

COMMON WOLF-FISH



from life

ANARHICHAS. WOLF-FISH.

Generic Character.

<i>Caput</i> obtusiusculum.	<i>Head</i> rather obtuse.
<i>Dentes</i> primores supra infraque conici, divergentes, sex pluresve.	<i>Fore-Teeth</i> both above and below conical, divergent, strong, six or more in number.
<i>Molares</i> inferiores palatique rotundati.	<i>Grinders</i> in the lower jaw and palate rounded.
<i>Membr:</i> branchiostega radiis sex.	<i>Gill-Membrane</i> six-rayed.
<i>Corpus</i> teretiusculum. Pinnae caudæ distincta.	<i>Body</i> roundish. Tail-fin distinct.

COMMON WOLF-FISH.

Anarhichas Lupus. *A. lividus, fasciis transversis fuscis.*

Livid Wolf-Fish, with transverse brown bands.

Anarhichas Lupus. *Lin. Syst. Nat. p. 430.*

Anarhichas dentibus osseis. *Bloch. 3. p. 18. t. 74.*

Ravenous Wolf-fish. *Penn. Brit. Zool. 3. p. 157. pl. 24.*

I KNOW not that any thing material can be added to the descriptions of this fish by Mr. Pennant and Dr. Bloch. The former, in his *British Zoology*, informs us that it is confined to the northern regions of the globe, being met with in the seas of Green-

land, those of Iceland and Norway, and in some parts of the British coasts. It is a most fierce and ravenous fish, and when taken fastens on any thing within its reach: the fishermen, dreading its bite, endeavour, as soon as possible, to beat out its fore-teeth, and then kill it by striking it on the head: Schonfelde relates that its bite is so hard that it will seize on an anchor and leave the marks of its teeth behind; and we are informed by Steller that one which he saw taken on the coast of Kamtskatka seized with great violence a cutlass with which it was attempted to be killed, and broke it in pieces as if it had been made of glass. It feeds almost entirely on crustaceous animals and shell-fish, viz. crabs, lobsters, prawns, muscles, scallops, large whelks, &c. &c. these it grinds to pieces with its teeth, and swallows with the shells. It grows to a large size, being occasionally found on the British coasts of the length of four feet, but on the more northern coasts of Europe has been seen of the length of seven* feet: the head is a little flattened on the top; the nose blunt, the nostrils very small; the eyes small and placed near the end of the nose: the irides are pale yellow: the teeth are very remarkable, and finely adapted to its way of life: the fore-teeth are strong, conical, diverging a little from each other, and stand far out of the jaws: they are commonly six above, and as many below, though sometimes there are only five in each jaw: these teeth are supported withinside by a row of smaller

* According to Dr. Gmelin it has been found of the length of fifteen feet.

teeth, making the number in the upper jaw seventeen or eighteen, and in the lower eleven or twelve: the sides of the under jaw are convex inwards, which greatly adds to their strength, and at the same time allows room for the large muscles with which the head of this fish is furnished: the molares or grinders of the under jaw are higher on the outer than on the inner edges, which inclines their surfaces inwards: they join the canine teeth in that jaw, but in the upper are separate from them: in the centre are two rows of strong flat teeth, fixed on an oblong basis, upon the bones of the palate and nose: these and the grinding teeth are often found fossil, and in that state have been called *Bufonites* or *Toad-Stones*: they were formerly much esteemed for imaginary virtues, and were set in gold and worn as rings: the two bones that form the under jaw are united before by a loose cartilage, which mechanism admitting a motion from side to side, most evidently contributes to the design of the whole; viz. a facility of breaking, grinding, and comminuting its testaceous and crustaceous food: at the entrance of the gullet, above and below, are two echinated bones; these are very small, being the less necessary, as the food is in a great measure comminuted in the mouth by the aid of the grinders: the body is long, and a little compressed sideways: the skin smooth and slippery: the colour is an obscure livid brown, with several deeper transverse bands, which in some individuals are narrower and more irregular than in others: the pectoral fins are moderately large, rounded, and placed very near

the head: the dorsal fin commences almost immediately behind the head, and is continued as far as the tail, which is small and rounded: the vent-fin commences at a little more than half the distance of the whole animal from the head, and is continued, like the dorsal, as far as the tail.

Dr. Bloch observes that the skin of this animal is in reality beset with small scales, though the fish is by the generality of ichthyologists described as scaleless; an error arising from their small size, and their deep situation on the skin: they are thin, and placed at some distance from each other: the body is also marked by a lateral line, though described by Mr. Pennant as destitute of that part. Of three specimens of this fish examined by Dr. Bloch, one had six rows of grindlers in the upper jaw, and as many in the lower; another had six rows above, and four below; while a third had five above and three below.

Notwithstanding the ferocity of this fish, which is as dreadful to the small inhabitants of the water as the wolf is to those on land, it is said to be sometimes attacked and destroyed by an enemy of far inferior size and strength; viz. the Lump-Fish (*Cyclopterus Lumpus*), which fastens itself on its neck, and adheres immoveably; tormenting it in such a manner as to cause its death.

The Wolf-Fish commonly frequents the deep parts of the sea, and in spring-time approaches the coasts in order to deposit its spawn among the marine plants, &c. the ova are about the size of peas; and the young, according to Mr. Pennant,

are of a greenish cast, like that of the sea-wrack, among which they reside for some time after their birth.

The Wolf-Fish is taken both in nets and by the line, but much more rarely by the latter method, as it does not easily take the bait. Though the flesh is tolerable, yet from the forbidding appearance of the animal, it is rarely eaten in Europe, except by the fishermen: the Greenlanders however eat it, both fresh and dried, and make convenient satchels of the skin, in which they keep their utensils of various kinds.

The *Anarhichas strigosus*, mentioned in Dr. Gmelin's edition of the *Systema Naturæ*, seems to be nothing more than a variety in which the dusky bands of the body are narrower and somewhat less regular than usual, as in the specimen engraved in the *British Zoology*.

PANTHER WOLF-FISH.

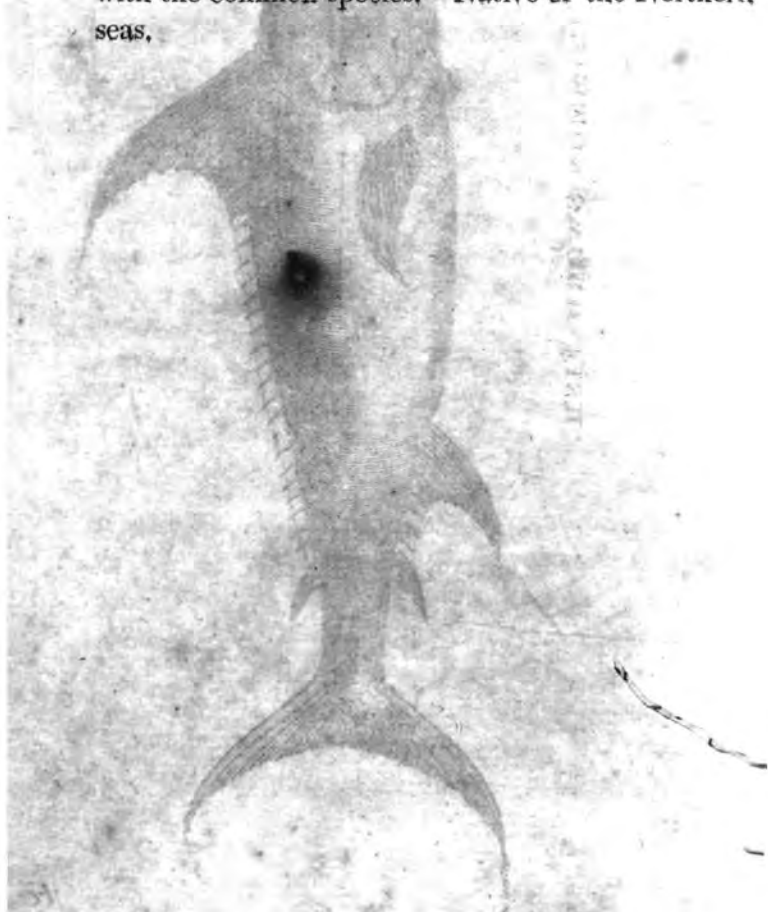
Anarhichas Pantherinus. A. flavus fusco maculatus.

Yellow Wolf-Fish, spotted with brown.

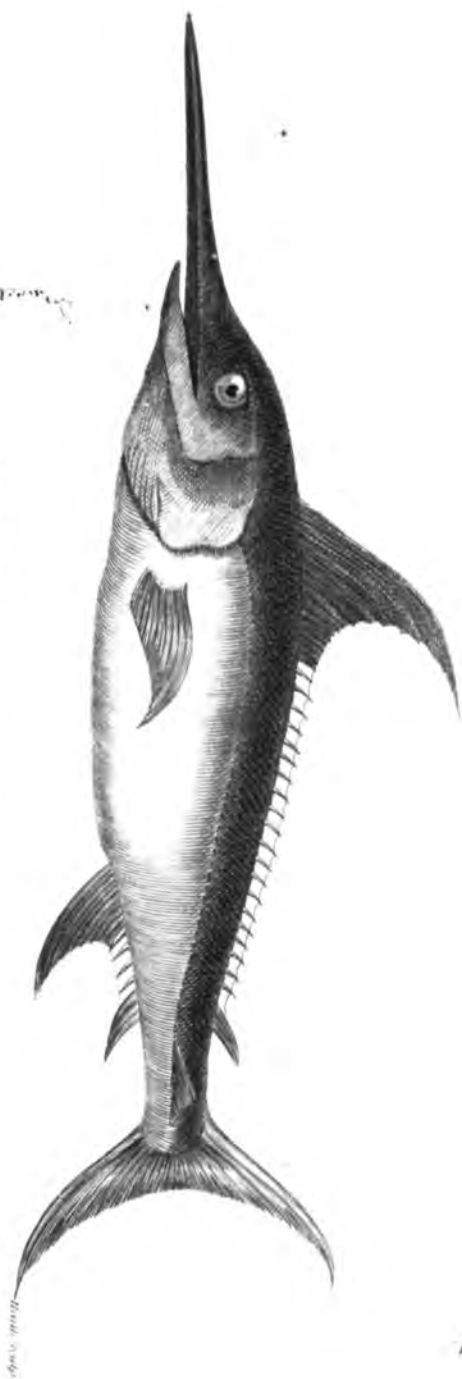
Anarhichas pantherinus. A. maculis per totum corpus rotundis fuscis. Lin. Syst. Nat. Gmel. p. 1144. Act. Petrop. 1781. p. 271. t. 6.

In its general appearance this is much allied to the preceding species, but differs greatly in colour, being of a deep yellow or fulvous, variegated on all parts with pretty numerous, round, deep brown or blackish spots of different sizes, the largest of

which are those on the back, upper part of the sides, and dorsal fin: the whole skin is of the same mucous or slippery nature as in the common Wolf-Fish, and is every where covered with small points or specks in place of scales: the head is roundish; the lips doubled; the eyes rather large, and the general disposition of the teeth the same as in the preceding: the length of such specimens of this fish as have hitherto been observed is about three feet or rather more: in other particulars it agrees with the common species. Native of the Northern seas.



COMMON SWORD-FISH.



XIPHIAS. SWORDFISH.

Generic Character.

<i>Caput</i> maxilla superiore terminatum rostro ensiformi.	Head with the upper jaw terminating in a sword-shaped snout.
<i>Os</i> edentulum.	Mouth without teeth.
<i>Membr. branch.</i> radiis octo.	Gill-Membrane eight-rayed.
<i>Corpus</i> teretiusculum, alepidotum.	Body roundish, without scales.

COMMON SWORDFISH.

Xiphias Gladius. *X. pinna dorsali postice attenuata.*

Swordfish with the dorsal fin attenuated at the hind part.

Xiphias Gladius. *Lin. Syst. Nat. p. 432.*

Xiphias. *Gesner. Will. Jonst. &c.*

Gladius. *Aldrov. l. 3. c. 21. p. 332.*

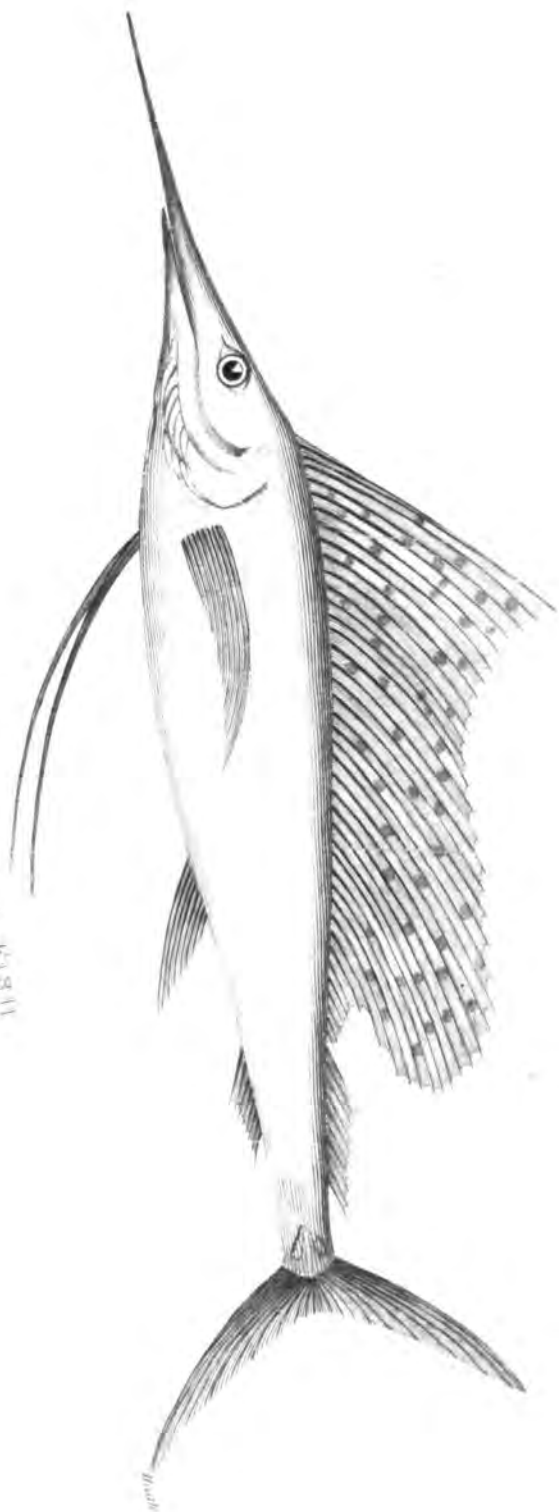
Sicilian Sword-Fish. *Penn. Brit. Zool. 4. p. 141. pl. 26.*

THE Swordfish, which is a native of the Mediterranean, and is mostly found in the Sicilian sea, grows to a very large size, sometimes measuring twenty feet in length, and is of an active and predacious disposition, feeding on the smaller kind of fishes, which it kills by piercing with its sword-shaped snout. The body is long, round, and gradually tapers towards the tail: the head flattish, the mouth wide, both jaws ending in a point, but the upper stretched to a great distance beyond the

lower: this part, which is commonly called the sword, is flattish above and beneath, and sharp on the sides: it is of a bony substance, covered by a strong skin or epidermis: down the middle of the upper part runs an impressed line or furrow, and three similar ones on the lower surface: the tongue is free or unconnected with the palate, and is of a strong texture, and in the throat are certain rough bones: the nostrils are double, and seated near the eyes, which are moderately large, and protuberant: the body is covered by a thin skin, having a thick fatty membrane lying beneath: the lateral line is placed near the back, and is formed of a series of longish black specks: the dorsal fin is very high at its commencement, and sinking suddenly, becomes very shallow, and is continued to within a small distance from the tail, terminating in an elevated process: the vent-fin is placed nearly opposite this part beneath, and is moderately small, and much wider at each extremity than at its middle: the pectoral fins are rather small, and of a lanceolate shape: the tail is large and crescent-shaped, and on each side the body, immediately before the tail, is a strong finny prominence or appendage. The general colour of the Swordfish is brown, accompanied by a deep steel-blue cast on the head and upper parts, and silvery white on the sides and abdomen.

Mr. Pennant observes that the ancient method of taking the Swordfish, particularly described by Strabo, agrees exactly with that practised by the moderns at the present day. A man ascends one

Illustration of a fish, likely a mackerel, showing its elongated body, pointed snout, and large, fan-like pectoral fins. The text "Illustration of a fish, likely a mackerel, showing its elongated body, pointed snout, and large, fan-like pectoral fins." is written vertically along the left side of the image.



of the cliffs that overhang the sea, and as soon as he spies the fish gives notice, either by his voice or by signs, of the course it takes. Another person, stationed in a boat, climbs up the mast, and, on seeing the fish, directs the rowers to it. As soon as he thinks they are got within reach, he descends, and taking a spear in his hand, strikes it into the fish, which, after wearying itself with its agitations, is seized and drawn into the boat. It is much esteemed by the Sicilians, who cut it in pieces and salt it: this process was anciently performed particularly at the town of *Thurii* in the bay of *Tarentum*, and hence the fish was called *Tomus Thurianus**.

The Swordfish is occasionally found not only in the Mediterranean but in the Northern seas, and sometimes in the Pacific: it is probable however that it has been often confounded with a different species more common in that ocean,

 BROAD-FINNED SWORDFISH.

Xiphias Platypterus. *X. pinna dorsali latissima, appendicibus pectoralibus acuminatis longissimis.* *

Swordfish with extremely broad back-fin, and very long sharp-pointed thoracic appendages. *Nat. Miscell.* vol. 3. pl. 88.

Guebucu. *Marcgr. Bras. l. 4. c. 15. p. 71.*

Scomber Gladius. *S. rostro ensiformi.* *Bloch.* 10. p. 69. t. 345.

In the appearance of the long and sharp-pointed process of the upper jaw this species is very nearly

* *Plin. l. 32. c. 11.*

allied to the common Swordfish, but differs in other striking particulars. It is found of the length of twenty feet, and even sometimes much longer. It was first described by Marcgrave in his *Natural History of Brasil*, who has illustrated his description by a figure, which though not possessing any degree of elegance, is yet sufficient to ascertain the animal. The general colour of this fish is a silvery blueish white, except on the back, head, tail, and fins, which in the living animal are of a deep-blue, fading into brown in the dried specimens, one of which is preserved in the British Museum, to which collection it was presented by Sir Joseph Banks, Bart. President of the Royal Society. Some years ago a letter was sent to the President from the captain of an East-Indiaman, accompanied by an account of an astonishing instance of the powerful strength which this fish occasionally exerts; the bottom of the ship having being pierced through by a fish of this species in such a manner that the sword or snout was completely imbedded or driven through almost to its base; the animal having been killed by the violence of the effort. A most singularly fortunate circumstance for the preservation of the vessel, which, had the fish been enabled to have withdrawn its snout, must inevitably have foundered in consequence of the leak. The wood, together with the sword imbedded in it, is now in the British Museum.

This fish is found not only in the Brazilian and East-Indian seas, but also in the Northern ocean. It is said to be a great enemy to whales, with

which it is reported to have frequent combats. It is remarkable that Pliny mentions the circumstance of the Swordfish being able to transfix vessels; which has generally been regarded as one of those exaggerations so frequent in the works of the ancient naturalists: but since the present fish is well known to possess this power, (several other equally well attested accounts having been received within these few years), it is surely no improbable supposition that Pliny, though not conscious of the difference, in reality spoke of this very species, which at that time was doubtless confounded with the common Swordfish.

In the arrangement of this animal I have ventured to differ from Dr. Bloch, who, notwithstanding its general appearance, its sword-shaped snout, and other particulars in which it evidently proclaims itself a genuine *Xiphias*, has placed it among the *Thoracic Fishes* as a species of the genus *Scomber*, considering the long processes beneath the breast as a kind of pectoral fins. Dr. Bloch seems also to have considered the finny processes above and below the tail, together with the prominences on each side that part, as sufficient to justify his classification of the animal. It may be added that Piso, in his description of this fish, compares its viscera to those of the Tunny.

Dr. Bloch informs us that when this species does not exceed the length of about four feet, it is considered as an eatable fish, but is too coarse when it exceeds that length.

SHORT-SNOURED SWORDFISH.

Xiphias Makaira. *X. nigricans*, rostro mediocri, cauda utrinque tuberculis duobus osscis.

Blackish Swordfish, with snout of middling length, and two bony tubercles on each side the tail.

Le Makaira noiratre. *Cepede pisc.* 4. p. 689. pl. 13. f. 3.

THIS species, which has but lately been discovered, is described by Cepede under the title of *Makaira*. Its general appearance resembles that of the common Swordfish: it seems also to equal that species in size; the principal difference consisting in the much shorter and thicker appearance of the sword-like process of the upper jaw in proportion to the rest of the animal: the lower jaw is about half the length of the upper, and the mouth is destitute of teeth: the eyes are large and round: the gill-covers rounded behind, and composed each of two pieces: the pectoral fins are very narrow and about the same length with the upper jaw: the first dorsal fin is large, and gradually sinks as it passes down the back: it is capable of being so far depressed or lowered at the pleasure of the animal, as to rise but little above the outline of the back: beyond this, at a small distance from the tail, is a second fin, of nearly similar shape, but of much inferior size, and the vent-fin, which is placed opposite to this, is but little larger: the tail is large and crescent-shaped, and is marked by numerous black spots, and on each side the tail are two oblong



SHORT-SPINED SWORD-FISH.

sharpish prominences or bony tubercles. This fish was cast on the isle of Rhe, near Rochelle in France. Its length was 330 French centimetres, and its weight 365 kilogrammes: its colour was blackish: it was eaten by many of the inhabitants of Rochelle, and was found to be tolerable food, though somewhat dry: the flesh was white: on inspecting the mouth it was observed that the palate was extremely rough.

It is probable, as the Count de Cepede observes, that this species has hitherto been confounded with the common Swordfish, and that it is an inhabitant of the same seas.

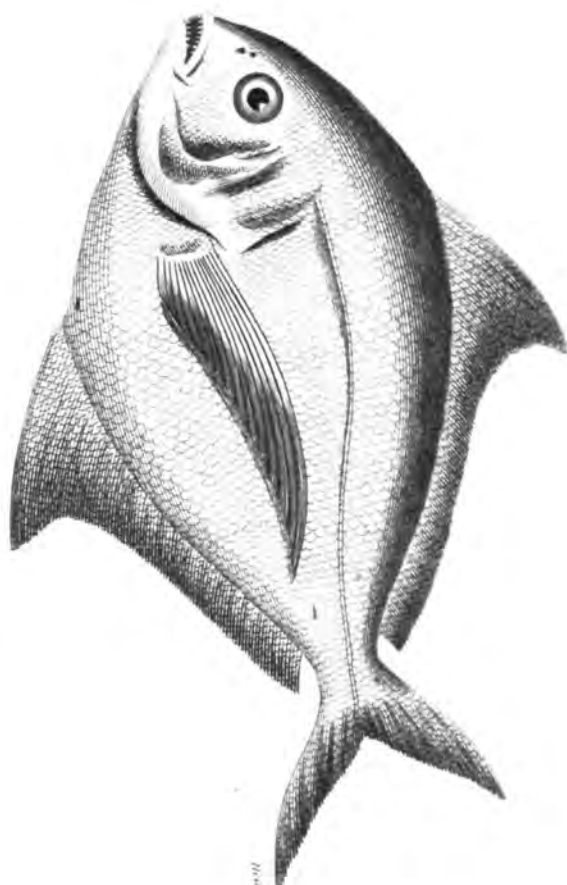
ROUND-SNOURED SWORDFISH.

DESCRIBED by Cepede from the sword or snout, preserved, with the fore-part of the head, in the Paris Museum. It differs from the snout of the common Swordfish in being convex above, instead of flattish, as in that species, and in having the sides perfectly rounded or incapable of cutting: it is also nearly cylindric in its shape, whereas that of the common Swordfish is much depressed: it has three longitudinal furrows above, and one beneath: (the Count de Cepede however seems mistaken in supposing that there are no furrows on that of the common Swordfish, though they are differently placed from those of the present): the skin with

which it is covered is of a very rough or shagreen-like surface; the tubercles being much larger than on the common species, and on the under surface or mouth, they are prolonged into a kind of small, curved teeth, lying in a reversed direction.



STRIPED SPROMATI



Smith. Acad.

STROMATEUS. STROMAT.

Generic Character.

<i>Caput</i> compressum.	<i>Head</i> compressed.
<i>Dentes</i> in maxillis, palato.	<i>Teeth</i> both in jaws and palate.
<i>Corpus</i> rhombeo-ovatum, compressum, lubricum.	<i>Body</i> rhombic-ovate, compressed, lubricous,

STRIPED STROMAT.

Stromateus Fiatola. S. Argenteo-cærulescens, fasciis undulatis transversis.

Blueish-silvery Stromat, with transverse undulated bands.

Stromateus Fiatola. S. subfasciatus. Lin. Syst. Nat. p. 432.

Fiatola Romæ dicta. Gesn. Jonst. Will. &c.

THIS species, though a native of the Mediterranean, seems to be somewhat less distinctly known than the rest of the genus. It is described by Belon, Aldrovandus, Willughby, and others, as of a broad and flat form, but thin, the body being much compressed laterally: its colour on the upper parts is blue, of the sides and abdomen silvery; the whole body being marked transversely by numerous undulated or rather zigzag lines of a yellowish or golden cast, and the lips edged with red: on each side the body are two lateral lines, one of which, viz. that nearest the back, is curved; the other

nearly strait: the mouth is small, the tongue large and smooth; in both jaws is a row of minute teeth, and in the palate are two rough bones; the eyes are small, placed near the mouth, and have silvery irides: the skin is covered with very minute scales: the pectoral fins are rather small, with very numerous rays: the dorsal fin commences at about a third part of the length of the whole animal from the head, and is continued almost to the beginning of the tail: it is of a thickish nature, being covered by the common skin: the tail is considerably forked: the vent-fin resembles the dorsal, but commences at a greater distance from the head. This fish is said to be not uncommon in some parts of the Mediterranean, and is known to the modern Romans by the name of *Fiatola*.

PARU STROMAT.

Stromateus Paru. S. dorso aureo, abdomine argenteo. Linn. Syst. Nat. Gmel. p. 1148.

Stromat with gold-coloured back and silvery abdomen.

Stromateus striis carens. Bloch. 5. p. 63. t. 160.

THIS, which is a native of the South-American seas, is of a bright gold-colour on the upper parts, which gradually sinks into bright silver on the lower: the whole body is covered with small, tender scales, which are easily detached from the skin: the fins themselves are also scaly: the head is of moderate size, and brownish in front; the jaws of equal length, and armed with numerous sharp-

pointed teeth: the tongue large and smooth: in the throat are certain rough bones, serving to retain the prey: between the eyes and mouth are two foramina: the gill-covers consist each of a single piece: the lateral line, which is nearer the back than the abdomen, is rather broad, and is curved in the direction of the back. This species is said to be much esteemed as a food. Its general size is that of a turbot.

ASH-COLOURED STROMAT.

Stromateus Cinereus. S. cinereus, cauda furcata, lobo inferiore longiore.

Ash-coloured Stromat with forked tail, the lower lobe longer than the upper.

Stromateus cinereus. S. parte inferiore pinnae cauda longiore.
Bloch. 12. p. 81. t. 420.

THE body of this species is of a somewhat more rhomboid form than that of the preceding, and the fins are somewhat more extended or pointed: the tail is more deeply forked, and the lower lobe considerably exceeds the upper in length: the colour of the whole animal is cinereous, with a cast of yellow on the sides of the head and the base of the fins and tail: the pectoral fins are tinged with red. It is a native of the Indian seas, and grows to about the length of a foot or more, and about the thickness of two inches: it is considered as ex-

cellent for the table, those which are largest being generally preferred: the bones are said to be of a soft or nearly cartilaginous nature, and the ribs but few in number: the residents in India use this fish both in its fresh and salted state, prepared in various ways: the native name is *Pampel*.

SILVER STROMAT.

Stromateus Argenteus. . *S. argenteus caudæ lobis æqualibus.*

Silvery Stromat, with the lobes of the tail equal.

Stromateus argenteus. . *S. partibus utrisque pinnæ caudæ æqualibus.* Bloch. 12. p. 83. t. 421.

OF the same general form with the preceding, but with rather shorter fins and tail, the lobes of the latter being both of equal length: the mouth is situated considerably beneath the muzzle, which is thick and round, the colour of the whole animal is bright silver, with a blueish or dusky tinge on the back and fins: the scales are small, thin, and easily deciduous. It is a native of the same seas with the preceding, and is in equal estimation as an article of food.

BLACK STROMAT.

Stromateus Niger. S. totus nigricans.

Stromat entirely of a blackish colour.

Stromateus niger maxillis æqualibus. Bloch. 12. p. 85. t. 422.

GREATLY allied to the former in shape, but the mouth is placed in the usual manner, the upper part of the muzzle not rising above it, as in that species: the colour of the whole animal is blackish, with a silvery cast about the breast and sides of the head: the scales are small, and the lateral line, as in others of the genus, is curved in the direction of the back. Native of the Indian seas: not much esteemed as an article of food, on account of a popular prejudice entertained against it from its colour, as well as from its feeding on onisci, which are occasionally found in its mouth.

It may be observed that there is a considerable degree of general resemblance between the habit of the genus *Stromateus* and that of *Chætodon*; but as the *Stromats* are destitute of ventral fins, they cannot be placed in the same artificial order, and must rank among the *Apodes*. The same is the case with some other genera, which are naturally allied to fishes placed in very different orders. This forms the greatest objection to the Linnæan arrangement of Fishes: it would however be difficult to prove that a more natural distribution would lead to a readier investigation of the animals.

STERNOPTYX. STERNOPTYX.

Generic Character.

<i>Caput</i> obtusum.	<i>Head</i> obtuse.
<i>Os</i> simum.	<i>Mouth</i> abrupt.
<i>Dentes</i> minutissimi.	<i>Teeth</i> very minute.
<i>Membrana branch.</i> nulla.	<i>Gill-membrane</i> none.
<i>Corpus</i> compressum, alepidotum; <i>sterno</i> carinato bifariam plicato; <i>abdomine</i> pellucido.	<i>Body</i> compressed, without visible scales; <i>breast</i> carinate, folded both ways; <i>abdomen</i> pellucid.

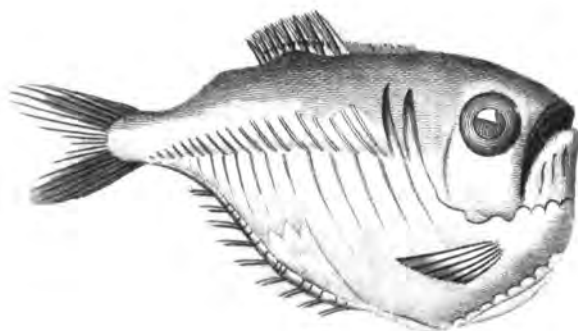
TRANSPARENT STERNOPTYX.

Sternoptyx Diaphana. *S. argentea*, *sterno carinato*, *abdomine pellucido*.

Silvery Sternoptyx, with carinated breast, and pellucid abdomen.

Sternoptyx diaphana. *Lin. Syst. Nat. Gmel. p. 1150. Hern. Naturf. 16. p. 8. t. 1. f. 1. 2.*

THE small fish from which this genus is instituted is a native of the American seas, and is described as of the general length of two or three inches; the shape broad, and pretty much compressed; the back rising into a sharp edge, and the abdomen terminating in a carina: the eyes are large; the mouth rather wide, and suddenly descending, so as to appear abrupt when viewed in front: the breast

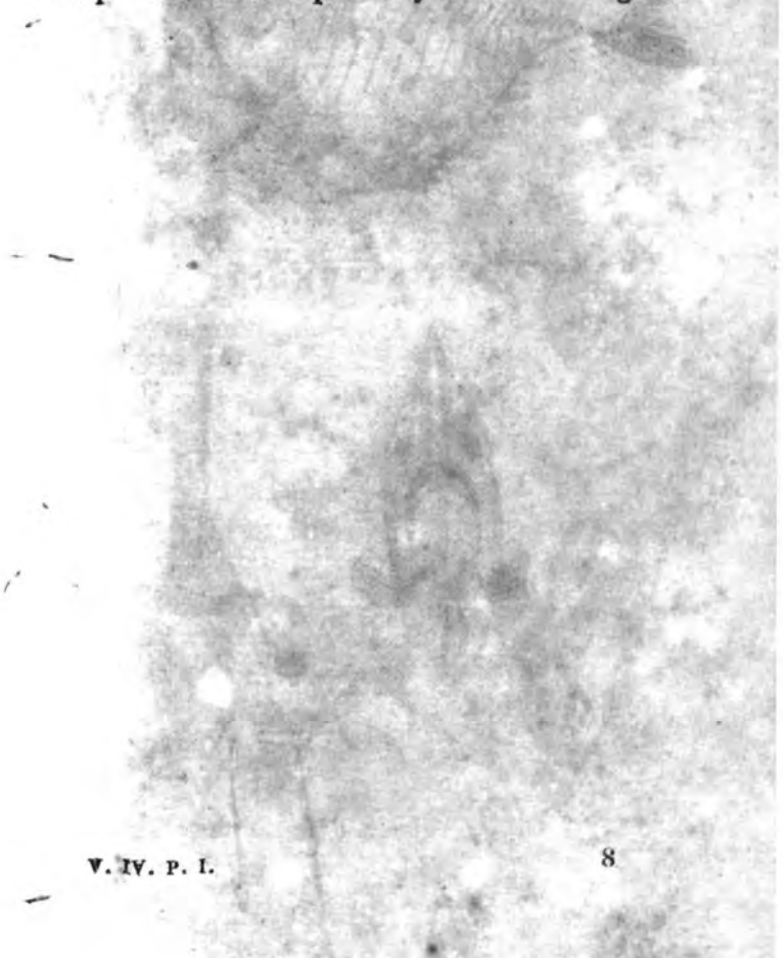


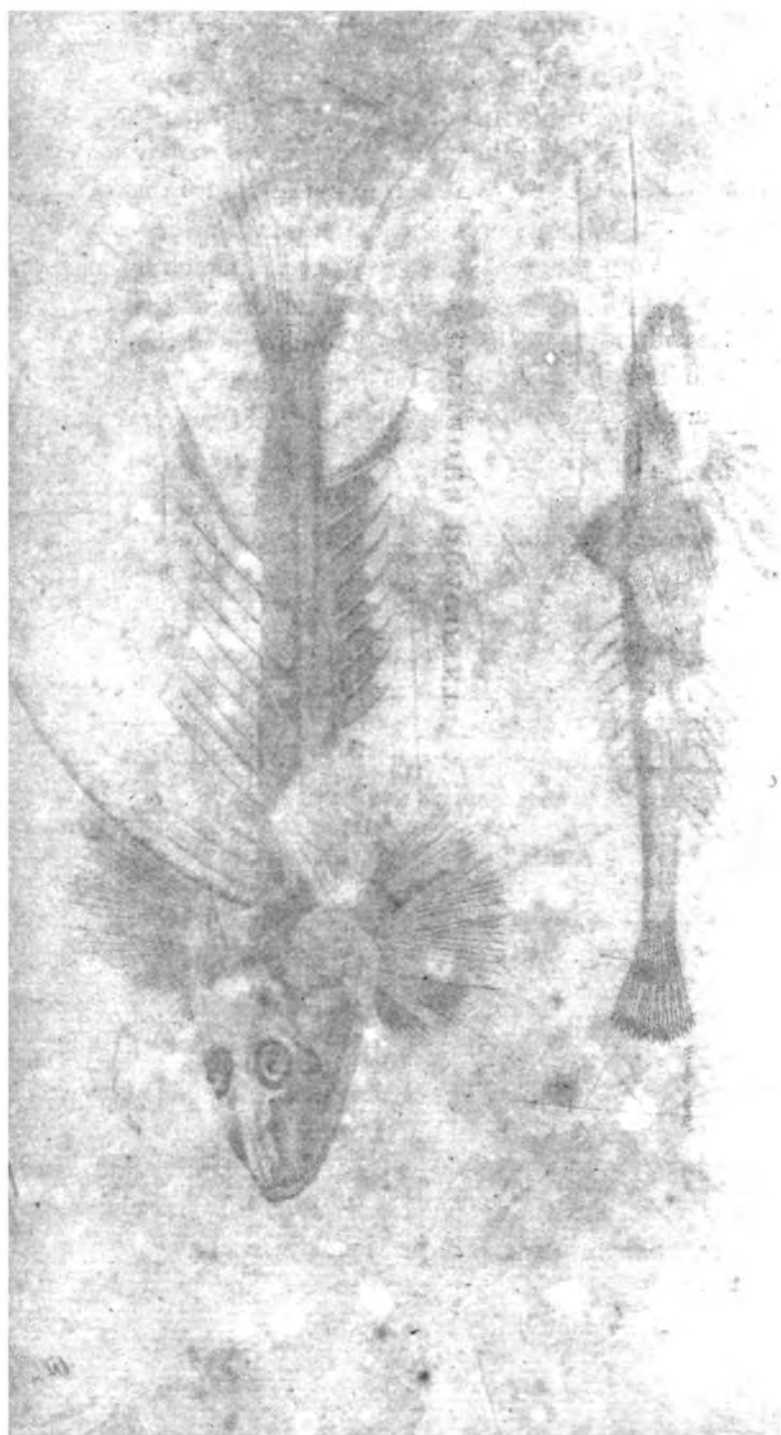
TRANSPARENT STERNOPTYX.



Heath sculp.

is disposed into a kind of folds on each side, so as to form a pellucid ridge; the pectoral fins are small: the dorsal short, and furnished with an extremely thick and strong ray at its origin: the anal fin is shallow, with distant rays, and extends a considerable way from the vent towards the tail, which is slightly forked. The general colour of this fish is a bright silver; the back inclining to olive, and the fins and tail dull yellow. The particulars of its shape are best exemplified by the annexed figure.







GEMMEOTS DRAGONET.



SCORPIO DRAGONET.

Scorpio

FISHES.

ORDER

JUGULARES.

CALLIONYMUS. DRAGONET.

Generic Character.

<i>Oculi</i> verticales, approxi- mati.	<i>Eyes</i> vertical, approxi- mated.
<i>Opercula</i> clausa, apertura branchiali utrinque in nucha.	<i>Gill-covers</i> shut, with a small aperture on each side the neck.
<i>Membr. branch.</i> radiis sex.	<i>Gill-Membrane</i> six-rayed.
<i>Corpus</i> nudum: Pinnæ ven- trales remotissimæ.	<i>Body</i> naked, ventral fins very remote.

GEMMEOUS DRAGONET.

Callionymus Lyra. *C. radio primo pinnæ dorsalis prioris longi-
tudine corporis.*

Dragonet with the first ray of the first dorsal fin as long as the
body.

Callionymus Lyra. *C. dorsalis prioris radiis longitudine corporis.*
Lin. Syst. Nat. p. 433.

Dracunculus. *Gesner.* Cottus. *Aldrov. Jonst. Will. Artedi.*

Gemmeous Dragonet. *Penn. Brit. Zool. 3. p. 145. pl. 27.*

THIS beautiful fish has obtained its specific title from the peculiar form of its first dorsal fin, the shape of which bears a fancied resemblance to that of an ancient lyre or harp. It is a native of the Mediterranean and Northern seas, and measures, when full grown, about a foot in length. The head is large and of a somewhat depressed form: the mouth wide, and the teeth small and numerous: the eyes are placed near each other on the upper part of the head: the gill-covers are joined to the skin of the body, in such a manner as to leave only two small openings on the top of the neck: the body is of a taper form, smooth, and destitute of visible scales: the pectoral and ventral fins are large, rounded, and of a peculiarly thin and delicate structure: the first dorsal fin is of a triangular outline, the first ray extending far beyond the rest, which are very few in number, rarely exceeding four or five. Like most other fishes the Dragonet varies slightly in colour in different individuals and at different seasons of the year; but when in full perfection, generally corresponds with the description given by Mr. Pennant in the *British Zoology*, viz. “the pupils of the eyes rich sapphirine blue; the irides fine fiery carbuncle: the pectoral fins light brown: the side-line strait: the colours of the fish yellow, blue, and white, making a beautiful appear-

ance when fresh taken: the blue is of an inexpressible splendor; the richest cærulean, glowing with a gemmeous brilliancy: the throat black." In the Philosophical Transactions, vol. 24, this fish is described by Dr. Tyson under the name of Yellow Gurnard: Dr. Tyson seems to have ranked it among the Gurnards from its general habit, as well as from the sharp processes of the gill-covers, each of which, at its end, is armed with a triple spine. Linnæus once considered it as a species of *Trachinus* or Weeyer, and Gronovius referred it to the genus *Uranoscopus*.

SORDID DRAGONET.

Callionymus Dracunculus. C. pinnae dorsalis prioris radiis corpore brevioribus. Lin. Syst. Nat. Gmel. p. 1152.

Dragonet with the rays of the first dorsal fin shorter than the body.

Dracunculus. Will. ichth. p. 136.

Callionymus radiis 4 in pinna dorsali brevibus. Bloch, 5. t. 162.

Sordid Dragonet. Penn. Brit. Zool. 3. p. 147. pl. 28.

This species seems so nearly allied to the preceding, that it may perhaps be doubted whether it may not be in reality the same animal in a less advanced state. It is thus described by Mr. Pennant. "Length six inches and a half: head compressed; forehead sloping down to the nose, being not so level as that of the preceding: eyes large

and almost contiguous: mouth small; teeth very minute: over the gills a strong, trifurcated, broad spine: the first dorsal fin had four rays; the first setaceous, extending a little higher than the others; the last very short: the two first rays and webs yellow, the others black: the second had ten soft rays, their ends extending beyond the webs, which were pellucid: the pectoral fins consisted of twenty rays, and were ferruginous, spotted with a deeper cast of the same: the ventral fins consisted of five broad and much-branched rays, like those of the first species: the anal fin was white, and had ten rays: the tail had ten rays: in both species they are bifurcated at their ends, and the ray next the anal fin is in both very short. In colour this species is far inferior to the former, being of a dirty yellow, mixed with white and dusky spots: the belly is entirely white." This fish, like the preceding, is a native of the Mediterranean and Northern seas: both are numbered among edible fishes, and are supposed to live principally on worms and sea-insects.

INDIAN DRAGONET.

Callionymus Indicus. *C. capite laevi longitudinaliter rugoso, operculis latere aperiendis.* *Lin. Syst. Nat. p. 434.*

Dragonet with smooth head longitudinally wrinkled, and gill-covers opening at the sides.

THIS species is a native of the Asiatic seas, and is described by Linnæus as having the head de-

pressed, and wrinkled in a longitudinal direction; the mouth rough; the tongue obtuse and emarginated, and the lower jaw rather longer than the upper: the branchial apertures large and lateral: the fore part of the gill-covers furnished with a double spine, and the hind part with a single one: the body much depressed, and of a livid colour: the vent situated in the middle of the abdomen; the first ray of the first dorsal fin very short and remote from the rest: the ventral fins very remote from each other. Linnæus adds that it is a kind of intermediate species, between the Callionymi, the Trachini, and the Uranoscopi.

BAIKAL DRAGONET.

Callionymus Baikalensis. C. pinnis ventralibus nullis, dorsali prima minima, secundæ radius cirrhiferis. Lin. Syst. Nat. Gmel. p. 1153. Pall. it. 3. p. 707.

Dragonet without ventral fins, the first dorsal fin very small, and the second furnished with cirrhiferous rays.

THIS species is described by Dr. Pallas, and is an inhabitant of the deepest parts of the Lake Baikal, from whence it occasionally wanders during the summer months to the shores, appearing in considerable numbers: the head is large, somewhat quadrangular at the base and flat at the top, with two tubercles on each side: the eyes are large and black: the snout broad and depressed, and the

mouth very wide: the mandibles thick at the edges, the lower projecting beyond the upper: both are internally beset with small curved hooks or teeth, but the lower is smooth at the tip and subacute: the gill-membrane is lax and furnished with very remote cartilaginous rays: the pectoral fins are lax and very long, equaling half the length of the body, and have very slender stiff rays: the rays of the second dorsal fin are also slender, and fifteen of them are stiff: the tail is bilobate and stronger than the fins: the lateral line is nearer the back than the abdomen: the length of this species is about a span: it is of a soft oily nature, and of a slender and somewhat compressed shape, gradually tapering from head to tail.

OCELLATED DRAGONET.

Callionymus Ocellatus. C. pinnae dorsalis prioris membrana fasciis fuscis et ocellis quatuor fuscis picta. Lin. Syst. Nat. Gmel. p. 1154. Pall. spic. Zool. 8. p. 25. t. 4. f. 13.

Dragonet with the membrane of the first dorsal fin marked with dusky streaks and four dusky ocellate spots.

A SMALL species, not exceeding the size of the little finger: native of the Indian seas: colour above a variegation of ash and brown, the ash-coloured parts being marked by white specks: beneath white: head smaller and sharper than in

others of the genus; flattish on the top; with the snout obtuse: eyes small and lateral: mouth small, with tumid, fleshy lips, the upper one doubled: gill-covers sharp, armed by a simple spine, and punctated on their membrane: first dorsal fin, in the male, minute, entirely black, with setaceous, flexile rays: in the female broad, the connecting membrane being marked on its lower part by dusky bars included by a white line edged with black; and on its upper part by eye-shaped spots black in the middle, surrounded by a white circle edged with black: the second dorsal fin is more shallow, and of a dusky colour, marked with white parallel lines: pectoral fins hyaline, spotted with white at their base; their rays twice barred with brown; the two middle rays being longer than the rest: ventral fins large, laciniate, black, with a white border, and very thick rays which are very much branched: vent fin serrated, black, with white base; the two first rays setaceous, the rest bifid: vent situated a little before the middle of the abdomen, and behind it, in the female, is a small conical peduncle recumbent in a fossule: lateral line strait: tail rounded: spotted with white at the base; the rays barred or interrupted with brown.

ARROW-HEADED DRAGONET.

Callionymus Sagitta. C. capite triangulari, membrana branchiostegi triradiata, pinnarum dorsi radiis æqualibus. Lin. Syst. Nat. Gmel. p. 1155. Pall. spic. zool. 8. p. 29. t. 4. f. 4. 5.

Dragonet with triangular head, three-rayed gill-membrane, and the rays of the dorsal fins equal.

NATIVE of the Indian seas: found about Amboina &c. Length about three inches: of a slender shape, obscurely quadrangular, and of a brownish colour variegated with grey; beneath of a greyish white: head large and broad, much depressed, with a sharpish snout, at the tip of which is the mouth, which is small, with thin lips, the superior of which is doubled: mandibles rough: tongue very short, and flat: eyes small and approximated; iris silvery: gill-covers soft, with the hinder lamina large and extended as far as the pectoral fins, the first lamina terminated by a long, subulate spine, serrated within with small teeth in a backward direction: first dorsal fin small, and marked at the hind part by a black band: second dorsal fin and pectoral ones hyaline, variegated with brown and white: ventral fins laciniate, spotted with brown, and furnished with very numerous rays: vent fin low, with the last ray branched: vent situated before the middle of the body: lateral line strait, obscure towards the head: tail rounded at the end, and spotted above with brown.

JAPANESE DRAGONET.

Callionymus Japonicus. *C. pinna dorsali priore oculo nigro picta, radio primo in pilos semipollicares terminato.* *Lin. Syst. Nat. Gmel. p. 1155. Houttuyn act. Harl. 26. p. 313.*

Dragonet with the first dorsal fin marked by a black ocellate spot, the first ray terminating in two hairs.

NATIVE of the Japanese sea: head depressed: eyes large, approximate: first dorsal fin with black rays: second dorsal fin whitish: pectoral fins rounded: ventral fins very large: tail four inches long, forked, with unequal rays; length of the fish about nine inches and a half: body variegated, smooth, and roundish.

URANOSCOPUS. STAR-GAZER.

Generic Character.

<i>Caput</i> depressum, scabrum, majus.	<i>Head</i> large, depressed, rough.
<i>Os</i> cirrho interno.	<i>Mouth</i> furnished with an internal cirrus.
<i>Opercula</i> membranaceo-ciliata.	<i>Gill-covers</i> edged by a ciliated border.
<i>Membr. branch.</i> radius quinque.	<i>Gill-membrane</i> five-rayed.

BEARDED STAR-GAZER.

Uranoscopus Scaber. U. labiis cirrhosis, dorso lævi.

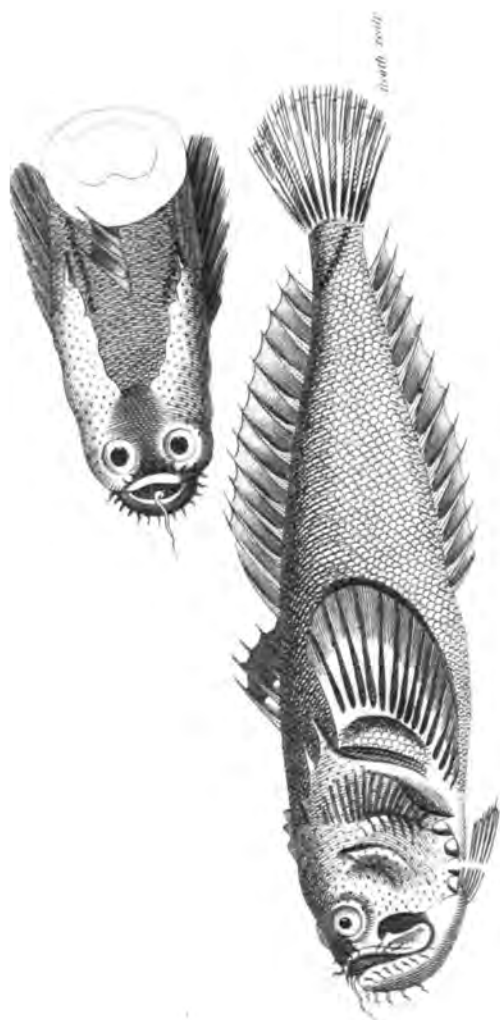
Star-Gazer with bearded lips and smooth back.

Uranoscopus scaber. Lin. Syst. Nat. p. 434.

Uranoscopus. Capite scabro. Bloch. 5. p. 75. pl. 163.

Uranoscopus. Gesn. Aldr. Will. &c.

THE head of this fish is large, squarish, and covered by a strong bony case, roughened by an infinite number of small warts or protuberances: each side of this case is terminated above by two spines, the hindermost of which is the strongest and covered by a skin: the under part has five spines, smaller than those above: the mouth, which

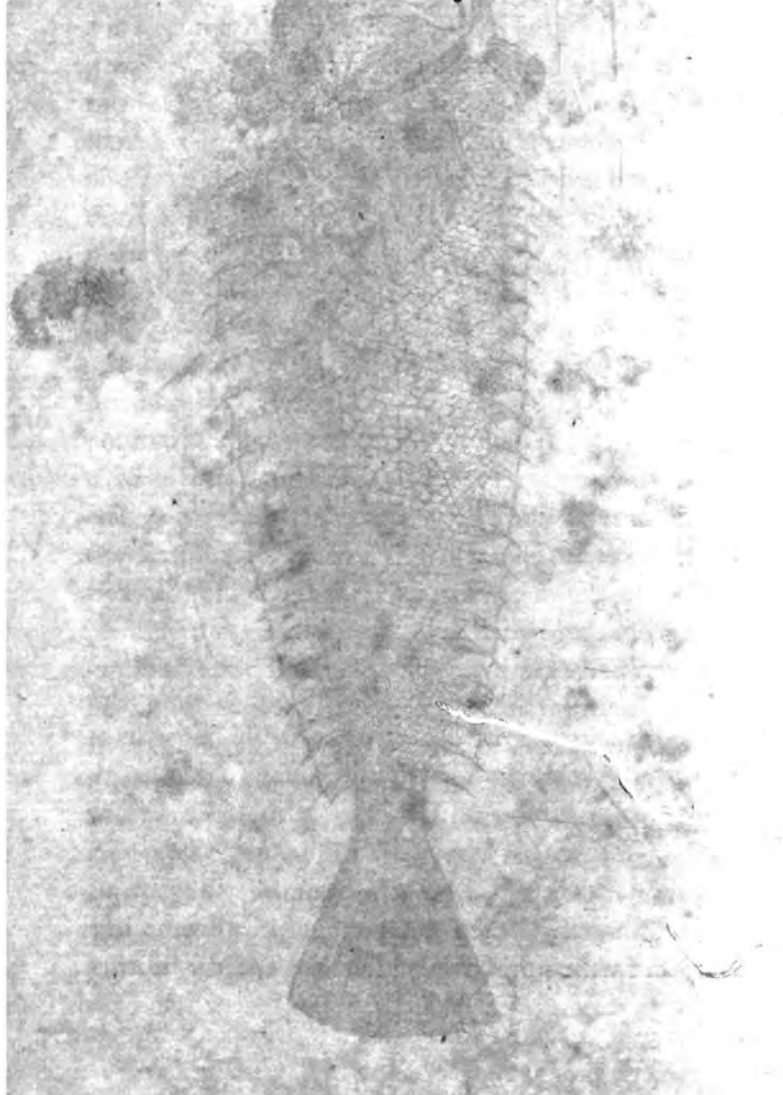


TOOTHED STAR-CATFISH

is wide, opens in an almost vertical direction: the tongue is thick, short, and roughened with numerous small teeth: near the interior tip of the lower jaw is a membranaceous process which terminates in a long cirrus or beard extending to some distance beyond the lips, which are themselves edged with smaller ones: the eyes are situated very near each other on the top of the head: the body is of a somewhat squarish form as far as the vent, and from thence becomes cylindric: it is covered with small scales, and marked near the back by a lateral line composed of small pores or points bending from the neck to the pectoral fins on each side, and from thence in a strait line to the tail: on the back are two fins, of which the first is much shorter than the latter and furnished with stronger spines: the pectoral fins are large, with soft rays: the ventral fins are small; the tail of moderate size and rounded at the end. The colour of the body is brown, with a whitish or silvery cast towards the abdomen; the head, pectoral fins, and tail having a strong ferruginous cast, and the first dorsal fin being marked towards its hind part by a large black spot.

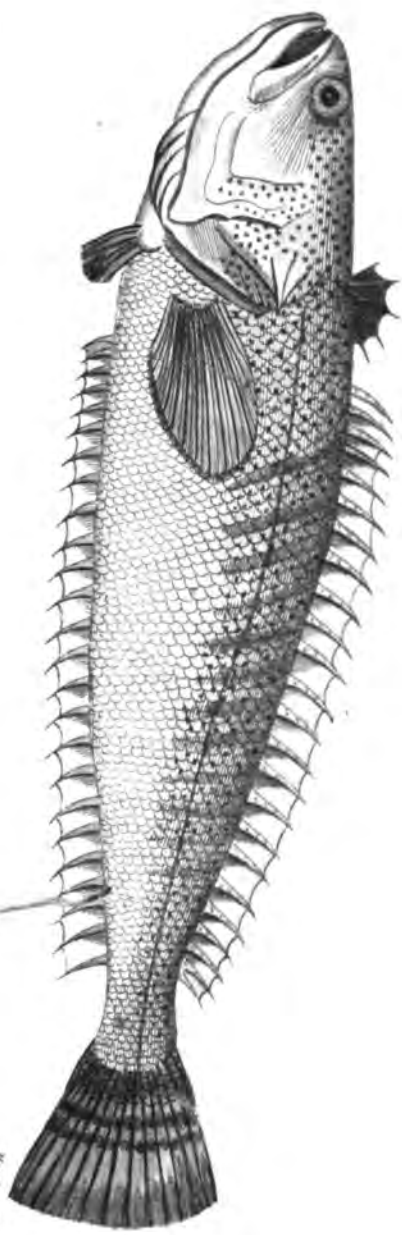
The Star-gazer is an inhabitant of the Mediterranean and Northern seas, chiefly frequenting the shallow parts near the shores, where it lies concealed in the mud, with the tip of the head alone exposed: in this situation it waves the beards of the lips, and particularly the long cirrus of the mouth, in various directions, thus alluring the smaller fishes and marine insects which happen to be swimming near, and which mistaking these organs for worms

are instantly seized by their concealed enemy. The usual length of this fish is about twelve inches. It is in no esteem as an article of food, being generally considered as coarse and of an ill flavour: the gall was anciently considered as of peculiar efficacy in external disorders of the eyes.



JD KAGION-WRAVWIA

Hand made



TRACHINUS. WEEVER.

Generic Character.

<i>Caput</i> minus læve, compressum.	<i>Head</i> slightly roughened, compressed.
<i>Membr. branch.</i> radiis sex, operculorum lamina serrata.	<i>Gill-membrane</i> six-rayed. <i>Gill-covers</i> serrated on the edge.
<i>Corpus</i> compressum. <i>Anus</i> prope pectus.	<i>Body</i> compressed. <i>Vent</i> situated near the breast.

DRAGON WEEVER.

Trachinus, Draco. T. subargenteus, striis subobliquis transversis flavescentibus, pinna dorsali priore quinque-radiata nigra.

Subargenteous Weever, with suboblique, transverse, yellowish streaks; the first dorsal fin black and five-rayed.

Trachinus Draco. Lin. Syst. Nat. p. 435.

Draco marinus. Belon. Gesn. Aldr. &c.

Weever. *Willughb. Pennant, &c.*

THIS fish is of a lengthened shape, much compressed on the sides, and covered with small and easily deciduous scales: the mouth is wide, and opens vertically, like that of the Star-gazer: both jaws are armed with sharp teeth: the tongue is strait, smooth, and pointed: the eyes are seated on the

upper part of the head, pretty near each other: the gill-covers are armed at their tips with a strong spine: the first dorsal fin is small, and furnished with five strong spines: the second fin is continued almost to the tail; the vent fin is of similar extent, and the tail is rather large, and even at the end: the pectoral fins are of moderate size, and the ventral very small: the general colour of the Weever is silvery, with a yellowish, or dusky cast on the upper parts, while the sides are commonly varied by numerous obliquely transverse streaks of a similar colour: the scales are small and rounded: the first dorsal fin is of a deep black. The usual length of the fish is about ten or twelve inches.

This fish, like the Star-gazer, is an inhabitant of the Mediterranean and Northern seas, commonly frequenting the coasts, and frequently imbedding itself in the sand; in which situation, if accidentally trodden on, it strikes backwards with great violence, and endeavours to wound the aggressor with the spines of its first dorsal fin. So troublesome are the consequences arising from the punctures inflicted by this part, that a law is said to exist in France obliging the fishermen to cut it away before the fish is exposed for sale. The usual symptoms attending the wound are, violent heat, pain, and inflammation; and it not unfrequently happens that when the hand is thus wounded, a sudden redness extends throughout the whole length of the arm, as far as the shoulder. The usual remedy among the English fishermen is, according to Mr. Pennant, sea-sand, well rubbed on the part: and

application which one might at first suppose would rather aggravate than alleviate the complaint. Many other popular remedies are used in different countries. Notwithstanding the suspicious aspect of the above-mentioned black fin, it does not seem to have any thing in its conformation which can justify the idea of any poisonous fluid conveyed from it into the wound; the spines when microscopically examined shewing no appearance of a tubular structure.

The Weever is considered as an excellent article of food, and is much esteemed in Holland, France, &c. It feeds principally on marine insects, worms, and small fishes; it is tenacious of life, and can exist many hours out of water: the skin is remarkably tough, and the animal may be excoriated with almost the same facility as an eel.

It is maintained by some ichthyologists, that there are in reality two kinds of this fish; viz. the greater and smaller Weever; but the difference, if any, seems to consist merely in size and a slight variation of colour: thus Willoughby mentions his having seen a specimen at Rome which, exclusive of its size, differed from the common kind in being marked along the side with large black spots instead of the usual oblique yellow streaks: the same variety seems also to be figured in the work of Salicrú. Mr. Pennant likewise describes and figures the Great Weever in the British Zoology, but makes no mention of the spots observed by Willoughby.

It may be added that the Weever was by Artedi

considered as not generically distinct from the *Uranoscopus*. Its English name *Weever* seems, as Mr. Pennant observes, to be a corruption from the French title *la Vire*.

OSBECKIAN WEEVER.

Trachinus Osbeckii. *T. albus, nigro maculatus, maxillis aequalibus.*

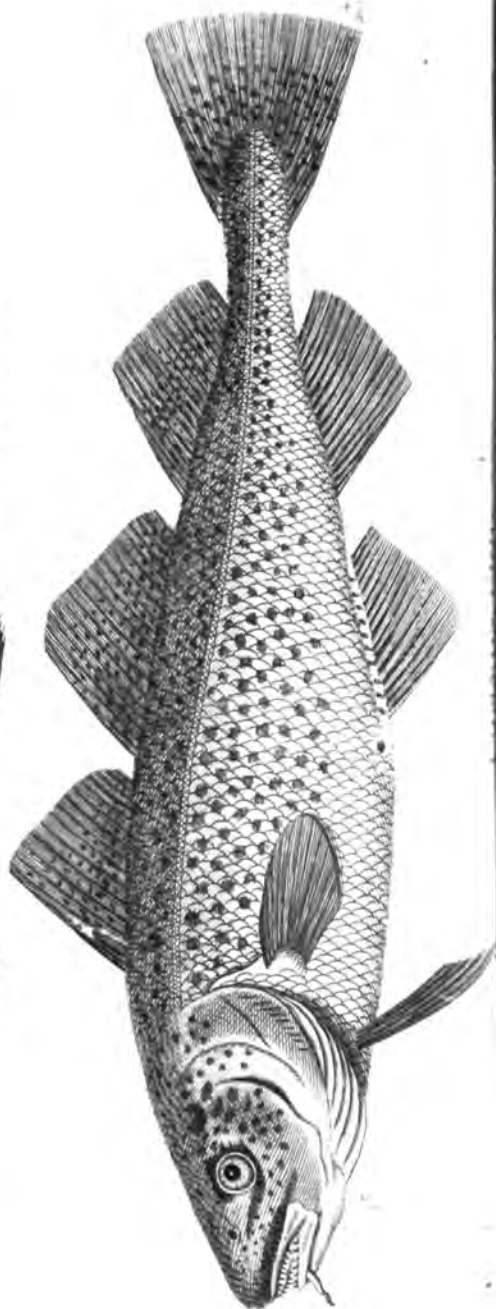
White Weever, spotted with black, with both jaws of equal length.

La Trachine Osbeck. *Cepede pisc.* 1. p. 364.

NATIVE of the Atlantic seas, and found about the Isle of Ascension, &c. Colour white, spotted with black: both jaws of equal length, and furnished with several rows of long and pointed teeth, three of which, both above and below, are larger than the rest: some sharp teeth are also situated in the throat: each gill-cover is terminated by two spines of unequal length: tail even. Described by Osbeck in his voyage to China.



COAL-FISH



GADUS. COD.

Generic Character.

<i>Caput</i> læve.	<i>Head</i> smooth.
<i>Membr. branch. radiis</i> septem tere t ibus.	<i>Gill-membrane</i> seven-rayed.
<i>Corpus</i> oblongum, squamis deciduis.	<i>Body</i> oblong, covered with deciduous scales.
<i>Pinnae</i> omnes cute communi vestitæ.	<i>Fins</i> all covered by the common skin.
<i>Dorsales</i> anique plures, radiis muticis.	<i>Dorsal and anal</i> generally more than one; the rays unarmed.
<i>Pectorales</i> in acumen attenuatæ.	<i>Ventral fins</i> slender, ending in a point.

COMMON COD.

Gadus Morhua. G. cinereus subflavo maculatus, squamis majoribus, cauda subæquali, radio primo anali spinoso.

Ash-coloured Cod, with yellowish spots, largish scales, and first ray of the vent fin spiny.

Gadus Morhua. G. tripterygius cirratus, cauda subæquali; radio primo anali spinoso. Lin. Syst. Nat. p. 436.

Morhua. Belon. Gesn. Aldr. &c.

Common Cod-Fish. *Penn. Brit. Zool. 3. p. 152.*

THIS highly important and prolific species, which furnishes employment for so many thousands,

and forms so considerable a part of the subsistence of mankind, is an inhabitant of the Northern seas, where it resides in immense shoals, performing various migrations at stated seasons, and visiting in succession the different coasts of Europe and America. Its history is so well detailed by Mr. Pennant, that little can be added to what that author has collected in his *British and Arctic Zoology*.

“The general rendezvous of the Cod-fish,” says Mr. Pennant, “is on the banks of Newfoundland, and the other sand-banks that lie off the coasts of Cape Breton, Nova Scotia, and New England. They prefer those situations on account of the quantity of worms produced in those sandy bottoms, which tempt them to resort there for food; but another cause of this particular attachment to those spots is their vicinity to the polar seas, where they return to spawn: there they deposit their roe in full security, but want of food forces them, as soon as the first more Southern seas are open, to repair thither for subsistence. Few are taken north of Iceland, but on the south and west coasts they abound: they are again found to swarm on the coasts of Norway, in the Baltic, off Orkney and the Western Isles; after which their numbers decrease, in proportion as they advance towards the south, when they seem quite to cease before they reach the mouth of the Straits of Gibraltar.”

Before the discovery of Newfoundland, the greater fisheries of Cod were on the seas of Iceland and our own Western Isles, which were the grand resort

of the ships of all the commercial nations, but it seems that the greatest plenty was met with near Iceland.

Newfoundland, a name in the infancy of discovery common to all North America, was discovered in the year 1496, by the celebrated Venetians Sebastian Cabot and his three sons; who, at their own charges, under a grant of Henry the seventh, giving them possession, as vassals of his, of all lands they might discover, coasted from lat. 67. 30, to the Capes of Florida.

The isle of Newfoundland is of a triangular form, and lies between lat. 46. 40, and 51. 30: visited occasionally, but not inhabited, by savages from the continent. The boasted mine of this island, viz. its sand-bank, is represented as a vast submarine mountain, of above 500 miles long, and near 300 broad, and seamen know when they approach it by the great swell of the sea, and the thick mists that impend over it. The water on the bank is from twenty-two to fifty fathoms; on the outside from sixty to eighty; and on the smaller banks much the same: the increase of shipping that resort to these fertile banks is now unspeakable: our own country still enjoys the greatest share, and ought to be esteemed one of our chiefest treasures, bringing wealth to individuals, and strength to the state. All this immense fishery is carried on by the hook and line only: the principal baits are herring, the small fish called a capelin, the shell-fish called clams, and pieces of sea-fowl; and with these are caught fish sufficient to find employ

for fifteen thousand British seamen, and to afford subsistence to a much more numerous body of people at home; who are engaged in the various manufactures which so vast a fishery demands. The fish, when taken, are properly cleaned, salted, and dried, and in this state sent into various parts of the European continent.

The Cod grows to a very large size. Mr. Pennant commemorates a specimen taken on the British coasts which weighed seventy-eight pounds, and measured five feet eight inches in length, and five feet in girth round the shoulders; but the general size, at least in the British seas, is far less, and the weight from about fourteen to forty pounds; and such as are of middling size are most esteemed for the table.

The Cod is of a moderately long shape, with the abdomen very thick and prominent: the head is of moderate size, and the eyes large: the jaws of equal length, the lower one bearded at the tip by a single cirrus: in the jaws and palate are numerous sharp teeth: the dorsal and anal fins are rather large, the pectoral rather small: the ventral small and slender: the tail of moderate size, and even at the end, the first ray on each side being short, strong, and bony. The usual colour of this fish is cinereous on the back and sides, and commonly spotted with dull yellow: the belly white or silvery; but the colours occasionally vary very considerably, and instances are often seen in which a yellow, orange, or even red tint prevails on the upper parts of the body, while the spots are lighter or deeper accord-

ing to the different seasons in which the fish is taken: the lateral line, which is one of the principal distinctive marks of the species, is broad and whitish, and the scales are somewhat larger than in others of the genus.

The food of the Cod is either small fish, worms, testaceous or crustaceous animals, such as crabs, large whelks, &c. its digestion is so powerful as to dissolve the greatest part of the shells it swallows: it is very voracious, catching at any small body it perceives moved by the water, even stones and pebbles, which are often found in the stomach. The fishermen are well acquainted with the use of the air bladder or *sound* of this fish, and dexterously perforate the living fish with a needle, in order to let out the air contained in that part; for without this operation the fish could not be kept under water in the well-boats, and brought fresh to market. The sounds when salted, are reckoned a delicacy, and are often brought in this state from Newfoundland. A species of Isinglass is also prepared from this part of the fish by the natives of Iceland.

HADDOCK.

Gadus Æglefinus. G. albicans, cauda biloba, maxilla superiore longiore, macula nigra pone pinnas pectorales.

Whitish *Gadus*, with bilobate tail, upper jaw longer than the lower, and a black spot beyond the pectoral fins.

Gadus Æglefinus. Lin. Syst. Nat. p. 435.

Gadus Æglefinus. G. cirro unico, linea laterali nigra. Bloch. pl. 62.

Haddock. *Willughb. Pennant, &c.*

THE Haddock is distinguished from the rest of this genus by having a forked tail, and the lower jaw longer than the upper: the colour of the body is silvery or white, with a dusky cast on the back: the lateral line is black, and on each side, at some distance beyond the head, and above the pectoral fins, is a moderately large, squarish black spot: the tip of the lower jaw is furnished with a cirrus: the eyes are large; the scales small, round, and pretty closely attached to the skin.

This species is a native of the Northern seas, where, like the cod, it assembles in prodigious shoals, visiting particular coasts at stated seasons: the shoals are sometimes near six miles in length, and more than a mile in breadth. "The grand shoal of Haddocks," says Mr. Pennant, "comes periodically on the Yorkshire coasts. It is remarkable that they appeared in 1766 on the 10th of December, and exactly on the same day in 1767. These shoals extended from the shore near three miles in breadth, and in length from Flamborough Head to Tinmouth Castle, and perhaps much

farther northwards. An idea may be given of their numbers by the following fact: three fishermen within the distance of a mile from Scarborough harbour frequently loaded their *coble* or boat with them twice a day, taking each time about a ton of fish: when they put down their lines beyond the distance of three miles from the shore they caught nothing but dog-fish, which shews how exactly these fish keep their limits. The best were sold from eight-pence to a shilling per score, and the poor had the smaller sort at a penny, and sometimes a half-penny per score." The Haddock is taken in vast quantities about Heiligiland, and is from thence sent to Hamburgh. In stormy weather this fish is said to imbed itself in the ooze at the bottom of the sea, none being taken in such weather; and those which are taken afterwards are observed to be covered with mud on their backs.

The Haddock is, in general, of moderate size, measuring about eighteen inches or two feet in length: those which are most esteemed for the table weighing from two to four pounds; but it sometimes arrives at the length of three feet, and the weight of fourteen pounds. Its food consists of small fishes, worms, and sea-insects. It spawns in the month of February.

DORSE.

Gadus Callarias. *G. cinereus subtus albus, capite corporeque fusco-maculatis, cauda integra, maxilla superiore longiore.*

Cinereous Gadus, white beneath, with head and body spotted with brown, even tail, and upper jaw longest.

Gadus Callarias. *Lin. Syst. Nat. p. 436.*

Gadus linea laterali lata ænea maculataque. *Bloch. pl. 63.*

The Dorse.

THIS is a somewhat smaller species than the Haddock, those which are usually taken rarely exceeding the weight of two pounds.

The head is smaller than that of the Haddock, and is marked by several spots, which in the summer are generally brown, and in the winter black: the general colour of the fish is cinereous above, and white beneath, several brown spots being scattered over the body, which, in the young fish, are often of an orange-colour: the scales are small, thin, and soft: the upper jaw is longer than the lower, and is furnished with more rows of teeth: at the tip of the lower jaw is a cirrus or beard.

The Dorse is a native of the Northern seas, as well as of the Mediterranean and the Baltic. It is taken both by the line and the net, and is highly esteemed as an article of food. It lives, like most others of this genus, on the smaller fishes, and sea-insects. Instances are adduced by authors in which this fish, like the Haddock, has been found greatly to exceed the usual size, and to weigh seven, eight, ten, or even fourteen pounds. It spawns in the month of February.

WHITING-POUT.

Gadus Barbatus. *G. albus, dorso pinnisque subfuscis, maxilla inferiore punctis utrinque septem.*

White Gadus, with brownish back and fins, and seven punctures on each side the lower jaw.

Gadus barbatus. *Lin. Syst. Nat. p. 437.*

Gadus corpore lato. *Bloch, pl. 166.*

Whiting-Pout. *Penn. Brit. Zool. 3. p. 161.*

THIS species, according to Mr. Pennant, never grows to a large size, rarely exceeding a foot in length, and is distinguished from all others by its great depth; one of the size above mentioned being near four inches deep in the broadest part: the back is very much arched, and carinated: the scales larger than those of the Cod-fish: the mouth small, and the head short: on each side the lower jaw are seven or eight punctures: the first dorsal fin is triangular, and terminates in a long fibre: the colour of the fins and tail is dusky or blackish, and at the bottom of the pectoral fins is a black spot: the body is white, but more obscure on the back than the belly, and tinged with yellow: the lateral line is white, broad, and crooked. This fish is in high estimation as a food, and is found in the Mediterranean and Northern seas.

BIB.

Gadus Luscus. G. albidus, lateribus subflavie, dorso olivaceo, radio pinnarum ventralium primo setaceo, cauda nigro marginata.

Whitish *Gadus* with yellowish sides, olivaceous back, first ray of the ventral fins setaceous, and tail bordered with black.

Gadus luscus. G. radio pinnarum ventralium primo setaceo. Lin. Syst. Nat. Gmel. p. 1163. Mus. Ad. Frid. 2. p. 60.

The Bib. *Penn. Brit. Zool. 3. p. 162.*

LENGTH a foot: greatest depth three inches and a half: body deep; sides compressed; scales large and easily deciduous: eyes covered with a loose membrane, so as to be blown up like a bladder at the pleasure of the animal: mouth small, and beneath the chin a beard of about an inch in length: colour of the back light olive; the sides finely tinged with gold; the belly white; the anal fins dusky, edged with white; the tail with black. Native of the European seas, and much esteemed as a food.



POOR.

Gadus Minutus. *G. argenteus, dorso subfusco, maxilla superiore longiore, ano in medio corporis.*

Silvery Gadus, with brownish back, upper jaw longest, and vent in the middle of the body.

Gadus minutus. *G. abdomine intus nigro.* Bloch, pl. 67. f. 1. Caplan.

The Poor. Penn. Brit. Zool. 3. p. 163.

THIS is a small species, seldom exceeding six or seven inches in length, and of a more slender form than any of the preceding kinds. It is of a silvery colour, brownish on the back, and marked with dusky specks on the sides: the scales are very small and thin: the head is of a somewhat sharpened form, with the upper mandible longer than the lower, and furnished with several rows of small and sharp teeth: beneath the tip of the lower is a cirrus: the lateral line is strait, and the vent is situated at the middle of the body: it is remarkable of this species that the abdomen is perfectly black within, being lined with a peritonæum of that colour. The Poor is found in the Baltic and the Mediterranean, as well as in some parts of the Northern seas. Its appearance in the Mediterranean is considered by the fishermen as the precursor of the Cod, the Dorse, and the Haddock, of which it is supposed to indicate very plentiful shoals. It is reckoned a wholesome food, and is taken both by the line and net. It is supposed to feed chiefly on worms and sea-insects, and deposits its

spawn among the stones and sea-plants towards the borders of the shore.

BLENNOID GADUS.

Gadus Blenoides. *G. argenteus*, dorso subcinereo, pinnis ventralibus didactylis.

Silvery Gadus, with greyish back, and didactyle ventral fins.

Gadus blennoides. *G. pinnis ventralibus didactylis.* *Pall. spic. zool.* 8. p. 47. *Lin. Syst. Nat. Gmel.* p. 1165.

DESCRIBED by Dr. Pallas. Habit of a Whiting: length about a span: body plump, soft, convex, compressed, silvery white, with subcinereous back, and covered with very small scales: head thick, conic, obtuse; lips fleshy, doubled: teeth minute, unequal, in the upper jaw extremely minute, hardly more than six, at some distance from each other, being distinctly visible: tongue sharp and fleshy: palate longitudinally striated: eyes large; irides silvery: lateral line arched on the fore-part: fins yellowish white, with very slender rays: dorsal and anal fins reclined; the first dorsal narrow, triangular; the second narrower; the third a little broader and shorter: pectoral fins subfalcated, very thin; first ray of the ventral ones very long, thickish, and bifid: tail forked, with rounded ends. Native of the Mediterranean.

SAIDA.

Gadus Saida. G. cærulescens, dorso fusco, abdomine albido, pinnarum ventralium radio secundo in setam longam terminato.

Blueish *Gadus*, with brown back, white abdomen, and the second ray of the ventral fins terminating in a long bristle.

Gadus Saida. Lepechin. nov. Comm. Petrop. 18. p. 512. Lin. Syst. Nat. Gmel. p. 1166.

DESCRIBED by Lepechin. Native of the white sea: length about eight inches: colour blueish, with dusky back, and white abdomen; head compressed on the fore-part, but more round behind, and marked on the top with a black spot: mandibles furnished with sharp, curved, setaceous teeth which are barbed backwards: upper jaw rather obtuse; lower longer and sharper: palate armed with a double row of teeth, and on each side the entrance into the throat is a rough or denticulated bone: eyes large, with whitish pupil and blueish iris: gill-covers silvery, speckled with black, and composed of three laminæ, of which the lowest is lunated, the next elliptic, and the third triangular and bicuspidate: back convex, slightly furrowed on the fore-part, and marked by a few confluent blackish specks: lateral line strait, nearest the back: dorsal fins triangular, brown, with whitish rays: anal oblong-triangular, with the fore-part of the base dusky-blue: ventral whitish at the base: tail forked. This species is edible, but of a dry or juiceless nature.

With three dorsal fins, as in the preceding kinds, but with beardless mouth.

WHITING.

Gadus Merlangus. G. argenteus, supra subfuscus, maxilla superiore longiore.

Silvery Gadus, brownish on the upper parts, with the upper jaw longer than the lower.

Gadus Merlangus. G. tripterygius imberbis albus, maxilla superiore longiore. Lin. Syst. Nat. p. 438.

The Whiting. Penn. Brit. Zool. 3. Bloch. pl. 65.

THE Whiting is, according to Mr. Pennant, the most delicate as well as the most wholesome of the genus, but does not grow to a large size, the usual length being about ten or twelve inches, and the largest scarce exceeding that of twenty. It is a fish of an elegant make: the body is rather long, and covered with small, round silvery scales: the head and back are of a pale brown, and the sides slightly streaked with yellow: the head is of a pointed form, with the upper jaw longer than the lower, and furnished with several rows of teeth, of which those in front are longest; the lower jaw has only a single row: on each side the palate is a triangular, and in the throat two rough bones above, and two smooth ones beneath: on each side the lower jaw are nine or ten impressed points: the vent is nearer the head than the tail: the lateral line is strait, and at the beginning of the pectoral fins on each side is a black spot. This fish is an inhabitant of the Baltic, and

the Northern seas, and is found in some parts of the Mediterranean. Vast shoals appear in the British seas during the spring; keeping at the distance of about half a mile to that of three from the shore: they are caught in vast numbers by the line, and afford excellent diversion: their food consists of small fishes, sea-insects and worms: they are said to be particularly fond of sprats and young herrings, with which the fishermen generally bait for them, and in defect of these with pieces of fresh herring, one being sufficient, when cut, for twenty baits. According to Dr. Bloch the chief time of the Whiting fishery in France is in the months of January and February, though in England and Holland it is practised at a much later period. The Whiting spawns in December and January.

COAL-FISH.

Gadus Carbonarius. *G. nigricans, subtus subargenteus, maxilla inferiore longiore, linea laterali recta alba.*

Blackish *Gadus*, subargenteous beneath, with the lower jaw longer than the upper, and straight, white lateral line.

Gadus Carbonarius. *G. tripterygius imberbis, maxilla inferiore longiore, linea laterali recta.* *Linn. Syst. Nat. p. 438. Bloch. pl. 66.*

Coal-Fish. *Penn. Brit. Zool. 3.*

THE Coal-Fish, when full grown, is, in general, readily distinguished from its congeners by its very dark or black colour, though in this respect it some-

times varies: it is of a moderately long and elegant shape, with a small head, sharpened snout, and lower jaw exceeding the upper in length: when full grown the head, dorsal fins, tail, and upper parts of the body are of a dusky black, which gradually softens into a silvery tinge as it approaches the abdomen: the lateral line is strait and white: the mouth is rather small, and black on the inside, though the tongue is of a bright silver-colour: the body is covered with small, thin scales, and the jugular and pectoral fins are generally of a pale colour: the tail is pretty large and forked.

The Coal-fish is an inhabitant of the Baltic, the Northern, and Mediterranean seas: it is common on most of our rocky and deep coasts, but particularly on those of Scotland and the Orkneys, where, according to Mr. Pennant, it swarms, and where the young or fry forms a great part of the support of the poor. In July, according to the same author, the young begin to appear in vast shoals on the coast of Yorkshire, and are at that time about an inch and half long: in August they are from three to five inches in length, and are taken in great numbers with the angling rod, and are then esteemed a very delicate fish, but when about a year old are so coarse that few people will eat them: at this period they are above fifteen inches in length, and begin to blacken on the gills and back; the blackness increasing with their age: the fry of the Coal-fish is known by different names in different places: at Scarborough the young are called *Parrs*, and when a year old, *Billets*: at that place such swarms have

occasionally appeared that for some weeks together it was impossible to dip a pail into the sea without taking several.

The varieties as to colour which this fish sometimes exhibits are different shades of brown rather than black; but in all the lateral line is invariably white, which therefore forms a good specific mark. Though the Coal-fish, in general, in its full grown state is but little esteemed as a food, yet it is frequently salted and dried for sale, in the manner of the Cod and others of this genus.

POLLACK.

Gadus Pollachius. G. subargenteus, dorso pinnisque fuscis, maxilla inferiore longiore, linea laterali curva nigra.

Subargenteous *Gadus*, with dusky back and fins, lower jaw longer than upper, and curved, black lateral line.

Gadus Pollachius. G. maxilla inferiore longiore, linea laterali curva. Lin. Syst. Nat. Gmel. p. 1169. Bloch. pl. 68.

Pollack: *Penn. Brit. Zool. 3.*

“ This species (says Mr. Pennant) is common on many of our rocky coasts: during the summer they are seen in great shoals, frolicking on the surface of the water, and flinging themselves into a thousand forms: they are at this time so wanton as to bite at any thing that appears on the top of the waves, and are often taken with a goose’s feather fixed to a hook: they are a very strong fish, being observed to keep their station at the feet of the

rocks in the most turbulent and rapid sea: they are a good eating fish: they do not grow to a very large size; at least the biggest we have seen did not exceed six or seven pounds; but we have heard of some that were taken in the sea near Scarborough, which they frequent during the winter, that weighed near twenty-eight pounds: they are there called *Leets*. The under jaw is longer than the upper: the head, and body rises pretty high, as far as the first dorsal fin: the side-line is incurvated, rising toward the middle of the back, and then sinking and running strait to the tail: it is broad and of a brown colour: the first dorsal fin has eleven rays, the middle nineteen, and the last sixteen: the tail is a little forked: the colour of the back is dusky, of some inclining to green: the sides beneath the lateral line marked with lines of yellow: the belly white."

Dr. Bloch observes that the scales of the Pollack are small, thin, oblong, and bordered with yellow: according to that author it is found in the Baltic and the Northern sea: it feeds chiefly on small fish, and especially on launces, which are generally found in its stomach.

GREEN GADUS.

Gadus Virens. *G. albus, dorso virescente, cauda bifurca.*

White Gadus, with greenish back, and forked tail.

Gadus virens. Gadus dorso virescente, cauda bifurca. Lin. Syst. Nat. Gmel. p. 1166. Faun. Suec. 309.

THIS species is said to bear a very near general resemblance to the Pollack, but to differ in being of a greenish or olive-colour on the upper parts, and to have the lateral line perfectly strait, instead of curved as in that fish: the jaws are also equal, and the tail distinctly forked; whereas in the Pollack the lower jaw is longer than the upper, and the tail but very slightly inclining to a forked appearance. Notwithstanding these differences it is held in doubt by some authors whether the present fish be really a distinct species from the preceding. It is said to be found plentifully in the Northern seas.

With two dorsal fins.

HAKE.

Gadus Merluccius. G. albidus, dorso subcinereo, maxilla inferiore longiore.

Whitish Gadus, with subcinereous back, and lower jaw longer than the upper.

Gadus Merluccius. G. dipterygius imberbis, maxilla inferiore longiore. Lin. Syst. Nat. p. 439. Bloch. t. 154.

Hake. *Penn. Brit. Zool. 3.*

THE Hake is a species of a considerably lengthened form: the head is rather large, broad and flat

at the top, but compressed on the sides; the opening of the mouth wide, and the jaws armed with two rows of long, sharp-pointed, curved teeth, intermixed alternately with smaller ones: the palate is also furnished with a row of teeth on each side: the lower jaw is longer than the upper, and at a small distance from the eyes are situated four small foramina: the body is covered with small scales, and is of a pale ash-colour on the back, and whitish on the sides and abdomen: the first dorsal fin is small, consisting only of about nine rays, but the second, which commences almost immediately from the former, is continued almost to the tail: the anal fin corresponds with this beneath: the pectoral and ventral fins are of moderate size, and of a sharpened shape, and the tail is nearly even at the end: the lateral line commences by several small warts beyond the head, and is continued in a straight direction to the tail: the usual length of the Hake is from one to two feet, but it is sometimes found of the length of three feet.

This fish is an inhabitant of the Mediterranean and Northern seas, in both of which its fishery is very considerable: it is salted and dried in the manner of Cod, Haddock, &c. but is not considered as a delicate fish either in its fresh or salted state, and is rarely admitted to the tables of the rich and luxurious: it forms however a very useful article of food for the lower orders in many parts both of our own and other countries. It is found in vast abundance on many of our coasts, as well as those of Ireland. We are informed by Mr. Pennant



that there was formerly a vast stationary fishery of the Hake on the *Nymph Bank* off the coast of *Waterford*, immense quantities appearing there twice a year; the first shoal coming in June, during the Mackrel season, and the other in September, at the beginning of the Herring season; probably in pursuit of those fish: it was no unusual thing for six men with hooks and lines to take a thousand Hake in one night, besides a considerable quantity of other fish.

At present, as we are informed by Dr. Bloch, one of the greatest Hake-fisheries is carried on about the coasts of Britany, both by the hook and net. It is carried on chiefly by night, in boats properly manned for the purpose: the principal baits for such as are taken by the line are launces, sardines, and other small fishes.

 LING.

Gadus Molva. *G. cinereus, subtus albus, maxilla superiore longiore, cauda fascia fusca.*

Cinereous Gadus, white beneath, with the upper jaw longer than the lower, and tail crossed by a dusky bar.

Gadus Molva. *G. dipterygius cirratus, maxilla superiore longiore.*
Lin. Syst. Nat. p. 439. Bloch. t. 69.

Ling. *Penn. Brit. Zool. 3.*

THE Ling (says Mr. Pennant) takes its name from its length, being corrupted from the word long: the body is very slender; the head flat; the

upper jaw longer than the lower, and furnished with very numerous, small teeth, those in the lower jaw being few, slender, and sharp: on the chin is a small beard: the first dorsal fin is small, placed near the head, and consists of fifteen rays: the second is very long, reaching almost to the tail, and consists of sixty-five rays: the anal is placed in a corresponding direction beneath, and consists of sixty-two rays: the pectoral fins have fifteen radiated rays, and the ventral six: the tail is rounded at the end. The usual size of the Ling is from three to four feet, but it is said to have been sometimes seen of the length of seven feet: in colour it varies, being sometimes of an olive hue on the sides and back, and sometimes cinereous: the abdomen is white, as are also the ventral fins, and the dorsal and anal are edged with white: the tail is marked near the end with a transverse black bar, and tipped with white.

The Ling is an inhabitant of the Northern seas, and forms in many places a considerable article of commerce. It chiefly frequents the depths of the sea, living on small fishes, shrimps, &c. It spawns in June, depositing its eggs among the fuci on the oozy bottoms. In the Yorkshire seas, according to Mr. Pennant, the Ling is in perfection from the beginning of February to the beginning of May, and some till the end of that month: as long as they continue in season, the liver is very white, and abounds with a fine flavoured oil; but as soon as the fish goes out of season the liver becomes red and affords no more oil: the same circumstance is

observable in several other fish in a certain degree, but not so remarkably as in the Ling*.

Vast quantities of this fish are salted for exportation as well as for home consumption. When it is cut or split for curing it must measure twenty-six inches or upwards from the shoulder to the tail; if less than that it is not reckoned a sizeable fish, and consequently not entitled to the bounty on exportation†.

LEVERIAN GADUS.

Gadus Leverianus. *G. subcinereus, maculis ocellatis albidis.*
Subcinereous Gadus, with ocellated whitish spots.

DESCRIBED from a specimen in the Leverian Museum. Body extremely long in proportion to its depth, and of nearly uniform diameter as far as the second dorsal fin, from which part it gradually lessens towards the tail: head large: mouth wide: lower jaw longer than the upper; both furnished with a row of sharp, subulated, and slightly curved teeth, of which those in the lower jaw are by far the largest and longest: eyes rather large: gill-membrane six or seven-rayed: pectoral fins of moderate size: ventral rather small and narrow: first dorsal fin subtriangular, situated at a considerable distance from the head, and the second at a great distance from the first, being of similar shape, but rather larger: vent-fin small, shallow, squarish, and

* Brit. Zool.

† Brit. Zool.

situated immediately beneath the second dorsal: tail of moderate size, and even at the end: skin smooth, without perceptible scales, and every where marked by numerous, small, round, whitish, ocellated spots on a pale brown ground-colour: lateral line not distinctly visible, but rather marked by a continued angular elevation of the skin along the whole length of the body, so as to give the fish a squarish form: length about two feet two inches: depth about two inches and a half. Supposed to be a native of the Southern ocean, being placed in a collection of fishes taken during the last voyage of Captain Cook.

BURBOT.

Gadus Lota. *G. olivaceo-flavescens nigro variegatus, ore cirrato, maxillis æqualibus.*

Yellowish-olive Gadus, variegated with black, with barbed mouth and both jaws equal.

Gadus Lota. *G. dipterygius cirratus, maxillis æqualibus.* Lin. *Syst. Nat.* p. 440. Bloch. *t.* 70.

Burbot. Penn. Brit. Zool. 3.

THE Burbot, a fish very highly esteemed for its superior delicacy, is an inhabitant of clear lakes and rivers, and is found in many parts of Europe and Asia. In our own country it occurs chiefly in the lakes of the Northern counties, in some of the fens of Lincolnshire, and the rivers Witham and Trent; but it is said to arrive at its greatest perfection in the Lake of Geneva, where it is found in

great plenty. In its habit or general appearance the Burbot makes an obscure approach to the *Muraena*, having a remarkably lengthened body of a subcylindric shape: the head is broad and flattened; the eyes small and lateral, with blue pupils and yellow irides: the mouth wide; the jaws armed with several rows of sharp teeth: the lower jaw is furnished with a beard of considerable length, and two small cirri are seated on the top of the nose, at some distance from the eyes: the tongue is broad: the colour of the Burbot, which, like all others, varies as to its particular shades at different seasons and in different individuals, is a dull or brownish yellow, approaching to whiteness on the abdomen, and to olivaceous on the back and fins; while the whole is variegated with numerous and irregularly formed spots and patches of different sizes and of a blackish colour: in some the ground-colour is greenish, and in others rather brown than yellow: the skin is remarkably smooth, and mucous or slippery like that of an eel, and is covered with extremely small scales: the first dorsal fin is small, and situated near the middle of the back; the second commences at a small distance beyond this, and is continued as far as the tail, which is rather short, and of a rounded form: the anal fin is of similar length with the dorsal, and like that is continued as far as the beginning of the tail: the pectoral fins are small and rounded; the ventral narrow and of a sharper form.

The Burbot is considered as a very voracious fish, preying on all the smaller fishes, as well as on frogs,

worms, and aquatic insects: it grows to a considerable size: the largest however of those which are taken in England have been rarely known to exceed the weight of three pounds, but in some parts of Europe they are found of more than double that weight, and of the length of three feet or more. The reputation of this fish as a food has long been established, but its liver is celebrated as an article of peculiar luxury, and we are informed by Aldrovandus that an old German countess carried her epicurism so far as to expend the greatest part of her income in the purchase of this dish. The gall has been famed, like that of the Stargazer, the Barbel, and some other fishes, for its supposed efficacy in external disorders of the eyes.

WEESLE GADUS.

Gadus Mustela. *G. cirris quinque vel tribus, pinna dorsali priore exoleta.*

Gadus with either five or three beards, and the first dorsal fin incomplete.

Gadus Mustela. *G. dipterygius cirratus, cirris quinque, pinna dorsali priore exoleta.* Lin. Syst. Nat. p. 440.

Gadus Mustela. *G. cirris tribus.* Bloch. t. 163.

Mustela vulgaris Rondeletii. Will. ichth. p. 121.

Five-Bearded Cod. Penn. Brit. Zool. 3. *Three-Bearded Cod.* id. 3.

THIS species appears to admit of two varieties, the one furnished with four beards on the upper lip and one on the lower; the other with two on the upper and one on the lower. These varieties or, per-

haps, sexual differences, have been considered by some authors as distinct species. Of this opinion is Mr. Pennant, whose description of both is so accurate as to require no additions.

Three-Bearded Cod.

“ This species commonly frequents the rocky shores of these islands, and is sometimes taken with a bait. It grows to the length of nineteen inches; the weight two pounds two ounces: the head is large and flat: the eyes not remote from the end of the nose: the body is long, slender, and compressed sideways, especially towards the tail: at the end of the upper jaw are two beards; on the chin one: the teeth are numerous and small, disposed along the jaws in form of a broad plate: in the roof of the mouth is a set of small teeth, disposed in a triangular form: the number of branchiostegous rays is seven: the first dorsall fin is lodged in a deep furrow just beyond the head, and consists of a number of short, unconnected rays: the second rises just behind it, and reaches very near the tail: the pectoral fins are broad and round: the ventral fins small; the second ray the longest: the anal fin reaches almost to the tail: the tail rounded at the end: the scales are very small: the colour of the body and head a reddish yellow, marked above the lateral line with large black spots: the back fin and tail are darker; the vent fin of a brighter red, but all are spotted: the lateral line bends in the middle, then passes strait to the tail.”

Five-Bearded Cod.

“ Mr. Willughby makes this species with five beards a variety only of the former; but having opportunity of examining several specimens, we must dissent from his opinion, having always observed the number of the beards in the spotted kind not to exceed three, nor the number in the brown kind to be less than five: the first ray of the dorsal fin is very long: there is also some difference in the form as well as colour, this species being rather thicker in proportion than the former.

“ Excepting in these particulars, and the number of the beards, there is a general agreement in the parts of both: the beards on the upper jaw are four, viz. two at the very end of the nose, and two a little above them: on the end of the lower jaw is a single one. These fish are of a deep olive brown, their belly whitish. They grow to the same size as the former.”

Russian Gadus.

A third variety of the Weesle Gadus, under the above title is described by Mr. Walbaum, and is introduced into the Gmelinian edition of the *Systema Naturæ*: it differs from the two former in being furnished only with a single beard.

CIMBRIAN GADUS.

Gadus Cimbrius. *G. cirris quatuor, pinna dorsali priore exoleta, radio primo hastato.* Lin. Syst. Nat. Gmel. p. 1174.

Gadus with four beards, first dorsal fin incomplete, with the first ray hastated.

GREATLY allied to the *Mustela*, but with the first ray of the first dorsal fin larger than the rest, subulate, and divided at the tip in form of the letter T. A single barb both on the upper and lower lip, and two over the nostrils: pectoral fins with sixteen rays; ventral seven; anal forty-two; caudal twenty-five. Native of the Atlantic and Northern seas.

TOAD GADUS.

Gadus Tau. *G. fusco-flavescens, nigro maculatus, labio inferiore cirris cincto, operculis triacanthis, pinna dorsali priore triradiata.*

Yellowish-brown Gadus, spotted with black, with the lower lip fringed with beards, the gill-covers three-spined, and the first dorsal fin three-rayed.

Gadus Tau. *G. dipterygius cirratus, operculis triacanthis, pinna dorsali priore triradiata.* Lin. Syst. Nat. p. 440.

Gadus cirris plurimis. Bloch. pl. 67.

THIS fish is so unlike the rest of the Gadi that it might almost be allowed to constitute a distinct genus: it is in fact more allied to the following genus, *Blennius*, under which however it cannot with strict propriety be placed.

The head and fore-parts are extremely broad and depressed, while the remainder of the animal is

compressed, tapering pretty suddenly towards the tail: the eyes are large, with gold-coloured irides, and are situated towards the upper part of the head: on each side the eyes is a series of small warts: the mouth is wide; the upper jaw furnished with several rows of sharp teeth; the lower with only two rows: the upper lip projects somewhat beyond the lower, which is fringed with a semicircle of short cirrhi or beards: the pectoral and ventral fins are of a sharpened form, and the first ray of the latter is very strong, and of a considerable length: the rays of the first dorsal fin, which is very small, are spiny; those of the second dorsal, as well as of the anal and caudal, are soft, and project somewhat beyond the edge of the membrane: the tail is rounded. The colour of this fish is yellowish brown, paler beneath, and the whole body as well as the fins variegated with pretty numerous and somewhat irregular blackish spots: the tail marked by two or three transverse bars, and between the eyes is commonly observed a transverse yellow bar or band. Native of the American and Indian seas. Grows to the length of about a foot, but is generally found of smaller size. It is supposed to be of a predacious nature, but its particular history seems to be not very distinctly known. The Count de Cépède places this fish, together with the *Gadus blennoides* of Linnæus, in a distinct genus, to which he gives the title of *Batrachoides*.

With one dorsal fin.

MEDITERRANEAN GADUS.

Gadus Mediterraneus. *G. maxilla superiore cirris duobus, inferiore unico.* Lin. Syst. Nat. Gmel. p. 1175.

Gadus with two cirri on the upper lip and one on the lower.

THIS also is very nearly allied to the Gadus Mustela, insomuch that it may be doubted whether it be really a distinct species, though furnished with only the second or long dorsal fin: mouth with two beards on the upper, and one on the lower lip. Native of the Mediterranean.

According to Cedepe this species has but two rays in the ventral fins, for which reason he considers it as a *Blennius*.

 TORSK.

Gadus Brosme. *G. ore cirroso cauda ovata.*

Gadus with the lower lip bearded, and ovate tail.

Brosme. Ström. sondm. 1. p. 272. t. 1. f. 19. Pontopp. norw. 2. p. 178.

THIS species is well described in the last edition of the British Zoology under the title of the Torsk. It is an inhabitant of the Northern seas, and is not observed lower than the Orkney islands, and even there is rather a scarce fish. The length of the specimen communicated to Mr. Pennant was twenty inches, and the greatest depth four and a half: the

head small; the upper jaw a little longer than the lower, and both jaws furnished with a multitude of small teeth: on the chin was a small, single beard: from the head to the dorsal fin was a deep furrow: the dorsal fin began within six inches from the tip of the nose, and extended almost to the tail: the pectoral fins were small and rounded: the ventral short, thick, and fleshy; ending in four cirrhi: the belly, from the throat, grew very prominent: the anal fin was long, and reached almost close to the tail, which was small and circular: the number of rays could not be counted with accuracy by reason of the softness and the thickness of the skin: the side-line was scarcely discernible: colour of the head dusky; of the back and sides yellow; of the belly white: the edges of the dorsal, anal, and caudal fins were white; the other parts dusky.

In the seas about Shetland this fish is said to swarm; and forms, both barrell'd and dried, a considerable article of commerce.

In the Gmelinian edition of the *Systema Naturæ* this species is described (from Müller) as having an ovate acute tail, but the descriptions and figures of other authors uniformly represent that part as of a rounded shape.

BLENNIUS. BLENNY.

Generic Character.

Caput declive.

Corpus elongatum, subcompressum, lubricum.

Memb. branch. radiis sex.

Pinnæ ventrales di, tri, s. tetradactylæ, muticæ.

Head sloping.

Body lengthened, subcompressed, lubricous.

Gill-membrane six-rayed.

Ventral fins two, three, or four-rayed, unarmed.*

With appendiculated head.

CRESTED BLENNY.

Blennius Galerita. B. fusco-flavescens nigro-punctatus, crista capitis transversa cutacea.

Yellowish-brown Blenny, with black specks, and a transverse skinny crest on the head.

Blennius Galerita. B. crista capitis transversa cutanea. Lin.

Syst. Nat. p. 441. Adonis. Bell. aquat. p. 219.

Crested Blenny. *Penn. Brit. Zool. 3. pl. 96.*

GENERAL length about four or five inches: body long, compressed, smooth and slippery: colour yellowish brown, freckled with darker coloured specks: belly of a paler cast: head furnished on the middle with a transverse finny appendage, which may be

either raised or depressed at pleasure; and between the eyes is a small triangular prominence, pointing backward, and red about the edges: ventral fins very small, short, and didactyle: dorsal shallow, running from the hind part of the head to the tail, which is of a round shape: vent placed at some distance beyond the pectoral fins: anal fin reaching from the vent to the tail. Native of the European seas, and found about the rocky coasts of Great Britain.

PUNARU.

Blennius Cristatus. *B. crista longitudinali setacea inter oculos.*

Lin. Syst. Nat. p. 441. Ray pisc. p. 73. Punaru.

Blenny with longitudinal setaceous crest between the eyes.

LENGTH about four inches: head thickish; eyes gold-coloured, situated towards the top of the head: over the eyes two short, red filaments: ventral fins three-rayed. Native of the Indian seas.

HORNED BLENNY.

Blennius Cornutus. *B. radio simplici supra oculos, pinna dorsali solitaria.* *Lin. Syst. Nat. p. 441. Mus. Ad. Frid. 2. p. 61.*

Blenny with simple ray between the eyes, and single dorsal fin.

THIS, according to Linnæus, its first describer, is a small species, with a long, thin, and simple process over each eye: on the head are a great many very small or scarcely visible scattered tuber-

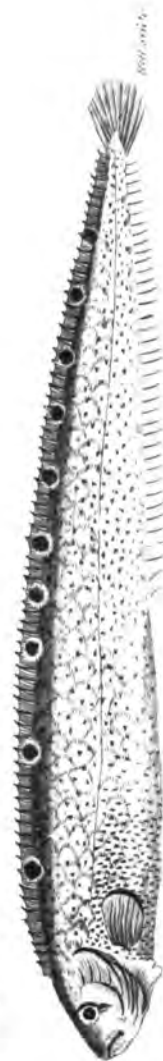
VITIPAROUS BLENNY.



SMOOTH BLENNY.



OCELLATED BLENNY.



Blenny.

cles or points : on each side the lower jaw is a tooth longer than the rest : the skin is mucous, and freckled all over with small reddish specks.

OCELLATED BLENNY.

Blennius Ocellaris. B. caeruleo-virescens, fusco subfasciatus, pinna dorsali lata, macula ocellari nigra.

Blueish-green Blenny, subfasciated with brown, with broad dorsal fin marked by a black ocellated spot.

Blennius ocellaris. B. radio simplici supra oculos, pinna dorsali anteriore oculo ornata. Lin. Syst. Nat. p. 441.

Butterfly Fish. *Will. p. 131. pl. H. 3. f. 2. Bloch. pl. 167. f. 1.*

This species is an inhabitant of the Mediterranean sea, and is usually seen of the length of about six or eight inches : it is numbered among edible fishes, though not much esteemed : it is of a thickish form in front, the body gradually declining towards the tail : the head is large, and slopes suddenly downwards : the mouth is wide, and furnished with sharp and close-set teeth : the body is without visible scales, and is generally of a greenish cast, much deeper on the back, and marked by a few large, distant, transverse clouds or bands of a dusky hue : on the head, between the eyes, are placed two long processes or filaments, slightly subdivided at their extremities : the back fin, which is very wide on its fore-part, is of a pale blueish tinge, clouded with dusky variegations, and is marked in the middle by a large black, or deep blue spot, surrounded by a whitish border. This fish is described

by Linnæus and some others * as having two
 sal fins; but Artedi and Bloch consider it as having
 in reality only one, the sinking in of the middle
 part, being in some specimens much deeper than
 in others, seems to be the cause of this difference of
 opinion.

FASCIATED BLENNY.

Blennius Fasciatus. *B. fusco-flavescens, fasciis transversis fuscis,
 cirris duobus simplicibus inter oculos.*

Yellowish brown Blenny, with transverse brown bands, and
 two simple cirri between the eyes.

Blennius fasciatus. *B. pinnulis simplicibus duabus inter oculos,
 pinnæ ani radiis novendecim.* Bloch. pl. 162. f. 1.

THIS fish, says Dr. Bloch, is distinguished from
 the rest by its simple filaments, by a pair of tufts
 situated between the eyes, and by having nineteen
 rays in the anal fin: the head is small and sloping:
 the body broad in front, and taper behind: the
 lateral line, which runs pretty near the back, is
 strait: the belly is thick: the vent placed nearer
 the head than the tail: the body covered with a
 viscid mucus: the rays of the tail subdivided, those
 of the other fins simple. Dr. Bloch makes no men-
 tion of the colour of this species, but his figure
 represents it of a pale yellowish brown, fasciated
 both across the body and dorsal fin with dusky
 bands. Its length is about six inches. Native of
 the Indian seas.

* Cepede describes two dorsal fins, but observes that they are
 sometimes so closely placed as to appear but one.

SALIENT BLENNY.

Blennius Saliens. B. fuscus, nigro striatus, cirro simplici inter oculos, pinnis pectoralibus maximis.

Brown Blenny streaked with black, with a simple cirrus on the head, and extremely large pectoral fins.

Le Blennie Sauteur. *Cepede 2. p. 479.*

THIS small species was observed by Commerson about the coasts of some of the Southern islands, and particularly those of New Britain, in the month of July 1768. It seems to be of a gregarious nature, and is seen swimming by hundreds, and as it were flying over the surface of the water, occasionally springing up and down with great rapidity among the rocks: it seems naturally formed for the celerity of its movements; the pectoral fins being very large in proportion to the body: they are nearly of a circular form when expanded, and when contracted reach almost as far as the vent on each side. This approach in point of form to the genera of *Pegasus*, *Trigla*, *Scorpæna*, *Exocoetus*, and others possessed of the power of temporary flight, seems, as *Cepede* observes, naturally to indicate a similar property. The body is of a very lengthened form, and greatly compressed on the sides: the upper jaw longer than the lower, so that the mouth seems to be placed underneath: the eyes are seated near the top of the head, and are large and round, with gold-coloured irides; and on the occiput rises a cartilaginous longitudinal process, of a simple cylindric form, of about four

millimetres in length: the colour of the body is brown, streaked with black, and the skin is extremely mucous or slippery. When dead, the colour frequently changes to a pale blue: there is no particular appearance of a lateral line, except what results from the longitudinal trace between the dorsal and lateral muscles.

The Count de Cepede farther informs us that the above species, in the manuscripts of Commerson, its first describer, is considered as a distinct genus, under the name of *Alticus*, and called *Alticus saltatorius*, but that it is a genuine species of Blenny. The gill-membrane has at least five rays: the dorsal fin has thirty-five articulated rays; the pectoral fins thirteen; the ventral two filiform rays; the anal twenty-six, and the tail, which is of a lanceolate shape, ten rays.

GATTORUGINE.

Blennius Gattorugine. *B. albidus fusco transversim undulatus, pinnulis superciliarum nuchaeque palmatis.*

Whitish Blenny, with transverse brown undulations, and palmated cirri over the eyes and the nape.

Blennius Gattorugine. *B. pinnulis superciliarum nuchaeque palmatis.* *Lin. Syst. Nat.* p. 441.

Gattorugine. *Will.* p. 132. *Penn. Brit. Zool.* pl. 96. *Bloch.* pl. 167.

THE Gattorugine is a Mediterranean species, usually growing to the length of eight or ten inches. It is of a moderately lengthened and com-

Compressed form, and of a whitish or pale ash-colour, variegated, particularly on the upper parts and dorsal fin, by several transverse undulations or streaks of a darker tinge: these colours are observed to vary; the streaks and spots being sometimes olive-coloured with pale blue edges; but what particularly distinguishes the fish from its congeners, is a double pair of ramified tentacula or lengthened processes on the head; the first pair being situated immediately over the eyes, and the latter pair over the back of the head: the mouth is wide, and the teeth very slender and sharp: the dorsal fin runs, as in most others of this genus, nearly along the whole length of the back; and the anal is continued from the vent to the tail. The Gattorugine is considered as an eatable fish, and feeds in the same manner as most others of the genus.

 SUPERCILIOUS BLENNY.

Blennius Superciliosus. B. flavescens, rubro maculatus, cirri superciliorum palmatis.

Yellowish Blenny spotted with red, with palmated superciliary cirri.

Blennius superciliosus. B. pinnulis superciliorum palmatis, linea laterali curva. Lin. Syst. Nat. p. 441. Bloch. pl. 168.

THIS species is of a moderately long and thick form: the head is small; the eyes rather large, with silvery irides, and immediately over each eye

is situated a small palmated crest or appendage divided into three segments: the lips are large, the mouth rather wide, and the upper jaw furnished with several rows of teeth: the body is covered with very small scales, and is of a yellow or gilded tinge, paler beneath, and marked, as well as the fins, by pretty numerous, and somewhat irregular spots of dusky red: the dorsal fin commences at the back part of the head, and is continued almost to the tail, but not far from its commencement suddenly sinks, so as almost to give the appearance of a smaller anterior dorsal fin, separate from the longer one: the pectoral fins are of moderate size; the ventral ones didactyle, and rather long: the vent is situated in the middle of the abdomen, from which part the anal fin commences, and reaches as far as the tail. This species is viviparous. It is a native of the Indian seas, and grows to the length of about twelve inches.

Pe

T

TENTACULATED BLENNY.

Blennius Tentacularis. B. exalbidus, fusco maculatus, radio supra oculos simplici, pinna dorsali antice uniolata.

Whitish Blenny, spotted with brown, with a simple cirrus over the eyes, and a large ocellated spot on the back fin.

Blennius tentacularis. B. radio supra oculos simplici, pinna dorsali integra antice uniolata. Lin. Syst. Nat. Gmel. p. 1179. Brunn. pisc. massil. No. 36.

THIS small species is greatly allied to the horned Blenny before described, but is scarcely more than two inches and a half long. Cope seems inclined to consider it as a variety of the horned Blenny caused by a difference of climate; this being a Mediterranean and the other an Indian fish. It is of an elongated form, and of a whitish colour, variegated with dusky clouds and specks; and marked on the back fin by a large ocellated spot: above each eye is a simple tentacular process, and the head is marked beneath by three or four transverse white bars: the irides are silvery, with red specks: the dorsal and anal fins are variegated with dusky spots and streaks.

SIMOUS BLENNY.

Blennius Simus. *B. cirro supra oculos minimo, pinna dorsali posterius caudali annexa, linea laterali curva.* *Lin. Syst. Nat. Gmel. p. 1179. Sujet. Act. Petrop. 1779. p. 198. t. 6. f. 2. 4.*

Blenny with very small cirrus over the eyes, dorsal fin united behind to the caudal fin, and crooked lateral line.

LENGTH about three inches and a half: body smooth and very thin: mouth placed beneath: jaws arched: lips membranaceous, very thin, and serrate: teeth small, crowded, equal, in a single row: eyes very large, approximate, and prominent: gill-covers small, flexible, pellucid, and consisting of two pieces: vent in the middle of the body: at the origin of the dorsal fin is a fatty tubercle: tail rounded, with four or five small spurious fins placed near it.

HAKE BLENNY.

Blennius Phycis. *B. fusco-cinereus, naribus subcristatis, cirro labii inferioris, dorso bipenni.*

Cinereous brown Blenny, with subcristated nostrils, a beard at the lower lip, and two dorsal fins.

Blennius Phycis. *B. naribus subcristatis, cirro labii inferioris, dorso bipenni.* *Lin. Syst. Nat. p. 441.*

Forked Hake. *Penn. Brit. Zool. 3. p. 170.*

THE present species is ranked by Mr. Pennant among the Gadi, but the ventral fins, being fur-

Perched with only two rays, seem to justify its being rather considered as a Blenny than a Gadus. It has however a general resemblance to that genus, being of a similar shape, and having a beard beneath the lower lip: it is a native of the European seas, and is so well described by Mr. Pennant in the British Zoology that nothing need be added to the account there detailed.

“ The length of one that was taken on the Flintshire shores was eleven inches and a half; its greatest depth three inches; but, according to Dr. Borlase*, some grow to be above eighteen inches long. The head sloped down to the nose in the same easy manner with others of this genus (Gadus): the mouth large: besides the teeth in the jaws, was a triangular congeries of small teeth in the roof of the mouth. At the end of the lower jaw was a small beard: the first dorsal fin was triangular; the first ray extended far beyond the rest, and was very slender: the second fin began just behind the first, and extended almost to the tail: the ventral fins were three inches long, and consisted only of two rays, joined at the bottom, and separated or bifurcated towards the end: the vent was in the middle of the body; the anal fin extended from thence just to the tail: the lateral line was incurvated: the tail rounded. The colour was a cinereous brown.”

* Nat. Hist. Cornw. p. 268.

VAR. ?

THIS is introduced by Ray, in his *Synopsis Piscium*, on the authority of Mr. Jago, a judicious ichthyologist of that age, under the title of *Barbus minor Cornubiensis cirris bifurcis*, or the *Lesser Forked-Beard*. Mr. Pennant having never seen the fish, places it next to the preceding, under the name of *Least Hake*. It is said not to exceed five inches in length: the first dorsal fin (according to the figure in Ray's *Synopsis*) is shorter than that of the preceding fish: the second resembles that of the other kind: the ventral fins are bifurcated: it has a small beard, and a rounded tail, but the head is shorter and more steep: the colour black, the skin smooth, and the appearance disagreeable.

With plain or inappendiculated head.

TRIFURCATED BLENNY.

Blennius Trifurcatus. B. fuscus, labiis albis, pinnis ventralibus triradiatis solutis.

Brown Blenny, with white lips, and three-rayed open ventral fins.

Trifurcated Hake. *Penn. Brit. Zool. 3. p. 172. pl. 32.*

FIRST described by Mr. Hugh Davies of Beaumaris in Wales, who communicated it to Mr.

Pennant. Habit resembling that of the *Gadus Tau*, the head being depressed and very broad; the eyes large; the irides yellowish; the mouth very wide, with irregular rows of incurvated teeth: in the roof of the mouth a semilunar congeries of teeth: no tongue; beneath the lower lips a small beard: body compressed from the setting on of the pectoral fins, but remarkably so as it approaches the tail, growing very slender near that part: on the beginning of the back a furrow containing the rudiment of a first dorsal fin: the second dorsal fin reaches almost to the tail, and the anal fin corresponds: above the pectoral fins on each side, is a row of tubercles, nine or ten in number, from the last of which commences the lateral line, which at its middle descends in a curved direction, and from thence continues strait to the tail: the ventral fins were very slender, and deeply trifurcated: the pectoral ones rounded and of moderate size: the length of the specimen described was twelve inches; the colour a deep brown, except the foldings of the lips, which were snow-white, giving a singular appearance to the animal. This species is evidently allied to the *Gadus Tau*, and was first discovered by Mr. Davies near Beaumaris.

PUNCTULATED BLENNY.

Blennius Punctulatus. *B. albidus squamosus, punctis irregularibus fuscis, pinnis ventralibus elongatis.*

Whitish scaly Blenny, with irregular brown points, and elongated ventral fins.

Le Blennie pointillé. *Cepede 2. p. 506. pl. 12. f. 3.*

THE head of this species is large, and scattered over with numerous impressed specks, which extend as far as the gill-covers: the opening of the mouth is narrow, the lips thick, and the teeth sharp and close-set: the eyes very large: the body covered with very visible scales, and marked by several small, irregular clouds and spots on a paler ground: the pectoral fins very large, and ovate: the ventral composed each of two soft rays, almost as long as the pectoral fins: the dorsal commences at the back of the head, and extends as far as the tail: its rays are tipped with small filaments, more especially the eight last, of which six are rather longer and two shorter than the rest: the vent fin is distinct from the tail, which is of a rounded shape. Size, according to *Cepede's* figure, about five inches. Described from a specimen in the Paris Museum.

SMOOTH BLENNY.

Blennius Pholis. *B. olivaceus, subnigro alboque nebulosus, linea laterali curva, subbifida.*

Olivaceous Blenny, with blackish and whitish clouds, and curved sub-bifid lateral line.

Blennius Pholis. *B. capite laxi, linea laterali curva subbifida.*
Lin. Syst. Nat. p. 443.

Smooth Blenny. *Penn. Brit. Zool. 3. pl. 36. Bloch. pl. 71. f. 2.*

THIS species, which appears to have been known to Aristotle, is an inhabitant of the Northern and Mediterranean seas, where it commonly frequents the borders of the coasts, lying among the stones, sea-weeds, &c. and occasionally enters the mouths of rivers. It grows to the length of seven or eight inches, but is usually found much smaller: it is a fish of a strong and vigorous nature, biting fiercely when first taken, though incapable of piercing the skin on account of the smallness of its teeth: it is so tenacious of life that, according to Mr. Ray, it may be kept for the space of four and twenty hours out of water. By the help of its ventral fins it is observed to creep with ease up the sides of stones, &c. It feeds on smaller fishes and their spawn, as well as on shell-fish, sea insects, &c. It is caught both by the line and net, but being a coarse fish, is very little esteemed as a food, and is rather used for the purpose of a bait for other fish. In colour it is subject to vary, but is usually of a deep olive-brown, marbled with blackish clouds: sometimes it is nearly black, and

sometimes is marked along the sides by several small whitish specks: the head is large, sloping suddenly to the mouth: the teeth slender, very sharp, and close-set: the irides red: the pectoral fins broad and rounded, consisting of about thirteen rays: the ventral small, consisting of only two thick rays separated at the ends: the dorsal fin reaches from the hind part of the head almost to the tail: the vent is placed about the middle of the abdomen, and the anal fin reaches from thence nearly to the tail, which is rounded at the end.

BOSCIAN BLENNY.

Blennius Boscianus. *B. olivaceus, albido fuscoque nebulosus, and in medio corporis.*

Olivaceous Blenny with brown and whitish clouds, and vent in the middle of the body.

Le Blennie Bosquien. *Cepede 2. p. 493. pl. 13. f. 1.*

NATIVE of the American seas, and very common in the bay of Charles-Town. It is extremely nearly allied to the Blennius Pholis, and like that species bites hard when taken: length about three inches and a half: colour olive, with whitish clouds or variegations, and obscure brown streaks: head inclining to a sub-triangular form: front whitish and flattish: eyes small: irides yellow: each jaw armed with very numerous, small, crooked teeth: body mucous, compressed, without apparent scales: fins spotted with brown: pectoral fins of moderate

size, and rounded: ventral small, and didactyle: the first eleven rays of the dorsal fin shorter and softer than the rest: the rays of the anal fin bent backwards at their tips: both anal and dorsal fins join the tail, which is of a rounded shape. This species was discovered by Mr. Bosc, by whom it was communicated to the Count de Cepede.

GUNNEL BLENNY.

Blennius Gunnellus. *B. fusco-flavescens, fusco-punctatus pinna dorsali ocellis circiter decem nigris.*

Yellowish-brown Blenny, with deeper specks, and about ten ocellated black spots in the dorsal fin.

Blennius Gunnellus. *B. pinna dorsali ocellis decem nigris.* Lin. *Syst. Nat.* p. 443.

Butter-Fish. *Will.* p. 115. Spotted Blenny. *Penn. Brit. Zool.* 3. pl. 96. *Bloch,* pl. 71. f. 1.

THIS species is an inhabitant of the Baltic, Mediterranean, and Northern seas, and grows to the length of about nine or ten inches: the body is of a long and very compressed form; the head small; the lower jaw longer than the upper, and both furnished with a row of small teeth: but what principally distinguishes this fish is a row of moderately distant, round, black spots, with paler circles, disposed throughout the whole length of the dorsal fin, which is shallow, and reaches from the top of the head to the tail: the pectoral fins are very small and rounded, and the ventral most extremely small, each consisting of only two short thick rays: the

vent is situated in the middle of the abdomen, and the vent fin, which is shallow, is continued from thence to the tail; being marked in its progress by several small dusky spots near its base: the tail is small and of a rounded shape: the colour of the body is yellow-brown, clouded and freckled with deeper specks: the skin is extremely slippery, and the rays of the back fin are strong and pungent. This fish inhabits similar situations with the *B. Pholis*; is of similar manners, and like that species is used by the fishermen as a bait. It is however eaten by the Greenlanders, who often dry it for that purpose. It is said to swim with considerable rapidity. Dr. Bloch observes that the specific character given by Linnæus cannot be admitted as sufficiently exact, since the number of spots on the back fin is not constantly ten, but varies from nine to twelve.

VIVIPAROUS BLENNY.

Blennius Viviparus. B. olivaceus subtus albidus, supra fusca subfasciatus, naribus tubulosis.

Olivaceous Blenny, whitish beneath, subfasciated above with brown, and with tubular nostrils.

Blennius viviparus. B. ore tentaculis duobus. Lin. Syst. Nat. p. 443.

Viviparous Blenny. *Penn. Brit. Zool. 3. pl. 37.*

Mustela vivipara. Will. p. 122. Bloch. pl. 72.

THIS species is considerably larger than either the *Pholis* or *Gunnellus*, being sometimes found of the length of twelve inches. It is of a moderately

slender form, with a smooth, slippery skin, covered by small scales, and is of a yellowish olive-colour, paler beneath, and marked on the upper parts by several moderately large dusky spots, which are peculiarly conspicuous along the base of the dorsal fin, forming a kind of bars on that part and over the back: the dorsal, caudal, and anal fins in this species are united, while the ventral fins are very small and short, each consisting of two thick, rounded rays: the pectoral fins are rounded, and of moderate size: the head is small, the lips thick, and the nostrils prominent and tubular: the rays of all the fins are soft.

This fish, like the *B. superciliosus*, is distinguished by a particularity which takes place in but very few fishes, except those of the cartilaginous tribe; being viviparous, the ova hatching internally, and the young acquiring their perfect form before the time of their birth. Not less than two, or even three hundred of these have been sometimes observed in a single fish. One might be apt to imagine that so great a number of young, confined in so small a space, might injure each other by the briskness of their motions; but this is prevented by the curious disposition of fibres and cellules among which they are distributed, as well as by the peculiar fluid with which they are surrounded. When the fish is thus advanced in its pregnancy, it is scarcely possible to touch the abdomen without causing the immediate exclusion of some of the young, which are immediately capable of swimming with great vivacity: their relative size may

be judged of by an inspection of the annexed plate.

The Viviparous Blenny is a littoral fish, and is found about the coasts of the Mediterranean, the Baltic, and the Northern seas, and sometimes enters the mouths of rivers. It seems to vary as to the period of producing its young, which, according to some authors, takes place in the winter, or in the very early part of spring, and according to others in the summer season.

Like others of its genus it feeds on the smaller fishes, insects, &c. It is taken by the line and net, but is in very small esteem as a food, though perhaps some degree of prejudice may operate in this respect, the bones, like those of the Gar-Fish, acquiring a greenish colour by boiling.

WEESLE BLENNY.

Blennius Mustelarius. *B. pinna dorsali anteriore triradiata.*
Lin. Syst. Nat. p. 443.

Blenny with the first dorsal fin three-rayed.

A SMALLISH species, slightly described by Linnaeus in the work above referred to, and principally distinguished by having two dorsal fins with only three rays in the first, the other being of considerable extent.

AREOLATED BLENNY.

Blennius Lampenus. *B. corpore teretiusculo flavicante, areolis dorsalibus fuscis.* O. Fabr. faun. Groenl. p. 151. Lin. Syst. Nat. Gmel. p. 1183.

Yellowish Blenny with subcylindric body marked on the back by brown patches.

A SMALLISH species, of a palish brown colour, whitish beneath, and yellowish towards the hind part: the head is also yellow and narrower than the body: the back marked with brown patches or spots: native of the Mediterranean, inhabiting deep, sandy shores, and concealing itself among fuci, stones, &c. in the manner of the *B. Pholis* and some others.

FROG BLENNY.

Blennius Raninus. *B. fuscus, pinnis ventralibus subsexfidis, cirro gulari.* Lin. Syst. Nat. p. 444.

Brown Blenny, with obscurely six-cleft ventral fins, and gular cirrus.

Gadus raninus. Mill. Zool. Dan. prodr. No. 359.

NATIVE of the Northern seas, as well as of some of the larger lakes: in habit resembling the *Gadus Tau*, and may be considered as a kind of intermediate species, connecting the genera of *Gadus* and *Blennius*. By Cope it is placed, together with the *Gadus Tau*, in a distinct genus under the name of *Batrachoides*. The head is very much depressed, and broader than the body: the irides

tawny: the mouth turned up, and white within: the jaws are each beset with a double row of sharp teeth: the tongue is obtuse, fleshy, and thick: the fins black, fleshy, and soft: the dorsal and anal equal, and abrupt on the hind part; and the two first rays of the ventral fins terminate in a long bristle. This is not an eatable fish, and it is said that wherever it appears the other fishes retire.

MURÆNOID BLENNY.

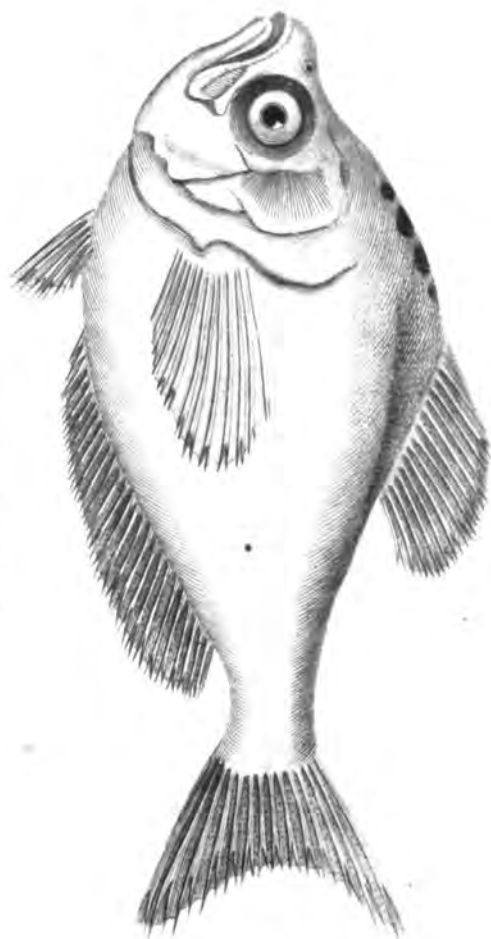
Blennius Murænoides. *B. fusco-cinereus, subtus albidus, pinnis ventralibus uniradiatis spinosis minimis.*

Brownish ash-coloured Blenny, whitish beneath, with very small, single-rayed, spiny ventral fins.

Blennius Murænoides. *B. membrana branchiostega triradiata, pinnis ventralibus uniradiatis spinosis minimis. Lin. Syst. Nat. Gmel. p. 1184.*

Body compressed, sword-shaped, smooth, and without visible scales: length about six inches: colour cinereous brown, the head and belly paler: head marked by minute tubercles: front triangular, rather convex: mouth oblique: jaws equal, with two rows of teeth: lateral line obscure: vent in the middle of the abdomen: dorsal fin prickly: pectoral and caudal oblong: vent fin equal. Native of the northern seas?

INDIAN KURTI'S



Thalassoma kurti

KURTUS. KURTUS.

Generic Character.

Corpus latum, utrinque carinatum, dorso elevato.

Membrana branchiostega radiis duobus.

Body broad, carinated both above and below; with greatly elevated back.

Gill-Membrane two-rayed.

INDIAN KURTUS.

Kurtus Indicus. *K. argenteus, dorso aureo.*

Silvery Kurtus, with gold-coloured back.

Kurtus Indicus. *Bloch. pl. 169.*

THE genus *Kurtus*, instituted by Dr. Bloch, consists at present of a single species only. This is a native of the Indian seas, and is supposed to be a common shell-fish, small cancri, and other sea creatures, the remains of which were observed in the stomach of the specimen examined by Dr. Bloch. The length of this fish was about ten inches, including the tail, and its greatest breadth something more than four inches: its shape is deep or broad, the sides being much compressed, and the back rising very high in the middle: the gill-covers consist of a large single membrane on each side: the eyes are large, with silver irides: the mouth is of moderate width, and curves downwards: the teeth are small and numerous, stand-

ing in several rows in each jaw: the nostrils are simple: the rays of the fins are soft, (except the first ray of the dorsal and ventral,) projecting somewhat beyond the membrane of the fin. The colour of the whole body is silvery as if covered with foil, without any appearance of scales: the back is tinged with gold-colour and marked by three or four black spots on its ridge, and the fins have a reddish cast.

END OF PART L