

These are not the first sheep sent from American to Pacific countries. Mr. Markham sent three car loads some time ago to Japan, where the government is striving to develop the best wool and carcass-producing animals.

THE ELEPHANT SEAL.

This animal differs from the crested seal by being furnished with a trunk-like extension of the nose of adult males, which has led to the adoption of one of its names, the "sea elephant." The number and arrangement of the teeth are the same as in the crested seal. A great difference is to be found in the claws of the fore feet, which in the elephant seal are merely rudimentary. The general appearance conforms with that of seals generally, but in size it is larger than any of its relations. Although the size has often been overstated, there is no doubt that it ranges from 15 to 21 feet in length. The females attain about one half the length of the males, but not over one third in weight of the male, the weight of the latter often exceeding 10,000 pounds. The head is large, broad, and somewhat elongated, the snout being greatly developed and terminating abruptly, as shown in the illustration. The upper lip has from 30 to 40 long dark-brown bristles arranged in six rows. The eye is rather large, round, and very prominent, the upper lid being destitute of lashes, the eyebrows having eight or ten bristle-like hairs. The ear is unusually small for so large an animal, and is situated not far to the rear and below the eye, and is not furnished with a flange, having the appearance of a hole.



THE ELEPHANT SEAL—(*Cystophora elephantina*.)

Pitchblende in Colorado.

Some three years ago an intelligent mineralogist discovered specimens of pitchblende on the waste dumps of Denver City, Colorado, and, recognizing the value of the mineral, gathered a quantity and sent it to Swansea, where it brought five shillings a pound, or at the rate of \$2,500 a ton. To what extent the mineral occurs in that region does not appear, but the incident affords another illustration of the facility with which unscientific miners may throw away minerals of more value than those they are looking for.

Pitchblende, or uraninite, is an oxide of uranium, obtained in Saxony and Bohemia, and used in fine glass making. Glass colored with uranium has the peculiar property of showing green when looked at, although perfectly and purely yellow when looked through.

FIGHT BETWEEN A THRASHER, SWORDFISH, AND A WHALE.

A marine battle between a thrasher, swordfish, and a whale, as witnessed by Lord A. Campbell, of Belleisle, is graphically represented in the annexed engraving. The thrasher—over thirty feet long—attacked the whale from above, springing several yards into the air, descended with fearful violence, inflicting severe slaps with its long flexible tail, while the swordfish attacked the distressed whale from below.

Other authentic accounts are given of similar fights in which the sea around the wounded whale became dyed with blood, and we have an account of a whale taking refuge under a ship to avoid his enemies, much to the consternation of the crew, who hardly dared to step or move while the huge creature maintained its position under the vessel.

Are Sharks Viviparous?

Recently Mr. E. G. Blackford, of Fulton market, described the discovery of a number of small sharks alive in the body of an old one, and raised the question whether sharks may not be vivipa-

rous. Further evidence in the same direction is furnished by Mr. John F. Lovejoy, of this city, in a letter to the *World*. Mr. Lovejoy's shark—about three feet long—was caught last May on Nantucket Shoals. Mr. Lovejoy says:

"It flopped about considerably, and in order to get the hook out of its mouth we were obliged to strike it over the head with a small capstan bar. This must have put the shark to great pain, and at any rate caused spasmodic action of the stomach, for in a few minutes we saw the head of a small shark protruding from the vent of the large one. We pressed the stomach, and first one, then another, came out. Then we cut the large shark open, and to our great astonish-

ment found four more. They were each seven inches long, with an umbilical sac hanging from them about four inches in length and looking very much like a spawn. Seeing that they worked themselves about on the deck, we wondered if they could swim, and dropped them into the water. They immediately commenced to swim, but gradually sank, the sacs seeming to carry them down. This, we think, goes to prove more fully that the shark is viviparous. The sac was not seen on the young taken from Mr. Blackford's shark, which in growing so large had absorbed it and were in a condition to take care of themselves."

A PROMISING VINE.

A French explorer in the valley of the Niger reports the discovery of a vine which promises to be of great economical value. Writing from Koundian (Gangaran), July 25, he says that the fruit of the vine is excellent and abundant; its cultivation is very easy, its roots being tuberose and perennial, while its branches are annual. It can be cultivated as easily as the dahlia. He himself had been eating the large

grapes of the vine for eight days, and found them excellent, and he suggests that its culture ought to be attempted in all vine-growing countries, as a possible remedy against the phylloxera. He has sent home seeds for experiment, both in France and Algeria, and intends to bring home specimens of the plant at all stages of development.

Why the Glow-worms Glow.

The French scientist Jousset de Liellesme claims to have discovered that the glow of the glow-worm is a spontaneous action, and that the little insect has the same object in glowing that some Parisian ladies have in displaying certain rib-

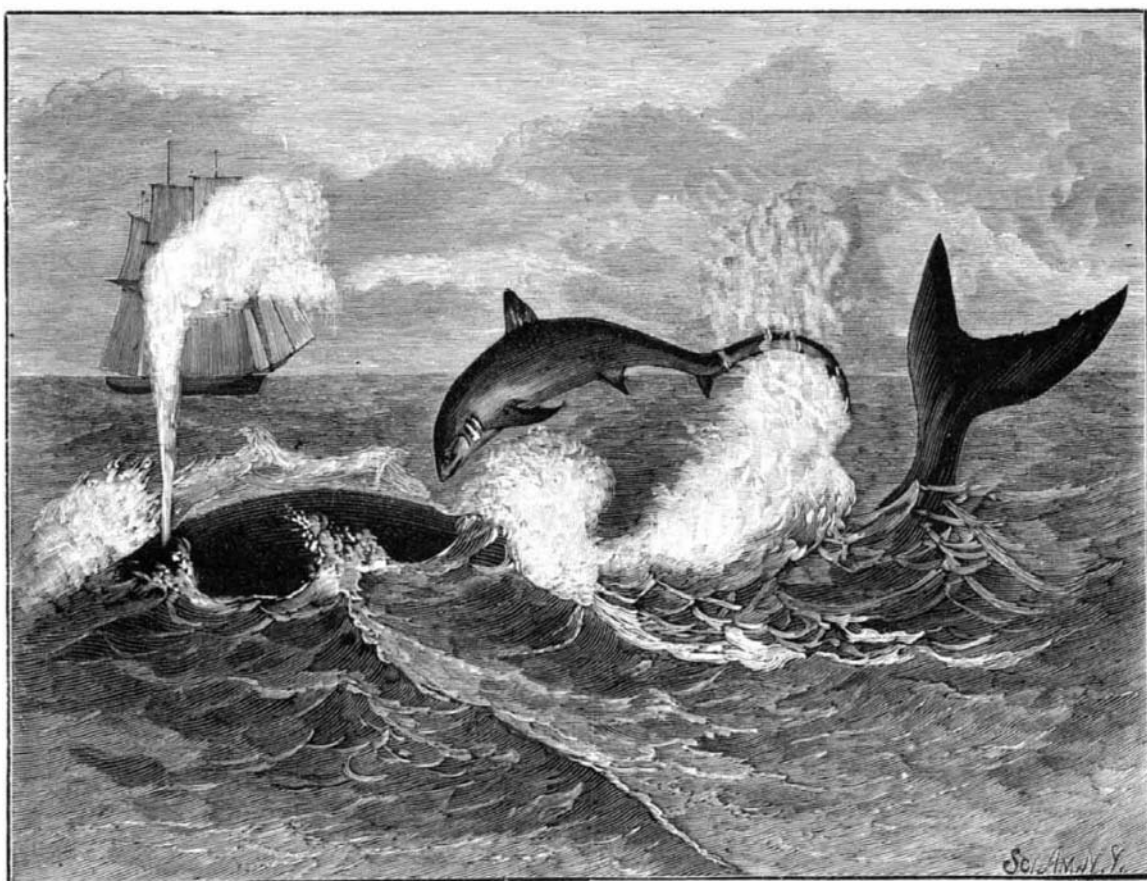
bon streamers, which are very appropriately called "*suites-moi*." It has long been known that the female glow-worm alone understands the art of glowing exceedingly well, though the male and even the larva possess some of this phosphorescence. Some earlier scientists expressed their belief that the glowing apparatus in the female served the purpose of favoring the fructification of the eggs, in so far as the male was attracted from the distance by the phosphorescent light of the female. But it was left to our prosaic age to discover that the light was produced by an essentially spontaneous action.

The above named French naturalist made an incision in the head of the female glow-worm (evidently supposing that in this animal, also, the organ of will is in the head), and the phosphorescent light at once ceased, but it returned—and this is the most important fact of the experiment—every time that the action of the brain

or of the central nervous organ was irritated by artificial means, such as electricity.

NATURAL HISTORY NOTES.

Phosphorescence of very Young Fishes.—Mr. John A. Ryder, while investigating the development of the bay mackerel and porgy, under the auspices of the U. S. Fish Commission, in Mobjack Bay, Va., found that the latter fish, when three days old, was very decidedly phosphorescent at night, when sudden impulses were imparted to the water in which they were swimming about; acting in this regard like numerous other marine animals, such as medusæ, polyps, infusoria, etc. The presence of an extraordinary development of amœbiform cells over certain portions of the bodies of these little fishes may be the cause of these phenomena. These cells change their form from time to time very considerably, but tend to aggregate in anastomosing clusters over the oil globule in the umbilical vesicle, over the ectoderm of the vesicle itself, and on certain parts of the body and tail. They are very different from pigment corpuscles. Besides these cells a peculiar homogeneously-distributed reddish tinge is acquired by the membranes of the umbilical vesicles of the porgy on the third day, and which is not due to the presence of blood globules. "To whichever of these structural causes the phenomenon of organic phosphorescence is attributable in this special case," says Mr. Ryder, "there seems to me to be little doubt that the prime element in the production of phosphorescence in the animal world in general is some kind of sudden molecular disturbance or impulse, disturbing the equilibrium of the molecules of the living protoplasm involved, so as to produce a kind of motion which makes itself apparent as momentary emissions of light. I have no doubt that the phenomenon in *Lampyrus*, or the fire-fly, is connected with expiration and inspiration, and possibly, in the *Medusa*, with the rhythmical contraction of the umbrella. The application of experimental methods to verify the above suggestions would be very easy."



WHALE ATTACKED BY ENEMIES IN THE ATLANTIC.

Relation of Algae to Flower-