

**The Dolphin at the Brighton Aquarium.**

In a letter to the *Brighton Examiner*, Mr. Henry Lee writes as follows: "By the courteous invitation of the authorities of the Brighton Aquarium, I have paid a visit to the dolphin recently placed in one of the large tanks there. It is a full grown specimen of the common dolphin (*Delphinus delphis*), and is about ten feet in length. It was found, early on Saturday morning last, stranded in Selsea Bay, eight miles from any railway station; and by means of much toil, care, and skillful treatment, it was brought safely to Brighton by Mr. Lawler, the curator, after being out of the water for twenty hours. This is the third species of the whales that have been exhibited in this aquarium. The other two have been the common porpoise (*Phocena communis*) and Risso's grampus (*Grampus risus*).

The opportunities of observing closely the habits of the cetacea are so rare, and the average duration of their lives in captivity is so brief, that any one who feels interested in the movements, structure, and mode of life of these great sea beasts should not lose a chance of improving his acquaintance with them. In this instance, the difference between this dolphin and the porpoises previously seen in the Brighton tanks should be noted. It is of larger size, weighing about half a ton; its snout, instead of being rounded off like that of the porpoise, is lengthened out in form of a beak, both jaws of which are filled with simple, pinnate teeth; and the dorsal fin rises much higher, and the tail is rather wider across, than in the common porpoise. Those who have not seen one of these creatures under such favorable circumstances, should notice, also, its mode of locomotion. This is effected entirely by an up and down motion of the tail (unlike that of fishes, in which the movement of the tail is from side to side, except in the flat fishes), and the flippers, or "paddles," as they have been called, do not contribute to its progress in any way; they are only used as rudders and poisers. As the water in the tank has been lowered so far as to allow the dolphin to be seen when it rises to the surface of the water, the action of the blow-hole and the absence of all "spouting" should be remarked. In fact, by two minutes' intelligent observation of this interesting animal a grand practical lesson in comparative physiology is to be learned—one a thousand times more impressive than can be obtained from the most careful explanation in print. We have before us a warm-blooded animal of great brain capacity, full of intelligence, breathing atmospheric air by lungs, like ourselves, and the female of which suckles her young one, and attends to it with the greatest maternal affection. This highly organized creature, instead of walking on four legs on land, has to live and move in water; and, so, its shape is adapted to its necessities, and it is made in the external form of a fish. But it has to breathe air through its lungs, and not the oxygen contained in water through gills. If it were to inhale the air in the ordinary way—through its mouth—the water would enter with it, and choke it. To meet this difficulty, its windpipe is carried up to the top of its head, and is fitted with a valve which allows the exhausted air from the lungs to pass out, and fresh air to be drawn in, while it effectually excludes the water.

**CURIOUS RESULT OF AN EARTHQUAKE.**

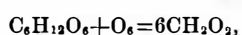
The engraving represents the curious effect produced by an earthquake on iron castings poured at the time. The cut, which is about one-sixth the real size of the castings, was taken from a photograph sent us by Mr. F. Gergens, of Yokohama, where the earthquake occurred on June 10, 1883, at 4:30 P. M. Mr. G. attributes the waved surface of the castings to the agitation of the melted iron by the earth vibrations, the waved forms having been fixed by the cooling of the iron.

Two tons of castings made at that time all had the same appearance.

**Reduction of Ammoniacal Silver Solution by Dextrose.**

It is well known that dextrose reduces the alkaline silver solution and deposits the metal in the form of a mirror. The quantity of silver precipitated by a given amount of dextrose has not hitherto been so well known, for where the only object is to get down all the silver, an excess of dextrose was of course employed. If, however, one wishes to utilize this reaction for estimating dextrose, it will be necessary to settle this point. B. Tollens says that since each molecule of sugar reduces  $2\frac{1}{2}$  molecules of copper in Fehling's solution, by taking up  $2\frac{1}{2}$  atoms of oxygen we should expect it to precipitate 5 or 6 atoms of silver. On the contrary, he found that it reduced at least twice as much. It does, indeed, reduce 12 or 13 atoms and takes up 6 atoms of oxygen; the greater or lesser quantity depending on the excess of silver in solution.

The hypothesis that 12 atoms of silver are reduced by 1 molecule of dextrose gives rise to this equation:



forming formic acid, and in fact a good deal of this acid is produced. The author also detected oxalic acid when there was an excess of silver, which requires 9 atoms of oxygen, reducing 18 of silver. —*Berichte*.

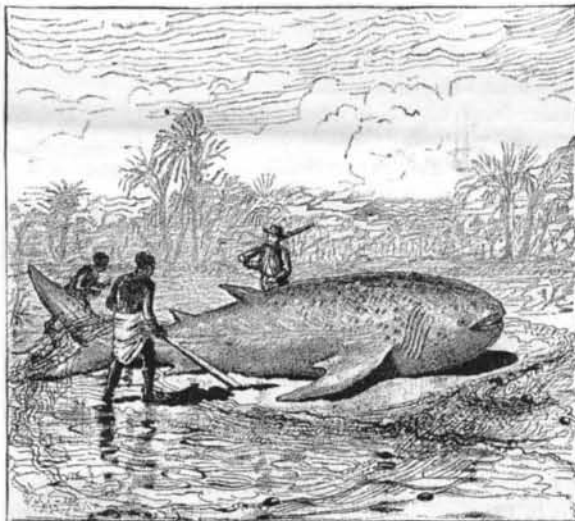
**A REMARKABLE SHARK.**

To the Editor of the Scientific American:

A perusal of the articles on sharks, appearing in two late numbers of your Export Edition, prompts me to mention a large African shark now in the Colombo Museum, and described per label as follows:

"*Smith's Spotted Shark (Rhiodon typicus, Smith)*.—An East African shark, never before recorded from Indian Seas. Was caught in a fishing net at Moratuwa, January 5, 1883. Length, 23 feet; girth, 13 ft."

I have verified the above measurements, and can add that the mouth, which (unlike most other sharks) opens on a level with the snout, is 5 feet in circumference, destitute of teeth, but armed with strong cartilaginous bands; and the

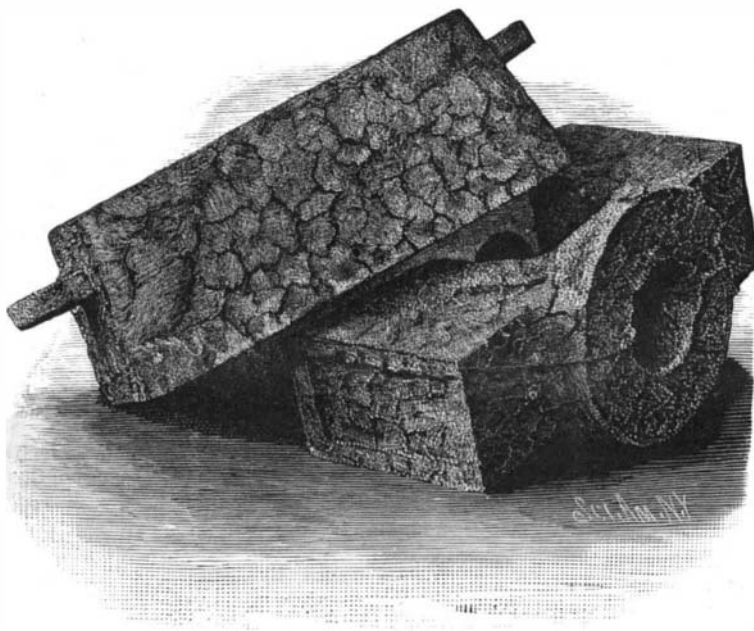


EAST AFRICAN SHARK, COLOMBO MUSEUM.

gills, five on a side, behind the shoulders, are each 2 ft. 3 in. long. The color is dark brown, mottled all over the back and sides with spots very like in appearance the mottles on well groomed brown and gray horses.

The monster was, as is set forth above, caught in a net, more properly a seine, called by the Sinhalese *Maha-dhalla* (great net), which, by being run off into the sea a quarter mile or more, then carried along about the same distance parallel with the beach, and again brought to land, incloses many acres of water, at times teeming with fish, which are thus secured in large numbers; and it is a most animating sight, in traveling between Colombo and Kalutara by railroad or coach, to see the thousands of people, men and boys, engaged in this industry, for most of them are nearly amphibious, and while the seine is being laid out the water is alive with dusky human forms, big and small, swimming and disporting about among the fishes they are capturing; and when finally the cast has been made, and the word given to draw in the net, hundreds of willing hands take hold of the long drag ropes, and, to a lively song, march up the beach, drawing in their finny prey.

Ordinarily, a shark of such immense proportions would prove an unwelcome occupant of one of these nets, for he would soon demolish it. Accordingly, the presence of this one inside of their seine must at first have caused the fishermen some perturbation. It seems, however, that he lay



CURIOUS EFFECT PRODUCED ON MELTED IRON BY AN EARTHQUAKE.

nearly motionless on the water, and was easily drawn to the shore, upon reaching which he immediately expired. On examination, its stomach proved to be empty, which fact, together with its great size and easy capture, would indicate that the creature died of extreme old age. It was quite fat, however, and many gallons of oil were tried out of its blubber.

Unlike most fish stories, this one is true; and it also has its sentimental aspect, since the distinguished visitor and subject of it arrived here, probably after an exhausting jour-

ney from Africa, simultaneously with Arabi Pasha and his fellow exiles from Egypt, who are now living in Ceylon.

The waters of Ceylon abound in fish of great variety, among which are several members of the shark family, notably the white shark (*Squalus carcharias*), saw fish (*S. trestis*), from 12 to 18 ft. long, hammer head (*Zygæna vulgaris*), tope (*S. galens*), blue shark (*S. glaucus*), basking shark (*S. maximus*), the skin of which is used by the Chinese for making shagreen, monkey mouth shark (*Stegostoma tigrina*), tiger shark (*Galeocercus tigrinus*), mud shark (*Rhyncobates ancyrtortinus*), and at least two varieties of the sword fish (*Histophorus gladius*), all of which are carnivorous, and most of them used for food by the natives. More especially is this the case with respect to the flesh of young sharks, which is commonly given to women, shortly after confinement, under the supposition, true or false, of its conducing to an abundant supply of lacteal nourishment for the infant.

W. MOREY.

Colombo, Ceylon, March 22, 1883.

**Should Women Ride Like Men?**

The above subject having created considerable discussion in the English newspapers, the *Lancet* (London) now takes it up and concludes that it would be as well to leave the determination of the question to those whom it principally concerns. We fancy they have no wish to change the custom. As a matter of fact, although it may not appear to be the case, the writer continues, the seat which a woman enjoys on a side-saddle is fully as secure, and not nearly as irksome, as that which a man has to maintain, unless he simply balances himself and does not gripe the sides of his horse either with the knee or the side of the leg. It is curious to note the different ways in which the legs of men who pass much time in the saddle are affected. Riding with a straight leg and a long stirrup almost invariably produces what are popularly called knocked-knees. Nearly all the mounted soldiers of the British army suffer from this deformity, as any one who will take the trouble to notice the men of the Life Guards and Blues walking may satisfy himself. On the other hand, riding with a short stirrup produces bowed-legs. Jockeys, grooms, and most hunting men who ride very frequently are more or less bow-legged. The long stirrup rider gripes his horse with the knee, while the short stirrup rider gripes him with the inner side of the leg below the knee. This difference of action explains the difference of result. No deformity necessarily follows the use of the side saddle if the precaution be taken with growing girls to change sides on alternate days, riding on the left side one day and the right on the next. The purpose of this change is to counteract the tendency to lean over to the side opposite that on which the leg is swung.

**Losses by Fire.**

An exchange thinks it is strange how accustomed people will become to the repeated occurrence of events which, if there were but one in a lifetime, or even in a series of years, would create the most intense excitement. Note, as an instance, adds the *Fireman's Journal*, the destruction of property by fire in this country. Think how many men, how much capital, and how great a share of the intelligent thought of the land are kept constantly employed because of this. Every municipality in the land is constantly agitated over the question of fire extinguishment, every property owner over the question of fire insurance, and every builder and property owner over that of fire prevention.

Each in turn gives employment to a vast number of men whose whole thought is engrossed by this annual wiping out of existence of a portion of the wealth of the land, by no means inconsiderable, whether regarded absolutely, or in its relation to the entire production of the year. Thus, since the 1st of January there has been destroyed by fire in this country, \$34,960,727 worth of property, and we may reasonably expect that the final showing for the whole year will not be less than \$77,334,500 worth.

**Bartholdi, the French Sculptor.**

Frederic Auguste Bartholdi, the sculptor, who is completing his immense statue of "Liberty enlightening the World" as a present to this country, is about fifty years old. He was a pupil of the famous Ary Scheffer, and was one of the French commissioners at the centennial exhibition at Philadelphia in 1876. He was so well pleased with his visit here that he decided on carrying out his previous intention as to the great statue, and on his return to France instituted a subscription for the construction of the gigantic figure for New York harbor, volunteering his work. And when subscriptions lagged, he pledged his own private fortune to its completion.

In addition to this statue, M. Bartholdi is engaged on the sculpture of a lion, to be cut out of solid rock, on the face of a mountain at Belfort, France, the figure to be eighty feet long and thirty feet high.

VISITORS find in some of the older houses of Nantucket tall Dutch clocks, with holes in the cases where screws had been taken out. This was done in order to banish wicked ornaments of brass and steel.