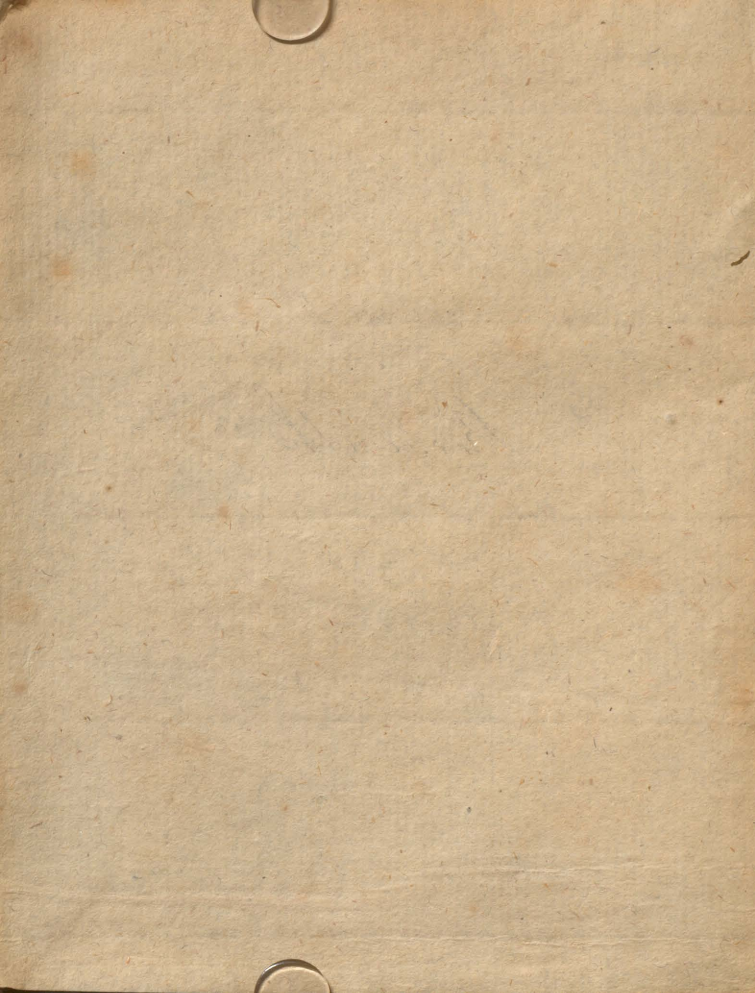




Beckwith



THE  
B E A U T I E S  
OF THE  
C R E A T I O N.

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VOLUME III.

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*FISHES AND REPTILES.*

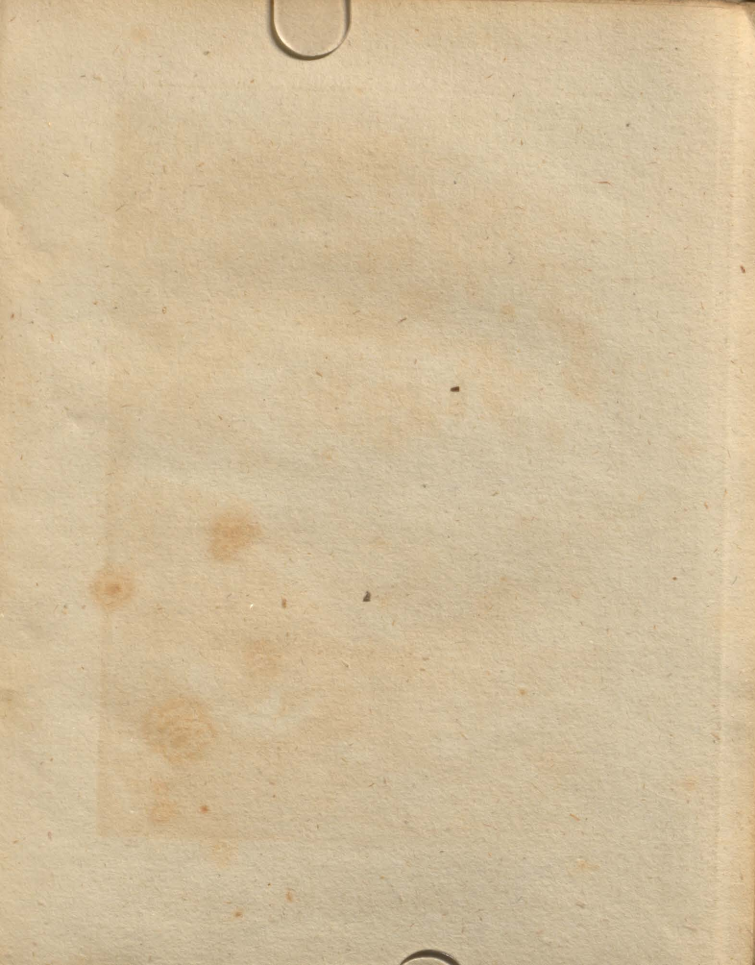
THE  
BEAUTIFUL  
OF THE  
CREATION.

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VOLUME III.

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THE END OF THE WORLD





Pub<sup>d</sup> Nov<sup>r</sup> 26. 1792 by G. Riley Ludgate S<sup>t</sup>



THE  
B E A U T I E S  
OF THE  
C R E A T I O N :  
OR, A NEW MORAL SYSTEM OF  
N A T U R A L H I S T O R Y :  
IN FIVE VOLUMES :

Consisting of

QUADRUPEDS,

BIRDS,

FISHES AND REPTILES,

INSECTS,

TREES AND FLOWERS,

&c. &c.

Designed to inspire Youth with Humanity towards the  
Brute Creation, and bring them early acquainted with  
the wonderful Works of the Creator.

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*Who can this field of miracles survey,  
And not with Galen, all in rapture, say,  
Behold a God! adore him, and obey.*

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THE SECOND EDITION.

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L O N D O N :

PRINTED FOR G. RILEY, No. 33, LUDGATE-STREET ;  
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1793.

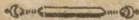
THE  
BENTLEY  
OF THE  
GREAT BRITAIN  
NATURAL HISTORY  
IN THE MUSEUM

Containing  
a Description of the  
Mammals, Birds, Fishes,  
Reptiles, and Insects,  
as well as the  
Mineralogy, and  
Vegetable Kingdom,  
with  
the Natural History of the  
Islands of the West Indies,  
and the  
Islands of the  
South Sea.

By  
J. BENTLEY  
Esq.  
F.R.S.  
LONDON  
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in the Strand.



## INTRODUCTION.



**I**N Natural History, FISHES hold the third station after man. As Quadrupeds occupy the terrestrial, and Birds the aërial regions of the globe. Fishes claim to themselves the dominion of that immense body of waters by which the earth is surrounded. And as that is known greatly to exceed the dry land, they consequently must, in proportion, exceed in number either of the foregoing classes of animals. For though it must be allowed that the portion of space allotted to the flight of Birds is infinitely more extensive than that

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appro-

appropriated to the use of Fishes, yet that space is not inhabited by the feathered race, as the ocean is by its scaly tenants. As the former only inhabit, for a time, those expansive regions, they are obliged to alight on the earth in order to procure rest and sustenance.

IMMENSITY OF NUMBERS.—It is reasonable, therefore, to suppose, that the inhabitants of the ocean greatly exceed in number either the beasts or birds. How numerous this class of animals might be, is far beyond the limits of human comprehension. When we compare the variety of those already known, with the numberless sorts that must have hitherto escaped human curiosity, and at the same time consider the amazing fecundity of which they are possessed, (a single Fish being capable, it is said, of producing eight or ten millions of its kind in a season,) we are led to wonder how the ocean can find room for its inhabitants. Were it not for the calculations which naturalists have been able to make, this account of their prolific powers would exceed credibility; but *Lewenboeck*, whose indefatigability and exactness in experiments of this kind is not to be doubted, computes, that there are no less than 9,344,000 eggs in a single cod-fish.

## INTRODUCTION.

vii

**GENERATION.**—The mode in which Fishes generate varies according to their species. Whales, and some other sorts, produce their young by means of coition; while the females of the spinous sort dig holes in the bottoms of rivers, ponds, &c. wherein they deposit their spawn, which the male immediately impregnates, by emitting on it a seminal fluid. For this purpose, at certain seasons, many species enter the rivers, and having made the necessary provision for giving being to their young, retire again to the sea.

**DISPOSITION FOR PREY.**—The amazing fecundity of fishes, before described, would undoubtedly produce a want of room, even in the immense depths they inhabit, were it not that the subsistence of one species depends on the destruction of another. An universal warfare prevails among them. The large devour the small, even of their own species; and those that escape, in their turn, become the tyrants of such as are smaller than themselves. The only way the smaller fry have to avoid this continual scene of hostility and violence, is by making their way into shoal places, where their more bulky enemies are afraid, or unable to pursue them.

them. And this disposition for preying on each other is not confined to any particular spot. Shoals of one species follow those of another through vast tracts of the ocean, from the vicinity of the pole as far as the equator. Thus the cod, from the Banks of Newfoundland, pursue the whiting even to the most southern parts of Spain.

MIGRATION.—A wonderful uniformity of conduct is observable in many species. Some may be called Fishes of passage, while others never stir from the places in which they receive their being. Thus the herring has its first station in those frozen parts of the ocean which lie nearly under the north pole; from whence they regularly, every year, make their way, and after overspreading the Irish and German Seas, at length arrive in the British Channel. Their voyage is performed with the utmost regularity. The time of their departure, which seems to be regulated by a general approbation, as they always assemble together before they set out, usually takes place from the month of June to August, and during their progress, not a straggler from the general body is ever to be seen. The cause of the Migrations is not easily to be accounted for.

for. Whether the voyage is undertaken in quest of food; whether they find a pleasure in an annual change of climate; or whether it proceeds from an apprehension of visits from some powerful enemy, at that season, were they to remain at home, is one of those secrets of nature that will never be accounted for. During these excursions their numbers are much thinned. After having satisfied the voracity of various tribes, when they arrive at their appointed stations, they there become a further prey to mankind.

CLASSES.—The three grand divisions of the Fish-kind are the *cetaceous*, or whale kind; the *cartilaginous*, and the *spinous*. Of the first sort are the whale kind; of the second, naturalists make two divisions, viz. those which bring forth their young alive, and those that produce spawn. These last are distinguished by the name of *spinous*; because they are provided with small sharp bones to support and strengthen their muscles; whereas those that bring forth their young alive, such as the skate and the thornback, have only a very soft sort of gristles. There are, however, some spinous or bony fishes, which bring forth their young alive; among which, some think, the eel might be placed. There

## INTRODUCTION:

are likewise some Fish which produce large eggs, in the manner of birds, with the yolk and white; and these are hatched in their bodies before they are excluded. Some species are called leather-mouthed Fish, from having their teeth in the throat.

EXTERNAL FORMATION.—There is a great similarity in the shape of most Fish. The head is generally a little tapered, by which means they are able to traverse, with greater ease, the fluid element they inhabit. The tail is extremely flexible; and in this lies their greatest strength; by bending it to the right and left, they repel the water behind, and thereby advance their head, with all the rest of the body. The fins are chiefly used to poise the body, and keep it steady, and likewise to stop it when it is in motion. It is observable, that when a fish would turn to the left, it moves the fins on the right side; and when to the right, it plays the left; but the tail is the grand instrument of progressive motion. The bodies of most Fish are furnished with scales, which are strong in proportion to the dangers nature has exposed them to. These scales are generally besmeared with a slimy liquor without; and under them, all over the body, there lies an oily substance,



substance, which supplies the Fish with warmth and vigour. Their eyes are generally flat; that form being most suitable to the element in which they live.

INTERNAL STRUCTURE.—Within their body is an air bladder; by means of which they are enabled to rise or sink in the water. When that is contracted, they sink to the bottom; but when it is dilated, they rise to the top. It has usually been supposed, that this bladder is only a reservoir of air, without which the Fish would not be able to breathe while under water; but experiments have proved the foregoing to be the use of it. Most Fish are furnished with teeth, or something analogous thereto; these teeth are not, however, designed for chewing, but only to retain their prey. They are placed in different positions, according to their manner of feeding; in some they are fixed in the jaws, palate, and tongue, in others in the throat. Most Fish are provided with a tongue; but some of them, as the carp, have none at all; instead of it they have a fleshy palate. It is difficult to determine for what use their great Creator has bestowed a tongue on Fish. That it does not serve them to form the voice, is certain, since they are mute; nor does it assist them

in chewing, because they swallow every thing whole; neither is it likely to be the organ of taste; because in almost every species, except the whale, it is of a gristly substance. An uncertainty likewise prevails as to the manner in which Fishes communicate to each other their wants and desires. Every other tribe of animals has its peculiar cry, by which it is enabled to do this; but as Fish are universally allowed to be dumb, what mode they make use of for this purpose, has not fallen within the reach of man to determine. Some Fish have no throat, for the maw or stomach is placed next their mouths; but those, whose bodies are long and slender, particularly the eel kind, have a throat, though they have no lungs. Notwithstanding the stomach of a Fish has no sensible heat, yet it has a wonderful faculty of digestion; since those of the voracious kind swallow not only great numbers of other Fish, but even prawns, crabs, and lobsters, which their stomachs readily digest or dissolve. Although water is the natural element of Fish, some sorts have been kept alive, and even fattened, out of it. Carps, when hung up in a cool cellar, in a small net, and covered with wet moil, may be fed and fattened with white bread, steeped in milk. Their heads, however, must be left at liberty.

CONNECTION

CONNECTION WITH THE OTHER CLASSES OF ANIMALS.—A connection between every class of animals is perceptible throughout the whole creation. This union takes place between man and quadrupeds in the ape; between beasts and birds in the bat, and in more instances than a work of this kind will allow an insertion of. Thus Fishes are united to quadrupeds by the sea lion, seal, and other amphibious animals; to birds by the flying fish; and to insects by the nautilus. Even the marine productions approach animated nature in the polypus.

USE FOR FOOD.—In general the flesh of Fishes yields little nourishment, and soon corrupts. It abounds in a gross sort of oil and water, and has but few volatile particles; which renders it less fit to be converted into the substance of our bodies; all sorts of animals that abound most in active and volatile principles, being most proper for the aliment of mankind. It, however, generally digests and passes off the stomach very soon, upon which account it is the most proper food in some kinds of diseases, when stronger nourishment would be very prejudicial. Several sorts of Fish are salted, in order to preserve them; after which they are dried

with smoke; others are dried in the sun before they are salted; but all these preparations render them hard of digestion. The most usual way of eating them is either fried, roasted, or boiled.

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## THE WHALE.

**T**HIS sort of fish, as we have observed, are endowed with lungs, with which they breathe, bring forth their young alive, nourish them with their milk, and resemble quadrupeds in their internal parts. Authors very much disagree with respect to the size of this fish; John Faber asserts, that he saw one at Corsica an hundred feet long; while Frederick Marten insists, that the largest Whales caught at Spitzbergen seldom exceed sixty feet in length. It is however certain, that there are Whales of a larger size than those mentioned by Marten.



THE SPERMACETI WHALE.

## THE SPERMACETI WHALE.

**T**HIS Whale differs much from any other: it has teeth, whereas the other has none; nor is the head near so large, in proportion to the body, as that of the toothless Whale.

In January, 1762, a Spermaceti Whale was brought into Greenland-Dock by a trading vessel. Those who were concerned in taking it, give the following account of this fish, and the manner in which they killed it.

As they were going through the Hope, they saw something floating at a distance, which appeared to them like the mast of a ship; but, as they approached it, they discovered it to be a large fish, and, upon seeing it cast up a great quantity of water, concluded it was a Whale. They chased him ashore below the

Hope-Point, and then went off to him in their boats. He seemed a motionless lump, his head and tail being concealed in the water. They first pierced the prominent parts; and, after having dug a hole twelve inches deep, a great torrent of blood issued forth. Upon this they withdrew to a distance, and soon after the boat had passed him, (as the water was deep enough over his tail) he struck the ground with such violence, as to force up stones and mud to a great height in the air. They waited about three quarters of an hour, and then he expired with the most horrible groans. After this, they fastened a cable to his body, and at last brought him to Greenland Dock, where he was seen by several thousands of people.

They took out of his head eight puncheons of spermaceti, which lay between the eyes and the spout-hole, in different cells of the brain. Its extreme length was fifty four feet, and its breadth fourteen; the lower jaw was ten feet, and the length of the penis eight; the tail measured fifteen feet.

At Mr. Rackstrow's Exhibition-Room, in Fleet-Street, is the skeleton of a Whale of this kind. Those  
who



who shew this curiosity say, that it will contain thirty people in its head, and fifty in its chest; and that twelve hogshheads of spermaceti oil were taken out of its upper jaw, or rather that part of the head above it, which was entirely composed of flesh and oil.

This Whale was thrown ashore on the Isle of Thanet, Feb. 2, 1762, and measures, from the snout to the tail-fin, seventy-two feet. The upper jaw, which appears to be one solid bone, is sixteen feet long, and six broad at the top, where it is widest, and from whence it grows narrower to the end of the snout, which terminates in a point. Along the middle of it runs a deep round groove, through which he sucked up the water, which he afterwards discharged at the spout-hole. From the top of this jaw proceeds a large thick bone, which turns upwards almost perpendicularly to the height of about four feet, and forms, as it were, part of a kind of skull. The under jaw is not near so wide as the upper, herein being just the reverse of the toothless Whale. At the distance of about eight feet from the snout, it divides and becomes forked, in order to receive in the cavity a protuberance of the upper jaw, which seems ex-

actly to fit it. This jaw had two rows of teeth, of which only one tooth is now remaining; but as this is quite loose, and kept in its place only by a piece of wire, it leaves some room to doubt, whether it be the real tooth or not. The upper jaw has no teeth; but, instead thereof, there is a groove or socket to receive those of the lower; so that, when the mouth was shut, they must have resembled so many pointed weapons in a sheath. The sockets of the eyes, which are nearly round, and placed almost at the furthest part of the jaws, measure about eighteen inches over. Hence, what is told us by some writers, that the crystalline humour of the eye in this fish is not bigger than a pea, must appear to common reason as a fable; for we must not suppose that Nature is so unequal in her proportions. Beyond the sockets of the eyes are the two fin-bones, which are very thick, five feet long, and two feet three inches in the broadest part. There are eleven ribs on each side, the largest of which is ten inches in circumference. The ribs form a cavity, eight feet wide, within the body of the fish, and in which were contained the heart, lungs, &c. The back-bone is at much the same distance from the floor, by which the

ribs are supported. The back-bone, which is three feet ten inches thick, (measured in the round part only; for the upper part of it is closely set, throughout the whole length of it, with spinal bones, like those of a hog) and the tail-fin compose the rest of this skeleton. The tail-fins, which are yet remaining, are each eight feet long.

Naturalists divide the different species of Whales into various classes; but to enumerate them all would be too tedious, and perhaps very little interesting to the young reader: we shall content ourselves with observing, that the substance called Spermaceti, which is prepared from the brain of this fish, is an excellent balsamic, and very valuable medicine in diseases of the breast.

The Dutch, for three hundred years, had the whale-fishery almost to themselves, and it is still one of the principal branches of their trade. Each vessel of three hundred tons has six shallops, and each shallop is allowed a harpooner, with five sailors to row it. The instrument, with which they strike the fish, is a harpoon or javelin, five or six feet long, pointed with steel,

like

like the barb of an arrow, of a triangular shape. The harpoonier, standing at one end of the sloop, when at a proper distance from the Whale, darts the harpoon with all his force into the Whale's back, where, if it fastens, he lets go a string tied thereto, at the end of which is a dry gourd: this, by its swimming on the water, shews whereabouts the Whale is; for, as soon as he is struck, he plunges to the bottom. However, great care is taken, that the line may be long enough; for if that in one shallop should be too short, they fix it to another from the nearest shallop, and another after that, if there should be occasion. The cord often runs out so swiftly, that it takes fire, if it is not kept wetting with a swab. When the Whale rises for breath, they attack him again and again, till he begins to grow weak by loss of blood, and then they plunge their javelins into various parts of his body, by which means they soon dispatch him.

## THE GREENLAND WHALE.

THEY are even at present sometimes found in the Northern Seas ninety feet in length; but formerly they were taken of a much greater size; when the captures were less frequent, and the fish had time to grow. Such is their bulk within the arctic circle; but in those of the torrid zone, whales are still seen one hundred and sixty feet long, where a fishery has been lately established.

This Whale is a large heavy animal, and the head alone makes a third of its bulk: the under lip is much broader than the upper. The tongue is composed of a soft spongy fat, capable of yielding five or six barrels of blubber. The gullet is very small for so vast a fish, not exceeding four inches in width. In the middle of the head are two orifices, through which it spouts water to a vast height, and with a great noise, especially when disturbed or wounded. The eyes are not larger than those of an ox; they are placed towards the back of  
the

NATURAL HISTORY.

the head, being the most convenient situation for enabling them to see both before and behind. On the back there is no fin, but on the sides, beneath each eye, are two large ones. The tail is broad and femilunar; and when the fish lies on one side, its blow is tremendous.

This whale varies in colour; the back of some being red, and the belly generally white. Some are black, others mottled, and others quite white, according to the observations of Marten, who says, that their colours in the water are extremely beautiful, and that their skin is very smooth and slippery.

What is called Whalebone adheres to the upper jaw of the animal, and is formed of thin parallel laminae, some of the longest being four yards in length; of these there are commonly three hundred and fifty on each side, and in old fish a great many more; of these about five hundred are of a length proper for use, the others being too short. They are surrounded with long strong hair, not only to prevent their hurting the tongue, but as strainers, to prevent the return of their food when they discharge the water out of their mouths.

Though

Though so bulky an animal, the Whale swims with vast swiftness, and generally against the wind. It brings either one or two young at a time. Its food is a certain sort of small snail, and, as Linnæus says, the *medusa*, or sea blubber.

The great resort of this species is within the arctic circle ; but they sometimes visit our coasts.

The English were late before they engaged in the Whale-fishery: it was carried on by the Biscayeners long before we attempted the trade, not only for the sake of the oil, but also of the whalebone, which they seem to have long trafficked in.

In ancient times, the Whale seems never to have been taken on our coasts, but when it was accidentally flung ashore: it was then deemed a royal fish, and the king and queen divided the spoil; the king asserting his right to the head, and her majesty to the tail.

The Whale uses the tail only to advance itself forward in the water; this serves as an oar to push its mass along; and its enormous bulk cuts through the ocean

ocean with amazing force and celerity. The fins are principally used for turning in the water, and giving a direction to the velocity impressed by the tail.

It produces its young at the end of nine or ten months, and is fatter at that time than usual, particularly when she is near her time of bringing forth.

When she suckles her young, she throws herself on one side on the surface of the sea, and the young ones attach themselves to the teat. She has two breasts, which are white in some, and speckled in others, and are filled with milk, resembling that of land-animals.

The tenderness of the female for her offspring is very remarkable: wherever she goes, she carries it with her, and when closely pursued, keeps it supported between her fins. Even when wounded, she still clasps her progeny. If she plunges to avoid danger, she takes it to the bottom with her, but rises more frequently than usual, in order to give it breath.

They are generally seen in shoals of different kinds together, and migrate from one ocean to another in very large companies. It appears astonishing how a number

her



ber of these enormous animals find subsistence together; and still more extraordinary that they are usually fatter than any other animals of whatsoever element.

The Whale is an inoffensive animal, and consequently has many enemies, which take advantage of his disposition, and his inability to combat: a small animal of the shell-fish kind, called the whale-louse, sticks to his body, like shells that are seen at the foul bottom of a ship. It usually takes its station under the fins, and, in spite of the efforts of the Whale, it continues its hold, and lives upon the fat: nature having furnished it with instruments adapted to the purpose.

The sword-fish is also a terrible enemy to the Whale: the latter has no instrument of defence except the tail, with which it endeavours to strike the foe. And indeed a single blow taking place would effectually kill it: but the sword-fish is extremely active, and easily avoids the stroke; then bounding into the air, it falls upon its adversary, not with intent to pierce with its pointed beak, but to cut with its toothed edges.

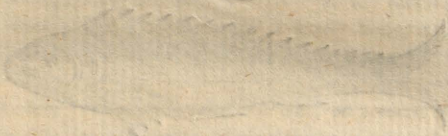
A cetæ-

A cetaceous animal, called, by the fishermen of New England, the killer, is a still more powerful enemy. A number of these surround the Whale; some attack it with their teeth before, and others behind, till the great animal is subdued; and, when it becomes their prey, it is said that they only devour its tongue.

The great resort of these animals was on the inhospitable shores of Spitzbergen; where the distance of the voyage, the severity of the climate, the dangers of the Icy Sea, together with their own formidable bulk, might have been expected to protect them from human injury: all these however were but slight barriers against the arts, the courage, and the necessities of man.

The flesh of the Whale is considered as a dainty in some nations, and the French seamen sometimes dress and use it as their ordinary diet: the English and Dutch sailors say it is hard and ill-tasted, but the French assert the contrary. The savages of Greenland, and those near the south pole, are exceedingly fond of it. They not only eat the flesh, but drink the oil, which they  
esteem

esteem one of their greatest delicacies. When they are so fortunate as to find a dead Whale, they make their abode near it, and seldom remove while any flesh remains upon the bones.



THE DOLPHIN.

The Dolphin is a small, sleek, and swift animal, which is found in the North Sea, and is covered with a smooth hard skin. It has an oblong rounded body, with a long pointed snout, and a small dorsal fin. The skin of the dolphin is very soft, and the color is a dusky grey. The dolphin is a voracious feeder, and feeds upon small fish, and the young of the whale. They are extremely tame, and will approach the ship, and will even leap out of the water.



## THE DOLPHIN.

THE Dolphin of the Ancients, properly so called, is of the Whale kind, and is covered with a smooth hard skin. It has an oblong roundish body, with a long round snout, turned a little upwards. The cleft of the mouth is long, and shuts very close; and the teeth are small and sharp. The tongue is large and fleshy, and the eyes also large; but they are outwardly so much covered with the skin, that nothing but the pupil appears. They are placed near the corners of the mouth, and

and almost in the same line. There is a double tube, or pipe, on the top of the snout, through which it spouts out water. It is placed just before the brain, and communicates with the wind-pipe; and there is a very strong fin on each side, not far from the mouth, and another on the back, which is partly bony, and partly gristly. The tail is made up of two fins.

The skin is thick and firm, but soft, on account of the fat that lies underneath; and on the back it is black, but on the belly white. The flesh is blackish, and resembles that of a hog, and the inner parts are not unlike those of the Porpus; but it differs from that fish, in having a long snout, somewhat like a goose, and being more slender and fleshy, though not so fat. They live to a considerable age, some say twenty-five or thirty years; and sleep with their snout out of the water. When they seem to play on the top of the water, many affirm it is a sign of an approaching tempest. They swim exceeding swift, and pass at a stated season out of the Mediterranean, through the Dardanelles into the Black sea. They are sometimes seen in shoals, and there is supposed to be always a male and female at least together. They will live three days out of water, during

during which they are said to make such a mournful noise, as to affect those greatly who are not used to hear them.

The predilection of the ancients in favour of these animals is not easily accounted for. Historians and philosophers seem to have contended who should invent the greatest number of fables concerning them. The Dolphin was celebrated in the earliest time for its fondness to the human race, and was distinguished by the epithets of the boy-loving and philanthropist. Scarce an accident could happen at sea, but the Dolphin offered himself to convey the unfortunate to shore. The musician flung into the sea by pirates, the boy taking an airing into the midst of the sea, and returning again in safety, were obliged to the Dolphin for its services. It is indeed difficult to assign a cause why the ancients should thus have invented so many fables in their favour.

The moderns have juster notions of these animals; and disregard the many fables, which every day's experience contradicts.

The parts of the Dolphin, appropriated to medicinal uses, are the liver, the ashes, the belly, and the fat.

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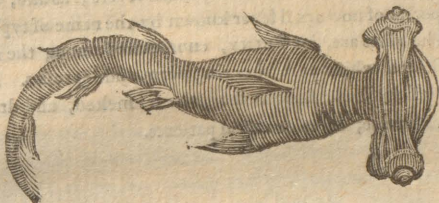
The belly dried, triturated, and exhibited in some proper liquor, is said to cure splenetic patients. It is said, that the liver roasted, and used with aliments, perfectly cures tertian and quartan fevers; as also, that species of nocturnal fever known by the name of typhus. The ashes are, by PLINY, enumerated among the medicines which cure the ringworm and leprossies. According to the same author, the fat melted, and drank with wine, cures dropical patients.

B H A H B

THE HAWK-HEADED SHARK

The Hawk-headed Shark is distinguished by its shape of its head, which is like a hawk's hammer. It grows to a very extraordinary size. The eyes are placed on each side of the head, and from each other as it is possible for them to be; they are large, round, and look rather downwards than upwards. It has a very large mouth placed underneath, which is furnished with exceeding strong

SHARKS.



## S H A R K S.

## THE HAMMER-HEADED SHARK.

THE Hammer-headed Shark differs from all others in the monstrous shape of its head, which is like a smith's hammer. It grows to a very extraordinary size. The eyes are placed on each side of the head, as far from each other as it is possible for them to be; they are large, round, and look rather downwards than upwards. He has a very large mouth placed underneath his Head, which is furnished with exceeding strong, broad,



broad, sharp teeth. The tongue is broad, and like that of a man. The body is round and long, not covered with scales, but with a skin like leather. The back is ash-coloured, and the belly white.

The White Shark is the largest of this kind, for some of them weigh one thousand pounds, and are sixteen feet in length. Some pretend that they have seen those of four thousand pounds weight, and particularly one that had an entire man in its belly.

The head is large, and somewhat depressed, and the snout oblong. The mouth is enormously wide, and the teeth very numerous and terrible, there being five or six rows of them, which are extremely hard and sharp, and of a triangular figure.

The fins are larger, in proportion, than in other fish, and the tail is forked; but the upper part is considerably longer than the lower. There is one fin on the back, another near the tail, two on the belly, between which the vent is placed, and there also two near the gills and mouth. The skin is rough, the eyes large and round, and furnished with variety of muscles. The mouth

mouth is not placed, as in other fish, at the end of the snout, but under the eyes, at some distance from it, which obliges him to turn on his back when he takes his prey.

The flesh is white, and has no great rankness in its taste; for which reason it is frequently eaten by some of our sailors, especially when they can come at nothing better.

Sharks often follow ships for a long while together, at which time the sailors catch them by striking a barbed instrument, called a fizgig, into their bodies, and so draw them up into the ship. As soon as he is laid upon the deck, he begins to flounce in a terrible manner with his tail; and therefore they cut it off with an ax, as fast as they can. They sometimes bait a large iron hook, made fast to a thick rope, with a piece of salt beef, which he will swallow very greedily, and then they drag him on board.

This fish is not only found in the Mediterranean, but also in most parts of the ocean; and it is no uncommon thing for them to lay hold of a man's leg or thigh, when they have an opportunity, and either drag him into the water, or bite the limb off.

So great is the rapacity of the Shark, that nothing which has life is rejected by it: but human flesh appears to be its most favourite food; when once it has fed upon mankind, it continually haunts those places where it expects a return of its prey; it is, however, asserted, that this voracious fish will take the black man's flesh in preference to the white, and that when men of different colours are in the water together, it always makes choice of the former.

BELONIUS assures us, that he saw a female Shark produce eleven live young ones at a time, and that the female in this tribe is larger than the male.

The ancients were acquainted with this fish; OPPIAN, in particular, gives a long and very entertaining account of its capture. Their flesh, which is sometimes eaten, is exceedingly coarse and rank, and hardly digestible by any but the negroes, who are remarkably fond of it: the liver affords three or four quarts of oil; and the skin is polished into that substance, known among us by the name of shagreen.

The Blue Shark is as bold and mischievous a fish as any that swims, and has a back of a lively blue colour, but its belly is of a silver white. The skin is not rough; the snout is long, sharp, flat, and indented  
C with

with many small holes above and below. The length is from six to eight feet, to which the thickness is proportionable. The mouth is very large, and placed as in the former, with teeth sharp and notched like a saw; but there are not so many as in the White Shark. The holes of the gills are five on each side, and the tail is divided into two parts. It is to be met with in various parts of the ocean, and often appears near the sea-coasts of Cornwall.

ÆLIAN says, this species will permit the small brood, when in danger, to swim down its mouth, and take shelter in its belly. This fact is confirmed by RONDELETIUS; and, as Mr. PENNANT observes, it is no more incredible, than that the young of the Opossum should seek an asylum in the ventral pouch of its parent; a fact too well known to be contested. It is probable, that this degree of affection is not peculiar to the Blue Shark, but common to the whole genus.





## THE SAW-FISH.

THE Saw-fish has its name from a saw, which the bone of its nose is supposed to resemble; but they are more like the teeth of a comb, placed at some distance from each other. They are from twenty to thirty in number, placed on each side the bone, and are in some five feet in length when the body of the fish is ten feet. On the back it is of an ash-colour, and the belly is white; and there are no teeth in the mouth, which is transversely cleft, like that of the Hammer-headed Shark; but the lips are as rough as a file. There are

two fins on the back, and that next the head is like the Euts-kopf's; and that towards the tail is hollowed like a sickle. On the belly there are four fins, two on each side; and those next the head are broadest and longest; those next the tail are placed directly under the uppermost fin on the back; and the tail is widened behind and before; but it is not divided into two parts. The shape somewhat resembles a man's naked arm, and the nostrils are oblong. The eyes stand high out of the head, and the mouth is directly underneath the eyes.

The Saw-fish are great enemies to the Whale and Fin-fish; for many of them will gather about one, and never leave him till he is killed. They are fond of nothing but his tongue, for they leave all the rest behind. When seamen and sailors happen to see this sight, they never offer to intermeddle, but let them alone till the Whale is conquered; for should they do otherwise, their long-boats would fright the Saw-fish away, and then the Whale would make his escape. Though they inhabit different parts of the ocean, they are in greatest plenty in the North seas; perhaps because there are the greatest number of Whales.



THE CRAMP-FISH, OR TORPEDO.

THE Cramp-fish, or Torpedo, is of a round or circular shape, except the tail, which is long and slender. It is of no extraordinary bulk, it seldom weighing above sixteen pounds. The colour is of a dirty yellow, like that of sand or gravel; and the eyes are small, being almost covered with skin; behind which there are two holes, shaped like half moons. On the upper part of the body there are five remarkable black spots. The head is broad, and joined to the body, for which reason it seems to have no head at all. The extremities

of the body terminate in fins; and a little above the vent there are two fins. Below those in the middle of the back or tail, for it is hard to say which term is most proper, there are two more, the one a little below the other. The upper corner of the tail is a little longer than the other, somewhat in the manner of a Shark, and other fish of that kind.

The mouth of a Cramp-fish is like that of a Skate, and is furnished with small sharp teeth; the nostrils are placed near the mouth, and, instead of gills, there are five holes as in Thornbacks. There are no prickles in any part of the body, it being smooth and soft to the touch: but there are a great many small holes, especially about the head, through which a slimy liquor is secreted, that renders the body slippery, and defends it from the sharpness of the salt water.

The most remarkable quality of this fish is to stupify, or benumb the hand of the person that touches it, to such a degree, that it seems to be affected with the cramp, from whence it derives the name of the Cramp-fish. Captain JOBSON being at Cassan, a sailor caught one of these fish, which he took for a Bream; but,



but, as soon as he had touched it, he cried out that he had lost the use of his hand. His companions laughed at him, and immediately one of them trod upon it with his naked foot, upon which the whole leg became motionless. Then they called the cook, and desired him to take the fish and dress it. He took it in both hands, but let it fall directly, and declared, in a mournful tone, that he was seized with the palsy. However, a negro, who was acquainted with this fish, told them, that after it was dead, this benumbing quality would cease. The famous REDD ordered one to be caught, that he might make a trial of the numbing quality. He had no sooner touched this fish, but he found a tingling in his hand, arm, and shoulder, attended with a trembling, and so acute a pain in his elbow, that he was obliged to take his hand away. The same troublesome symptoms were renewed as often as he repeated the trial; however, they grew weaker and weaker till this creature died, which was in about three hours time. After it was dead, this quality was quite lost, and it might be handled as safely as any other fish.

BORELLI imagines the stupefactive quality does not proceed from any poisonous steam, because, if it be

touched, when entirely at rest, it produces no effect at all; besides, if the fingers compress the extremities of the sides ever so strongly, the hand receives no damage at all; but if the hand is laid upon the fleshy part over the back-bone, the violent vibrations of the fish will stupify it, and affect it with a sort of cramp. He likewise observed a very remarkable difference in the manner of touching this fish; for, if his fingers were quite extended, and he touched the fish lightly with them, he received no damage; but if they were bent, and the knuckles laid upon it, especially the joint of the thumb, then the strong vibrations produced a cramp. From hence he concluded, that the tendons, and nervous ligaments of the joints, being exquisitely sensible, were very much affected with the violent and repeated strokes of the fish, which produced a cramp, in the same manner as a blow upon the elbow. However, Mr. REAUMUR affirms, he could never procure any such trembling or vibration of the fish that BORELLI speaks of; and he is confident, the numbness proceeds from the velocity of one single stroke, which is equal to that of a musket-ball. Accordingly, a person who feels this pain, imagines his fingers are affected with a violent stroke. As a proof of this he informs us that,

that, before the fish gives this stroke, he draws up his back quite round, which was before depressed and flat.

The flesh of this fish is seldom or never eaten, as being very unwholesome; for it is moist, soft, fungous, and of an ill taste,





THE SEA-WOLF.

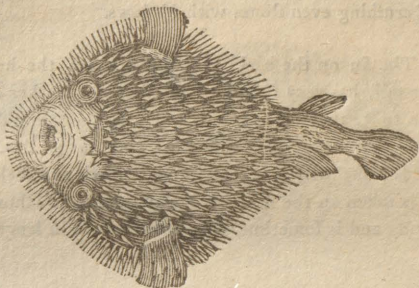
THE SEA-WOLF has a smooth body, being without scales, and very slippery. It is somewhat in the shape of an Eel; but it is of a brownish grey, and the sides are adorned with blackish transverse shades. The head is large, and flat above the eyes, and the cheeks seem to be swelled and puffed out. It is a most voracious fish, and will bite hard with its terrible teeth.

The Danish and German writers say, that its bite is so hard, that it will seize on an anchor, and leave the marks

marks of its teeth in it ; and that the animal is capable of crushing even stones with his jaws.

The fin on the back, which runs from the head to the tail, has very soft rays, and there is another opposite to it, that runs from the vent to the tail. At the gills there are two roundish and large fins. It feeds principally on crustaceous animals and shell-fish. It is taken in the sea near Yorkshire and Northumberland, and is sometimes seen about a yard in length.





## THE SEA PORCUPINE.

THE SEA PORCUPINE of South America, has a mouth like that of a frog, and is about seven inches long. The head is broad, and speckled with black spots, especially near the gill fins. The prickles of this fish are of a flattish shape; there are also broad dusky stripes which run along the back.

To enumerate the various species of it, as described by naturalists, would be endless, and indeed unnecessary, since the description of the above will always be sufficient to enable the curious to distinguish fish of this kind from any other, and their own observations will point out to them wherein they differ.





### THE SWORD FISH,

THE SWORD FISH may be easily known from any other by its snout, being in the shape of a sword. It is fifteen feet in length, and two hundred pounds in weight. The body is long and round, and the head thick, but it grows gradually smaller towards the tail. The skin is very thin and smooth. The upper jaw terminates in a very long snout like a two-edged sword; and the lower is exceeding sharp at the end, making a very acute angle. The snout is one third of the

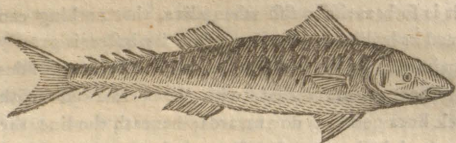


the whole length of the fish, and there is only one fin on the tail, which runs almost the whole length of the back. The tail is forked almost in the shape of a half moon, and has only one pair of fins at the gills. There are two fins on the lower part of the body near the vent, and the stomach is long, almost in the shape of a cone. It is extremely voracious.

The Sword-fish is still taken between Italy and Sicily, as formerly. Their custom is to place watchmen on the high cliffs that hang over the sea, whose business is to observe the motions of these fish. As soon as they perceive any, they give notice to the boats below, and, by signs before agreed upon, they direct them what course to take. As soon as they draw near them, a fisherman, who is used to the sport, climbs up a small mast placed in the boat for that purpose, to observe the fish he designs to strike, at the same time directing the rowers which way to steer. When they have almost overtaken one, the fisherman immediately comes down, and strikes a spear or harpoon into his body, the handle of which, being loose in the socket, parts from it, while the iron part, which is made fast to a

long cord, remains in the body : then, the fish is suffered to flounce about till he is tired, and grows faint with the loss of blood. After this, they either hoist him into the boat, or if he is very large, tow him on shore.





THE MACKREL.

**M**ACKREL swim in large shoals in divers parts of the ocean, but particularly on the coasts of England and France. They enter the English Channel in April, taking their course through the Straits of Dover; and in June they advance as far as Cornwall, Suffex, Normandy and Picardy. They are taken either with an angle rod, or with nets; and when they are angled for, it must be out of a boat, smack, or ship that lies at anchor. They will snap at any thing, insomuch that they will take a bit of scarlet cloth,

They

They are usually from a foot, to a foot and an half in length, and seldom exceed two pounds in weight.

It is so beautiful a fish when alive, that nothing can exceed its brilliancy of colour; but its lustre is greatly impaired by death. The colour of the back and sides is a fine green, varied with blue, marked with black lines pointing downwards; beneath the line, the sides and belly are of a silvery colour. It is a fish of prey. When just taken, the flesh of a Mackrel is delicate food, and is much esteemed. Those who have tasted Mackrel perfectly fresh, know how much they are superior to those which have been taken two or three days.

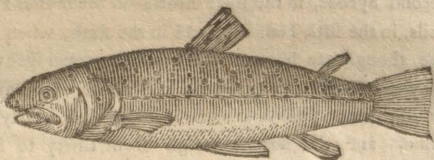
They have a method in Cornwall of pickling and salting Mackrel, where it proves a great relief to the poor during winter. They are recommended for the jaundice, and obstructions of the liver.

It is nourishing food, and reckoned to be of a dissolving nature; but is heating, and produces viscous and gross juices, and is not easy of digestion.

In the West of England they fish for them with nets, near the shore, in the following manner: one man fixes a pole into the sand near the sea, to which he fastens one end of a long net. Another in a boat takes the other end of the net in his boat, and rows round in a circuit as far as the length of the net will permit, and then back towards the shore; when his boat turns round, he steps into the water, and taking the cord of the net with him, drags the net towards the shore; then upon a signal given, both the men draw the net out of the sea, and by this method often catch three or four hundred fish; they are immediately carried away by horses, which wait for that purpose. The quantity of Mackrel sometimes taken upon that coast is almost incredible; and then they are so cheap, that they are not worth carrying away.

There are two ways of pickling them; the first is, by opening and gutting them, and filling their bellies with salt, cramming it as hard in as possible with a stick; which done, they range them in strata, or rows, at the bottom of the vessel, strewing salt between the layers. In the second method, they put them  
immediately

immediately into tubs of brine, made of fresh water and salt, and let them steep so long, till they think they have imbibed salt enough to make them keep; after this, they take them out and barrel them up, taking care to press them down as close as possible.



## THE SALMON.

ACCORDING to WARD this is a northern fish, being unknown in the Mediterranean sea, and other warm climates. It is found in France, in some of the rivers that empty themselves into the ocean; and north as far as Greenland. In several countries they are a great article of commerce, being cured different ways, by salting, pickling, and drying: there are stationary fisheries for them in Iceland, Norway, and the Baltic; but the greatest are at Colraine, in Ireland; and at Berwick, in Great-Britain.

It

It has different names, according to its different ages: those which are taken in the river Ribble, in Yorkshire, are in the first year called Smelts, in the second Sprods, in the third Morts, in the fourth Fork-tails, in the fifth Half-fish, and in the sixth, when they are thought to have attained their proper growth, they are deemed worthy of the name of Salmon. In all parts of Europe the size of this fish is nearly the same, and the largest weigh from thirty to forty pounds.

As this very beautiful fish is so universally known, a minute description is unnecessary. It is longish in the body, covered with small thin scales; the head is small in proportion to the body, and has a sharp snout; and the tail is forked. The back is of a bluish colour; and the other parts are generally white; intermixed with blackish or reddish spots, placed in a very agreeable manner. The female may be distinguished from the male, by having a longer and more hooked snout, in having scales that are not so bright, and also in having its body speckled all over with dark brown spots. The belly is also flatter, and not so red.

This



This fish lives both in the fresh and salt waters; quitting the sea at certain seasons, in order to deposit its spawn in security in the gravelly beds of rivers remote from their mouths.

The Salmon-fishery was an article of so much importance, that so early as the 13th of Edward the First, an act was passed to prohibit the capture of the Salmon, from the nativity of our Lord to St. Martin's day, in the waters of the Humber, Owse, Trent, Don, Arre, Derwent, Wharfe, Nid, Yore, Swale, and Tees; and successive monarchs have provided for the security of the fish in other rivers.

The Smelts, or fry of Salmon, leave the Mersey about May or June, and then weigh about two ounces a-piece; they return about August or September, and weigh from one pound and an half to two pounds. Their greatest magnitude is much the same in most parts of Europe, and when they are largest, they weigh from thirty-six to fifty-four pounds; one of this last weight being caught at Lachford Causeway, in the year 1763.

Salmon

Salmon ought to be kept a few days before it is dressed, for which reason it is better when it reaches London, than when caught in the Mersey.

The Salmon chuses the river for his abode about six month in the year; they enter the fresh water about December or January, where they continue till the autumnal season, at which time they cast their spawn, and soon after return to the sea.

When their spawning time arrives, the female seeks a proper place, in a gravelly bottom, where she has been observed to work with her head, tail, belly, and sides, till she has formed a kind of nidus, of the same dimensions with herself; which done, she discharges her spawn, and retires; then the male, or milter, advances; this is no sooner over, but the female returns to the male, when they use their joint endeavours to cover their brood with the gravel, in which they work with their noses like hogs: after this they return to the deeps to recover their strength, which they do in about twenty days.

There

There is nothing relative to this fish which has been more talked of, than its agility in leaping over the obstacles which oppose its passage either to or from the sea; for they are frequently seen to throw themselves up cataracts and precipices many yards high. They sometimes make several essays before they can gain their point, and when they have done it, it has been often to their own destruction, for they have leapt into baskets placed on purpose to catch them. There is a remarkable cataract on the river Tivy in Pembrokehire, where people often stand wondering at the strength and agility which they exercise to get out of the sea into the river; on which account it is known in those parts by the name of the Salmon-leap. On the river Wear, near the city of Durham, there is another of this kind, which is supposed to be the best in England: there is another at Old Aberdeen in Scotland, where such great plenty of Salmon has been caught, that they have been deemed the principal trade of the place. Whenever their passage to the sea is intercepted by weirs, or any other contrivance, they soon grow sickly, lean, and languid; and in the second year they pine away and die. It is worth observation, that the Salmon is not only desirous of

4 returning

returning back to the rivers, but to that very river where it was spawned, as evidently appears by an experiment made by fishermen, and others, who have caught them when very small, and run a small ribband, tape, or thread, through the tail fin: by this mark they have been certain that they have retaken the same fish, at the same place, as they returned from the sea: by this means they have likewise discovered, that the Salmon is of very quick growth, and considerably more so than any other fish.

The chief rivers in England that yield this excellent fish are the Thames, Severn, Mersey, Trent, Medway, Dee, Ex, Uik, Wye, Lon, Tyne, Werkington, Weaver, &c. However, our London markets are supplied soonest from the north, where they are not only more plentiful, but are in season before those of the southern rivers. The Mersey greatly abounds with Salmon, which in the spring strive to get up that arm of the sea, and with difficulty evade the nets, which the fishermen spread to catch them before they get to Warrington-bridge, at which place the river becoming narrower, and the land-owners having an exclusive right, each proprietor, by his agents, catches Salmon,

which, in the whole, amounts to above one thousand pounds a year; by which means the towns of Warrington, Manchester, and Stockport, are well supplied, and they are carried on horseback to Birmingham, and other inland towns.

The chief Salmon fisheries in Europe, are along the coasts of England, Scotland, and Ireland; the fishing usually begins about the first of January, and ends the eleventh of August. It is performed with nets in the places where the rivers empty themselves into the sea, and along the sea-coasts thereabout; because these fish are seen to crowd thither from all parts in search of fresh water. They also fish for them higher up in the rivers, sometimes with nets, and sometimes with locks or weirs made for that purpose with iron-gates: these gates are so contrived, that the fish in passing up the river can open them with their heads, but they are no sooner entered than the gates clap to, and prevent their return. Thus the Salmon are inclosed as in a reservoir, where it is easy to take them.

Near

Near Flixton in Lancashire, they fish for Salmon in the night-time, by the light of torches, or kindled straw, which the fish mistaking for the day-light, make towards, and are struck with the spear, or taken with the net, which they lift up with a sudden jerk from the bottom, having laid it in the evening before opposite the place where the fire is kindled. In some parts of Scotland, it is said, they ride a fishing up the rivers, and when they espy them in the shallows, they shoot them with fire-arms. It is very common to dart Salmon as they are endeavouring to get over the weirs.

When the fish are caught, they open them, take out the guts and gills, and salt them in large tubs made for that purpose, out of which they are taken before October; and are packed up in casks, from 300 to 450 pounds weight.

There are forty-one considerable fisheries on the Tweed, extending upwards of about fourteen miles from the mouth, which are rented for near five thousand four hundred pounds per annum.

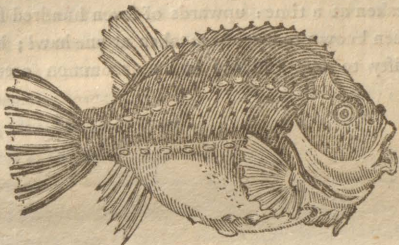
About

About the month of July, the capture in the Tweed is prodigious: in a good fishery a boat load of them are often taken at a time: upwards of seven hundred fish have been known to have been taken at one haul; but from fifty to one hundred is no uncommon occurrence.

THE LUMBER

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### THE LUMP-FISH.

**T**HIS is also called the Sea-Owl, and in Scotland the Cock-Paddle. This singular fish encreases to the weight of four pounds, and the length of sixteen inches: the shape of the body is like that of the Bream, deep, but very thick, and it swims edgeways. It is of a blackish colour, a little tingured with red: it has no scales, but the skin is rough, with sharp tubercles of a blackish colour in every part. There are three rows of crooked spines or prickles on each side; and another row of the same on the top of the back. The belly is of a bright



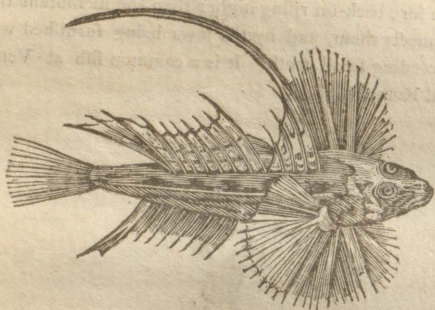
bright crimson colour; the pectoral fins are large and broad, almost uniting at their base. Beneath this is the part by which it adheres to rocks, &c. under the water, and this so firmly, that it is very difficult to remove it. It consists of an oval aperture, surrounded with a muscular and soft substance, edged with small appendages like threads, which concur as so many claspers. By the assistance of this part, it adheres firmly to whatever it pleases: on putting a fish of this species, just caught, into a pail of water, it fixes itself with such force to the bottom, that, on taking the fish by the tail, the whole pail may be lifted up, though it holds some gallons, and that without removing the fish from its hold. However extraordinary this may appear, we have sufficient testimony of the truth of it, for Mr. PENNANT informs us he has known an instance of the kind.

The mouth of the Lump-fish resembles that of the Sun-fish, but is somewhat larger: the lips are flat and thick; the jaws are full of teeth, and the nostrils are tubes or pipes which rise above the skin.

These

These fish are found in great abundance in the Greenland seas, during the months of April and May, when they approach the shore to spawn. They have extremely large roes, which the Greenlanders boil and eat: they are remarkably fat, which renders them more agreeable to the natives, who are fond of oily food.





## THE DRAGON-FISH.

THE small Dragon-fish is nine inches in length, and taken in the sea. RAY says, he has never seen any of this kind above six inches long. It has an oblong body depressed, and almost square, and the colour on the back is of a yellowish green, but on the belly white: the sides are speckled with small spots of a blueish silver colour. This fish may be known from all other small fish by the spots just mentioned, by the round holes of the gills, by three pointed prick-  
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les at the extreme corners of the gills, by the rays of the fore back-fin rising higher than the membrane that connects them, and by the jaws being furnished with exceeding small teeth. It is a common fish at Venice and Rome.

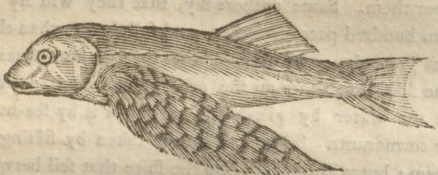


THE SEA BREAM.

The Sea Bream is a common fish in the Mediterranean Sea, and is highly valued for its flesh. It is a species of fish that belongs to the family Sparidae. The fish is characterized by its elongated body, small head, and slightly open mouth. It has a small eye and a slightly open mouth. The body is elongated with a visible dorsal fin and a tail. The drawing is very light and appears to be a watermark or a very faint print.

THE

upper part of the wings is of a light olive colour; on the sides they are brownish yellow with small black spots. The base of the wings they use to avoid the water, and they can be drawn up to avoid the pursuit of the Dolphins and other fishes that would devour them. When they are flying they will fly for some hundred yards, and then they will sink to the bottom. The Flying Fish is a very common fish in the sea, and is often seen flying over the water. It is a very useful fish, and is often used for food. The Flying Fish is a very common fish in the sea, and is often seen flying over the water. It is a very useful fish, and is often used for food.



THE FLYING FISH.

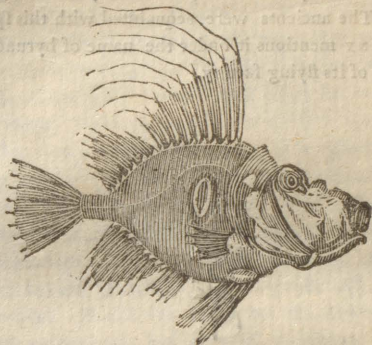
**I**N shape and colour the Flying Fish nearly resembles that of a Herring, but the eyes are larger in proportion. It has two pair of fins like wings; the greater of which are placed a little behind the gills, and the lesser about the region of the vent. The wings before are preceded with a small fin of six rays; and the

upper part of the wings is of a dirty olive colour; but on the edge they are beautifully painted with round blue spots. By the help of these wings they arise out of the water, and fly a considerable way, to avoid the pursuit of the Dolphins and other fishes that would devour them. Some authors say, that they will fly for two hundred paces together, and fall down when their fins grow dry; in their flight they go sometimes on one side, sometimes on the other, and are taken either in the water by gilt-heads, or out of it by sea-mews or cormorants. They are never taken by fishing for them; but will often fly into the ships that sail between the tropics. NIEUHOFF says, that the Flying Fish is blueish on the back, but inclining to brown towards the tail; that it has large eyes, broad yellowish fins, and in shape resembles the smelt. Different authors, says a naturalist, having given different accounts of this fish, renders it highly probable, that there are several kinds of them. The flesh of them has a very agreeable flavour, and is very wholesome; which, very likely, may be the inducement to other fishes so frequently to pursue it. Mr. RAY affirms, that he has seen them frequently in the fish-markets at Rome, as well as in

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the islands of Sicily and Malta, where they are brought for sale. The ancients were acquainted with this species: PLINY mentions it under the name of *hyrundo*, and speaks of its flying faculty.





THE DOREE, OR GILT FISH,

**H**AS a broad compressed body, not much unlike that of a flounder; but it swims erect. The head is very large and compressed, and the mouth is extremely wide. The colour of the sides is olive, with a large round black spot on each, by which it may be distinguished from other fish of this kind. In short, the form of this fish is hideous; the body is oval; the eyes large, and the irides yellow. They never grow to a great size; one

of



of the weight of twelve pounds being considered as a very large fish. It is called the Dorce, or Gilt Fish, on account of its shining appearance when alive.

It was very long before this fish attracted our notice as an eatable one: the vulgar prejudices, on account of its deformity, deterred our ancestors from venturing to eat it; but that judicious actor and bon vivant, Mr. QUIN, has effectually established its reputation, and added a most delicious repast to our table.

This fish is found not only in the southern seas of this kingdom, but also on the coast of Anglesea. Those of the largest size are taken on the Bay of Biscay, off the French coasts; they are also very common in the Mediterranean.



THE HERRING.

**H**ERRINGS differ greatly in size, but the usual length is from nine inches to a foot. The colour of the back and sides is green, varied with blue, and the belly is silvery. What principally distinguishes this fish from all others, is a scaly line that runs along the belly from the head to the tail. The scales are large, thin, and fall off with a slight touch. It has no spots, and the belly is sharp like a wedge. The eyes are very large, the gill-covers are very loose, and open wide; which

which occasions the immediate death of the fish when taken out of the water; whence the proverb arises, *as dead as a herring*.

The flesh of the herring is in great esteem, being fat, soft, and delicate; especially if it be drest soon after it is taken.

Herrings are met with in vast shoals on the coast of America, as low as Carolina: they are also extremely numerous in the seas of Kamtzchatka. Their great winter rendezvous is within the arctic circle; where they continue several months in order to recruit themselves after the fatigue of spawning; the seas within that space swarming with insect food, in a much greater degree than our warmer latitudes.

Herrings begin to appear off the Shetland Isles in April and May; but the grand shoal make their appearance in June. Their number is so immense as to alter the appearance of the very ocean. They are divided into distinct columns of five or six miles in length, and three or four in breadth, and they

drive the water before them with a kind of rippling; sometimes they sink for a few minutes, then rise again to the surface, and in fine weather reflect a variety of splendid colours.

Towards the end of June, herrings are in full row, and they continue in perfection till the beginning of winter, when they begin to deposit their spawn. The young herrings approach the shores in July and August, and are then from half an inch to two inches in length. Very few young herrings being found in our seas during winter, it is imagined, that they must return to their parental haunts beneath the ice, to repair the vast destruction of their race during summer, by men, fowl, and fish. Some few of the old herrings continue on our coasts the whole year, but their number is very inconsiderable.

The herring-fishery is of great antiquity: the Dutch first engaged in it about the year 1164: their diligence and skill gives them a superiority over us in that branch of trade even at this day; it is nevertheless a considerable article among the English. Yarmouth has long  
been

been famous for its herring fair, which was regulated by an act in the 31st of Edward the Third.

Immense quantities of these fish are annually taken, many of which are consumed whilst they are fresh, and the rest are salted, pickled, or smoak-dried, and are an eatible article all over Europe.

Fresh herrings, considered as a food; are said to be very good aliment, if used moderately; but, taken in quantities disproportioned to the powers of digestion, they produce a putrefaction in the stomach of the alkaline kind, and are attended with very bad consequences. But pickled herrings are very bad aliment, the flesh being rendered hard, and scarcely digestible by the vital powers. These, however, are less injurious than those which are salted and dried; these last being more hardened, and consequently less easily digested.

It was a question formerly, whether herrings fed upon any thing besides water? but LEWENHOEK has made it evident, that they come every year in pursuit of worms and small fish, which at the time of their arrival abound in the channel; for when they have cleared

the northern seas of their stock of provisions, then they travel southward, in search of a fresh supply.

The Dutch begin their herring-fishery on the 14th of June, in which they employ no less than a thousand vessels. These vessels are a kind of barks, called *bus-fes*, carrying from forty-five to sixty ton, and two or three small cannon. None of them are allowed to stir out of port, without a convoy, unless they carry twenty pieces of cannon among them all, in which case they are permitted to go in consort. Before they set out they make a verbal agreement, which has the same force as if it was in writing: that no fisher shall cast his net within a hundred fathom of another's boat: that while the nets are cast, a light shall be kept on the hind part of the vessel: that when a boat is by any accident obliged to leave off fishing, the light shall be cast into the sea: likewise, that when the greater part of the fleet leaves fishing, and casts anchor, the rest shall be obliged to do the same.

The best times of fishing on the coast of Norfolk and Suffolk, near Yarmouth, Lestoffe, and Southwold, are

are from the middle of September till the middle of October. Those taken there are dried, and called Red Herrings.

The pickled herrings are best done by the Dutch, who take them for that purpose about the summer solstice.





## THE STURGEON.

THE Sturgeon grows to the length of eighteen feet, and to the weight of five hundred pounds, but it is seldom taken in our rivers of that bulk. The nose is very long, slender, and ends in a point; on the lower part of the nose are four beards: the mouth, which is situated far beneath, is small, and unsupported by any jaw-bones: neither is it furnished with any teeth. The eyes are extremely small, and the nostrils are placed near them. The whole under-side of the fish,  
from



from the end of the nose to the vent, is entirely flat; and on the back is a single fin, not very remote from the tail. It has also two pectoral fins, two ventrals, and one anal fin. It is an exception among the cartilaginous fish in the manner of breeding, being like the boney fish oviparous, spawning in winter.

In its general form it resembles a fresh-water pike. Though it is harmless and ill-provided for war, the body is formidable enough to appearance. It is long, pentagonal, and covered with five rows of large boney knobs, one row on the back, and two on each side, and a number of fins to give it greater expedition. Of this fish there are three kinds; the Common Sturgeon, the Caviare Sturgeon, and the Huso, or Hinglafs Fish. The first is the Sturgeon, the flesh of which is sent pickled into all parts of Europe. The second is the fish, from the roe of which that celebrated delicacy called Caviare is made; and the third, besides supplying the Caviare, furnishes also the valuable commodity of Hinglafs. They all grow to a very large size.

This fish visits every country in Europe at different seasons; it annually ascends the largest rivers to spawn,

and propagates in an amazing number. The inhabitants along the banks of the Po, the Danube, and the Wolga, make great profit annually of its incursions up the stream, and have their nets prepared for its reception. The sturgeon also is brought daily to the markets of Rome and Venice, and they are known to abound in the Mediterranean sea. Yet those that keep entirely either in salt or fresh water are but comparatively small. When the Sturgeon enjoys the vicissitude of fresh and salt water, it is then that it grows to an enormous size, so as almost to rival even the whale in magnitude.

England receives frequent visits from this much esteemed fish. It is often accidentally taken in our rivers in salmon nets, particularly in those parts that are not far remote from the sea. The largest we have heard of caught in Great Britain, was a fish taken in the Eske, where they are most frequently found, which weighed four hundred and sixty pounds. An enormous size to those who have only seen our fresh-water fishes.

North America also furnishes the Sturgeon; their rivers in May, June, and July, supply them in very great abundance. But the greatest numbers are to be found in the lakes of Frischehoff and Curischaff, near the city of Pillau.

As the Sturgeon is not a voracious fish, it is never caught by a bait in the ordinary manner of fishing, but always in nets. Indeed it never attempts to seize any of the finny tribe, but lives by rooting at the bottom of the sea, where it makes insects and sea-plants its whole subsistence. From this quality of floundering at the bottom it has received its name; which comes from the German verb *flaeren*, signifying to wallow in the mud.

The Sturgeon is as timid in its nature as temperate in its appetites. There would be scarce any method of taking it, did not its natural desire of propagation induce it to incur so great a variety of dangers. The smallest fish is alone sufficient to terrify a shoal of Sturgeons; for, being unfurnished with any weapon of defence, they trust entirely to their swiftness, and their

their caution for security. GESNER asserts, that they are delighted with sounds of various kinds; and that he has seen them shoal together at the notes of a trumpet.

The usual time for the Sturgeon to come up rivers to deposit its spawn, is about the beginning of summer, when the fishermen of all great rivers make a regular preparation for its reception.

The flesh of the Sturgeon pickled, is very well known at the tables of Europe; and is even more prized in England, than in any of the countries where it is usually caught. The fishermen have two different methods of preparing it. The one is by cutting it in long pieces lengthways, and having salted them, hang them up in the sun to dry: the fish thus prepared is sold in all the countries of the Levant, and supplies the want of better provision. The other method, which is usually practised in Holland, and along the shores of the Baltic, is to cut the Sturgeon crosswise into short pieces, and put it into small barrels, with a pickle made of salt and saumure. This is the sturgeon which is sold in England; and of which great quantities came from  
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the north, until we gave encouragement to the importation of it from North America.

A considerable trade is also carried on with the roe of the sturgeon, which is salted and preserved in a particular manner, and called Caviare : it is made from the roe of all kinds of Sturgeon, but particularly the second.



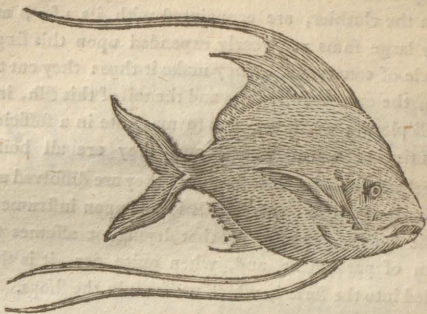


THE HUSO, OR ISINGLASS FISH.

THE Huso or Isinglass Fish, a species of the Sturgeon, is caught in great quantities in the Danube, from October to January: it is seldom under fifty pounds weight, and often exceeds four hundred: its flesh is soft, glutinous and flabby; but it is sometimes salted, which improves the taste of it, and then it turns red like Salmon. It is for the commodity it furnishes that it is chiefly taken. Isinglass is of a whitish substance, inclining to yellow, done up in rolls, and so exported for

for use. It is serviceable not only in medicine, but many arts. The varnisher, the wine-merchant, and even the clothier, are acquainted with its uses; and very large sums are yearly expended upon this single article of commerce. They make it thus: they cut the skin, the entrails, the fins, and the tail of this fish, into small pieces; these are left to macerate in a sufficient quantity of warm water, and they are all boiled shortly after with a slow fire, until they are dissolved and reduced to a jelly, this jelly is spread upon instruments made for the purpose, so, that drying, it assumes the form of parchment, and, when quite dry, it is then rolled into the form in which we see it in the shops.

This valuable commodity is principally furnished from Russia, where they prepare great quantities surprisingly cheap. The ancients were not unacquainted with the fish that afforded this drug.



### THE HORN FISH.

**T**HE Horn Fish is a native of the Indian seas, it is so called from the horn it has on the top of its head, or beginning of the back. It is about a span in length, or somewhat more, with a large head, and little mouth, one half of this fish being nothing but head: the skin is very bright, the back blueish, the belly white, and the fins and tail yellow.

THE



## THE SEA BAT.

THE Sea Bat is likewise found in the East-Indies. It is about eight inches in length, and nearly as broad : two large spines proceed from the under jaw, and on the back and belly are two large fins, which resemble wings; the tail fin is like that of a Dorado.

Another SEA BAT, is also found in the East-Indies. It has a head like a toad, is of a darkish colour, and the fins very much resemble the wings of the bird called a Bat. The tail is long, and something like that of the Sharp-snouted Ray.

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The FORK-TAIL FISH has a long round body, with a very long forked tail, from whence it takes its name. Its head resembles that of a Herring, with a long barb or bristle on the top of it, and two more below the mouth, like those of Shrimps, but larger, which they keep close to the body when they are swimming. The size is like that of a Mackrel, but the taste is not extraordinary.

THE

NATURAL HISTORY.

THE PYED-FISH is so called from its colour, its tail and fins being brown, spotted with pale blue spots. It is about a foot in length, pretty thick, and without scales: the eyes, which are yellow, are surrounded with a blue circle, and under the throat there hangs a crop. It has a little mouth, and on each side there is a yellow fin. It is in great esteem among the native Indians, being well tasted; but in some part of the belly there is a venomous matter, which must be taken out when gutted.

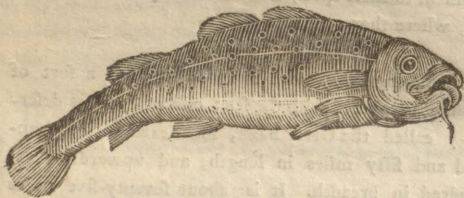




## THE CUTTLE FISH.

**T**HIS Fish, which is ranked among the bloodless soft Fish, is of an oblong shape, being about six inches in length, and three and a half in thickness. The body is somewhat oval; but broadest near the head, and grows smaller towards the extremity, where it is obtusely pointed.

pointed. Its back is covered with a shell as large as a man's hand, and about an inch thick in the middle, but it is more slender on the sides. It is hard above, but very spongy and brittle below, being very white, and tastes a little saltish: the goldsmiths make use of it for many purposes. Under its throat there is a vessel or bladder full of liquor blacker than ink, which it sheds in the water when it wants to be concealed, or would escape from the fishermen. There are two sorts of legs joined to the head, which serve this fish for swimming and bringing any thing to its mouth. The two shortest are in the middle, and are ferrated on the inside. Next to them are two long ones, one on each side, and the six remaining are generally turned backwards, being of a pyramidal figure. It lives upon small fish, and is met with near the shores of the ocean, as well as of the Mediterranean sea. The flesh is good to eat.



## THE COMMON COD FISH.

THE Cod inhabits only the northern part of the world: it seems confined between the latitudes sixty-six and fifty: those which are caught either north or south of those degrees, being few in number, and bad in quality.

Immense quantities of Cod Fish inhabit the banks of Newfoundland, and the other sand banks that lie off the coasts of Cape Breton, Nova Scotia, and New England. It is probable they are tempted to resort there

on account of the quantity of worms produced in those sandy bottoms. Another cause of their particular attachment to these spots, is their vicinity to the polar seas, where they return to spawn.

The fishing banks of Newfoundland are a sort of mountains covered with the sea: one of these is deservedly called the Great Bank, for it extends four hundred and fifty miles in length, and upwards of one hundred in breadth. It is about seventy-five miles from the island of Newfoundland, in America: the largest, best, and fattest Cod, are those taken on the south side of the bank; those on the north side being considerably smaller. The season for catching them on this bank, is from the beginning of February to the beginning of May. Those that are taken in May and June will keep tolerably well; but those which are caught in July, August and September, will spoil in a very short time, unless extraordinary care be taken of them. Sometimes, indeed, this fishing is over in a month or six weeks, and at other times it continues upwards of six months.

Providence hath benevolently ordained, that this fish, so useful to mankind, should be so very prolific as to supply more than the deficiencies of the multitudes annually taken. LEWENHOEK counted nine millions, three hundred and eighty-four thousand eggs in a Cod-fish of a middling size.

They begin to spawn, in our seas in the month of January, and deposit their eggs in rough ground among rocks.

Those fish are most esteemed for the table which are of a middling size, and they are to be chosen by their plumpness or roundness, especially near the tail, and by the regular undulated appearance of the sides, as if they were ribbed. These, and other fish of this genus, are in the highest season in winter; but the glutinous parts about the head lose their delicate flavour, after they have been twenty-four hours out of the water.

The general weight of those taken on our coasts is from fourteen to forty pounds, though they are sometimes found to weigh sixty or seventy pounds.

The

The Cod-fish is short in proportion to its bulk; the belly is very large and prominent: the jaws are of an equal length, with a small beard on the lower jaw: the teeth are disposed in the palate as well as the jaws: the eyes are large. This fish has three soft fins on the back: the ventral fins are very slender; and it has two anal fins. It is ash-coloured on the back and sides, and usually spotted with yellow: the belly is generally white; though they sometimes vary not only in colour, but in shape, especially that of the head. It has a side line, which is broad, straight and white, till it reaches opposite the vent, when it curves towards the tail.

Cod-fish are salted in the following manner on board the ships: the head is cut off, the belly opened, and the guts taken out; and then they are laid side by side, head to tail, at the bottom of the vessels, for about eight or ten feet square. One layer being completed, it is covered with salt, and another laid upon that, which is covered as before. All the fish that are taken in one day are thus disposed of; but great caution is used not to cure those which have been caught on different days. They remain thus for three or four days,



and are then removed into another part of the vessel, and salted again. They are suffered to remain thus till the vessel has procured its full cargo, or till they depart for their destined port. Sometimes they are put into barrels and packed up, and then go under the denomination of barrel cod.

These fish, however, are not always salted; for some are dried on shore: Such are fished for along the coast of Placentia in Newfoundland, from Cape Race to the Bay of Experts; within which limits, there are several commodious harbours and places to dry the fish in. Those who mean to dry them in the sun, always take them in the summer season, that being the only proper time for that purpose.

The tripes, tongues, and rows of the Cod-fish, are also salted and barreled up; the latter of which are of service to throw into the sea, in order to draw other fish together, particularly pilchards. An oil is taken from this fish, which answers all the purposes of train oil, and is much used for dressing leather.

CRABS,



## C R A B S.

### THE SOLDIER CRAB.

**T**HE Soldier Crab, is a native of the Caribbee Islands. It is about three or four inches long, and half the body is covered with a hard skin or shell. Four of the feet have two nippers, of which one is no larger than the other feet: but the other is thicker than a man's thumb, with which it can pinch very strongly, and it serves to stop up the mouth of the shell wherein it lodges.

lodges. The rest of the body is like a little pudding, covered with a rough thick skin, and is of the size of a man's finger, though not above half as long. At the end of this, there is a short tail, composed of three small nails or shells.

They descend every year to the sea-side to change their shells: for the back part of the body is quite naked. As soon as they are hatched, they every one go in search of a shell proportionable to their bulk, thrusting their back parts therein, and then they march along as clothed in armour, from whence they have the name of Soldiers. They go up to the tops of mountains, and take their lodgings in hollow trees, where they live upon leaves, rotten wood, and fruits. The next year, when the shell begins to grow too little, they travel down to the sea-side again, in search of others that fit them better. When they are there, they stop to examine the shells that they meet with, and, when they have found one they think will do, they immediately quit their old one, and get into it.

Sometimes it happens, that two make choice of the same shell, and then a battle ensues; for they will

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fight and bite each other till one of them yields, and resigns the shell to the conqueror. When he has got possession, he takes three or four turns upon the shore, and if he likes it he keeps it; otherwise he betakes himself to his old one again, and then chuses another. This they do often five or six times, till they get one to their liking. Within these shells there is about half a spoonful of clear water, which is looked upon as a sovereign remedy against pimples or other breakings out, especially those that are caused by the water that drops from the leaves of the manchineel trees. When they are taken, they seem to be very angry, and have a cry like *gre, gre, gre*, endeavouring to lay hold of the person's hand, which, when they do, they will sooner suffer themselves to be killed, than to let go their hold.

The Sea Crab of the East Indies is about a span in breadth, and of a most curious colour, the shell being speckled with yellow spots: besides which there are three of a purple colour inclosed with white rings. The claws are yellowish next the body, afterwards white, and at the extremities of a deep purple. The  
eyes

eyes have somewhat the appearance of small tacks, and stand out an inch from the head.

The Guaia Apara is a South American Crab, beautifully variegated. One end of the body is terminated with a circle, and the other by a right line. It is three inches broad, and two and a half long, though some of them grow to a larger size. The fore part of the shell is of a dark brown, variegated with whitish spots; and the hinder is of a whitish yellow, adorned with brown streaks that run according to the length. It has eight roundish feet or claws, with four points, which are of a whitish yellow colour. Besides these, there are two great claws or nippers, each two inches and a half long, and half an inch broad: the nippers themselves are but small; for which reason they cannot lay hold of any thing so firmly as other Crabs. The upper part of these claws is armed and dentated like a cock's comb. The nippers are somewhat like the bill of a cock, which, with the whole leg or claw, represents the fore part of the head of that animal, together with its comb. These are also of a whitish yellow, variegated with brown spots. As it swims in the water, it blows it up like the bubbling of a spring.

The Guanhami, or Indian Land Crab, is of a roundish body, but a little compressed, and of the size of an orange. It has eight legs or claws, five inches long, with four joints, and the lower parts are covered with long hairs: the mouth is large, and hairy on its sides for about an inch, as well as the rest of the body. Of the great legs or claws, the right is big, and the left small, the right being eight inches long and two broad: but the left is scarce so long by three parts: the eyes are thrust out like two small pills, and are drawn in at pleasure. About the mouth there are two feelers, if they may be so called; for they are short, and can be drawn in at the will of this animal.

All these crabs have one property, which is very wonderful. When their nippers are laid hold of, they can part with them very easily to make their escape: besides, if one of them is wounded, they immediately part with it, and get rid of the limb and wound together. However, in a year's time, there are other claws which grow in the room of the former.

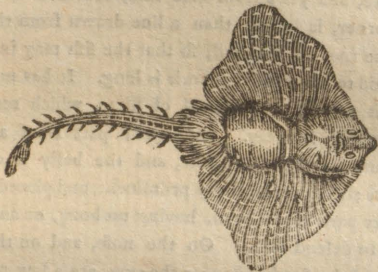
The Potiquiquia, of the Brasilians, is a Sea Prawn. The length of the body, from the fore part of the head

to the tail, is seven inches, and the tail six: the breadth of the shell on the back is seven inches, and of the belly two and a half: the tail consists of seven shells; with as many joints placed over against each other, and on the lower part of each side there are four fins an inch and a half long, and one broad; likewise the lateral extremities of each plate end in a sharp horn. There are ten claws, five on each side, with five joints, and the first pair are six inches long, the next nine, the third a foot, the fourth seven inches, and the fifth five. They have each a crooked sharp nail, beset with many yellow hairs, like hair-pencils. The fore-leg is an inch thick, but the rest are smaller: the shell is covered with various sorts of tubercles, like horns, with sharp points: the eyes are prominent, and of the shape of a cylinder, having behind them two straight horns bending forwards, and an inch in length. Before the eyes, and over the mouth, there are four feelers, two of which are as thick as a man's thumb at their rise where there are four joints: and they are a foot and a half long, being beset with prickles on all sides. Between these there are two less, with four joints, but they are smooth, being without prickles; and about

half way from the head they are divided in two, being altogether ten inches long.

The Parancare is a sort of Crab, or rather Lobster, that lives in a borrowed shell, and is three inches long; but the flesh is not eatable. The two fore-legs have nippers, and there are four others three inches long; and behind these four more that are short. The tail is an inch and a half long, and the eyes are long and prominent. There are two barbs consisting of tufts of hair. The body is covered with a skin of a dark chestnut colour; and the tail is of the same colour streaked with black according to its length. The lower part of the body is blueish, as are the eyes and barb; and over every part are hairs of the colour of oker. The shell it lives in is about four inches long, and turbinated, being of a palish yellow colour.





THE THORNBAC K.

THE THORNBAC K differs from the Skate, in being less, and being armed with a great number of spines or prickles, from whence it has its name. It has one row on the back, and three on the tail. Mr. Pennant mentions a large one that he had seen, which had three rows on the back, and five on the tail.

The shape of the body, exclusive of the tail, is nearly square, and yet a transverse line, drawn from corner to corner, is longer than a line drawn from the head to the root of the tail, so that the fish may in reality be said to be broader than it is long. It has no scales, but is covered with a kind of slime, which renders it extremely slippery. The upper part is of a dusky colour, spotted with white, and the belly is entirely white; the eyes are very prominent, and placed on the upper part of the head, having no bone, or any thing else to defend them. On the nose, and on the inner side of the forehead, near the eyes, are a few prickles; and others are irregularly scattered on the upper part of the pectoral fins.

If a Thornback is placed with the belly uppermost, the nostrils appear, and are contiguous to the mouth, which is destitute of teeth; but the jaw-bone is as rough as a file.

The gills, as in other fish of this kind, consist of five holes, placed in a semicircular form; and there are two semicircles on the lower part of the fish, one encompassing

compassing the breast, and the other the lower belly, which is divided from the upper by a bone, where these circles touch.

The young fish have very few prickles on them, and their backs are often spotted with white, each spot being encircled with black.

Thornbacks are sometimes found to weigh fourteen or fifteen pounds, but with us they seldom exceed eight.

They frequent our sandy shores, and are very voracious; they feed on all sorts of flat fish, and are particularly fond of herrings and sand eels. Sometimes they feed upon crustacious animals, such as crabs, &c. They begin to generate in June, and produce their young in July and August, which (as well as those of the Skate) are called Maids, before they are old enough to breed.

In November, the Thornback begins to be in season, and continues so later than the Skate,

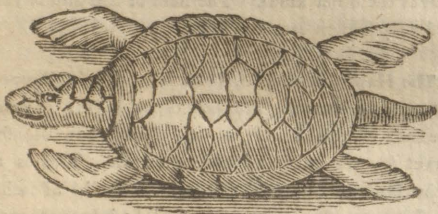
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but the young of both are good at any time of the year.

The flesh of the Thornback resembles that of the Skate, but it is less delicate, and harder of digestion; but the liver is considered by some as a great delicacy.





## THE TURTLE.

TURTLES are usually distinguished by sailors into four kinds; the Trunk Turtle, the Logger-head, the Hawksbill, and the Green Turtle.

The Trunk Turtle is generally larger than the rest, and its back is higher and rounder. The flesh of this Turtle is rank and unwholesome.

The Logger-head has obtained his title from the size of his head, which is much larger in proportion than that of the other kinds. The flesh of this also is rank, and very seldom eaten.

The Hawksbill Turtle, has a long and small mouth, somewhat resembling the bill of an hawk. Though the flesh of this Turtle is very indifferent, the shell serves for the most valuable purposes. This is the animal which supplies the tortoise-shell, of which snuff-boxes and a variety of beautiful trinkets are made. The flesh of this also is very indifferent eating.

The Green Turtle is the most celebrated, and the most valuable of all the animals of the tortoise kind. The delicacy of its flesh, and its nutritive qualities, together with the property of being easily digested, are now well known among us. Dampier appears to be the first who informed us of the distinctions among these animals; and that, while the rest might be valuable for other purposes, the Green Turtle alone was chiefly prized for the delicacy of its flesh. The Green Turtle is indeed become a branch of commerce, and ships are provided with conveniencies for supplying  
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ing them with water and provision, to bring them over in health from Jamaica, and other West India Islands. This cannot, however, be always effected; for though they scarce require any provision upon the voyage; yet the working of the ship occasions them to be beat against the sides of the boat which contains them, by which they become very lean and battered.

The colour of the shell of this animal is rather greener than that of others of this kind; whence it has the name of the Green Turtle. Those which are about two hundred weight are the most common size, though they are sometimes found to exceed five hundred.

The coupling time is one of the principal seasons for catching them. As soon as they are perceived, two or three people draw near them in a canoe, and either slip a noose round their necks or on one of their feet. If they have no line, they lay hold of them by the neck, where they have no shell, with their hands only; and by this means they catch them both to-

gether : but sometimes the female escapes, being more shy than the male.

Another way of taking them at this time is with a spear, which being thrown at the back of the Turtle, pierces the shell and bone, and sticks as fast therein as if it was solid oak. They struggle hard to get loose, but all in vain ; for they take care that the line, which is fastened to the spear, be strong enough to hold him.

The time of taking Turtle upon land is from the first moon in April till that in August, it being the season in which these creatures lay their eggs. The number of them is prodigious ; for they will lay several hundred in one season. The night before she intends to lay, she comes and takes a view of the place, and after taking a turn about, she goes to sea again, but never fails to return the night following.

Towards the setting of the sun, they are seen drawing near the land, and seem to look earnestly about them, as if they were afraid to be discovered. When they



they perceive any person on shore, they seek for another place; but if otherwise, they land when it is dark. After they have looked carefully about them, they begin to work and dig in the sand with their fore-feet, till they have made a round hole of a foot broad, and a foot and a half deep, a little above where the water reaches when highest. This done, they lay eighty or ninety eggs, or upwards, at a time, each as big as a hen's egg, and as round as a ball. They continue laying about the space of an hour, during which time, if a cart was to be driven over them they would not stir. The eggs are covered with a tough white skin, like wetted parchment. When they have done laying, they cover the hole so dexterously, that it is no easy matter to find the place. This done, they return to the sea. At the end of fifteen days they lay eggs again, in the same manner; and at the end of another fifteen, they do the same again, laying three times in all.

In about twenty-five days after laying, the eggs are hatched by the heat of the sun; and then the little Turtles, being as big as young quails, run directly to the sea, without any guide to lead them, or shew them

the way. When there are any caught before they get into the sea, they are generally fried whole, and are said to be delicious eating.

The men that watch for the Turtles, as soon as they have an opportunity, turn them on their backs, which is not performed without some difficulty; for they are very heavy, and struggle hard. After this, they haul them above high-water mark, and leave them till morning.



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NATURAL HISTORY  
OF  
FRESH WATER FISH.

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## THE LAMPREY.

**T**HE MURCENA is by the writers of English dictionaries called a LAMPREY, but very improperly; however, we have no English name for it. The body is broader and flatter than that of an eel, with a longer sharp and flat snout. The colour is a mixture of blackish yellow and gold colour; and the mouth opens exceeding wide. At the end of the snout there are two short hollow appendages; and above the eyes there are another pair, that are thicker but shorter. The eyes are seated in the upper jaw, in the space between

tween the end of the snout and the corners of the mouth. A fin rises not far from the head, in the middle of the back, and is continued to the tail.

Lampreys in general have a round or oval mouth, with a hole or pipe on the top of the snout, as in those of the Whale kind. There are seven holes on each side, which serve instead of gills, where there are no fins, nor yet on the belly; by which they are distinguished from all other fish of this kind; that is, the long and slippery.

Lampreys are sea-fish, but, like the Salmon, they quit the salt waters about the latter end of the winter, or the beginning of spring; and, after a stay of a few months, return again to the ocean, a very few excepted. Though the Severn is the most noted for them, they are found at certain seasons of the year not only in several of our rivers, but in the most considerable of the Scotch and Irish rivers. They are most in season in the months of March, April, and May; for they are much firmer when just arrived out of the salt water, than they are afterwards; it having been  
observed,

observed, that they appear wasted and very flabby at the approach of hot weather.

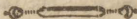
It has been an ancient custom for the city of Gloucester, to present annually to his Majesty a Lamprey pye, covered with a large raised crust. As this present is made at Christmas, the corporation find it extremely difficult at that time to procure any fresh Lampreys, it being so early in the season; and sometimes they have been known to purchase them at a guinea a-piece.

Lampreys are sometimes found that weigh four or five pounds: when either potted or stewed, they are reckoned a great delicacy: but they are a surfeiting food, as one of our monarchs fatally experienced; the death of Henry the First being occasioned by a plentiful meal of Lampreys.

The mouth of this fish is round, and placed rather obliquely below the end of the nose; the edges are jagged, which enables them to adhere more strongly to the stones, as their custom is; and from which they are not to be drawn off without some difficulty. There are twenty rows of single teeth placed in the  
mouth

mouth of this animal, disposed in circular orders, and placed far within. The colour of the fish is dusky, marked with irregular spots of dirty yellow, which gives it a disagreeable appearance.

There is a species called the Lesser Lamprey, which grows to the length of about ten inches. The colour of the back is dusky, sometimes mixed with blue; and the whole under-side is silvery. They are found in the Thames, Severn, and Dee; and, when potted, are by some preferred to the larger kind. Great numbers are taken about Mortlake.



#### THE LAMPREY-EEL.

**T**HE LAMPREY-EEL is sometimes three yards in length; the body about the gills is near fourteen inches in circumference; and the skin is of a blackish colour, marked with pale angular spots. The mouth is round, with which it adheres to a piece of wood, stone, or any other substance, as if it was sucking it, and cannot be parted from it without difficulty. The  
skin



skin is tough, and yet they do not take it off to dress it. It has a hole in the head like the Lampern, and there are seven holes on each side of the head, under which the gills are concealed. On the top of the head there is a white spot, and the edge of the mouth is jagged; ] the teeth are placed within the mouth, and those that stand farthest backwards are largest. It has no bones but a gristle down the back full of marrow, which should be taken out before it is dressed. In short, they resemble a Lampern in all things.





THE CHAR, OR RED CHAR.

**T**HE CHAR is an inhabitant of the lakes of the north, and those of the mountainous parts of Europe. It is found in great abundance in the cold lakes on the summits of the Lapland Alps, and is almost the only fish that is met with in plenty in those regions.

The only place in England, where this fish is taken, is Winander-mere; but in Wales it is caught in different

ferent lakes. In Merionethshire they are smaller than in other places, and are taken in October; but in one of the lakes in Carnarvonshire they are caught in November; in another, in December; and in a third, in January: so that the fishing ends in one when the other begins. They swim together in shoals; and, though they appear on the surface of the water in summer-time, yet they will not then suffer themselves to be taken either with an angle or nets. The only season for catching this fish, is, when they resort to the shallow parts of the lakes to deposit their spawn. At this time they set trammel-nets baited, and so leave them for whole days and nights, after which they are generally sure to find some therein.

It has a longer and more slender body than a Trout, and the back is of an olive-green colour, speckled with whitish spots. The belly is generally red, though it is sometimes white, especially in the spawners. The scales are exceeding small, and the lateral lines straight. The mouth is wide, the jaws pretty equal, only the lower is a little sharper and more protuberant than the upper. The lower part of the fins are of a vermilion die, and the gills are four double. There are teeth  
both

both in the jaws and on the tongue ; but in the upper jaw there is a double row. The flesh is softer and more tender than that of a Trout.

The Char is in very high esteem, and exceeding scarce. The inhabitants in the neighbourhood of Winander-mere make a practice of potting chars, which are usually sent as presents to remote friends ; but they cannot be taken in sufficient quantities for sale even at an unreasonable price.

The GILT-CHAR is the same as the Red-Char of Winander-mere in the county of Westmoreland ; and is like a Trout, only it is much broader, and has a more prominent belly. The scales are very small, and the colour on the back is lighter than that of a Trout, though variegated with black spots. The belly and sides are of a silver colour ; the snout is blueish, and the skull transparent. It has teeth in the palate, and two rows of them on the tongue. The flesh is red, and is in high esteem among the Italians. It never exceeds twelve inches in length.

The GELT or BARREN CHAR, is one that has not spawned the preceding season, and on that account is reckoned to be in the greatest perfection. It is more slender than the Red Char, as being without spawn. The back is of a glossy hue; the sides silvery, mixed with blue, and spotted with pale red: the sides of the belly are of a pale red, and the bottom white. This is found only in those lakes, which are also inhabited by the Red Char.





### THE TROUT.

THE TROUT is a fish of excellent taste, and is covered with small scales, usually streaked with red. There are several species of this fish, which live in various places, and differ in colour and size. Some are found in deep and rapid rivers, others in lakes; some are of a blackish colour, others reddish, and rather of a gold colour, and variously marked with spots of a purple or vermilion die; but on the belly they have a yellowish cast.

This

This fish swims with much agility and swiftness, and is said on hearing thunder to be so astonished, as to become immoveable. It feeds upon worms, slime, mud, insects, and small fishes, which it pursues with so much eagerness, from the bottom to the surface of the water, that it sometimes throws itself into the boats passing near it.

The Trout is of a longish form, and resembles the Salmon more than any other fish. The head is short and roundish, the nose blunt, the body thick, and the tail broad. The mouth is wide, and it has teeth, not only in the jaws, but on the palate and tongue. The eyes are large, with a reddish circle round the pupil; the rest of the iris being of a silver colour. The skin readily falls into wrinkles, and separates from the flesh. In the larger trouts, the back is of a dusky hue, and full of black spots, which in some are mixed with red.

It is surprizing that this common fish has escaped the notice of all the ancients, except Ausonius, who only celebrates it for its beauty.

The

The Trout is a voracious fish, and affords excellent diversion to the angler. These fish shift their quarters to spawn, and, like the Salmon, make up towards the heads of rivers to deposit their spawn. They delight in cool and small streams, which descend from rocky hills; and seem particularly fond of swimming against the course of the water. They are found in small rivers among the Alps, the waters of which are so exceeding cold, that no fish can accompany them.

Trouts are not in the highest season when they are fullest of spawn, for they are fattest, and have the most delicious taste in July and August. They begin however to be in season in March, and become so in some rivers much sooner than in others.

In winter they are lean, sick, and unwholesome, breeding a kind of worm with a large head, which in some degree resembles a clove. At that time the beautiful spots disappear, and the lively colour of the belly becomes dusky and disagreeable. But, towards the latter end of March, he rouses from his lethargy,

rub



rubs off his ill-bred foes against the gravelly bottoms, and soon after recovers his former strength and vigour. The flesh is drier and less tender than that of the Salmon; it is, however, esteemed the most agreeable of all those fish that reside continually in fresh water.





## THE S M E L T.

**S**MELTS are usually about six inches long, and near an inch in breadth, but they are sometimes found of the length of twelve inches; they have a very peculiar scent, from whence their English name is derived—*smelt*, that is, *smell it*. People greatly disagree respecting the scent of this fish: some assert it flavours of the violet, others of the cucumber: we acknowledge that we are of the latter opinion. The Germans however distinguish it by the delicate title of *Stinckfisch*. The *Smelt* is the least of these kind of fish, and is of a very beautiful form and colour: the head is so transparent, that

all the lobes of the brain may be plainly and distinctly seen; and the skin in general is so thin, that, with a good microscope, the blood may be observed to circulate. The scales are small, and fall off with the slightest touch. The back is of a dusky colour, but the belly and sides shine like silver: the tail consists of nineteen rays, and is forked. The iris of the eye is silvery; the pupil of a full black; and the under jaw is the longest. It has four large teeth in the front of the upper jaw, and several small ones in the sides of both. It has two rows of teeth in the roof of the mouth; and two others of large teeth on the tongue.

Smelts inhabit the seas that wash the islands of Great Britain and Ireland the whole year, and never go very remote from shore, except when they ascend the rivers. It has been observed, that they are seen in rivers some months before they spawn, but immediately afterwards they all return to the salt water, and never appear again in the fresh streams till the next season. The flesh of the smelt is soft and tender, and of a delicate taste; and is therefore in very high esteem. They are frequently served up to table as a kind of garnish to large fish; and they ought, in that case, to be considered only as a

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garnish,

garnish, for they are seldom fit to be eaten; the cook generally keeping them so long before the fire, that they become dry, insipid, and tasteless.

In March, if the spring be mild, prodigious quantities of this delicate fish make their appearance in the river Mersey, which often seems of a greenish colour, from the vast bodies of Smelts that swim about. At this time, every boat, every fisherman, and every net, is employed, and even the boys with cabbage-nets catch these fish, which are double the size of those usually caught in the Thames; sometimes the baskets, pails, boats, and the very banks, are filled with sparlings, as they are called in Cheshire, where, from the great plenty, they are frequently sold at four-pence a score. Some of these fish have been caught in Rostern-Mere, and other still waters, where the fishermen have washed the spawn from their nets; but these fish appear lean; neither do they breed in ponds.



## THE MULLET.

THE form of a Mullet resembles that of a Dace; the head is almost square, and flat at the top; the nose is sharp, and the lips thick. It has large scales, not only on the body, but also on the head, and the covers of the gills. The back is of a blueish brown, and the belly white. The lateral lines are variegated alternately with black and white. The eyes have no other skin than their own coats, and the forward back fin is radiated with five long spines. The mouth is destitute of teeth, but the tongue is roughish; and there are two rough bones on each side of the palate. This fish ha

also a bone beset with prickles, at each corner of the mouth. When at its full growth, it is about eighteen inches long. It visits the rivers in the southern parts of England, in the beginning of the summer with every tide, and returns back when the water ebbs. Those taken near Arundel, in Suffex, are said to be much superior to any others. The Mullet is an excellent fish for the table.

Mullets generally come in great shoals, and keep rooting in the sand or mud, like hogs. They are very sagacious, and when surrounded with a net, the whole shoal frequently escapes by leaping over it; for when one takes the lead, the others immediately follow.

The Mullet was in great estimation amongst the Romans, and bore an exceeding high price. ASINIUS CELER, a man of consular dignity, gave eight thousand mummy, or sixty-four pounds eleven shillings and eight pence, for a fish of so small a size as the Mullet. Such indeed was the luxury of the times, that there were slews in the eating-rooms, so that the fish could at once be brought from under the table and placed upon  
it:

it; they even put the Mulletts in transparent vases, that they might be entertained with the various changes of its colour while it lay expiring.

The American Mullet is of the size and shape of a middling Trout, with eyes of an oval form, and scales of a silver colour; between the rows of which there are grey lines. On the top of the back there is a fin larger than all the rest, and the tail is forked. All the fins are whitish.

The Bass is by many authors called *Lupus*, that is, the Wolf Fish, on account of its greediness. It weighs about fifteen pounds, being not much unlike a Trout in shape, only it has a thicker head. The colour on the back is of a blackish blue, but on the belly like silver. When young, the back is variegated with black spots, which vanish when the fish grows old. The scales are of a middle size, but thick, and adhere very close to the skin. The mouth is wide, as well as the apertures of the gills, and there are rough teeth in the jaws. It has thorns or prickles about its head, and the eyes are large, with an iris of a silver colour. The forward back skin is radiated with no more than nine

spines, and in the palate there is a triangular bone, besides two more in the throat. The tongue is broad slender, and rough, there being a rough bone in the middle. The flesh is extremely well tasted, and exceeding wholesome.







## THE PERCH.

THE Perch is justly admired as a firm and delicate fish. It delights in deep holes, and gentle streams; it is extremely voracious, and a very eager biter: if an angler meets with a shoal of them, he is almost sure of taking every one. A full-grown Perch is about twelve or fourteen inches long, though they are sometimes found to exceed sixteen; but this is an extraordinary size. The body is deep, the scales very rough, and the back very much arched. The iris of the eye is of a yellow

or gold colour; the mouth is wide; and the teeth are small, disposed in the jaws and on the roof of the mouth: the edges of the covers of the gills are serrated; and on the lower end of the largest is a sharp spine. The colours of the Perch are beautiful: the back and part of the sides are of a dark green, marked with five broad black bars, pointing downwards: the belly is white, tinged with red: the ventral fins are of a bright scarlet; and the anal fins and the tail are of the same colour, but somewhat paler. The tail is a little forked.

It is said that the Pike will not attack this fish, being fearful of the spiny fins, which the Perch erects at the approach of the former. With respect to large fish, this opinion may be well founded; but it is well known the small ones are the most alluring bait that can be offered for the Pike: it is probable the fins are then too soft to do him any injury.

The flesh of it is very wholesome and easy of digestion. It is much esteemed in a dish called by the Dutch Water Souchy. The bones of the head are used in medicine,

dicine, and, when pulverized, have the same virtue as other absorbent powders.

There is a very singular variety of Pearch in a lake called Llyn Raithlyn in Merionethshire, in which the lower part of the back-bone, next the tail, is strangely distorted.

The liver of the Pearch is usually thrown away, because it is apt to be measly. These fish spawn but once a year, and that is in the latter end of February. Some think the male is to be distinguished from the female by the fins being of a deeper red.

The most natural places for this fish are rivers, and yet it will live, and even thrive when shut up in a pond. In the day-time it does not appear to be fond of any particular haunt, because it is almost continually roving about in quest of food, being a very voracious fish: and yet they are more likely to be found under the hollow of a bank, the piles of bridges, stumps of trees, or in a gentle stream of middling depth. In the night, indeed, they retire to a place of repose, which, if you are so lucky as to discover, early in the morning,

you have an excellent chance of taking them all, for they bite very boldly, generally herd together, and the taking of one does not intimidate the rest from falling into the same danger.

It will be to no purpose to angle for this fish before the mulberry-tree begins to bud; that is, before the spring is so far advanced as to put the fruit out of danger of being killed by nipping frosts, and for the same reason he always bites best in warm weather; yet, in the very midst of summer, he is soonest taken in cool, cloudy, and windy weather, and you may angle for him any time of the day, but you will be more likely to succeed from seven to ten in the morning, and from two till sun-set in the afternoon, or later. In angling for Pearch you need not continue long in the same place, for they usually bite as soon as the bait drops in; you ought to angle at or near the bottom, constantly raising your bait almost to the top, letting it drop gently again.



T H E P I K E .

**T**HE Pike has a roundish oblong body with a flat head, and square back: the snout is very prominent, and the lower jaw is somewhat longer than the upper. The mouth is very wide, and the teeth very sharp, disposed not only in the front of the upper jaw, but in both sides of the lower jaw, in the roof of the mouth, and sometimes on the tongue: the eyes are small, and the tail is forked. The body is covered with small thick scales which are moistened on the edges with a kind of slime that has a greenish cast; and the younger the fish is, the greener he appears. The back and sides, when turned towards the light, appear to have somewhat of a golden hue: the sides are spotted with yellow, and

the belly is white. It has dusky spots, and reddish lines on the tail, especially towards the corners.

The Pike will swallow other fish which are almost as large as itself; not even excepting those of their own kind. Innumerable are the instances mentioned by authors of the voracity of this fish. Mr. PENNANT informs us of a Pike being choaked, by attempting to swallow one of its own species, that proved too large a morsel. It will devour the water-rat, and draw down the young ducks as they are swimming on the water. At Lord GOWER's canal at Trentham, a Pike seized the head of a swan, as it was feeding under water, and gorged so much of it as killed them both. GESNER indeed relates an instance, that borders a little on the marvellous. He tells us, that a famished Pike on the Rhine seized on the lips of a mule that was brought to water, and that the beast drew the fish out before it could disengage itself.

The longevity of the Pike is very remarkable: RZACZYNSKI tells us of one that was ninety years of age; and Gesner says, that in 1497, a Pike was taken near Hailbrun, in Suabia, with a brazen ring affixed

to

to it, on which were the following words in Greek characters: "I am the fish which was first of all put in-  
" to this lake by the hands of the governor of the uni-  
" verfe, FREDERICK the Second, the 5th of October  
" 1230:" fupposing this to be a fact, the fish was at  
leaft two hundred and fixty-seven years of age.

Their ufual time of spawning is in March, and fome-  
times fooner, if the fpring is forward. They are ex-  
ceedingly prolific, forty-eight thoufand eggs having  
been found in one of their roes. They are in feafon all  
the year, except in spawning time, and about fix weeks  
after it. The flefh is firm, white and fweet; but if the  
fish exceeds ten or twelve pounds in weight, it has a  
rankifh flavour.

The Pike is good and nourifhing food, and agrees at  
all times, but efppecially in winter, with any age and  
constitution. Some authors pretend, that it is hard of  
digestion, heavy in the ftomach, and always affords bad  
juices; but thefe qualities are only applicable to fuch as  
live in ponds, and marfhy places, and feed upon flime  
and mud. Jovius thinks the Pike has but an ordinary  
taste, and Aufonius does not efteem it; but its taste

differs according to the country in which it is bred. The roe provokes vomiting, and sometimes purges violently. The Pike contains much oil, and volatile salt.

Mr. LEE, of Thelwell in Cheshire, had flored a pit; but when he laded it, in expectation of catching a great number of fish, to his disappointment he found only a large lean Pike, which had devoured all the store-fish, and had in his stomach a water wag-tail, and a young thristle, which were supposed to have been hopping on a twig near the water.

A Pike caught in Barn-meer (a large standing water in Cheshire,) was an ell long, and weighed thirty-five pounds; it was presented to Lord CHOLMONDELEY, who ordered it to be put into a canal in the garden, wherein were abundance of several sorts of fish. About twelve months after, his Lordship drew the canal, and found that this overgrown Pike had devoured all the fish, except one large carp, that weighed between nine and ten pounds, and that was bitten in several places. The Pike was then put into the canal again, together with abundance of fish with him to feed upon, all which he devoured in less than a year's time:



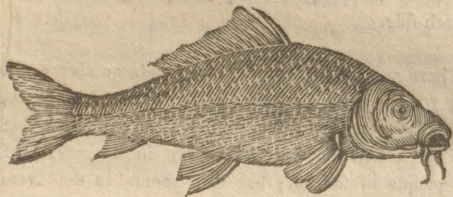
time; and was observed by the gardener and workmen there to take the ducks, and other water-fowl, under water; whereupon they shot magpies and crows, and threw them into the canal, which the Pike took before their eyes: of this they acquainted Lord CHOLMONDELEY, who thereupon ordered the slaughterman to fling in calves bellies, chickens guts, and such like garbage to him, to prey upon; but being soon after neglected, he died, as supposed, for want of food.

In the stew for preserving fish, at JOHN EGERTON'S, Esq. at Tatton in Cheshire, a large Pike was taken out, when there appeared at his mouth the tail of a fish, which being pulled out; proved to be another Pike, weight one pound, and was then alive.

The Pike delights in a quiet, shady, unfrequented water, and lurks in the midst of weeds, flags or bull-rushes: yet he frequently makes excursions from thence, and ranges about in search of prey: in cold weather he lies deep, and near the bottom, but as the weather grows warm he frequents the shallows. In a very hot, clear, sultry day, he may be seen lying on the surface of the water, but then you cannot tempt him with any

bait. His best biting time is early in the morning and late in the evening, when there is a brisk wind, and where the water is clear. If they bite at all, they will take the bait at first; it is therefore useless to throw it often in the same place. He will take any sort of bait, except a fly; but the principal are young roach, dace, gudgeons, minnows, loaches, and bleak.





## THE CARP.

THE colour of the Carp, especially when full grown, is yellowish, and the scales are large: the head is short, like that of a Tench, and the mouth is of a middling size, with fat fleshy yellow lips. It has no teeth in the jaws or on the tongue, but it has a triangular bone in the palate, and two other bones in the throat, which answer the purpose of teeth. It has a single barb on each side of the mouth, and another above those which is shorter: the fins are large; the tail is broad,  
a little

a little forked, and of a reddish black colour: the lateral line is straight, and passes through the middle of each side.

There were no Carps in our ponds or rivers, till they were introduced here by LEONARD MASCHAL, about the year 1514. Russia has none of these fish at this day; Sweden has them only in the ponds of the people of fashion; but they abound in the rivers and lakes of Polish Prussia, where they are taken of a vast size. They are there a great article of commerce, and are sent in well-boats to Russia and Sweden.

PLINY says it lives in the sea; and we are credibly informed, that Carps are found in the harbour of Dantzick. They are very long lived. GESNER affirms, that he knew a man of good reputation, who assured him he had seen one of an hundred years old. They also grow to a very great size: a Carp was taken in the river Thames, near Hampton court, that weighed thirteen pounds. JOVIUS says, Carps were sometimes caught in the Lacus Larius, of two hundred pounds weight; and, according to RZACZYNSKI, others have been taken in the DNIESTER which were five feet in length.

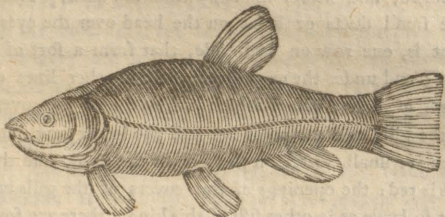
length. They are extremely tenacious of life, and have been kept alive out of water upwards of a fortnight, by being wrapped up in wet moss, with the mouth only remaining out. It should be hung up in a cool place, fed with bread and milk, and sometimes plunged into the water. By this treatment they grow fatter, and have a finer flavour than those which are immediately killed from the pond.

The Carp is a prodigious breeder: the roe has sometimes been taken out and weighed with the fish itself, when the former has been found to preponderate. The Carp has perhaps the longest scales of any fish, in proportion to its bulk. Some of these are brown, and others yellow and white: the brown colour prevails in the largest scales; the middle are of a yellow and gold colour; but the white are small and silvered.

The flesh of the River Carp is much better than that of the pond, and in general it is more or less wholesome, according to the nature of the water in which they are bred, and consequently muddy stinking ponds produce the worst fish. It is soft, insipid, and not entirely free from viscosity. But curious eaters value it chiefly for  
the

the palate, or tongue, as they call it. The River Carp is not fond of a rapid stream, but delights in a still deep water, with a marley, or clayey bottom, especially if there be green weeds, which he is extremely fond of. A Carp exercises the angler's patience as much as any fish, for he is very fly and wary. They seldom bite in cold weather, and, in hot, a man cannot be too early or too late for them. But when they do bite there is no fear of their hold.





## THE TENCH.

**T**HE Tench weighs with us about five or six pounds, when full grown, but in other countries they have been found to weigh twenty.

It has a small head and snout, in proportion to the size of the body; for this is broad, thick, and short: the opening of the mouth will admit one's little finger, and the jaws are without teeth; but in the throat there are five on each side: the covers of the gills consist of  
four

four plates and three crooked spines; the lateral line is crooked, and nearer the belly than the back. There are small ducts or holes on the head over the eyes; that is, one row on each side, that form a sort of a line; and under the eyes there are two other lines or rows of holes, one of which is seated near the covers of the gills, and the other beneath the lower jaw: the eyes are small, seated on the sides of the head, and the iris is red: the openings of the covers of the gills are not so large as in other fish of this kind; there are four gills on each side, each of which is furnished with a double row of knots made in the shape of a comb, and which are equal on each side to three of the inner gills; but in the last of the inner knots they are almost equal to each other, and the external are longer than the internal on the upper part, though much shorter at the lower: these are all soft. The back, which is thick, rises a little above the head, and the belly is broad and flat throughout: the scales are oblong, and small, in comparison of other fish of the same kind; they adhere close to the skin, and are black upon the back, and blackish on the sides, with a little mixture of a golden or greenish-yellow colour; but it is whitish under the belly.



belly. There is a sort of slime all over this fish, that renders it as slippery as an Eel. All the fins, as well as the tail, are black or blackish, and sometimes of a dark-grey colour: the fins on the breast are blackish, almost round, and consist of seventeen rays, of which the sixteenth is longest, and the first is single and strong; but all the rest are branched at the end, and the last is small. The belly fins are also black and roundish at the edge, and consist of eleven rays, of which the first is small, the second robust and thick; but all the rest are branched at the ends. There is a single black fin on the back, consisting of twelve rays, of which the first is very short, and the second is somewhat longer, and reaches to the middle of the rest: the third is single, as well as the two first, but the rest are branched at the ends: the fin at the vent is black, and consists of eleven rays, of which the two first are small, but the third is pretty long and single, like the two former, and all the rest are branched at the ends. The tail is blackish, somewhat square, and consists of nineteen rays, that are hard to count, except the last.

The flesh of this fish is a little clammy, like that of an Eel, and may probably want a little spice in the dressing:

dreſſing; but in general it is as much in eſteem as moſt other fiſh.

There are two ſmall ſtones in the head of the Tench, that have an abſorbent, detergent, and dieuretic quality.

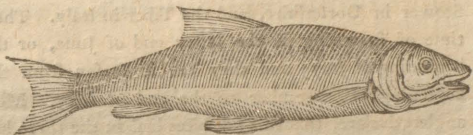
It is ſometimes called the Phyſician of the fiſh, and it is ſaid that the ſkin is ſo healing, that the wounded apply it as a ſtyptic. In its medical uſes, it is cut and applied to the wrifts, and ſoles of the feet, in order to mitigate feveriſh heats, and to divert the venom of the peſtilence; in like manner it is applied in pains of the head and joints. Live Tenches, applied one after another to the regions of the umbilicus and liver, and kept there till they die, are ſaid to cure the jaundice; for they contract, it ſeems, a yellow colour.

It is a mucous, excrementitious fiſh, which delights in marſhy and muddy waters. Whatever may be the uſes of its ſlime to the inhabitants of the water, its fleſh is certainly a wholeſome and delicious food to thoſe of the earth.

The

The Tench delights so much in standing waters and ponds, and the still parts of rivers, whenever they are found there, that they seem to be natives of standing water. However, they are said to breed in the rivers Stower in Dorsetshire, and the Tiber in Italy. Their time of spawning is the latter end of June, or the beginning of July; and they are in season from the beginning of September to the end of May. Most anglers declare, that this fish bites best in the three hot months; and yet others have found they will bite at all times, and at all seasons, unless after a shower of rain but best of all in the night.





THE CHUB, OR CHEVIN.

THIS is a very coarse fish, and full of bones: it has a large blackish head, and its body is longer than that of the Carp. The back is of a dark green, and the belly and sides of a silver colour; however those that are fat and full grown have them of a gold colour, sprinkled with small black specks. The temples are yellowish, and the scales, as in a Carp, large and angular. Its mouth, which is not large, is without teeth, and the  
 upper

upper jaw is a little longer than the lower. Its palate is soft and furnished with a triangular bone; and the nostrils are large, open, and have each a double hole, one of which is every now and then covered with a fold. Its eyes are of a middle size with an iris, which is a mixture of gold and silver colours. Its tail is forked, and all the fins are of a blackish blue, though in some there is a tincture of red. It has a broadish belly, and the lateral lines run parallel to the bottom of the belly.

The Chub is a very timid fish, sinking to the bottom of the water on the least alarm. It does not grow to a very large size; though they have been known to weigh upwards of five pounds.

The spawn of this fish is excellent meat; and the head of a large Chevin, the throat being well washed, is the best part of him. The flesh is white, soft, and insipid, and is but in very little esteem among the generality of people.

In August, and the cooler months, a yellow paste made of the strongest cheefe, and pounded in a mortar with

with a little butter, and so much saffron as being beaten small will turn it to a lemon colour, is a very good bait. In the winter months the Chub is esteemed the best, it being observed, that the forked bones are then lost or turned into a kind of gristle, especially if the fish is baked. Some make a paste for this season of cheefe and turpentine. He will also bite at a minnow, as well as the Trout. But take this for a rule in Chub-fishing, that in hot weather he is to be angled for towards the mid-water, or near the top; and in colder weather near the bottom. If you fish for him near the top, with a beetle or fly, be careful to let your line be very long, and to keep out of sight.

The Chub is very fond of a large bait. In the summer, at mid-water, five or six cabbage, nettle, or cattle-dock-grubs, or a mixture of all or any of the above, mixed with flies, are very good baits.

The Chub usually swims in mid-water, and sometimes at the top, and therefore is best taken by dibbing. From the beginning of May to September, you may angle for him before the sun rises till nine, and in June, July, and August, from five till dark, and with the  
white

white moth all the night over, but in the winter he lies lower, and then you may fish for him at the bottom in the middle of the day, with new cow brains. Some people will chew and spit them into the hole where they fish, but if you can mix them very small in a cup with a little water, and throw a small quantity in at a time, you will have sport, if you bait with the same; this, and the spinal marrow of an ox, is the very best winter bait. They will take almost any bait, as the brains of oxen or sheep dried, and cut into small pieces; all sorts of worms, gentles, the brood of wasps, blackberries, dewberries, new cheese, grasshoppers, black snails with their bellies slit, and all sorts of paste.

In dibbing, the Chub will take a black ant-fly, small butterflies with the great wings cut off, oak-worms, ash-flies, green caterpillars, and the cod-bait; in short, there is scarce any thing comes amiss to him. It is but a cowardly fish, and when once turned yields presently. But you must master it as soon as you can, because when he is hooked, he does not make to the middle of the stream, but to the banks, which may endanger your tackle. When you throw your bait into  
the

the water, they fly from it, but return immediately to see what it is, and, if they like it, they swallow it without hesitation, if you keep yourself out of sight.

This fish will afford good sport, if you do as follows: Get two or three grasshoppers, and go to one of their holes, where, in most hot days, you may find numbers of them floating near the top of the water, and placing yourself secretly behind a tree, keeping as free from motion as possible, put a grasshopper upon your hook, and let your hook hang a quarter of a yard short of the water: to which end you must rest your rod on the bough of a tree. It is probable the Chub will sink down at the first shadow of your rod, being a most fearful fish, and apt to do thus if but a bird flies over them, and makes the least shadow on the water: but they will presently rise up to the top again, and there lie floating till some shadow frights them afresh: when they lay thus upon the top of the water, fix your eye upon the best Chub you can single out, and move your rod gently towards him. Let your bait fall easily on the water, about three inches before him, and he will infallibly take it, and be taken; for he is one of those  
leather-



leather-mouthed fishes, of which a hook scarce ever loses its hold : but be sure to give him play enough, before you offer to take him out of the water. If a grasshopper cannot be found, a black snail, with his belly slit, to shew his white, or a piece of soft cheese, or any sort of natural flies, will usually do as well.





## THE BARBEL.

**T**HE BARBEL is about a cubit in length, and the back is of an olive colour, but a little palish, and the belly is that of silver. The back and sides are sprinkled with black spots, and the shape of the body is long and roundish, but the back is sharp and arched. The scales are of a middle size, and the lateral lines run through the middle of the sides. The belly is so flat, that, when this fish lies with its mouth downwards, it touches the earth;

earth; which circumstance is perhaps common to all fish that keep at the bottom of the water. The snout is a little sharp, and the mouth is not large, being without teeth, like the rest of this kind. The upper jaw is longer than the lower, and there are four barbs, of which two are at the corners of the mouth, and the other two are higher near the end of the snout. The tail is forked, the eyes small, looking downwards, and their iris is either of a silver or gold colour, spotted with brown. In the summer time their bellies are red.

The weight of this fish is commonly about seven or eight pounds, and yet there was one caught at Stains that weighed twenty-three pounds. The flesh is soft and flabby, and in no great esteem; and the spawn is unwholesome, purging both upwards and downwards.

Barbels flock together like sheep, and are at the worst in April, about which time they spawn; but are soon after in season. He is able to live in the strongest current of water, and in summer he loves the shallowest  
and

and sharpest streams; he delights to lurk under weeds, and to feed on gravel against a rising ground: he will root and dig in the sands with his nose, like a hog, and there nest himself; though sometimes he retires to deep and swift bridges or flood-gates, where he will nest himself among piles, or in hollow places, and take such hold of moss or weeds, that be the water ever so swift, it will not be able to force him from the place for which he contends. This is his constant custom in summer, when he and most living creatures sport themselves in the sun; but, at the approach of winter, he forsakes the swift streams and shallow waters, and by degrees returns to those parts of the river, which are quiet and deeper.

Probably about this time, as well as in April, and in these places, they spawn, with the help of the melter: they hide their eggs in holes, which they both dig in the gravel, and then they mutually labour to cover them with the sand, to prevent their being devoured by other fish.

The

The Barbel is curious in his baits, which must be clean and sweet, the worms well scoured, and not kept in four and musty mofs. At a well-scoured lob-worm he will bite as boldly as at any bait, especially if a night or two before you fish for him, you bait the place where you intend to angle, with big worms cut into pieces; and you need not fear either over-baiting the place, or fishing too early or late for the Barbel. He will also bite at gentles, which being green, and not too much scoured, are deemed an excellent bait. Cheese is likewise much in his esteem, if it is not too hard, but kept a day or two in a linen cloth to make it tough. If the cheese is laid in clarified honey an hour or two before you use it, it will reward your trouble.

Some advise, to fish for the Barbel with sheep's tallow and cheese beat into paste, which is an excellent bait in August. Observe that your rod and line be long, and of proper strength; for you will find him a heavy and dogged fish to deal with.

The most famous places near London for Barbel angling, are Kingston-bridge, and Shepperton-deeps;  
G 5  
but

but Walton-deeps, Chertsey-bridge, the small isle at Brentford, Hampton-ferry, and the holes under Cooper's-hill, are thought to be in no wise inferior: you may likewise meet with them at all the locks between Maidenhead and Oxford.





THE D A C E.

**T**HE DACE, or DARE, is like a Chub, though it is less, and a little whiter; the head also is less, and not so flat; and the tail is more forked. Besides, the body is more slender and compressed, and the scales are less. The colour is generally white, and there are a sort of strait streaks between the scales. The iris of the eyes is not so yellow, nor are the tail, and back fins so black, though they are sometimes sprinkled with black spots. The teeth are not placed in the jaws, but in the throat,

throat, as in other fish of this kind. The French give it the name of Dard, which signifies a dart, from whence the English Dare is derived. It is a very brisk and lively fish, and seems to dart along the water, it swims so swiftly. The flesh of this fish is sweet, soft, and yields good nourishment; but is in no great esteem.

Dace are found in almost every river of the kingdom, and are very large in those near London. They are found on gravelly bottoms, in the deepest and most shady places, as well as on the shallowest gravelly scour in hot weather. They also haunt the eddies between two mill-streams, under the water-dock, and generally near the top of the water.

It is a very simple fish, and will often bite when you least expect it. However, their darling bait is a gentle at the bottom, and a small fly at the top. In the summer months an ant-fly is best. They will likewise take any paste, as well as all sorts of small worms.

Angle for him with a very slender rod, a line of single hairs from the top to the hook, which is to be a very



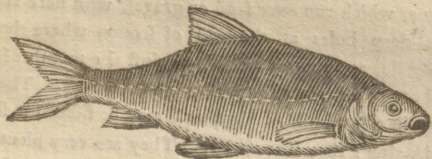
very small one; one small shot, a float made of two sea-gull quills, cut within about half an inch of the feather, and thrust one of the open ends into the other, and then whipt fast with fine waxed silk. This makes the very best float, and is drawn under the water without danger of pricking the fish.

When you are so provided, get some white bread, and chew it, and throw it into the water in small pieces, and bait with gentles, you will have good sport: or you may fish with boiled malt, and bait with grains, and you will frequently catch Chub, Bream, and many other sorts of fish. He will likewise take all sorts of flies very well. In the spring you may point your hook with a gentle, or he will take an earth-bob.

If you angle where two mill-streams are going at one and the same time, let it be in the eddy between the two streams; first make use of the plummet; and if the water be deep, you must angle within a foot of the bottom, and perhaps you will find but little sport. But if it proves to be shallow, that is, about the depth of two feet, or not exceeding three, then bait your

hook with three large gentles: use a cork-float, which ought not to be a foot and a half from the hook, and have a quick eye to strike at the very first bite: for if there be any large Dace in the mill-pool, they will resort to the eddy between the two stones.





## THE ROACH.

**T**HE ROACH is less than a Bream, and about one third as broad as long. The back is of a dusky colour, and sometimes bluish; but the belly is pale. The iris of the eyes, as well as tail and fins, are red. The lateral lines run parallel to the belly, and the tail is forked. About the gills it is of a gold colour, and the mouth is round, but void of teeth, it being a leather-mouthed fish. It will breed in ponds as well as rivers; and though the pond Roach is largest, that of the rivers is the best.

The Roach is principally found in shallow, gentle streams, which run over sand or gravel, with here and there deep holes at the end of scours, where they usually lie, and more especially against the mouth of a small brook or river, entering into a larger. They spawn in the middle of May, and may be fished for six weeks after: they bite all day. They are very plentiful in the Thames, but are largest in ponds. This fish and the Dace are coarse and insipid meat.

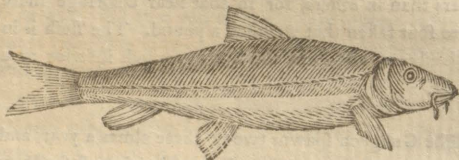
Angle, as for Dare or Dace, with one gentle. When you angle for Roach in a pond, throw in a little chewed white bread, and let your bait lie within six inches of the bottom, and you will not only take much larger, but more in number than you will by any other method. In winter you may fish for him with paste or gentles; in April with worms or cod-bait; but in very hot weather with very little white snails, earth-bobs, new cheese, or with flies under water, for he seldom takes them at the top as the Dace will; and this is the principal thing wherein they differ.

In August the Roach-fishery affords great diversion about London, where it is thus practised: any waterman will provide a boat, with rip-hooks, to fix it in the middle of the stream; and prepare your ground-bait, which is of bran and stale bread, mixed in balls, and thrown in, up the stream, with clay or small stones within, sufficient to sink it speedily, and lodge it at the bottom. Not more than three can conveniently fish in one boat. Your tackle must be strong, your float large, and heavy leaded, to sink the quicker. The constant bait is a well-scoured gentle, three at least on your hook, which must swim ten or twelve inches, at most, from the bottom. The best times are, from half-ebb tide to within two hours of high water.

There is also another highly approved method of this diversion below-bridge, called stern-fishing, by fastening a boat at the stern of any collier or vessel that has lately been a voyage, and has her bottom foul, which contains insects and food for the fish; use about two joints of your rod at most, and a line not longer than four feet, your float fixed within twelve inches of the top of it. In this you use no ground bait. You must begin when the tide first ebbs.

In Thames angling you must not attempt when there is a cold and raw air, high wind, rough water, or wet weather, or when there are spring-tides, or the land-floods come down. Be always careful to pitch your boat on that side the river that is most under the wind.





## THE GUDGEON.

**T**HE GUDGEON is five or six inches long, with a round body, small scales, a brown back, with a whitish belly. It is sprinkled with about nine or ten pretty large blackish spots, which are placed in a right line, directly running from the head to the tail on each side. There are also others that are small on the back, tail, and fins, and at each corner of the mouth there is a barb or thread.

They are to be met with in rivers almost every where; but grow to a much larger size in some rivers than in others, for in that near Uxbridge there were four taken that weighed a pound. The flesh is in high esteem, and some think it not much inferior to a Smelt.

The Gudgeon spawns two or three times a year, and always in summer. They haunt the clearest sandy or gravelly bottoms, and middling sharp streams, where they lie in shoals on the shallows in summer; but get deeper about autumn, under any bridge or plank in small rivers, being fond of the shade.

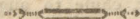
The Gudgeon will bite all day from the end of March till Michaelmas, but not till an hour after sunrise, nor longer than an hour before sun-set. You may sometimes have full as good sport an hour after sun-set as at any time in the day.

The principal baits for the Gudgeon are the small red worm, gilt-tail, brandling, and a meadow-worm. He will likewise take a gentle, a cod-bait, brood of wasps, or cow dung bob; but the small red-worm is what he



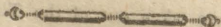
is the fondest of. If you can find a bridge or plank over a small river, chuse to angle underneath for Gudgeons, for they love the shade; and are so far from being shy, that you may not only appear in sight, but if you drive them from their place of resort, they will immediately return. A single hair line, a fine taper rod, a float, and a small hook, is what is in general use, and the bait to drag on the ground. When you angle for them in the shallows, raise up the sand or gravel with a rake or pole, and it will draw the Gudgeons about your bait; when you have no such conveniency, throw in some handfuls of earth.

When you angle for them in a boat in the Thames, let the waterman rake the gravel up to draw the Gudgeons about you; then plumb the ground, and bait your hook with a small well-scoured red-worm; by this method you will seldom fail of good sport. Your tackle as for Dace with a well-scoured gilt-tail. There have been an hundred dozen, or more, taken at Metwell Weir, in the river Mersey, with angling, in one day; you may use two hooks at a line at a time, and two rods is not amiss; and then you may sometimes take Pearch or Trout instead of Gudgeons.



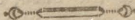
The LOACH, or GROUNDLING, is like a Gudgeon in shape and colour; but is much less and shorter, seldom weighing above four ounces. The body is soft and slippery, and the tail broad, but not forked; and there are few or no scales. The head, back, fins, and tail are sprinkled with blackish spots, and sometimes with a dirt yellow. On the upper jaw there are three pair of barbs, one at the corners of the mouth, and two near the end of the snout. The eyes are small, and have their iris yellow. The flesh is tender and delicate, and is by many swallowed alive, being thought good for a consumption.

Loach are generally found in small, clear, swift brooks, and lie under stones, pieces of wood, and the like. They spawn in the beginning of April among the weeds; but are never out of season. He bites at a small red-worm, or the gilt-tail, and may be fished for at any hour. The hook must be of the smallest size.

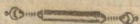


THE WHITE BAIT.—Various are the conjectures about this species; the general opinion however is, that they are the fry of some fish. Some attribute it to the Bleak, others to the Shad, the Sprat, and the Smelt. It bears a greater similitude to the Bleak than to any other, but it is impossible for us to class it with any degree of certainty. In the months of July and August, innumerable multitudes of these fish are taken in the Thames, near Blackwall and Greenwich. They are esteemed very delicious when fried with flower, and the taverns contiguous to those places are much resorted to, when the White Bait are in season. The head, back, and sides of this fish are silvery; and the back tinged with green. Its usual length is about two inches. It is remarkable, that these fish expire the very instant they are taken out of the water. A wager was laid in the summer of 1775, that a person could not shew a live White Bait above London bridge. The experiment was tried, a well-boat was procured, and  
some

Some hundreds of these little fish poured into it the instant they were taken out of the Thames; the utmost expedition was then used to get to the west side of London-bridge; after which the fish were immediately inspected, and not one of them remained alive.



THE MINNOW is much smaller than the Gudgeon, having a roundish body, and seldom exceeds three inches in length. Its body is smooth, and the scales are so small as to be hardly visible. The back is flat, and of a deep olive colour: the belly and sides are mottled with scarlet in some, in others white, and in others with a shining blue. The tail is forked, and marked near the base with a dusky spot. These beautiful fish appear in shoals in many of our small gravelly streams.

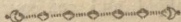


THE BREAM.—This is a broad flattish fish, with a small squarish head, and a sharp nose. It is extremely deep and thin in proportion to its length: the top of the head is broad and flat; and the back, which rises like that of a hog, is of a dusky blue colour: the belly and sides are white: the scales are large, and the mouth, in proportion to the size of the fish, is very small, and without teeth: the iris of the eye is of a silver colour, and the pupil is small. This fish is an inhabitant of lakes, or the deep parts of still rivers. It is extremely insipid, and consequently very little esteemed.

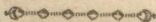
Breams naturally feed upon slime, weeds and dirt; but will take any sort of paste, the brood of bees or wasps, flies under water, and cod-baits. But a short well-scoured marsh worm, or a large red-worm, will prove most successful, or the tail of a well-scoured dew-worm, or two or three large brandlings.

The

The best method of angling for him is this: seek a shallow sandy bottom that leads into a deep hole; then throw into the shallow part of the stream four or five handfuls of marsh-worms, cut in pieces, which will soon drive down into the hole. Use a long rod of proper strength, with a line proportionable; a small hook, and no float. The hook must be tied to India grass, on which put a cut shot six inches from the hook, and next to that a small bullet. The use of the shot is to keep the bullet from slipping lower. This done, bait your hook with a short well-scoured marsh-worm, throw in the shallow, and the stream will drive it into the hole. By this method you may catch more in two hours than you can well carry away.



THE RUD.—This is broader than a Roach, and thicker than a Bream. The back is of an olive colour; and the sides and belly of a gold colour, marked with red. The ventral and anal fins, and the tail, are generally of a deep red. The tail is also a little forked. The head is small, and the iris yellow, inclining to red. The scales are very large. This fish is in great esteem, and always in season, except in April.

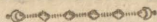


THE BLEAK seldom exceeds six inches in length: the body is broadish, and not unlike that of a Sprat; the head small; the scales are thin, and of a silver colour, and come off easily. The back is of a blueish or greenish brown, and the eyes are large, marked on the lower side with a blood-coloured spot. The skull is transparent. Artificial pearls are made with the scales of the bleak. They are beat into a fine powder, then diluted with water, and introduced into a thin glass bubble, which is afterwards filled with wax.

The Bleak spawns in March, and recovers its strength in three weeks. The flesh is sweet, nourishing, and pleasant, but little sought after on account of the diminutive size of the fish.

The best baits for him in the cold months are gentles and small red-worms; and in summer you may catch great numbers with an artificial ant-fly, or a very small gnat.

THE



THE GOLD FISH.—They were first introduced into this country about the year 1691, but were not generally known till 1728, when many of them were brought to England. In China Gold Fish are kept for amusement by every person of fashion.

The form of the Gold Fish resembles that of the Carp: they have been seen in England of the length of eight inches, and Du Halde informs us, they grow to the size of our largest Herring in their native country. In the colours of this fish there is infinite variety: some are marked with a fine blue, a brown, and a bright silver; but the general and predominant colour is gold, of a most amazing splendour. This species is particularly distinguished by the anal fins, which are placed opposite each other, like the ventral fins; and not behind each other like those of other fish.



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NATURAL HISTORY  
OF  
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SERPENTS.

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A VIPER differs from other Serpents, not only in moving more slowly, and in never bounding or leaping, but in bringing its young to perfection before they are excluded; whereas the females of other Serpents lay eggs, which are either hatched by the heat of the sun, or in the place of their retreat. Some have thought, that a Viper is an emblem of Malice and Cruelty; but without reason; for they never do any mischief, unless they are exasperated, and then they become furious, and bite very hard.

Though the flesh of the Viper has been converted to salutary purposes in medicine; yet in the countries where they abound, man is found to suffer more from their baneful qualities, than he is benefited by their medicinal

dicinal virtues. Providence, however, in some measure, seems to secure him from the dangers of those which are most mortal: the Rattle Snake, for instance, whose bite is fatal, warns him of his vicinity, by sounding his rattles; the most formidable avoid his appearance, and seldom attack him without some kind of previous provocation. In some countries, the Serpent kind are even rendered useful, and like cats, employed for the purpose of destroying domestic vermin. Without penetrating into the designs of Providence, it is sufficient for us to know, that by granting us such powers superior to all other animals, such of them as we think proper to employ, are rendered entirely subservient to all the purposes of our pleasures or amusements.

Vipers will live several months without nourishment, nor will they eat after they are taken, for though they are very fond of Lizards, yet, when these have been thrown into a tub, in which were several Vipers, they were never touched. The flesh of a Viper is viscid and hard, and does not digest very easily: the skin is scaly, and its colour on the upper part of the body is yellow, with a reddish cast in the males, which is whitish in the females. In the middle of the back, there

there is a blackish line dentated on each side, or rather a chain of blackish spots, which runs along from the head to the end of the tail. A little below is another row of blackish spots, and on the lower part of the sides there is a line consisting of little white spots, and then another of black, which are larger, and at last a third, which are whitish. The belly is covered with long transverse black scales, which are less on the other parts. Besides, the colour is not the same in all, at least the ground is different; for it is sometimes whitish, sometimes red, grey, or yellow, and at other times tawny. This is always spotted with black, or at least with a dark colour. Upon the head there are two rows of spots, which resemble horns, that rise between the eyes, and run along the sides on the top of the head. Opposite the middle of these horns, there is a spot of the size of a lentil, which is the beginning of those that run along the spine of the back.

They are generally about two feet in length, and about the thickness of the thumb of a large man. The head is flat, and has a border at the extremities of the upper part, in which it differs from Snakes. It is about an inch long, and at the top two thirds of an inch broad,

broad, which, diminishing by little and little, is one third of an inch about the eyes, and half as much at the end of the muzzle. The neck, at the beginning, is about as thick as a man's little finger; and the tail of the females is always more thick and long than that of the males, and they terminate in a point in both.

Vipers cast their skins generally twice a year, and the new ones seem always more beautiful, and the colours more bright, than that which they have quitted. Soon after this, another skin begins to be formed, so that it may be said, that they always have a double skin. When a Viper is cut into several parts, after the skin is taken off, and the bowels out of the belly, they will all live for several hours, and the head is always ready to bite; nor will this be less dangerous now than at another time. Vipers do not make holes in the earth, like other Serpents; for they generally hide themselves under stones, or the ruins of old houses. However, in fine weather they delight to lie among bushes, and in tufts of grass.

Vipers have generally two large teeth without the upper jaw, surrounded about two thirds of their height, with

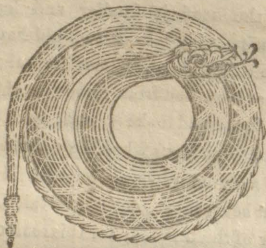
with a pretty thick vesicle full of transparent yellowish liquor, and pretty fluid. In this vesicle, and in the middle of the liquor, under the large and principal tooth, there are several teeth irregularly placed, some longer than others, and all crooked. There have been sometimes six or seven on the same side, under the same tooth, and in the middle of the same vesicle. These large teeth art about one sixth of an inch long, and are hooked, white, hollow, and transparent throughout, even to their very point, which is extremely sharp. These teeth generally lie close to the upper jaw, and their points do not appear till the moment the Viper is going to bite. There are likewise other crooked teeth in both jaws, which are hollow and transparent, but very small. Their number is uncertain, they being seldom found the same in any two Vipers, which perhaps may be owing to their being so liable to be broken off.

There is a great difference between the teeth and jaws of Vipers and those of Snakes; for these last have four upper jaws, and two lower. Two of the former lie near the edge of the lip, and serve, as it were, to defend the other jaws, which have the same situation as  
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in Vipers. Some Snakes have near an hundred teeth, which are all fine, crooked, hollow, white, and transparent as in Vipers.

The tongue of a Viper is composed of two long fleshy round bodies, which terminate in sharp points, and are very pliable. It is about an inch and a half long, and its root is connected very strongly to the neck by two tendinous bodies, near a quarter of an inch in length. The tongue of some Vipers have three or four points; and, though they are often darted out, they do no harm, except terrifying those that behold them; for they serve principally to catch the small animals, which the Viper lives upon.





## THE RATTLE SNAKE.

**T**HE Rattle Snake is bred in America, but in no part of the Old World. Some of these are as thick as a man's leg, and six feet in length; however there many that are no larger than a common Snake, and these are most frequent. They receive their name from the rattle which is at the end of their tails, that consists of several shells, which are very thin and of a horny substance.

They are of an orange, tawny, and blackish colour on the back, and of an ash colour on the belly, inclining  
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to that of lead. The male may be readily distinguished from the female by a black velvet spot on the head; and besides, the head is smaller and longer made. The young Snakes of a year or two old have no rattles at all, but those that are older have several. Many have been killed that have had from eleven to thirteen joints each. They shake and make a noise with those rattles with prodigious quickness when they are disturbed, and their bite is very dangerous; but not always of the same force, it being more or less mortal, in proportion to the vigour of this animal; for this reason it is always more fatal in March and April.

This Snake is a very majestic sort of a creature, and will scarce meddle with any thing unless provoked; but if any man or beast offends it, it makes directly at them. Many have affirmed, that a Rattle Snake has the power of charming Squirrels, Hares, Partridges, and the like, in such manner as to make them run directly into their mouths; but this, upon strict examination, appears to be a mistake.

The Viper of Ceylon, has small eyes, seated over the nostrils, which seem to be four in number; because  
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over the jaw, on each side, there are two whitish spots that resemble eyes. The nose is covered with pretty large scales, and these are adorned with an undulated black and red streak. The belly is of a bright yellow, spotted with a reddish colour, and furnished with whitish scales.

The Javan Viper is coloured with scales of a sea-green colour, and surrounded with stripes of a dark tawny, that run transversely round the body from the head to the tail. The head is defended by large reddish scales, only over the eyes there are two white transverse stripes. About the neck there is a red circle, and the scales on the belly are of a bright yellow, but bordered on the sides with a black line, like a silken thread.

The Marassus is an Arabian Viper, with reddish scales on the upper part of the body, shaded with large dark brown spots, which reach to the sides. These spots on the back are mixed with streaks of a forrel colour, which run cross-ways. The head is covered with large uniform scales, and the mouth is edged with a beautiful border: the scales on the belly are of a yellowish blue, speckled with red.

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The Ammodytes, of Ceylon, is a very large and dangerous Serpent, with a mouth full of sharp teeth. The eyes are large and sparkling, and the forehead is covered with small round scales, some of which are yellow, others red, and speckled with black. On each side of the eyes there are black stripes that reach to the neck; but the body, above and below, is of a whitish ash-colour, and on the back are angular spots variegated with white and brown. The scales that cover the upper part of the body are placed like net-work, with large meshes, and the tail is spotted with brown, ending in a bony point.

The Ammodytes, of Surinam, is a Serpent which the negroes have in high esteem, and think themselves very happy if they come into their huts; but their colours are so many and beautiful, that they surpass all description.

The Ammodytes, or Sand Serpent, so called, because it hides itself in the sand, and is said to be very like a Viper. It is a cubit in length, of a sandy colour, and the head is broader than that of a Viper, as well as the jaws. On the upper part of the nose, or muzzle,

there is an eminence like a wart, which has given occasion to some to call it the Horned Serpent. It is to be met with in Africa, Illyria, Italy, and other parts of the world.

The Bayapna is an African Serpent, with a longish white head, spotted with chefnut colour, and the neck is adorned with a narrow collar. The eyes are large, seated near the mouth, and the upper part of the body is covered with squarish scales as white as snow, from the head to the tail, which last is long and slender. The neck is small, marked with oblong spots of a bright bay, which are more large on the back. Near the tail the spots are smaller, and the belly is of a yellowish ash-colour, speckled with red on each side throughout its length. It lives upon birds and frogs.

The Gerenda, so called by SEBA, is a Serpent of the East-Indies, to which they pay divine honours. It generally lies folded up, and has a skin finely spotted; it is covered with very thin scales of a yellowish ash colour, and encircled with red bands, which look as if they were embroidered, or rather like ribbands. The head is oblong, and like that of a hound, and of a very pale

pale ash colour ; it is covered with small scales, that become larger upon the nose ; and from thence to the neck, there runs a deep red streak, made like the links of a chain. Another streak, much of the same sort, proceeds from the eyes to the jaws ; the edges of the lips are turned outwards and folded. The teeth are small and slender, the eyes lively and sparkling, and the nostrils large ; the transverse scales on the belly are of a yellowish ash colour, and the small scales of a bright ash colour, spotted in the middle with a deep red. This Serpent is held in great veneration in Japan and Calicut. The inhabitants of Malabar are greatly afraid of it.

The African Gerenda is of a prodigious bulk, and is worshipped by the inhabitants on the coast of Mosambique. The skin is not so finely spotted as the former ; but is variegated all over the body with very fine white ash-coloured and black spots. The head is somewhat like that of a dog, as well as the nose, which is finely spotted, and small round scales cover the top of the head. The mouth, when open, seems to be furrowed, and the tongue, which is cloven in two, is red ; the tail terminates in a point.



THE ANGUIS ÆSCULAPII, AND  
THE HOODED SERPENT.

**T**HE *Anguis Æsculapii*, the Snake of Æsculapius, is a harmless kind of Serpent. In Italy it is suffered to come into the houses, and often gets into the beds where people lie; but though it is an innocent sort of an animal, yet it will bite when exasperated. It is of an oblong shape, an ell long, and of a yellowish colour, except on the back, where it is brown. Both jaws are

armed with many very sharp teeth; and on the neck two small eminences appear, with an empty space between them. They are very common in Spain, Italy, and other warm countries.

The *Serpens Indicus Coronatus* is called by the Portuguese *Copra de Capello*, which signifies the Hooded Serpent, and is so named because it has an excrescence like a hood or cap on the top of the head. The skin is of a gold colour, and it is generally about a yard in length, and about three quarters of an inch thick. It is agreed on all hands, that the poison of this serpent is extremely dangerous, and perhaps more strong than that of any other.

The *Jaucaacanga*, so called by the Brasilians, is named *Tedagoso* by the Portuguese. The Dutch that live in those parts call it the Hunting Serpent, because it winds along with incredible swiftness, insomuch that it is very difficult to get out of its way. The natives do all they can to render these Serpents tame, for they receive them into their houses, where they free them from all vermin. The head is oblong, the mouth small, and the nose is like that of a hound; the eyes are large and very



very fine, as well as the scales on the nose; but those on the forehead are small, thin and round. The rest are pretty large in proportion, as white as snow, shaded with a pale red, and variegated with gold colour. The teeth are crooked, the tongue cloven and of a pale red, and the tail is of a deeper colour than the body. Under the belly they are ash-coloured with red edges.

The Hæmorrhoids, which is the name of the bleeding piles, is so called, because those that are bit by it have hemorrhages or fluxes of blood from all parts of the body. It is but small, being only a foot long, and it has a very bright and shining skin. The eyes are red and shine like fire, and the back is full of black and white spots. The neck is small, the tail very slender, and it has small horns above the eyes.

The Acoalt is a water Serpent found in the East-Indies, that has very small teeth, and its bite is not dangerous. It is pretty long, and variegated with broad black streaks; but the back and the under part of the belly are blue; the upper part of the head is black, the lower yellow, and the sides blue.

The Argus is a Guinea Serpent; it is very uncommon, and is so called, because it is covered with spots from the head to the tail, that resemble eyes. On the back there is a double row of them, which are the largest; the ground colour of the scales is of a bright chefnut colour, only on the back between the eyes it is of a dark brown.

The Prince of Serpents, so called by SEBA, is a native of Japan, and has not its equal for beauty. The scales which cover the back are reddish, and finely shaded, and marbled with large spots of irregular figures. The head is oblong, and the fore part is covered with large beautiful scales. The jaws are bordered with yellow, and the forehead is marked with a black marbled streak, which reaches to the end of the neck; the eyes are handsome, lively, and brilliant. It is a very harmless animal.

The Asp is a Serpent very often mentioned by ancient historians; but they have given us no accurate description of it. Some say it is of the size of a common Snake, only the back is broader, and their necks swell greatly

greatly when they are angry. But as to their teeth growing exceeding long, and standing out of their mouths like boars, which some assert, seem to be fabulous. However, it may be true, that two of the longest are hollow, and that they are those which contain the venom. They are generally covered with thin pellicles, which slide down when the Serpent bites. The skin is said to be covered with scales, which are redder than those of any other Serpent; but others affirm they are of very different colours. Some say they are two cubits long; others four; others again five; and PETER KOLBEN affirms he has seen them several ells long; so that in short, there is nothing certain to be said about it. They are undoubtedly bred in Africa, and it was by the bite of one of these Serpents that Cleopatra is said to have ended her days.

The Giboya is the largest of all the Brazilian Serpents, being sometimes twenty feet long and very thick. Travellers pretend it will swallow a stag whole: but this must be a fable. The teeth are very small in proportion to its body, and this Serpent is not at all venomous. It lies in wait for wild animals near the paths, and when it throws itself upon one of them, it

about him in such a manner, and with so much strength, that it breaks all its bones : after which it mumbles the flesh so, as to render it fit for swallowing it whole.

The Hippo, an African Serpent, so called by SEBA, is covered with scales of a bright lead colour, appearing very beautiful to the eye ; the head is variegated with red, yellow, white, and blue, very curiously mixed : and each side of the head and neck are marked with four spots as red as coral. Along the spine, from the head to the tail, there runs a whitish streak, which seems to consist of a row of oval pearls, and on each side of the belly, which is covered with yellow scales, there runs another white streak.



THE LARGE SPOTTED LIZARD.

THE large West-Indian Green and Spotted Lizard is above a foot in length, and the head, legs and sides, and under part of the body, are of a fine green. The top of the head is covered with broad scales, and the sides and under part of the head with smaller. It has a sort of necklace under the throat, and it thrusts out a black

forked tongue from its mouth. The ear-holes, which are pretty far behind the eyes, are black. The upper side, except the head and tail, is of a dark brown, covered with very small scales like studs, and variegated with yellowish lines crossing each other, and forming a kind of net-work. On each side, from the fore legs to the hinder, there are fine blue oval spots, each of which is surrounded with a dusky colour. The tail is covered with longish scales, which run round it in regular rows to its end, which are all of a dark brown with a greenish cast. The belly has broad transverse scales running across it, and there are five toes on each foot, with small sharp nails. The hinder feet seem to have a thumb, and four distinct fingers.

The *Hæmaceta* is a Serpent of Asia, which SEBA procured out of Tabarestan, a province of Persia. It is covered with scales exactly resembling oriental agate. On each side the belly there are spots of deep red, and the fore part of the head is covered with uniform pale red scales: but the hinder part of the head and neck are adorned with white spots like roses; the scales of the belly are of the colour of apple blossoms, inclining a little to red in some places.

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The Scytale is of a long round shape like a staff, from whence it has its name; for Scytale signifies a club or staff in the Greek. Some say this Serpent is very full of marks or spots on the back, which render this animal extremely beautiful. It has a very slow motion, and therefore cannot pursue any one to hurt him. The head and tail are so much alike, that it is hard to distinguish one from the other.

The Amphibœna, or the double-headed Serpent, is remarkable for moving along with either the head or the tail foremost, as the Greek name imports. For this reason, many authors have affirmed, that this animal has two heads, which must needs be false: for there is no such creature in the universe. This error took its rise very probably from the thickness of the tail, which might look at a distance like another head; but, if those who have affirmed it, had had a nearer view, they would soon have discovered their error. Some assert, that this Serpent is like the Scytale, and differs only from it in going backward and forward. It is as thick at one end as the other, and the colour of the skin is like that of the earth. It is rough and hard,

and variously spotted. It is to be met with in Lybia, and likewise in the island of Lemnos.

The American Amphibœna is of a flesh colour, and seems to have neither eyes nor nostrils: its mouth is a small cleft, without teeth or tongue; however it is thick, smooth, and covered with large scales of a flesh colour; the head is blunt, and as thick as a man's head, as some say; but this may be doubted; some place them among the blind Serpents.

The Apamea is a Syrian Serpent, which seems to have two heads, and the body is smooth and shining. The head is small and of a pale yellow, only there is a streak which reaches from the eyes to the nostrils. It is round, thick, and flat, and covered with small scales, like lozenges, of a violet purple underneath the body, variegated with straw colour. The tail is thick, and blunt at the end.

The Ibijara, so called by the Brasilians, and by the Portuguese COPRA DE LOS CABECAS, is reported to have two heads, but falsely. The error arose from its striking with the tail, as well as biting with the mouth; besides



besides the head can be hardly distinguished from the tail, because they are both of the same shape and size. It is about as thick as a man's little finger, and a foot and two inches long. It is of a whitish colour: it glitters like glass, and is marked with beautiful rings, and lines, nearly of a copper colour. The eyes are very small, and hardly visible; for they look like small holes in the skin, made with the pricking of a needle, lives under the earth, and never appears but when turned up by digging. It lives upon ants, and its venom is so fatal, that the Portuguese affirm there is no cure for it.

The *Cæcilia*, the Blind Worm, or Slow Worm, some have supposed to be both blind and deaf; but this is a mistake, for they certainly have eyes, though very small. The teeth are set in the mouth like those of a Camelion, and the skin is very thick. It is of a pale blue, with blackish spots on the sides. Likewise, it is quite smooth, being without scales. It is about a span long, and as thick as a man's finger. It is to be met with in England, as well as in many other countries; and it brings forth its young ones alive like the Viper.

The *Aeontias*, or *Dart*, is so called, because it shoots itself forward like a dart. It is of a whitish ash colour, and on the belly is entirely white, with little spots like eyes upon the back. The neck is black, and from thence there runs two white lines along the back to the tail. The spots, which are black, are no bigger than a lentil, and they are all encompassed with a white circle. Authors affirm that they get upon trees, from whence they dart themselves upon people as they pass along, and that their bite is mortal. They are to be met with in Egypt, Lybia, and the islands of the Mediterranean sea. Late authors mention different kinds of them, the descriptions of which have been sent to Europe from different parts of the world.

The *Dart* of Amboyna is called by the Dutch *Spait-flang*, which is as much as to say, the *Syringe Serpent*, because it raises itself as swiftly as water out of a syringe. It is as thick as a man's arm, six feet in length, and is covered with scales disposed in the form of lozenges, which are of a reddish brown, and of a sea-green on the back and sides; but those on the belly are of a bright ash colour. The skin is smooth, and the head of  
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a middle size; but the eyes are very large and shining, with small teeth, and a long pointed tail.

The Grill, of Surinam, is a Serpent almost a foot long, and an inch thick, being in the shape of a cylinder from the head to the tail. The skin is smooth without scales; on the back there are points a little elevated, and there are wrinkles on the sides. The head is smooth and round, and the upper jaw is long, blunt, and furnished with a thread on the side of each nostril. The holes of the nostrils are a good distance from each other, and are as small as the points of needles, as well as the eyes, which however are very brilliant; the teeth are small, and the tail, if it may be said to have any, is blunt and wrinkled like Earth-worms.

The American Blind Serpent is white, mixed with flesh colour, and is covered with small scales from the head to the end of the thick tail; and they are divided by fine longitudinal streaks that cross others which are circular. The head is large and short, and the mouth is furnished with teeth. Its eyes are very small, and covered with a membrane; but the nostrils are large. It feeds upon Hog-lice, and other small insects.

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The Biten of New Spain, is of a thick short shape, being remarkable for its short tail, which is distinct from the body; the scales which cover the middle of the body are long and broad; but towards the head and tail they are narrow; these are whitish, variegated with red, pale, and deep yellow, mixed here and there with black spots. In the back part of the mouth there are crooked teeth; but there are none before.

The Biten, of Ceylon, is a sort of large Snake covered with great oblong scales, which adhere to the skin by the root; but there are other parts as loose, and so moveable, that when it is angry they rise up like hair that stands an end. They are of a deep yellow where they touch each other, shaded with blackish spots; but between them there are other scales of a yellowish ash colour. Its neck is marked with oval spots, and the head is short and of an oval shape: the eyes are large, brilliant, and full of fire; and in the mouth there are only four long crooked teeth, two above and two below; these are connected to the jaws on each side by tendons; but at the bottom of the palate there are others very small and crooked. Its tongue is forked.

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The large Mexican Serpent, called Depona, is remarkable for the enormous size of its head and jaws. The mouth is armed with cutting crooked teeth, among which there are two tusks, which other Serpents have not, and which are placed in the fore part of the upper jaw. All round the mouth there is a broad scaly border, and the eyes are so large that they give it a terrible aspect. Its forehead is covered with large scales, on which are placed others that are smaller, curiously ranged: those on the back are greyish, and along it runs a double chain, whose ends are joined in the manner of a buckler. Each side of the belly is marbled with vast square spots, of a chefnut colour, in the middle of which is another that is round and yellow: the transverse scales of the belly are variegated with large spots, of a reddish colour, as well as the long slender pointed tail. They avoid the sight of a man, and consequently seldom or never do any harm.

The Cencoalt is a sort of Viper of New Spain, and has an oblong head flatted before, with large nostrils: the mouth has a large dentated border, and the eyes are large and sparkling: the body is covered with  
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speckled scales, shaded with spots that are partly red, partly yellow, and partly of a chestnut colour: the scales on the belly are of a bright ash colour, variegated with yellow, and the tail and neck are long and small.

The Boiguacu is called by the Portuguese Cobra de Veado, and is supposed to be the largest of all these kinds of animals. They have been seen from seven to twenty-four feet long; and MARCGRAVE affirms, that he has seen one swallow a goat whole. This seems to be the same that CONDAMINE mentions by the name of the Coral, and says, it is remarkable for the variety and liveliness of its colours; but more especially for its largeness, for it is affirmed they are from twenty-five to thirty feet long. This author carried two of the skins to France, one of which was fifteen feet long, and a foot in diameter. It is thickest in the middle of the body, and grows shorter and smaller towards the head and tail. On the middle of the back there is a chain of small black spots running along the length of it, and on each side there are large round black spots, at some distance from each other, which are white in the centre. Between these, near the belly, there are  
two

two rows of lesser black spots, which run parallel to the back. It has a double row of sharp teeth in each jaw, of a white colour, shining like mother of pearl. The head is broad, and over the eyes it is raised into two prominences. Near the extremity of the tail there are two claws resembling those of birds.

Piso affirms, that those Serpents lie hid in thickets, from whence they will come out unawares, and raising themselves upright on their tails, will attack both men and beasts. It makes a strange hissing noise, when exasperated, and will sometimes leap from trees, and wind themselves round the bodies of travellers so very closely as to kill them. However, CONDAMINE makes no mention of this, but he takes notice of their biting, which he affirms is not at all dangerous; for though the teeth are so large as to inspire any one with terror that behold them, yet their bite is not attended with any other consequence than what may proceed from an ordinary wound.

DELLON affirms, that in the East-Indies there are Serpents of twenty feet in length, and so thick, that they are able to swallow a man. They generally haunt  
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desart places, for though they are sometimes seen near great towns, on the sea shore, or on the banks of rivers, yet it is generally after some great inundation. He never saw any but what were dead, and they appeared to him like the trunk of a large tree lying on the ground. The Americans pretend that one of these Serpents will swallow a Deer, horns and all; and the Indians, that it will swallow a Buffalo whole; both which stories are very improbable. However it is pretty certain that one of the East Indian Serpents did actually swallow a child.

The Cucuruca is a Serpent from nine to twelve feet long, and thicker than a Rattle Snake. Their scales are much alike, only these are yellow and marked on the back with large black spots. It is a very venomous animal, and greatly to be feared, and yet the flesh is eaten by the savages.

The Iboboco, of the Brasilians, is called Cobra de Coral by the Portuguese. It is two feet long, and almost an inch thick; and the tail towards the end is round and sharp like a bodkin. All the belly is of a shining white, and the head has white cubical scales, which are black on the edges. Next to these is a spot  
of



of a bright red colour, the scales of which are black on the edges, as all the red spots are. To this a black spot succeeds, then a white, then a black, and again a red, and so on. The red spot is about an inch long; and two white, and three red, taken together, are an inch and a half long, but equal to each other. The edges of the white spots are always black. The bite of those Serpents are generally fatal; however it can move along but slowly.

The Boitjapo, of Brasil, has the name of Cobra de Lipo among the Portuguese, and is seven or eight feet in length, but is scarce so thick as a man's arm. The body is round, and the tail ends in a sharp point. The colour in general is olive, except under the belly, which is yellowish, and covered with beautiful triangular scales.

The spine of the back is furnished with a row of prickles, which runs from the head to the tail. The scales on the upper part of the body are placed like the meshes of a net with a double thread, which crossing each other form a sort of lozenges. The head is defended by a buckler, consisting of large long scales, and  
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the eyes are large, sparkling, and full of fire. The mouth is armed with many small teeth. It lives upon frogs and is very venomous.

The Boyuna is a Serpent of Ceylon, which the inhabitants are fond of meeting with; because they take it to be a sign of good luck, and more especially if it happens to come into their houses. The mantle on its back consists of a fine web of small scales, which are ash coloured and yellow, and made like a net; they are bordered with a mixture of large bay-brown spots, and on the belly there are others that are smaller, inclining to a rose colour, and speckled. The head is covered with beautiful pretty large scales, of a bright chestnut colour, speckled with red and brown. The scales on the belly are white, spotted with brown.

There is another Boyuna of Ceylon, with a white head, defended with large scales, and adorned with a sort of crown. The edges of the jaws are transversed with black streaks, and on the hind part of the head is the print of a Tiara. The fore-part of the body is half a Dutch ell in length, and there are very large spots, variegated with white, chiefly on the back, though  
they

they extend here and there to the belly. The scales of the belly and the tail are surrounded with a very narrow roundish border.

The BOJOBİ, so called by the inhabitants of Brasil, is known to the Spaniards by the name of Cobra Verde, or the Green Serpent. It is about an ell in length, and as thick as a man's thumb. The green colour on the body is like that of a leek, and shines very much. The mouth is large, and the tongue black, and it delights to be near buildings. It is a very harmless animal, unless any one vexes it, and then it will bite, which is always fatal.

Another BOJOBİ, is a Serpent of Ceylon, with large lips, and is of a beautiful shape, but it has a terrible look; the lips are thick and hanging, and the teeth sharp; but they are hid in sheaths within the jaw, and have a membranous covering. The lips are edged with a border of large, pale, reddish scales made like studs, and the eyes are red and sparkling. The upper part of the body is of a shining orange colour variegated with straw coloured spots, and adorned with belts of a reddish brown.

Seba

Seba informs us, that this Serpent is of different sizes, though seldom above that before-mentioned: the scales are large, long, and of a sea-green colour, variegated on the back with long, large, transverse stripes as white as alabaster. The scales on the belly are yellow and large; the head is well made, and shaded above with bright red, but greenish underneath; the eyes are surrounded with large scales, and the flat snout is quite covered therewith; the upper lip is bordered with the like scales; and the tongue is forked and pointed, being white and reddish; whereas the tongues of most other serpents are black.

There is another serpent called BOJOBİ, and by some the Crowned Serpent. It has a wide, short mouth, with a black head, marked at the top with a yellowish crown. The eyes are small, and of a sparkling green; but the nostrils are large and open. This Serpent generally keeps in old hollow trees.

The Boiquatrara is a Serpent of the Island of St. Maurice, which word signifies the Painted Serpent. These kind of Serpents live a long while, and become extremely large; the upper part of the body is adorned  
with

with a long chain of chestnut-coloured links, somewhat like a net, and on each side the belly there are round saffron-coloured spots, disposed in a beautiful order. The other scales are large and speckled with a pale yellow; the head is not large in proportion to the body; but it is finely adorned with scales, and those on the belly are of an ash-coloured yellow, and barred with rays.

The Boiquatrara, of Amboyna, is so finely coloured, that it is likewise called by the natives the Painted Serpent. It is beautifully variegated with blue sea-green, and dark-green: the scales on the belly are of a sea-green, marked on the upper part with four yellow stripes, which run from the head to the tail. The head terminates like a long-pointed bill: but the mouth is so large, that it can swallow a common fowl whole; but it has no teeth. This Serpent makes a kind of a singing noise, by which it is said to invite birds within its reach, and then leaps upon them.

The Caracara is a Brazilian Serpent, with a greyish head, the back part of which, and the neck, are covered

covered with scales of the same colour, marked with dark-brown spots, that run transversely in the form of a bow, and cuts a blackish chain in the middle of that part. Where this chain terminates the scales become of an oblong shape. That part of the Serpent where this chain begins is a little swelled, and inclinable to a red colour. The scales on each side of the belly are of a bright ash-colour, and on each side the head is a black streak, which terminates at the nape of the neck. The eyes are large and shining.

The Jararaca is a short Serpent, seldom exceeding half a cubit in length. There are prominent veins in the head, as in those of Vipers, and it hisses much in the same manner. It is marked with red and black spots; but all the other parts are of a dirt colour. The Portuguese have a remedy for its bite, called by them Herva de Cobras, and by the natives Caatia, which being applied outwardly, and taken inwardly, cures not only the bites of this, but of all other Serpents.

The

The Taresboya, and Cacaboya, are two amphibious Serpents, that live as well on land as in the water; and upon that account are not unlike our Water Snakes. However they are not so pernicious as those in Europe. They are quite black, and not very large, and will bite when angered, but the wound admits of an easy cure. There is one of this kind of a yellow colour, six palms in length, which is more to be feared by the country people, on account of devouring the poultry, than from the danger of its bite.

The Girawpiagara, which signifies an Egg-eater, is an oblong Serpent or Snake of a black colour, only it is yellowish on the breast. They are very nimble in getting up the highest trees, where they seek birds nests and devour the eggs.

The Jararacucu is about thirty inches in length; its teeth are very large, and when it is about to bite, they are thrust out of the mouth like fingers; but at other times they are hid within the cheeks. The venom is of a yellow fluid, so powerful that it will kill  
a man

a man in the space of twenty-four hours. These Serpents bring forth several young ones at a time, and some of them that have been killed have been found to have thirteen in their belly.

The American Cobra de Capello, so called by the Spaniards, seems to be a sort of Viper. The upper part of the body is of a dark red, and some white streaks run across it: the belly is of a pale red, and the upper part of the tail of a scarlet colour; but the top of the head is whitish. The forehead is marked with a spot in the shape of a pair of spectacles, and the eyes are small. It lives upon spiders, and insects of the like kind.

The Cobra de Capello, of Siam, from the head to the end of the tail is of a greyish ash-colour, and has a little brownish red on the back. The scales on the belly are large, and of a reddish pale inclining to an ash-colour. The mark on the forehead is not so large as that of the foregoing, and the chequered scales are without ornament. The eyes are large and shining, and the fore-teeth are so small that they can hardly be  
seen,



seen, being covered with a loose skin; but the hinder teeth are sharp and crooked.

The *Serpens Ocellatus*, or the Eyed Serpent, is so called on account of the various white spots on its black skin. Some give it the name of the Dart, on account of the swiftness with which it throws itself on its enemy, when it meets with an opportunity. It may be taken with a great deal of ease: for a small blow on the back with a stick will stop its career, and then there is no difficulty in killing it.

The Tree Serpent is so called, because it perches commonly upon trees; it is three ells in length, three quarters of an inch thick, and it winds itself about the branches of trees; where it continues a long time without motion. One not accustomed to these Serpents, unless he has a very piercing sight indeed, may easily mistake them for branches of trees, which they do not differ from in colour, except in the spots. When any one comes near the place where they lurk, it is usual for them to dart their heads at the person's face, by which means they often wound them. When the mischief is done,

done, they get down from the tree as fast as they can in order to get away; but as they are slow in their motion they may be soon overtaken and knocked on the head. They do not leap from the tree, but get down by winding along the branches. Many of these are put into spirits, and sent by the Dutch to Holland as presentt to their friends.

The Blind Serpent is very common at the Cape of good Hope, and his scales are black, with brown, white and red spots. Its bite is not so dangerous as that of other Serpents, and is found often in the clefts of rocks and other places about them, where they may be killed with little trouble.

The Dipfas is so called from the Greek word, which signifies thirst, because those who have the misfortune to be bit by it have always a passionate desire for drink. Some call it Prester, which signifies to burn, on account of the burning sensation that it causes. This Serpent is about three quarters of an ell long, and is very thick a little below the head, with a blackish back. It is very nimble in attacking any person; and its bite in-

flames the blood to such a degree, that it causes a burning thirst.

The Chayquarona is a Brazilian Serpent, whose male is adorned with rings from the head, which are handsome, to the extremity of the tail. On each side the neck there are nine black spots, which look like eyes, as in some kind of Lampreys: some of the rings are red, and others of a pale yellow, and the scales of the lower belly are of a faint blue. The female is like the male, only the rings are of four colours, and there are no spots on the sides of the neck.

The Horned Snakes are like the Rattle Snakes for colour, but rather lighter. They hiss exactly like a goose when any animal comes near them. They strike at their enemy with their tail, which is armed at the end with a horny substance like a cock's spur; which, being venomous, generally kills those that are struck with it.

The Water Snakes of Carolina are of four sorts; the first is of the colour of the Horn Snake, but somewhat less; the next is a very long one of a different colour, and will swim over a river a league in breadth. They generally hang upon birch, and other

trees, near the water side. Their bite is reckoned venomous. The third sort is of the colour of an English Viper, and delights in places where there is salt water. The bite is accounted dangerous, but whether deadly or not, is not said. The last kind is of a black colour, and frequents ponds and ditches, which is all that authors say of it.

The Swamp Snakes are very near a kin to the Water Snakes, and may properly be ranked in that number. The belly of the first is of a carnation or pink colour, and its back of a dirty brown; they are of a large size, but not very venomous. The second sort is large, of a dirty brown colour, and continues always in the marshes. The last is mottled, and very poisonous, with prodigious wide mouths. They grow to the thickness of the calf of a man's leg, and frequent the sides of swamps and ponds.

The Red Bellied Land Snake is so called, on account of the colour of its belly, which is nearly that of an orange. Some have been bitten by these Snakes without any bad consequences, while others have suffered greatly on that account.

The Red Backed Snakes are so called from the colour of the back. They are long and slender, and their bite is so fatal as to admit of no cure. However they are happily very uncommon.

The black Truncheon Snake lies under the roots of trees and on the banks of rivers. When any thing disturbs them, they dart into the water like an arrow out of a bow. They are so called from their shape, for they are very thick and short.

The Lamanda, or the King of Serpents, so called by SEBA, is a native of the island of Java. It is so curiously coloured and spotted, that a very skilful painter whom he employed, could not come up to the beauty of the original. The head is well proportioned, and the forehead is of a yellowish ash colour, covered with scales, marked with a red cross made like the iron part of a halberd; and near it are two annular spots, which surround others that are smaller. From the eyes, which are lively and sparkling, to the nape of the neck, there runs along the side of the upper jaw a bay-brown variegated streak; and the lower jaw is encircled underneath with another of the same colour. The hinder

part of the head is finely spotted, and the mouth is armed with sharp crooked teeth. The upper part of the body is very beautiful, for it seems to be painted with coats of arms, and crowns of different shapes, so interwoven with each other, that any one would imagine they were the work of some curious painter. The scales are like lozenges of various colours, and the tail is adorned with a singular orange-coloured spot. The transverse scales are of an Isabella colour, that is, between white and yellow, and beautifully marked with blackish spots of different sizes. This Serpent is about seven feet and a half long, but the thickness is not proportionable to the length.

The Manballa, a Serpent of Ceylon, is of a chestnut colour, and the head is like that of a hound: the upper part of the body is covered with pale yellow scales, and those on the forehead and jaws are of a deep red. The whole extent of the back, which is smooth and highly polished, is marked with oval links, which are joined together by a large spot or streak: under this streak the lines are of a triangular form, inclining to a pale red, and run uniformly on each side of the belly to the beginning of the tail. Towards the extremity of  
the

the tail, the colours become more deep, for the bright yellow changes into a deep yellow, and the brownish red into one the colour of vermilion, with a kind of a black border. The large yellowish spots, and the upper part of the body, are marked with flesh-coloured specks; the head is large, the neck slender, and the tongue long and forked. The mouth is armed with long teeth, the eyes are large and sparkling, and the scales on the belly are of a yellowish ash-colour, marbled with blackish spots and other ornaments.

The Nintipolonga is a Serpent of Ceylon, which is of a fine marble colour, and has the head adorned with small flowers. The whole body is of a liver colour, marbled with bright ash-colour, and the spots are terminated with black edges, only they are of a fallow colour in some places, and very white in others. The forehead is covered with large bright yellow scales, disposed in the shape of small flowers; and the eyes are large, blue, and sparkling. The opening of the mouth, which is armed with sharp crooked teeth, is defended by a border of thick scales. The tongue is white, pretty long and forked. The tail diminishes gradually to a point.

The Petzcoalt is a Mexican Serpent, the upper part of whose body is yellow, mixed with a little red, and covered with large scales like lozenges, which are smooth and slippery to the touch. The transverse scales of the belly are mixed with red and yellow, and the head is defended by large strong scales that rise like lumps. It is about four feet and a half in length, and thick in proportion. These sort of Serpents hide themselves in hollow trees, where they watch for their prey.

The Pimberah, according to Seba, is a Serpent of Ceylon, as thick as a man, and of a proportionable length. It has a terrible aspect, on account of its two large eyes placed on the top of the head next the sides. The jaws are armed with teeth cut like a saw, and the mouth has a border in the form of a shell. Its forehead is covered with grey and ash-coloured scales, adorned with large beautiful spots, and furrowed across with three streaks, in the shape of so many crosses. Its scales on the upper part of the body are reddish, shaded with large spots of a dark brown, of which some are reddish, and others oblong, ranged in a fine proportion, from the top of the head to the end of the tail, which



which is slender. This variegation is accompanied on the sides with large triangular black spots. Underneath, towards the bottom of the belly, a third row of very small spots extend near the transverse scales, which are large, of an ash-colour, and disposed in a beautiful order.

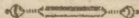
The Polonga is a Serpent of Ceylon, according to Seba. Its head is covered with small thin ash-coloured scales, inclining to yellow, and marked with reddish streaks. Its eyes are small, and the edges of the mouth are bordered with a simple lip without scales. Its jaws are armed with sharp teeth, and the scales on the upper part of the body are adorned with large beautiful spots, some of which are of a purplish brown, and others of a yellowish ash-colour, all of which are terminated by a blackish border; those on the sides are brown and quadrangular, with a yellow ash-coloured speck in the middle. Likewise on the upper part of the body, there are black irregular specks mixed with the spots; the yellow ash-coloured scales, that traverse the belly underneath, are all marked with black spots. Its tail is one third-part of the whole animal, which

grows gradually more slender, and becomes insensibly of a more reddish-colour. It is generally said to be very innocent, and is admitted into the houses of the natives.



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VIPERS and SERPENTS from SEBA, that have particular  
Names.



THERE are besides several sorts of Serpents described by SEBA, which he has not distinguished by any particular names :

AMONG THESE ARE,

A Viper, which was sent from the island of Madeira, and is represented as lying in a bundle of hair. In this situation Vipers are commonly found when they are asleep, with the head stretched out and exposed to the sun beams. The head is long and flat, and the jaws are placed more backward than ordinary. The upper part of the body is of the colour of lead, and covered  
with

with rhombodial scales spotted with yellow, so as to appear in the form of chains. The scales of the belly are of an ash colour inclining to yellow, but shaded here and there with black, like some sort of marble.

An East-Indian Viper, of the Island of Java, otherwise called the Snake of Jararaka. It is all over of a reddish brown, variegated with white, and the scales are whitish, pretty large, and intermixed with a smaller sort of a red bay colour, and disposed on the back like a chain. Its head is large and puffed up, and the eyes are so sparkling, that this Viper has a terrible look. It is generally met with under the shoots of a tree, called the Horned Acacia.

A male East-Indian Viper, with two long teeth or tusks, which are not very thick, and are placed in the upper jaw; besides these, the mouth is furnished with others that are small, throughout the whole extent of both jaws. The body is remarkably spotted, and it is covered with brownish scales, disposed in a beautiful order, and speckled with spots, the largest of which join each other, and, as it were, creep along to the end of the tail.

A Viper

A Viper of Surinam, which is all over scales, and every part of the skin is hid by small reddish scales.

An American Viper, beautifully spotted, and the back variegated with a mixture of white, palish red and black. The belly is of a bright ash colour, and the eyes are lively. Its head is pretty large, but compressed, and the nape of the neck is marbled with spots, which are either white or inclining to red. Its forehead is covered with large greyish scales; but the tail is not so pointed as in other Vipers.

A male American Viper, sent from the island of Eustachia. The colour is reddish, and a chain runs throughout the length of the body, consisting of small links with four points, and marked in the middle with an oval spot. The mouth is full of small teeth, as in other Vipers.

A female Viper, sent from the Island of Eustachia, and yet of a different kind from the former, for it does not only differ in colour, and in the spots, but the head is in the shape of that of a calf, and very large on the  
back

back part. The mouth is larger, but the neck more slender, which might seem to render the swallowing difficult; and yet it is able to swallow frogs, toads, and lizards. The upper part of the body is covered with reddish scales, and there is a chain of a bay brown colour.

A female Viper of the island of Saint Eustachia. The mouth and head are pretty large; the colour is yellow about the neck, and on the nape there are two black spots: the body is covered with large reddish scales; across which, on the back, there are green ones that shine like fatten. The belly is of a palish yellow, shaded with black spots, which are extended in the shape of little flames.

Another female Viper, from the island of Eustachia, which is not less beautiful than the former. The scales on the upper part of the body are of a lively blue, and each of them are marked with a whitish spot: but the belly and the scales that cross it fillemot. The head is made like that of the former, only it is covered with large blue scales.

A female

A female Viper of the isle of Ceylon, which has a large flattish nose, and a terrible look. Its colouring is very fine, consisting of white, chestnut colour, and reddish, curiously diversified. The head is large, as well as the mouth: and it makes a noise like the voice of one that is singing. It has two rattles at the end of the tail, which may be heard at some distance, and serve as a warning for persons to keep out of the way. It lies concealed among the plants and trees of open forests. This seems to be like the American Rattle Snake.

Another Viper of the isle of Ceylon, of a very beautiful kind. It is covered from the head to the extremity of the pointed tail, with small yellow and red scales, waved every where with dark brown spots. Its head seems to be gilded, and is covered with very large scales, in proportion to those of the body.

A beautiful Viper of Antycira, whose back is marked with annular spots, which run transversely, and are placed separately. They are of a straw colour, with bay brown edges; but on the sides of the belly, they  
join

join other black, or rather chestnut coloured spots, variegated with yellowish rays, made like a crescent. Its forehead is of an oblong shape, covered with small thin scales of a saffron colour, reddish on the edges; they are divided, in the middle of the forehead by a chestnut coloured ray, that extends to the nose; but the jaws and the neck are of a bright yellow. The other scales on the body are of a brownish ash colour, mixed with yellow; but those on the belly are as white as snow.

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