THE OCTOPUS AT THE BERLIN AQUARIUM.

At the Berlin Aquarium there are several live specimens of the octopus, some of which are shown in our illustration, which we take from *Tycodnik Poroszechny*.

These animals have been for some time in the aquarium, and seem to thrive. They are very lively and exhibit a decidedly healthy appetite.

The cuttlefish family comprises several species, some of which have distinct exterior shells, like mollusca, while others are entirely naked and have interior bone-like formations. This group, to which the subject of our illustration belongs, forms a link between the vertebrates and the mollusca. The only remnants of an exterior shell in the octopus are two horny masses embedded in the flesh near the mouth.

The entire structure of the long, oval body of the octopus, with its rough, warty surface, somewhat resembles that of vertebrate animals. The body is symmetrical, both sides being equally developed. The nervous and circulatory systems and the blood corpuscles are also analogous to those of vertebrates. The eyes are well developed and protrude at the sides of the body. Adjoining them are the external respiratory organs. Eight muscular structures surround the mouth. These arms are nearly five times as long as the body, and are supplied with two rows of sucking disks. The entrance of the mouth is supplied with two horny jaws, working vertically like a bird's bill. The tongue is very large and fleshy, partially covered with recurved spines.

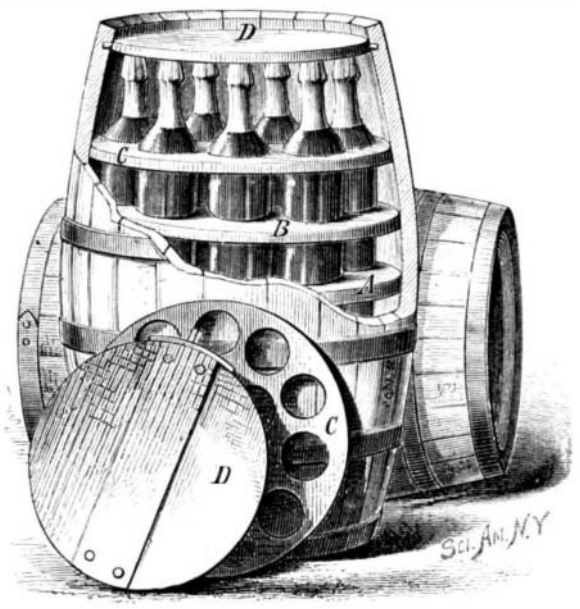
The brain is internally protected by a sheet of cartilage. The backbone consists of a shell-like formation, well known as the cuttle bone. A feature peculiar to all species of this family consists of an interior gland, secreting a brown liquid, which, being expelled by the animal, diffuses very easily in water and renders it cloudy and opaque. This brown liquid is employed as a water color, which is known as sepia.

The octopus moves with great rapidity by means of its arms and the violent expulsion of a quantity of water from the respiratory gills. When chased it instantly discolors the water by the expulsion of the inky liquid and makes its escape, or, by means of its long arms it drags its body into some narrow crevice, from which it can only be extracted by great force. Although frequently left in shallow places when the tide retires, they are nevertheless not very easily caught. In the dark they are slightly phosphorescent. They are all carnivorous and very voracious, swallowing an incredible number of small fish and shellfish, which they seize with their arms, holding them by means of their suckers, and introduce into the mouth.

There are now known about 200 species of the group of *Cephalopoda*, and of the octopus family about 40, the ordinary cuttlefish being the most common. They inhabit the seas of the moderate and tropical zones, and frequent principally rocky shores. They abound particularly in the Mediterranean; in Smyrna, Santiago, aples, and other places, they are regularly exposed at the markets as an article of food. They are ordinarily only a few inches in length, but specimens of five and six feet in length are not rare, and there are numerous cases on record of arms separated from some specimens which measured from ten to twenty-five feet.

BARREL FOR SHIPPING BOTTLED LIQUORS.

The accompanying engraving represents a novel barrel recently patented by Mr. S. Strauss, of Charleston, W. Va., for shipping bottles containing liquors, and for preventing access to the bottles by unauthorized persons.



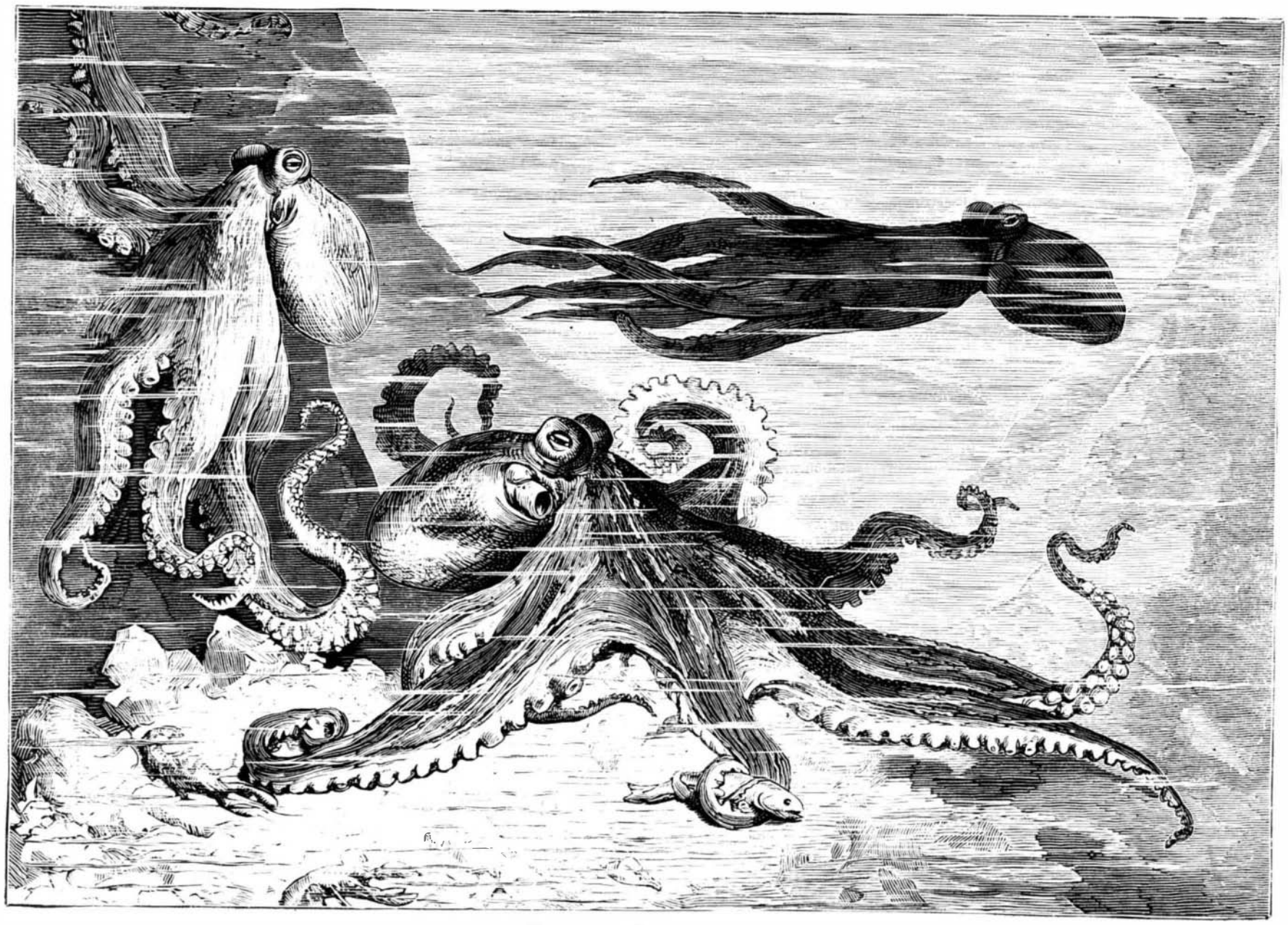
STRAUSS' SHIPPING BARREL.

The barrel has two removable heads, D, and a stationary middle partition, A. On each side of the middle partition there are two perforated supporting partitions, B C, which hold the bottles so that they are isolated one from the other, and are therefore not liable to breakage when the barrel is moved about. The heads when inserted are locked, so that no one can open them without a key. The lock may be sealed if desirable.

For further information address S. Strauss & Co., Charleston, W. Va.

Natural History Notes.

The Migrations of Animals and Plants.—The question how animals and plants migrate, says Dr. Hagen, in a recent lecture, is an interesting one. Generally the migration took place so long ago that only a conjecture is possible. Nearly everywhere it seems to have been from East to West. Only very few cases in the opposite direction are known; among the most remarkable is that of the potato bug during the last few years. The common cockroach, said to have been originally an inhabitant of Asia Minor, was first observed in an alarming number in English ships 300 years ago; it spread more than 200 years ago from England to France; and 100 years ago more or less slowly, but faster in the time of the Napoleonic wars, through Germany into Russia and Siberia. These facts are proved by the common name given to this disagreeable insect in different countries. In Germany it is called Frenchman; in Russia, Prussian. The most disastrous instance of an eastern propagation is that of the ill-famed phylloxera killing the choicest kinds of grapes known to man. The comparatively new cultivation of America has shed at least some light on the question of migration. In most cases the intruders accompanying emigrants follow strictly the ways of the latter and spread most rapidly along railroads. A careful comparison of the European weeds growing in the United States, and found in Professor Gray's Manual of Botany, represented two thirds of all the European weeds; and, perhaps, some more out of the remaining third. It is a certain fact that in some places the original vegetation is changed remarkably by such intruders. Indigenous plants are killed, and not only the plants, but the insects living on them, so that a keen observer, Baron Von Ostensacken, has stated that particular flies, living exclusively on certain plants, and common in many places in Virginia and adjoining States twenty years ago, are exceedingly rare now, and some species perhaps exterminated. The introduction of plants is often accompanied by the introduction of insects peculiar to them; therefore many enemies of fruit trees, shrubs, and flowers, formerly not known here, are now common. Such insects are even induced to infest indigenous plants belonging to the same order or genus as the imported one. For the same reason, plants entirely foreign to a flora, if introduced, remain at first intact. Besides the well known larger animals for food and agriculture imported from Europe, smaller animals, such as insects, also come over every year. Some butterflies have already made the trip round the world. A large species of fly, well known in Europe by its curious rat-tailed larva, was found here first three years ago, and was so common the past year that hundreds were caught. As steamers make the passage in a week or two, insects are imported living, and go on propagating here. Although



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