
Trevandrum, January.
322. *Gobius griseus*. Goby. Vern. : ' Uluvay ' .
Trevandrum, May.
323. *Apocryptis bato*.
Cape Comorin, December.

Family XXIX. ECHENEIDÆ

Edible carnivorous fishes, having the spiny dorsal fin modified into a flat laminated disk by means of which, they attach themselves to sharks, turtles and even ships, or any floating object in the sea, and profit by the refuse of the shark's dinner or offal thrown overboard.

In Cuba and Jamaica, they are used for hunting by fishermen who attach to their tail a strong cord of palm-fibre, which serves to draw them out of the water along with the prey.

324. *Echeneis naucrates*. Sucker-fish. Vern. : ' Uru-kunjoo ' .
Trevandrum, October.
325. *Echeneis remora*. Sucker-fish. Vern. : ' Uru-kunjoo ' .
Trevandrum, September.

Family XXX. SCORPÆNIDÆ

Carnivorous marine fishes of viviparous habits, for the most part of small size. They have a stay or buttress across the cheek and the head which is large. The opercles are armed with poisonous spines, and in some species are transformed into poison glands.

The majority are found among coral groves and their fin-rays are curiously elongated and fringed. Some are ugly, others remarkable for their brilliant color. The young are born when about one-fourth of an inch long. The flesh is relished by the poor.

326. *Scorpaena bleekeri*. Scorpion-fish. Vern. : 'Moochay'.
Cape Comorin, February.
327. *Scorpaena armata*. Scorpion-fish. Vern. : 'Moochay'.
Cape Comorin, February.
328. *Scorpaena venosa*. Scorpion-fish. Vern. : 'Moochay'.
Cape Comorin, October.
Coromandel Coast of India, F.B.I.
329. *Pterois miles*. Vern. : 'Thoombay'.
Cape Comorin, October.
330. *Pterois russellii*. Vern. : 'Thoombay'.
Cape Comorin, October.
331. *Pterois antennata*. Vern. : 'Thoombay'.
Cape Comorin, November.
332. *Pterois zebra*. Vern. : 'Vari-thoombay'.
Cape Comorin, November.
333. *Apistus carinatus*. Vern. : 'Vari-thoombay'.
Trevandrum, September.
334. *Gymnopistus dracæna*. Vern. : 'Vari-thoombay'.
Cape Comorin, February.
335. *Minous monodactyla*.
Cape Comorin, February.

Family XXXI. PLATYCEPHALIDÆ

The Crocodile-fishes, also known as Spiny-heads, inhabit the Indian ocean and the Western Pacific. They are bottom fishes, and their colour is protective. Only one genus, consisting of two species, is represented in Travancore.

336. *Platycephalus scaber*. Crocodile-fish. Vern. : 'Orathay'.
Trevandrum, June.
337. *Platycephalus insidiator*. Crocodile-fish. Vern. : 'Ullpathi'.
Trevandrum, June.

Family XXXI. DACTYLOPTERIDÆ

The Flying Gurnards are edible fishes of elongate form, characterized by a covering of osseous keeled scales, with the head completely mailed. The pectoral fins, which are enormously developed and wing-like, are divided into two portions, and the flight of the fish, which consists of long or short leaps, is effected by the stout tail and the caudal fin. The eggs are pelagic and buoyant, and are found in almost all warm seas.

338. *Dactylopterus orientalis*. Flying Gurnard. Vern.: 'Aneithoombi'.
Trevandrum, May.

Family XXXIII. URANOSCOPIDÆ

The Star-gazers are rapacious fishes, lying in ambush at the seabottom in shallow water. Eyes on top of head and capable of being raised or depressed at will. They chiefly inhabit the warm temperate seas of both hemispheres.

339. *Uranoscopus guttatus*. Star-gazer. Vern.: 'Manathu-kanni'.
Trevandrum, October.
340. *Ichthyscopus inermis*. Star-gazer. Vern.: 'Nelam-kodanjan'.
Trevandrum, November. Not uncommon.

Family XXXIV. BLENNIIDÆ

The Blennies are shore-fishes, resembling the Gobies in size, with a covering of soft shining skin, which is either naked or scaly.

They inhabit brackish and fresh-water on rocky shores where they lurk about the crevices of rocks, among sea-weeds or under stones. Some are oviparous and some viviparous; some carnivorous, others herbivorous. They are known as jumping-fishes.

341. *Salarias steindachneri*. Blenny. Vern. 'Kallappi'.
Cape Comorin, January.
342. *Salarias kirki*. Blenny. Vern. 'Kallappi'.
Covalum, May
343. *Salarias bilitonensis*. Blenny. Vern. 'Kallappi'.
Cape Comorin, November.
344. *Salarias unicolor*.
Cape Comorin, January.

Family XXXV. BATRACHIDÆ

The Toad-fishes are creatures of sluggish habits ascending rivers. The males take care of the brood. They occur in the tropical warm seas and are not edible.

345. *Batrachus grunniens*. Toad-fish. Vern.: 'Thavala-meen'.
Cape Comorin, November.

Suborder 8. *Opisthomi*

Family I. MASTACEMBELIDÆ

The Spiny-Eels are edible carnivorous, fresh and brackish-water fishes of Southern Asia and tropical America. Dorsal and anal fins confluent.

346. *Rhynchobdella aculeata*. Thorn-backed Eel. Vern.: 'Aural'.
Trevandrum, October.
347. *Mastacembelus armatus*. Spiny Eel. Vern.: 'Kal-aural'.
Trevandrum, October.
348. *Mastacembelus guentheri*. Spiny Eel. Vern.; 'Kal-aural'.
Trevandrum, October.

Suborder 9. *Pediculati*.

Family I. ANTENNARIIDÆ

Body compressed, tumid. Dorsal fin modified into tentacles and the carpal bones, into a long arm-like appendage.

The Frog-fishes lead an inactive life on the bottom of coral reefs, where they lie in wait for prey. Their brilliant color harmonises with that of the sea-weeds, and is protective.

349. *Antennarius mummifer*. Frog-fish. Vern.: 'Moochay.'
Trevandrum, November.

Family II. MALTHIDÆ

Head and body covered with bony tubercles or spines. Spinous dorsal absent or reduced to a more or less developed tentacle, lodged in a cavity under the snout.

350. *Haliutea stellata*. Bat-fish. Vern.: 'Vavvaul-meen'.
Trevandrum, September.

Suborder 10. *Plectognathi*.

Family I. TRIACANTHIDÆ

The body is covered with hard prickly scales, with a pair of strong erectile ventral fins. Pelvis present.

351. *Triacanthus strigilifer*. Vern.: 'Klauthi'.
Trevandrum, November.
352. *Triacanthus indicus*. Vern.: 'Komben-klauthi'.
Trevandrum, July.

Family II. BALISTIDÆ

This family comprises the File-fishes which are covered with juxtaposed movable scutes or rough spines. Teeth in jaws powerful and incisor-like, which enable the fish to break off pieces of coral or hard-shelled molluscs, on which they live.

The flesh has a rank odour and the poorer classes eat it on account of its cheapness.

The file-fishes occur around coral reefs; their rough skin is used as a substitute for sand-paper and the largest specimen is said to reach upwards of 3 feet in length.

They are found in the tropical parts of the Atlantic and the Mediterranean, beside the Indian Ocean.

353. *Balistes mitis*. File-fish.
Cape Comorin, November.
354. *Balistes viredescens*. File-fish.
Colachel, August.
355. *Balistes erythrodon*. File-fish.
Trevandrum, December.
356. *Balistes stellaris*.
Trevandrum, December.
357. *Monacanthus scriptus*.
Trevandrum, August.

This fish is covered with rhomboidal scales which are rough and so small, as to give the skin a velvety

appearance. It is herbivorous, living among coral reefs.
The flesh of many is poisonous.

Family III. ORSTRACIONTIDÆ

The Ostracion or Trunk-fish, derives its name from the angulated box-like carapace or cuirass, composed of innumerable close-fitting juxtaposed hexagonal bony plates, forming a mosaic, sometimes with two horn-like projections in front above the eyes and two on either side behind the origin of the caudal fin. They live in shallow water near the bottom in the tropical seas.

358. *Ostracion turritus*. Coffe-fish. Vern. : 'Yavay'.
Trevandrum, June.
359. *Ostracion cubicus*. Coffe-fish. Vern. : 'Yavay'.
Trevandrum, December.
360. *Ostracion nasus*. Coffe-fish. Vern. : 'Yavay'.
Cape Comorin, July.
361. *Ostracion cornutus*. Coffe-fish. Vern. : 'Yavay'.
Cape Comorin, July.

Family IV. TETRODONTIDÆ

The name Globe-fish is applied to several fishes of the genera *Tetrodon* and *Diodon*. Body short and thick, either naked or covered with scutes or spines and inflatable. The bones of the jaws are confluent, forming a parrot-like beak, and present the appearance of four large front teeth, owing to a median suture on each jaw. The skin is naked or covered with movable spines, rarely with bony plates.

They haunt coral groves and live on molluscs, and they have the power of suddenly inflating the body by swallowing air and assuming a globular form, the spines become erect and form formidable weapons. They float at the surface of the sea on their backs; the flesh of some is regarded as poisonous, though others are said to be regularly eaten.

They inhabit all the tropical and warm seas; some enter estuaries and ascend rivers. Many of the *Tetrodons* make a croaking sound.

362. *Tetrodon inermis*. Globe-fish. Vern. : 'Paythay'.
Trevandrum, December.
363. *Tetrodon lunaris*. Globe-fish. Vern. : 'Paythay'.
Trevandrum, December.
364. *Tetrodon paloca*. Globe-fish. Vern. : 'Paythay'.
Cape Comorin, February.
365. *Tetrodon unimaculatus*. Globe-fish. Vern. : 'Paythay'.
Trevandrum, February.
366. *Tetrodon stellaris*. Globe-fish. Vern. : 'Paythay'.
Cape Comorin, November.
367. *Tetrodon fluviatilis*, Globe-fish. Vern. : 'Paythay'.
Trevandrum, February.

Family V. DIODONTIDÆ

Body covered with strong stout movable spines, which are erectile and constitute a defensive armour and an offensive weapon; these can be distinctly seen when the body is inflated. The jaws are topped with ivory-like enamel instead of teeth. They are undivided, so that there appears to be a tooth above and another below, whence the name of the family. The *Diodons* are innocent creatures until molested when they become truly formidable to deal with. In their inflated condition they are unable to swim but come to the surface, lying on their backs, and allow themselves to be carried along by the tide. They are destructive to sharks.

When they desire to revert to their normal condition, they expel the air or water from the gullet through the mouth.

368. *Diodon hystrix*. Porcupine-fish or Sea Hedge-hog. Vern. : Mulloo-paythay.

Trevandrum, March.

369. *Diodon maculatus*. Spotted Hedge-hog. Vern. : ' Pulli-paythay '.

Cape Comorin, November.