Imported Matches.

Residents and strangers in New York city must have noticed, during the latter part of the summer, the offering for sale on the streets of matches in boxes of foreign appearance, the price asked being lower than that of our domestic matches. These foreign matches are as different as their nationality, for they come from Switzerland, Bohemia, Italy, and Sweden. Those from Italy are especially attractive, being in reality miniature paraffine candles, having a fine cotton wick and being only about one and a half inches long. They burn with a clear, white flame, and last a sufficient time to light several lamps. They are put up in neatly embossed boxes with a sliding drawer that opens by a bit of concealed elastic cord, and closes by the same means on being slightly pushed back. The other sorts are similar to those manufactured here.

Why these foreign matches are now for the first time introduced in large quantities to this market is explained by the Act of Congress, by which the tax of one cent on each one hundred matches, whether domestic or foreign, was removed July 1. This tax was more onerous on foreign makers than on our home manufacturers, because, as the government required that the attaching of the stamps should be done while the goods were in bond, and by customs officials, it proved an expensive operation and generally necessitated the repacking of the small boxes by reason of the destruction of labels, wrappers, and oftentimes the boxes. The domestic manufacturers made a slight reduction in price on the removal of the stamp tax, but it was less than the amount of the tax. Although there has been no reduction in the duty on imported matches, there has been a change in the conditions and expenses attendant on their importation by reason of the removal of the stamp tax, that enables our merchants to import Swiss and Bohemian matches, and after paying the government the thirty-five per cent duty exacted, sell them to the dealers at a lower price than is asked for the domestic monoply matches.

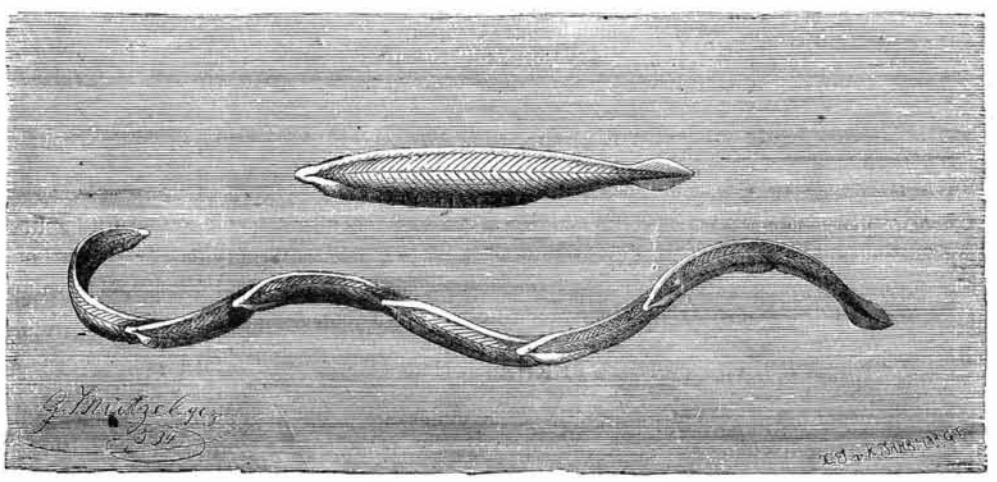
Cement for Milk Glass.

Waechter describes the following method of preparing a white enamel for joining milk glass:

Melt together three parts of red lead, two of white sand, and three of crystallized boracic acid in a Hessian crucible. The melted mass is poured out on a plate of metal and finely pulverized. This is mixed with gum tragacanth and applied to the glass and the pieces pressed together. Finally it is heated in a muffle, but not enough to entirely melt the enamel, but only soften it enough to make it unite with the glass.

THE LANCELET FISH.

The lancelet (*Amphioxus lanceolatus*) has so little similarity to other members of the fish family that for a long time it was undecided whether it belonged to the vertebrate or invertebrate class. Its body is about five centimeters long, slender and angular, symmetrically tapering off to a point at each end. A slender fin extends from the head around the extremity of the tail and terminates at the vent. The mouth, a mere longitudinal fissure, is under the front part of the body, and its orifice is crossed by numerous cirri. This fish has no heart, the place of that organ being taken by tubular vessels having a pulsating motion, which drives the transparent, colorless blood into the smaller veins. It has no bones, the muscles being attached to soft cartilage, and the spinal cord is not protected by a bony covering. The body is covered by a delicate skin without scales. It is found in the seas of the torrid and temperate zones. It lives in the sand, in which it buries itself, and being so nearly the color of the sand, it is completely concealed, and is often only perceived when the sand is washed through a fine meshed sieve. Probably, wherever it makes its appearance it is far more abundant than is generally supposed. If it is necessary for it to leave the sand, it swims through the water with a gliding, serpent-like motion, and with the quickness of an arrow, but in a short time it embeds itself again in the sand. Mr. Couch was the first captor of this fish on the British coast, and found his first specimen in the sand about fifty feet from the receding tide. He says that when swimming the head can hardly be distinguished from the tail.



THE LANCELET FISH.

Mr. Wilde put one of these fish in a tumbler of water. "It moved around the glass like an eel, and, although no eyes were perceptible, it avoided the finger or any substance put in its way, stopping suddenly or turning aside from it." The mouth is surrounded by cilia, the motion of which causes the passage of water for food and for breathing.

These fish have a peculiar and remarkable power of attaching themselves to each other, sometimes clustering together, sometimes forming a string from fifteen to twenty centimeters long. In the latter case they swim in unison, with a serpent-like motion. When swimming in a line they adhere to each other by their flat sides, the head of one coming up about one-third on the body of the one before it, as seen in the engraving.—*From Brehm's Animal Life.*

THE STAR NOSED MOLE.

The star-nosed mole is strictly an American animal, and its genus is confined to America alone. Its great peculiarity lies in the strange formation of its nose, or rather its nasal appendages. The muzzle, which is a kind of cartilaginous disk, sending out about 20 fibers or feelers, when viewed from the front has the appearance of a star, hence the common name, "star-nosed." The two cartilaginous fibers situated beneath the nostrils are the shortest. The use of this radiating process has not been fully ascertained, but it is quite probable that it is extremely sensitive, and is used for detecting the presence of its prey. It always touches or feels an object with this "star" before swallowing it.

The star-nose is subterranean in its habits, and rarely quits

THE STAR NOSED MOLE.

the ground, at least during the day, and hence it is seldom seen. It is generally found in moist valleys along the banks of streams, and consequently does not damage gardens and lawns by digging furrows through them, like the common mole. Its food consists of earth worms, and the grubs of beetles, cicadas, and other ground dwelling insects. In captivity it will eat raw meat of any kind.

During the breeding season the tail of the star-nose becomes greatly enlarged, and this form has been described as a *new* species. Its fore feet, like all the moles, are very powerful for the size of the animal, and are formed for burrowing in the ground. It makes rapid progress in soft earth, but upon the surface its movements are awkward and slow.

Its nest is large, and composed of withered grasses and leaves, and is mostly situated in an excavation beneath a stump or log. In the very young animals, the radiations on the nose are but slightly developed.

Its eyes are small and rudimentary, almost concealed in the fur, and it is extremely doubtful whether they have the power of vision even in the slightest degree. In their dark burrows eyes would be of no use to them; on the contrary, they would be a source of inconvenience, inasmuch as they would continually be irritated by sand and dirt. There is an orifice in place of an external ear, which does not project beyond the skin.

The body is covered with dense soft fur, brownish black above, a shade lighter beneath. The length of the body of the star-nose is about 5 inches, and of the tail 3 inches.

C. FEW SEISS.

A Natural Refrigerator.

It is a remarkable fact that while brewers expend an enormous amount annually on the construction, maintenance, and working of refrigerating machines, they have at hand an unlimited supply of natural cooling power, which might be obtained at a merely nominal outlay. The waters from very deep wells come to the surface at a temperature which altogether preclude their use for refrigerating purposes, and in London, where company's water is very frequently used, it is occasionally delivered at the brewery in summer time at 70° Fah., and upward. As brewers require to bring their worts down to about 55° Fah. prior to pitching, and subsequently have to use a large volume of water at less than this temperature for attemperating purposes, some artificial refrigeration becomes a necessity. Now, the earth at a certain depth has a constant temperature lower than those we have named; for about 24 feet down the temperature of the crust of the earth is influenced by the climate and the season, but at from 24 to 36 feet the temperature in all climates and in all seasons remains nearly constant, only varying about 5° Fah.; the temperature of the earth at 30 feet from the surface is always about 51° Fah., and this is the natural refrigerator we refer to. If water from a very deep well or from any other source where the temperature is considerably higher than 51° Fah. were conveyed down again into the earth to the depth of about 30 feet, and there run through a considerable length of thin metallic piping, it would necessarily give up its heat, and on being forced again to the surface would have a temperature closely approximating to 51° Fah. The construction of such a natural refrigerator ought not to be impossible or impracticable; the water should pass through a wide tube in its downward course, and at a temperature of about 30 feet be distributed through a number of smaller horizontal tubes made of some good conducting material, and then be collected again into a single tube of large diameter, made of or covered with some non-conducting material, by which the water would be forced to the surface again, and at a temperature very little in excess of 51° Fah. At this season of the year such a system of refrigeration would be invaluable, and the only expense after the first cost of laying down the pipes would be the cost of pumping. As the stratum of earth surrounding each horizontal tube would gradually acquire the temperature of the warm water passed through it, it would be necessary to provide a number of cooling tubes, so that while some were in use, others a little distance apart would be gradually acquiring the mean temperature of earth again.—*Brewers' Guardian.*

The Cost of Wrought Iron Framing.

It is a fact quite worthy of note in connection with the use of wrought iron bars and plates, in the more modern designs of roofs and other similar framed work in buildings, that the amount of what may be called blacksmith's work, or forged pieces, has steadily diminished in quantity and in complexity until now there is very little of it left. This fact does not by any means indicate that the fitting or joining of the parts has been slighted, or been done carelessly, but it is due to the constant study of those who plan such work to simplify the whole, so that the usual range of work called for may be reduced in cost to the lowest practicable limit, and also, an equally important thing, so that there may be the largest possible inducement for the use of such work in new directions.

This need of simplicity of construction and of reduced cost has led to the furnishing by many rolling mills of bars of a great variety of forms, so that in the use of them, even in a complicated piece of framing, the only hand labor that need be done is found to be the bending, or twisting, or flattening out of these bars, all of which can be done at a comparatively low heat, and by men of very moderate skill. The joining of such parts has come to be almost wholly a matter of the fitting of plain pins, turned for the more important work, and the driving of rivets, all of which involve care and skillful oversight, but no special skill on the part of the individual workmen themselves.

For some of the tension rods, and similar parts, of iron frames there will probably always be some welding needed, as these members are usually made of the best iron, and hence, to save cost, must be kept as light in weight as possible. Hence the need, in the ends of these parts, for joining them one to another, of a welded eye, so that the fullest strength shall be maintained for the size of bar used, or more correctly, so that the full strength shall be preserved throughout every part of it when made up into the finished form. In the forming and welding of these eyes the smith's work is of the most elementary sort, the bending of the end back upon itself, and the making of the simplest form of a scarf weld, being the whole of it.

The great care which has thus been given to these details of design, both in the ideas involved in the combination of parts, and in the putting of them into the forms of actual construction, has led to very large reductions in cost price of all such work, and hence to an expansion of the business of making wrought iron framed work which is nearly incredible, even to those who have been familiar with each step of this advance during its progress.—*P. Barnes, in the Industrial World.*

Now that the exploded boiler of the Riverdale has been thoroughly inspected, some one suggests if it would not be well for the boilers of certain other steamboats to be inspected before they burst; and we beg to ask whether it would not be well to have an examination made as to the capability and practices of some of the steam boiler inspectors.