

The Feroocious Frog.

The London *Telegraph* relates the following story of the curious propensity of the frog, alleged to have been discovered during the draining of some huge carp ponds upon Count Schaafgotsche's estate of Warmbrunn. Upon transferring the fish from these preserves to baskets, for the purpose of conveying them to tanks wherein they might disport themselves while their old familiar quarters were being cleansed, it was observed that frogs were clinging to backs of many of the larger carp. Most of the fish thus beridden were blind, the frogs' fore feet being found firmly fixed in the eye sockets of their victims.

Interrogated respecting this strange phenomenon, the chief pond keeper told our contemporary's informant that, according to his experience, extending over several years, frogs were the deadliest enemies with which carp had to contend, and caused an annual mortality among the fish under his care of from 3 to 4 per cent of their total number. The frog's object in bestriding the carp, he said, was to feed upon the slimy matter that so frequently forms a sort of spongy crust on the heads and backs of the older fish; and, once settled in their favorite seat, they speedily succeeded in gouging their finny steeds, which, when blinded, being unable to look out for their food, soon perished of hunger. How tightly these voracious batrachians hold on to their living pastures was exemplified by the pond master, who picked up a carp weighing two pounds and a half, and held it suspended in the air by one of the hind legs of a frog perched upon its back in the manner above described. Carps thus frog ridden to death begin to turn yellow on the third day after the parasitical croaker has taken his seat, rapidly waste away, and generally die within a fortnight from the commencement of their martyrdom. In clear water it is pretended that they can espy their nimble foe as he prepares to spring upon them, and by a timely wriggle often escape his attack; but in dim and slimy old ponds, like those of Count Schaafgotsche, they too frequently fall a victim to his saltatory skill and merciless appetite.

Alaska Seal Skins.

During one week recently 950 casks of Alaska seal skins arrived here by the Pennsylvania Railroad. They, with 450 casks more to come, were going to London to be dressed for market. The consignment contained about 92,500 skins, and was valued at nearly \$1,000,000. The cost of freight to this point was almost \$600 for a carload of forty casks. The skins are tied in oblong bundles and pickled in salt. It requires eight skins to make a full sack, and they have to be dressed and dyed by London furriers and then reshipped to this country.

THE CORAL SIGNET OF THE KING OF ITALY.

Among the beautiful pieces of coral exhibited by Messrs. Mazza, Guiseppi e Figli, from Torre del Greco, near Naples, at the Berlin International Fisheries Exhibition, was a branch of coral weighing eleven pounds, valued at \$3,000, and another branch, in three colors—white, pink, and red—and which has been in the hands of the family for two hundred years. Further, a necklace valued at \$6,000, and, finally, the beautiful coral signet represented in the annexed engraving, for which we are indebted to the *Leipziger Illustrirte*



THE CORAL SIGNET OF THE KING OF ITALY.

Zeitung. The signet is cut from a bright-red piece of coral, and is a representation of the royal family of Italy. On the top we find the portrait of the late King Victor Emmanuel, below him, at the right, the present Queen Marguarite, at the left the present King Humbert, and below the latter two their son, the Crown Prince, surrounded by flowers and emblems. The firm of Mazza presented this signet to the King, who accepted it, but desired to have it exhibited at the Berlin Exhibition before taking permanent possession of it.

THE MOLLUSKS AT THE BERLIN FISHERY EXHIBITION.

We have given illustrations of various parts of the Berlin Fishery Exhibition, and of the animals exhibited there, and now we add another cut representing the "mollusca."

Fig. 1 represents the *Rhizostoma aldrovandii*, whose transparent disk, ornamented with blue, violet and scarlet stripes, attains a diameter of two feet. A series of transparent gelatinous members are suspended from the under side of the disk, and carry the stomach of the animal, which terminates in eight wonderfully fine tentacles. By contracting the disk or bell the animal can propel itself and can change the direction of its movements. The specimen we have represented is the first of its kind that was ever brought to Berlin alive, and has given opportunity to observe very many of its peculiarities. It constantly remains above the opening through which the clear water containing a surplus of oxygen is admitted into the tank.

In Fig. 2 the most beautiful representative of the class of medusæ, known as the *Turris digitalis*, is shown, and resembles a balloon woven of the finest and most transparent of materials. The dark spots in the interior represent the organs of generation, which are of a strawberry-red color. The tentacles are of a glaring white, and have an ordinary length of about one to one and a half inches, but can be lengthened to eight or nine inches in an instant.

The *Cydippe brevicostata* (Fig. 3) has not been so profusely provided with ornamental appendages as the other members of the medusæ family. The development of the medusæ is highly interesting and instructive, on account of the changes which take place in its generation. The egg passes from the female organ in an infusorial form, and swims about in the ocean a short time by means of the hairs that cover it, and finally attaches itself to some sea plant, rock, etc. Here it develops itself into a polypus provided with tentacles. In a short time contractions take place, so that the animal represents a series of flat glass cups or saucers placed above each other, and finally each of these cups is separated from the main body and is an independent animal. Before the discoveries of Ehrenberg the above polypus had been treated as being a distinct kind of animal and belonging to a certain class.

A most peculiar inhabitant of the ocean is the *Tethys fibraria*. It has a series of knotted rudimentary branches, containing the gills, on the back. The head consists of a large cape with two side wings, called the sails, and containing the eyes; and the mouth consists of a funnel-shaped opening under the cape. The parts shown on the back of the animal drop off as soon as they are touched, and have vitality for a short time.

We are forced to place the wool-crab, Fig. 5 (*Dromia*



THE MOLLUSKS AT THE BERLIN FISHERY EXHIBITION.

vulgaris), among all these beauties, but the peculiarities and oddities of his manner of living will compensate the observer for the lack of beauty. The reddish-brown mass on his back is a cork-sponge (*Suberites domuncula*), which keeps company with him. If the sponge is detached from the crab, and both are placed in a tank, the spectator will see a most humorous performance, for the crab will endeavor to procure his mantle and will make the most frantic attempts to get it; in fact he will behave about in the same manner that any person would that has been deprived of a very much needed garment. If he finally gets his covering again he places it upon his back, shifts it, tries it, and after many attempts is at last satisfied. The crab disguises himself by means of the sponge, which grows so rapidly that it is oftentimes difficult for the crab to reserve for himself the freedom of movement for his limbs and continually munching jaws. The crab generally locates himself in the neighborhood of other sponges and there waits for his prey, either attacking them in open fierce combat or in his sly and stealthy way, of which it is a great favorite.

The nests of the weaver bird or the stickleback fish are real masterpieces of animal ingenuity, and are deserving of the praise they call forth; but if we remember that the intelligence of vertebrates is far superior to that of the mollusca, we cannot do otherwise than admire the nest building file-shell (*Lima hiems*), Fig. 6. The shell is absolutely white, and fringed by numerous orange-colored tentacles, which serve to furnish the food and the breathing water, as also to build the nest.

The peculiar nest, which is built of small pieces of shells and stones, connected by very fine threads that the animal spins, resembles a fortress, from the main entrance of which the tentacles of the shell project in a defiant manner. The *Lima* swims very well, and drags its tentacles along like the tail of a comet.

The finger date shell (*Lithodomus dactylus*), shown in Fig. 7, bores through the hardest rocks slowly but surely. Schleiden relates the following in regard to it: The temple ruins of Serapis are situated near Puzzuoli (in the Bay of Naples), and three of the columns still stand erect. The columns are of the most beautiful Cipollini marble, and the first seventeen feet are perfectly intact and smooth, but the next seventeen feet have been perforated by numerous dateshells, and in some of the apertures the shells are still to be found. The remaining forty-five feet of the columns have been very much affected by the atmosphere. All this is very easily explained, if we assume that the ground upon which the temple stands settled so that the columns were immersed in the ocean to the height of thirty-four feet, and were then perforated by the date shells. Later the land rose again, and the columns were once more upon dry land. Odd documents give proof that the temple formerly stood in the ocean, but that the land began to rise in the fifteenth century, for one of the old deeds of those times conveys to the priests of Puzzuoli "all the new land that is rising out of the water." The ground sank about fifty-two feet, rose again, and, according to all appearances, is now sinking. All these movements were so slow and gradual that not a stone has been displaced, and the columns stand as straight as they ever did. The question arises, "By what means does the date shell accomplish its gigantic task? Some assumed that it secreted a strong and powerful dissolving liquid, the composition of which we do not know, but closer examination has revealed the fact that the boring is accomplished by means of fine silica needles on the feet of the animal, so that mechanical labor is required.

Fig. 8 represents a sponge—the antler sponge (*Raspailia viminalis*), in view of its peculiar shape.

Fig. 9 represents the well known sea cucumber, or *Cucumaria planiei*.

A New Orang-Outang in London.

The somewhat formidable animal whose arrival at Mr. Jamrach's establishment was noticed in a recent impression of the London *Daily News*, from which paper we extract, has been safely housed at the Royal Aquarium, Westminster. In order to secure his comfort, and it may be added that of the public also, a strong cage has been fitted up, the bars of which are stout enough to allay any apprehensions as to the possibility of its restless occupant finding his way out. Writing on the subject of the orang-outang, Mr. Frank Buckland says that, "so far as can be judged he is an adult, or nearly an adult. He has been brought from Malacca in a box three feet high, and as he sits in the box the top of his head almost touches the top of the box." Stretched to his full height he measures about four feet, and seizes the bars at the top of his cage with the greatest ease, swinging to and fro with all the agility of his race. Some idea of his great strength may be gathered from the nervous energy with which he grasps the bar with his fingers, which are about five inches long, and from the muscular development of his arms and shoulders. He peels an orange with great dexterity, and sucks it with evident relish. He is fond of retirement, and when an opportunity offers will envelope himself from head to foot in his blanket, any attempt to remove which arouses a display of passion which would suggest a speedy retreat on the part of the offending person. His anger is expressed in a peculiar manner. He purses up his lips as though about to whistle a tune, and dashes about his cage with restless energy, stopping every now and then to peer through the bars in search of his enemy.

When in good humor his natural ugliness and the fierceness of his eyes are much softened by the intellectual forma-

tion of his forehead, which may be said to be beautiful by comparison with the other portions of his frame. This is a point in which naturalists will no doubt be interested. Although somewhat shy, he does not absolutely shun the public gaze, but generally looks straight before him over the heads of the crowd, as though searching for some object familiar to him. Any unusual sound, such as the beating of a drum, attracts his attention at once, and causes him to turn his head round sharply in a listening attitude.

Concluding his remarks upon this singular animal, Dr. Buckland states that "the hair about his head is so arranged that he appears to wear whiskers. He has, moreover, a red dish beard, and under his beard is a very remarkable pouch, the use of which has not as yet been clearly ascertained. As, however, it is capable of dilatation with air, it is, in all probability, directly connected with the organs of voice. It is a wonder to me how ever the natives managed to catch him, whether as an infant or full grown."

A NEW ACID PUMP.

The use of acids in the arts and manufactures is of great importance, and there is scarcely a laboratory or factory which does not use more or less acid, the quantity varying from a single carboy a month in the smaller establishments

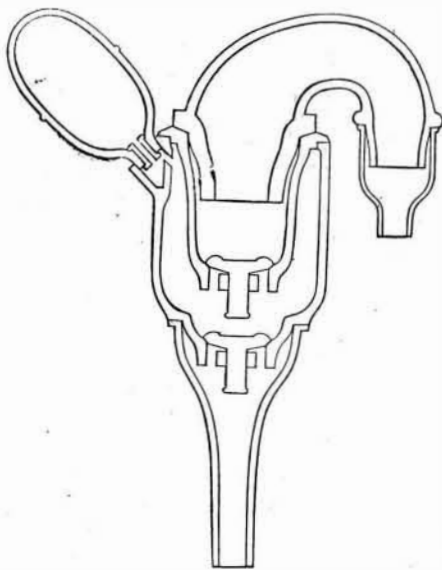


Fig. 1.—VERTICAL SECTION OF ACID PUMP.

to more than one hundred carboys a day in the larger works. The carboy, as is well known, consists of a large glass bottle holding from ten to twelve gallons, packed in hay, in a box with its neck protruding from three to six inches. A carboy of sulphuric acid weighs from 170 to 200 pounds, and is a heavy and cumbersome article to handle; and the problem of getting the acid out of this inconvenient holder without danger to life, clothing, and floors, has been the subject of much study and experiment. Various expedients have been resorted to for removing acid from these unwieldy packages, but they have been regarded as impracticable and unsatisfactory.

The late Francis Nichols, of New London, Conn., devoted his time for about eight years to study and experiment in this direction, and invented a pump which would pump the acid independent of the carboy without injury either to the pump or acid. His last inventions and improvements have recently been patented in this country and in Europe.

The principle on which the pump is constructed may be seen in Fig. 1. The body or working part of the pump con-

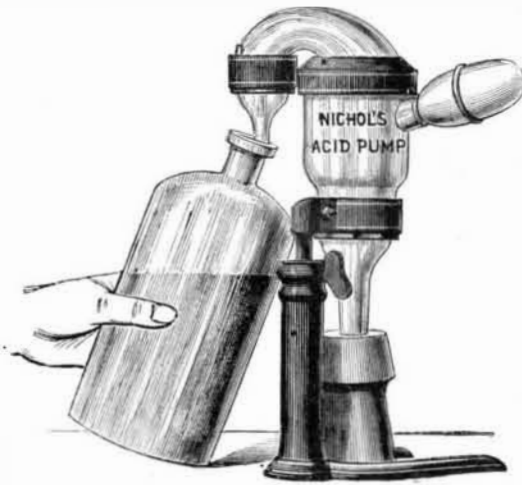


Fig. 2.—NICHOLS' ACID PUMP.

sists of three glasses and a rubber bulb. The glasses are very carefully ground together and secured at the joints by screw couplings, making them perfectly air-tight. The two valves are fitted to their places and carefully ground by machinery constructed especially for the purpose. In use: the rubber bulb is compressed by the hand, which drives the air into the chamber between the glasses, C and B. The lower valve remains tight, and the air escapes through the valve near B. The hand, now removed from the bulb, allows it to expand, and as a vacuum is created in the chamber the upper valve closes and the acid rises through the sec-

tion tube into the chamber to fill the vacuum. Another compression of the bulb drives the acid up through the upper valve, and the chamber is again filled with acid; as this operation is repeated the liquid flows from the nozzle of the pump. The relative capacity of the chamber and bulb is so nicely adjusted that the acid never rises high enough in this chamber to enter the bulb. It will be noticed that an air chamber is formed at every joint by a downward projection of the top piece; this prevents the acid from ever reaching any joint so long as the pump stands erect. A discharge tube attached to the nozzle of the pump extends to a point just below the bottom of the carboy, so that continuous pumping for a short time will give a siphonic action which can be instantly arrested at any time by the removal of the bulb from its nipple. A metallic bulb may be substituted for the rubber one, giving greater power. By means of a metallic bulb a large tube may be used on the siphon, which will be capable of emptying a carboy of sulphuric acid in less than three minutes.

By the pump shown in Fig. 2, without the siphon, the quantity delivered can be nicely measured. Its action is rapid and perfect. The glasses are entirely enveloped in a light cast iron covering handsomely ornamented, and the apparatus is light, durable, and perfect in its action. Any quantity of acid can be drawn without the least danger to clothing, person, or floors, and the person using the pump, who may be entirely inexperienced in such matters.

These pumps have been examined and approved by the U. S. Mint, Assay Office, and Torpedo Station; the fire departments of New York, Boston, Lynn, Cambridge, Rochester; and over five hundred manufacturers of the United States. We understand that 1,200 of them are in use. They are now on exhibition at the Fair of the American Institute.

Further information may be obtained by addressing the Acid Pump and Siphon Company, New London, Conn.

The Fire Engineers.

The National Association of Fire Engineers convened in Boston, September 15. At its first session a report was submitted recommending organization on a plan based on the rules of the New York Fire Department. A report favoring the telegraph as the only reliable system for giving alarms was adopted. The second day Chief Hilliard, of Provincetown, in an essay on the firemen of the future, predicted the placing of the fire service on the same level with the army and navy as a means of public protection. The fact that pipes carrying low pressure steam will give rise to fires when in contact with wood, was held by Chief Hopkins to be fairly well established.

The protection of theaters and other places of public gatherings was considered in a report by Chief Engineer Green. He recommended the close and careful official supervision of such buildings during their construction. Theater stages, with their large area of inflammable properties, could and should be entirely separated from the auditorium by brick walls extending to the roof, with a gauze or iron drop. The latter should likewise be used to separate the stage and the auditorium, with ventilators over both, inclosed mainly in double-thick glass, which would answer for ventilation and would shut out cold air. The glass, in case of fire, would be broken by the heat, and the hole thus made would act as a chimney to let out the dense smoke and flame. Chief Nevins, of Brooklyn, favored the placing of such structures directly under the supervision of fire engineers with discretionary powers.

Charles S. Halloway, of Baltimore, made a report on the topic "Spontaneous Combustion," narrating a number of incidents illustrating the frequency of fires from this cause.

The drill of children in the public schools was next considered, Chief Combs, of Worcester, submitting a report in which he urged that more attention be given to this matter by school teachers. He advised the drilling of children, and thought that a drum should be kept in every school building, to be beat on only in case of fire, as a signal for the children to fall into line and march to the ordinary place of egress under the command of their teachers.

Other committees reported the advisability of the passage of State laws requiring buildings in business sections of cities to be fireproof and insuring better protection to people living in tenement houses.

In a valuable paper on the mutual relations of the fire engineer, the architect, and the underwriter, Mr. Edward Atkinson, of Boston, pointed out many common faults in the construction of buildings used for manufacturing and storage purposes. Chief among these are elevators, flues, and other air-connected spaces through which flames spread rapidly from floor to floor. The precautions against fire insisted on by the Boston Manufacturers' Mutual Fire Insurance Company have reduced the losses on mills, factories, and similar properties to one-tenth of one per cent on the amount of risks taken. A good word was said for petroleum, which is popularly supposed to increase the risk of fire. Mr. Atkinson said that the introduction of petroleum oils has been in many ways of benefit to the Mutual Insurance Company. About one-fourth of the factories insured therein are lighted with kerosene oil, but great care is taken to get the safe lamps and safe oil. Factories lighted with the vapors of gasoline are not insured at any rate. But the great value of oils made from petroleum in cotton factories is that they are "absolutely free from liability to spontaneous combustion," and one great source of danger has been removed by their introduction.