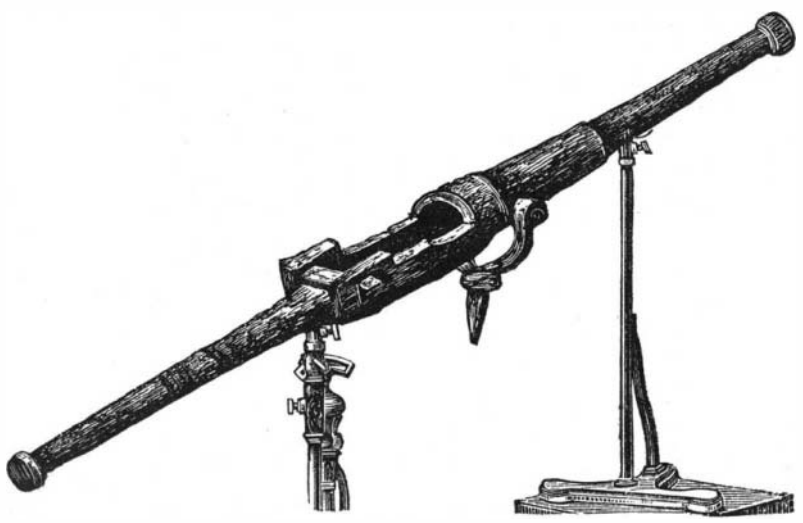
ANCIENT BREECH-LOADER.

We have been favored with a photograph, reproduced in the engraving herewith, showing an ancient piece recently fished up in the harbor of Santander, which appears to have attracted considerable attention. It is a wrought iron breech-loading piece—length of gun, 1·85 meters (6 feet); that of lever or tail piece, 0·85 meter (2 feet 9 inches); caliber, 50 mm. (nearly 2 inches). It will be seen, then, that this piece has four features that we generally associate with very modern guns: (1) It is wrought iron; (2) it is a breech-loader; (3) it is about 36 calibers long; (4) it is a pivot gun without provision for recoil. Those who are at all familiar with ancient pieces, however, know that these features were found at times. In the Rotunda Museum at Woolwich are several guns resembling the above in some features, among them an English gun of the fifteenth century, a Chinese gun taken in the last Chinese war, of unknown date, and a gun taken out of a vessel of the Spanish Armada. It is not easy to say exactly what was the office of this Santander piece. The spike pivot generally was fixed in a tripod, but no doubt might equally well have been fixed on the side of a ship. Probably the gun was a Spanish one of the fifteenth century. More than that can hardly be said, especially without seeing it. The effect of the sea water on it might tell something. Iron has been found so completely honeycombed by the action of the sea water that when shot were first taken out the finely divided mass of iron was so attacked by the oxygen of the air that the metal steamed and became hot. Indeed, this effect is said to have caused considerable alarm to the finder in one instance, who ran away from the shot on observing its strange behavior.—*The Engineer.*



AN ANCIENT BREECH-LOADER.

Icebergs and Ice Fields in the Atlantic.

Usually the Atlantic ice fields have ceased to be a peril to navigation before midsummer. This year is an exception, not less in the long continuance of the ice floes and icebergs off Newfoundland than in respect to their early beginning and abundance.

The Signal Service monthly charts, prepared from reports of incoming shipmasters, show that in April the general drift of the North Atlantic ice was southeasterly, its eastern limit on that course running from longitude 50° west to about 41° west, in latitude 45° north; thence its trend was a little westerly until the southern limit was reached in about 39° north. The coasts of Labrador, Newfoundland, and Nova Scotia were blocked with ice. The chart for May shows a contraction of the vast triangular ice field, whose limits were shown to be still more contracted in June. The ice should have substantially disappeared by July, but it had not, nor had it at the beginning of August, when numbers of large icebergs were lingering off Cape Race. The practical lesson of the charts seems to be that transatlantic navigators will avoid delays and more serious danger from ice by keeping to the south of the latitude of New York until (or after) they reach the neighborhood of lat. 40° N., long. 40° W.

Submarine Telephony.

An interesting telephonic experiment was recently made between Brussels and Dover. A submarine cable is practically a condenser, which, by its inductive action, materially interferes with the speed of signaling. The retardation, indeed, is so great as to reduce the speed to one-fifth that attained on air lines, the same instruments being used in both cases. It was feared that this condensation would prove, for a long while, a great difficulty in the case of telephonic currents, so transforming them as to render them unintelligible. The difficulty, however, has been overcome, the honor of the achievement belonging to a distinguished Belgian physicist, M. Van Ryssel-berghe. On June 9 the new telephonic apparatus, designed for the purpose of counteracting the effects of induction on air lines and condensation in submarine cables, was tried with success. M. Bordeaux, the engineer of the Submarine Telegraph Company, was stationed at Dover; M. Banneux, inspecting engineer of Belgian telegraphs, was at Ostend, and a third operator at Brussels.

Conversation was freely exchanged through the sixty miles of cable and two hundred miles of air line. The experiment is certainly very hopeful for ocean telephony.

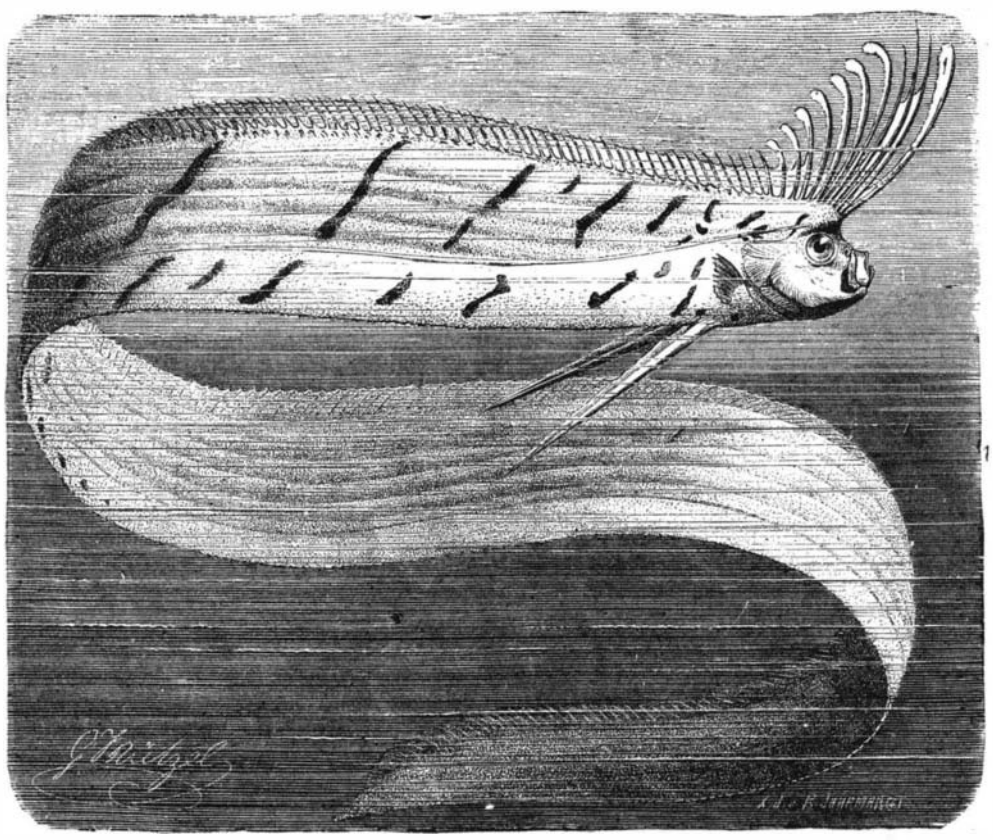
A Vigorous Mushroom.

The enormous power of cell growth was strikingly illustrated a short time since in a grain elevator at Buffalo, N. Y. The asphalt flooring was over a foot thick, in two layers. The upper layer was seven inches thick, laid hot, rolled down, and thoroughly cooled four years ago. Below was an old floor of tar and gravel, six inches thick. A curious bulge in the floor was first noticed, covering about a square foot. In six hours the floor was burst open, and a perfectly formed mushroom, with a stem two inches through and a very wide cap, made its appearance. Elsewhere the floor is smooth and unbroken.

THE HERRING KING.

The attention of scientists has frequently been called to the band fishes (*Tænioidei*), more on account of their odd form than for their value as a food fish. Their body is of an extraordinary length, and is flat like a band or ribbon, and is covered throughout with small, beautiful, bright and shining scales. The dorsal fin extends over the entire back, and the ventral fin is missing altogether, or consists of a few long thin or fragile bone spurs, which are in the front part of the body near the pectoral fins.

Among the band fishes the herring king (*Regalecus banskii*), which is found in the northern seas, always creates more or less of a sensation every time one is caught, and that is seldom and far between. As this fish lives in the greatest depths of the ocean it very rarely occurs that one is washed ashore. It was first discovered on the Norwegian coast in the neighborhood of Bergen, in 1776, and as the herring were passing along the coast at the time, the new fish was named the Herring King. Later this fish was observed on the Scandinavian and Scotch coast, and lately a specimen was caught at Stavanger, and was preserved in an almost perfect condition. The most striking feature is the exceedingly great length, as most of the specimens caught measured from 9 to 18 feet in length. The head is relatively very small, and provided with minute teeth. The bright, silvery, ribbon-shaped body is provided with dark spots and stripes, and the dorsal fin is of a mild pink color. The first spines or ossicles are of an uncommon length, and form a fan-shaped and exceedingly fragile head ornament, which was not found in a perfect condition in any of the specimens.



THE HERRING KING.—(*Regalecus Banskii.*)

A Venomous Lizard.

A great surprise has visited herpetological London, in the shape of a venomous lizard! We have so long been accustomed to ridicule as "fabulous" the belief prevalent in some countries that certain lizards have a poisonous bite, that we are slow to commit ourselves to the recognition of a living lizard, "all of whose teeth are grooved and connected with poison glands," as we are informed at the Zoological Gardens. This startling reptile, presented by Sir John Lubbock, is from Mexico; it arrived on July 16, and has since drawn crowds of the zoologically curious to inspect it, and, at first, to doubt it! As yet I have seen no printed or authentic account of the distinguished stranger; but, until more able pens shall give your readers a scientific description of it, I may briefly describe it as about one foot and a half in length, of a somewhat thickish form, and with a rather short, pointed tail. Except in color its aspect is not prepossessing. Heloderm is its name, *Heloderma horridum* scientifically. My only knowledge of the Greek language is that it is subservient to science, and zoologically defiant of gender and case, sometimes of spelling; therefore conjecturally *helo*, the first part of the generic name, may have reference to the pale yellowish or sunny color of this creature, as certain flowers, helianthemum, heliotrope, and helianthus, are named from *helios*, the sun, as our botany books instruct us; and *derm* is certainly skin. Heloderm is of a pale ocher or maize color, with a coarse reticulation of black marks all over it; and its specific *horridum*, deferentially inferring its terrible, dreadful qualities, is *not* given in slangy disgust, as is supposed to be the case with its neighbor, *Crotalus horridus*. "Horrid rattlesnake!" exclaimed a lady visitor in my hearing. "What's the use of calling *that* one 'horrid,' as if they are not all horrid!"

An interesting field of inquiry is now open to herpetologists in seeking for a "missing link" among the saurian tribe, and to discover by what singular modification one lizard has developed—not a single pair of fangs like its ophidian relatives, but—a whole row of grooved teeth, and by what process of evolution all these teeth are supplied with venom.

It would appear that this lizard is not altogether unknown, for—as the story goes—a gentleman in Mexico was once bitten by one of the species, his hand and arm in time becoming so seriously injured that amputation seemed the only hope for him, so he lost his arm but saved his life, and afterward entertained the regretful idea that he might have enjoyed the latter without the penalty of the former. The only deducible argument from this accident is that Heloderm's venom is very different from serpent venom, which rapidly, instantaneously decomposes the blood to the remotest extremity of the body, "acting on the nerve centers," as experimentalists tell us, and "destroying every vital function." However, those who unpacked the Heloderm fortunately escaped a bite, which is probably due to the fact that the reptile was languid or lethargic after its journey, for it was handled fearlessly—because unconscious of danger—by the keepers and others; but its dangerous qualities having been reported, it was tested with a frog, which died after a few savage bites, and then a guinea pig, which was convulsed and dead in three minutes after one bite on its leg.—*C. C. H., in Land and Water.*

Nickel in Oregon.

At a recent scientific meeting in San Francisco announcement was made of the discovery in Southern Oregon of a large deposit of nickel ore, resembling that discovered in New Caledonia in 1864, the development of which by the French has so greatly extended the economical use of this metal. The New Caledonia minerals are known as garnierite and noumeite, both hydrated silicates of nickel and magnesia, occurring with chrome iron, steatite, and other minerals found only in serpentine. There are, likewise, two of the Oregon minerals, one dark, the other pale apple green, like those of New Caledonia, and closely corresponding with them in hardness and specific gravity.

THE largest sailing vessel afloat was launched at Belfast, Ireland, July 6. She was built by Harland, Wolff & Co., and was named the Walter H. Wilson. Her measurement is 300 feet by 42½ feet by 25 feet. She will be classed 100 A1 at Lloyd's. She is built of iron, has four masts, three of which are square rigged, and is capable of carrying 4,000 tons dead weight