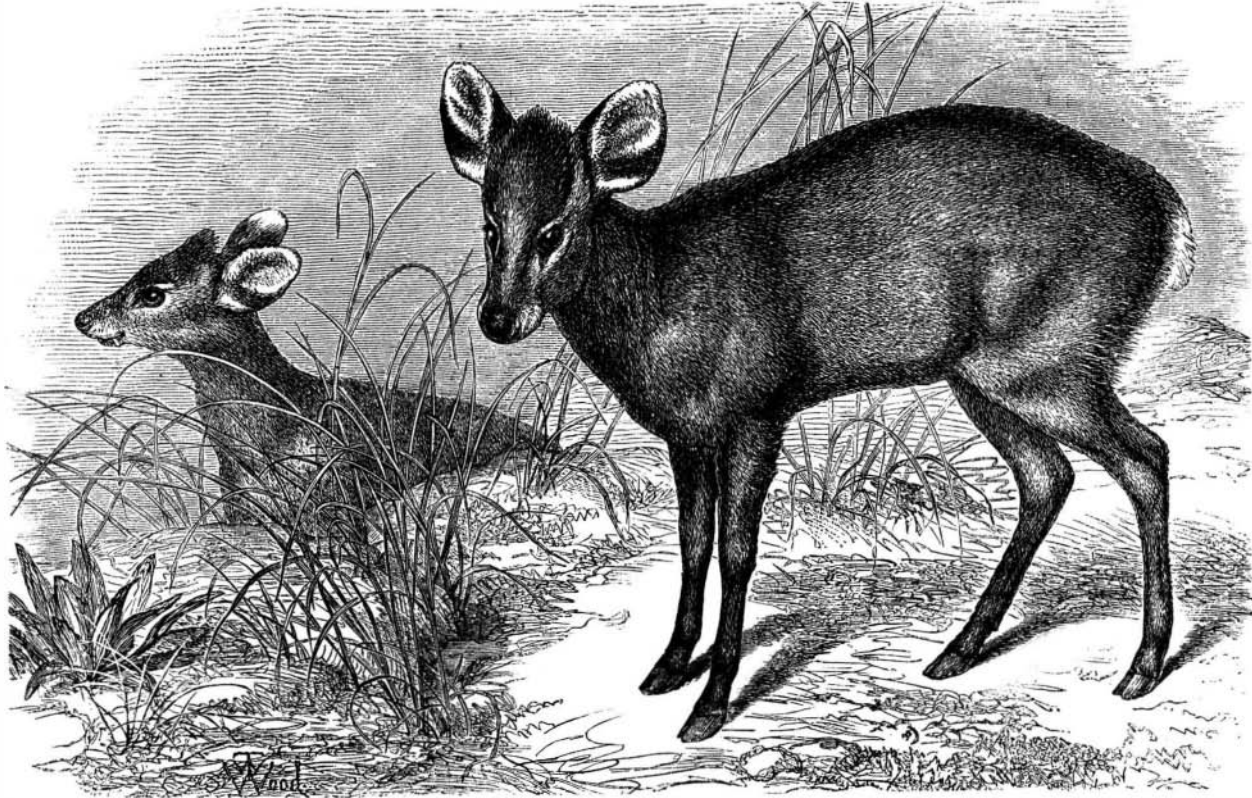


NEW CHINESE DEER.

Towards the end of 1873, Michie, an English naturalist in China, discovered in the mountains, near Ningpo, a new species of deer, termed by the inhabitants the *shanyang*. The skin of the animal being sent to England, it was there carefully studied, and Mr. Swinhoe, a well known zoölogist, declared not only the species to be new, but that the animal belonged to a new generic type, different from any yet known. He applied to it the name *lophotragus Michianus*, the first word having reference to the peculiar tuft of hair on the animal's head, and the last referring to the name of the discoverer. A living deer has lately been placed in the Zoölogical Gardens, London, and the identity of the genus, with that of the *elaphodus* discovered by Abbé David in the mountains of the principality of Moupin, has been determined.

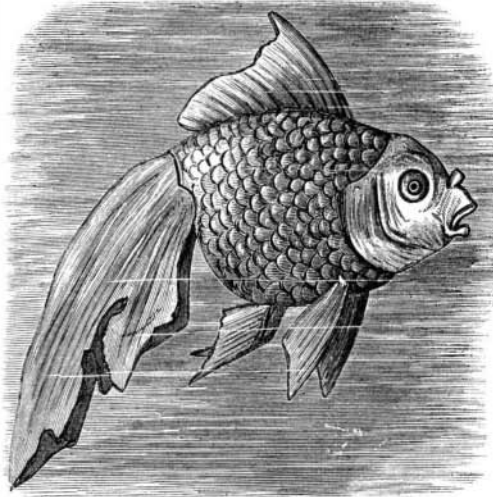
The *lophotragus* is a deer of small size, resembling the *hydropotes* or Chinese aquatic deer. Its height is about 21 inches. On the summit of the head the hair forms a tuft about 1.5 inches in length, which is slightly inclined rearward between the ears, presenting a very singular aspect. By separating this tuft with the fingers, two bony protuberances may be recognized, starting from the skull; but no genuine horns can be found, nor have any appeared in the specimens examined. The upper jaw has two canine teeth, which extend past the lip and protrude from each side of the mouth. The eyes are large and expressive, the lachrymal fossæ being nearly an inch in length. The nostrils are confluent with the upper lip. The color of the skin is a blackish brown, which becomes very dark on the forehead, the tuft, the rear of the ears, the dorsal line, and on the outer sides of the legs, but which lightens considerably on the belly. Insides of the ears are white, covered by black bands. There are also two white bands near the mouth. Our engraving affords an excellent idea of the general characteristics of the animal.



CHINESE DEER.

CURIOUS FISH AT THE NEW YORK AQUARIUM.

In the accompanying illustrations are represented three



remarkable creatures which have recently been added to the New York Aquarium. The first is the

JAPANESE KINGIYO,

a fish which, apart from its great beauty, possesses an exceptional interest in that it is one of the most curious results attained by the process of artificial selection carried on over a long period of time. The animal appears to belong to the carp species, and possesses the brilliant color of the gold fish. The body, however, is almost oval, and the belly is very protuberant. Forming an exquisite contrast with the deep golden red of the body are the fins and tail, which seem to be pure, pearly white, silky membranes, edged with a delicate fringe. The tail at rest is canopy-shaped; but as the fish moves, it floats into the most graceful undulations, reminding one of a filmy cloud or curling smoke wreath. It is hardly possible to divine by what series of steps this wonderful finny creation was produced. No naturalist would hesitate an instant in classing it under a new species, were it discovered in a wild state; but the fact that it is an artificial production, obtained from monstrosities or sports of well known types, now forbids such classification, and at the same time renders the animal living evidence in favor of the evolutionary hypothesis as advocated by Darwin. There are but very few kingiyos in this country at the present time. Eighty-eight constituted the first lot brought from Japan not

long since, but of these all but seven died during the voyage, or shortly after. The survivors were successfully carried to Baltimore, and during the last summer they spawned, the result being about fifty young fry, which exhibit all the peculiarities of the originals. It is the intention of the owner, when he has a sufficient stock, to donate them among persons who will take an interest in them and carefully raise them. Meanwhile Mr. W. S. Ward, the naturalist of the aquarium, has taken measures to apply and test the Oriental methods whereby this curious animal was produced;

and the aid of the most improved piscicultural appliances will be invoked during a series of experiments intended to produce still more curious fish as the result of special culture. In our second engraving is represented the

ALLEGHANY HELL-BENDER,

or *menopoma Alleghaniensis*, an exceedingly ugly half lizard, half fish, found in the Alleghany river and other tributaries of the Ohio. Mr. A. R. Grote records in the *American Journal of Science* the interesting fact that this animal sheds a transparent membrane, which he believes to be the exterior layer of the skin. While observing one in the aquarium of the Buffalo Society of Natural Sciences, an almost complete skin, all the feet and toes being readily perceived, was seen floating in the water; and later the creature was discovered in the act of swallowing his former covering, a practice which has also been observed in the toad. In a recent communication Mr. Grote describes this operation of shedding the skin, from which we learn that this thin and transparent membrane is first seen to loosen and separate from the entire surface of the body, appearing at this stage like an envelope or glove in which the animal is contained. By a number of wide gapings, during which the mouth is opened to the fullest extent, the skin is parted about the lips, and then commences to fold backward from the head. Convulsive and undulating movements with the body and fore legs are employed to extract these from the loose skin. The skin then readily falls backward, as the animal crawls forward and out of it, until the hind legs are reached, when the *menopoma* turns round upon itself, and, taking the skin in its mouth, pulls it over the legs and tail. The operation reminds one of taking off clothes. The cast-off skin is retained in the mouth and finally swallowed. The operation is quickly performed. The visitor who watches the *menopoma* will observe a swaying motion of the body; this action is not yet fully accounted for, though it is possible that



it is connected with the animal's desire to rid himself of his ugly skin.

A female hell-bender, opened on the 21st of August, con-

tained well developed eggs attached by a membrane to the ovary. These eggs are laid in a connected string, and are deposited along the muddy banks of the river. At this time there is a change in the external appearance of the creature. The tail broadens, and there is a plaited extension of the skin along the sides of the body.

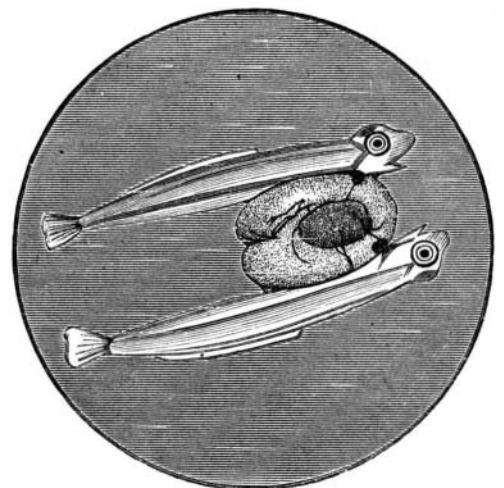
The *menopoma* furnishes a connecting link between the fish and lizards in the chain of evolution. On the fish side the *menopoma* is a higher development than the *lepidosiren* or legged fish, while it ranks lower in the scale than the amphibious axolotl.

THE TWIN SALMON, or "salmonese twins," as some witty individual has termed them, are represented in our third engraving. The two fish were hatched from a single egg; the two bodies are attached to one sac, but each fish is perfect in itself. The connecting vesicle is filled with oil globules, arteries, and veins; and it was expected that a microscopic examination would discover a diaphragm separating the circulation into distinct systems. The closest scrutiny, however, fails to discover this wall, and the circulatory systems appear so so intimately connected that the blood flows freely from one body to the other, impelled, however, by two hearts.

Mr. Mather is of the opinion that there is but little chance of their living after the absorption of the sac; for if they survive till that

time, the abdomens will still be joined by the membrane of the sac, and, being thus compelled to swim on their sides, great difficulty will be experienced in obtaining food. In this instance, however, a careful system of artificial feeding will be adopted in case the pair reach an age when they will need such nourishment. From the extended observations of Mr. Mather, it appears that these deformities are quite frequent in the salmon family, which includes the trout; and in hatching one hundred thousand eggs, there may be from three to five hundred abnormal specimens, comprising crooked backs and twisted heads and tails; and in some instances two or even three heads are attached to one body.

We are indebted to Mr. W. S. Ward and to the *New York Aquarium Journal*, an excellent little paper published at



the aquarium and devoted to popularizing scientific knowledge concerning the fish, for the engravings and facts presented.

The First Sound Telegraph.

The project at present under consideration in England, of establishing a line of telegraph across the African continent from the Cape of Good Hope, reminds us of the curious fact, not generally known, we believe, that the earliest system of telegraphy for signaling over long distances originated among the African negroes. It is still more remarkable that the means used were telephonic, and the signals were read by sound, and not by the eye, as in the case of the semaphore or other early signaling devices. The "elliembic," as the instrument used is termed, is still in existence, and has been in use from time immemorial in the Cameroons country, on the west coast of Africa. By the sounds produced on striking it, the natives carry on conversation with great rapidity and at several miles distance. The noises are made to produce a perfect and distinct language, as intelligible to the operator as that uttered by the human voice.

M. Gustave Delvigne, who died at Toulon, was the inventor of the explosive bullet and the rifled gun barrel bearing his name.