Fish Curing in New York.

The practice of setting aside the surplus of our city fish markets in seasons of plenty to meet the demand when fish are scarcer or entirely out of season, has led to the establishment of enormous refrigerators, or buildings for "cold storage," in which tons of fresh fish are securely locked up in ice and kept for months. The magnitude of this cold storage business and its relative novelty have attracted to it no little popular attention.

Less generally known, but probably of greater financial and economic importance, is the business that has grown up here in drying, pickling, and smoking fish. For the most part the city cured fish are taken by fishermen under contract, and roughly salted at sea. They are mainly cod, mackerel, and salmon. Other establishments are directly engaged in sea and shore fishing. One firm, which cures from 15,000 to 40,000 pounds of fish a week, make a specialty of smoked shad and sturgeon. The sturgeon are taken in drift nets off the coasts of Florida and Georgia. The nets are 100 fathoms long and 20 fathoms deep, the sturgeon often weighing from 300 to 500 pounds each. Occasionally the capture of a large shark or alligator gives serious and unprofitable diversity to the work of the fishermen. When caught the sturgeon are cleaned, the back bone is cut out, and the sides packed in ice and sent to Savannah. There the fish is packed in fresh ice and shipped by steamer to New York. Here the sides are cut in slices, pickled in brine for four hours, dried, and smoked. The drying takes about six hours and the smoking fourteen hours. The smoke is made from hickory wood and cedar sawdust, and the smoking room is hot enough to thoroughly cook the fish. Other fish are smoked in substantially the same way. The sturgeon roe is immediately treated to successive washings, passing each time through sieves to cleanse them thoroughly, and are then packed in salt. The result is *caviare*. The same parties have sturgeon fisheries in Delaware, and eel fisheries there and in New Jersey. The best and fattest eels are said to come from the mouth of the Shrewsbury River. The eels are thoroughly scrubbed to remove the slime, and either smoked or put up in jelly. Herring are roasted and put up in kits in pickle. Considerable quantities of smelts from the coast of Massachusetts are smoked. Also many lake whitefish, which is accounted particularly fine in flavor. Mackerel smoked round when fresh—Boston smoked—is becoming a popular preparation. All the fish to be smoked are brought to the city fresh, packed in ice, except salmon, which during part of the year is pickled.

The home and foreign demand for fish cured in New York is large and rapidly increasing. The industry promises to become very large.

Experiments with the Heliograph.

A detachment of nineteen men of the Sixth Cavalry and Twelfth Infantry, near Fort Grant, Arizona, under command of First Lieutenant M. P. Mans, First Infantry, has been testing the practicability of heliographic signaling since July 1, and it is pronounced a grand success. Lieutenant Mans has signaled messages from the top of Dos Cabezas Mountain to Fort Grant, a distance of forty miles, which were read at once by his party at Grant. Messages can be sent with the heliograph at the rate of from six to twelve words per minute, according to the ability of the operator, and it is a splendid substitute for the telegraph, should the Indians cut the lines, which they have been doing, and always can do, when on the warpath, while they cannot cut a sun flash. It is understood that heliograph lines are about to be established by Lieutenant Mans, and partly under direction of Colonel Bracket, commanding scouting operations connecting Bowie, Grant, Thomas, Apache, and points along the Gila River, in the vicinity of Solomonville and Clifton, enabling troops in the field to be in constant communication with one another, without waiting for couriers or the proximity of a telegraph office. The signalmen, on account of their elevated positions, are enabled to observe with their glasses the movements of the hostiles, and in a few minutes to communicate it to any command in the field, each of which is always to be accompanied by one or two heliographic signalmen. The great advantages of this system of transmitting messages in a mountainous and hostile country are self-evident.—*Cor. Morning Call.*

Crayons in Vitrifiable Colors.

M. Lacroix, a Parisian chemist, has introduced crayons similar to the ordinary lead pencils, the lead being replaced by vitrifiable colors. The colored designs which are executed with these crayons, on slightly roughened glass, bear the heat of a muffle and are fixed like a painting upon glass; the grays especially give excellent results. A similar process which was tried upon porcelain some years ago was unsuccessful, probably because enameled surfaces were used. On biscuit it is likely that good results might have been obtained.—*Chron. Industr.*

IMPROVED WASHING MACHINE.

The engraving shows an improved washing machine recently patented by Mr. Thomas J. Meroney, of Salisbury, N. C. In this machine the clothes, while under the pressure of a corrugated roller, are subjected to the action of steam, so that while the clothes are being agitated or rubbed they are subjected to the action of steam.

This machine has a plain wooden tank lined with copper or galvanized iron, with perforated pipes in the bottom for the admission of steam, with corrugated copper or galvanized iron roller of sufficient weight. This roller gathers the air while passing back and forth over the clothes, and forces air and water through the fabric. At same time the steam is thrown up through the perforated pipes at the bottom of the tank. There are wooden strips between the pipes

MERONEY'S WASHING MACHINE.

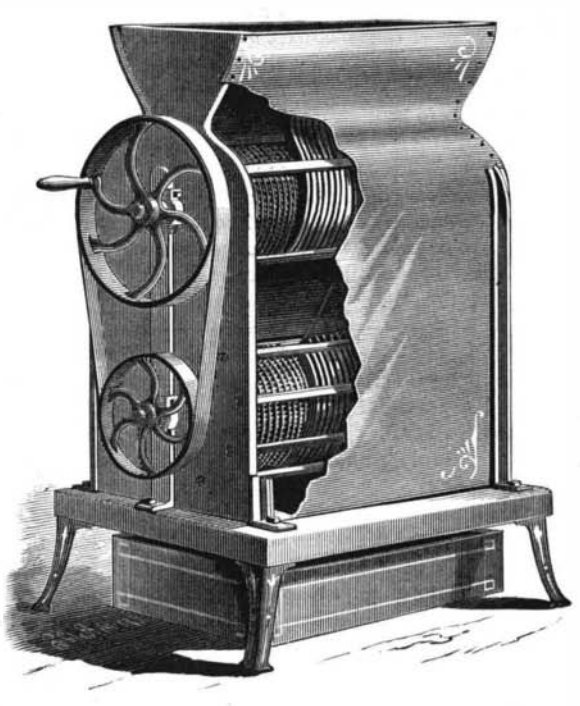
to protect them and make the bottom of the tank smooth. This machine is very simple both in construction and operation. It can be operated with very little exertion, and does its work quickly and thoroughly. It will wash the thickest fabric as well as the thinnest muslin or lace. In addition to its use as a clothes washer it may be used for washing wool, and the boiler answers a good purpose for steaming and boiling grain and vegetables for stock.

This machine differs from other washing machines in using steam as the principal agent for agitating the clothes and removing the dirt. Of course the steam always keeps the water at the boiling point, which is very desirable for rapid work.

Further information may be obtained by addressing the inventor as above.

IMPROVED CORN CRUSHER.

An improved corn crusher invented by Mr. George C. Mueller, of Red Bluff, Cal., is shown in the engraving. It is designed for crushing ears of corn to reduce them to the proper state for fodder. The machine consists of two parallel cylinders journaled in a frame, and inclosed by a suitable



MUELLER'S CORN CRUSHER.

casing surmounted by a hopper, into which the ears of corn are fed. The upper cylinder carries a number of saws arranged a small distance apart, and revolves near a concave also made of saws, which are curved to form a tapering cavity in which the ears of corn are received. The saws of the concave enter the spaces between the saws of the cylinder, so as to insure a more thorough breaking up of the ears.

The corn entering the machine is first crushed into small fragments by the saws. It is then delivered by an inclined chute to the cylinder below, which is provided with a series of pins arranged in circumferential rows. This lower cylinder revolves near a concave, also armed with pins, and between these pins the corn is reduced to meal suitable for fodder. The meal is discharged into the box below.

The machine may be driven by hand power, horse power, or by connection with any convenient motor. It is compact, effective, and easily operated.

Further information may be obtained by addressing the inventor as above.

History of Plant Life in America.

An interesting sketch of the history of plant life in America was given by Professor Newberry at the Montreal Science Meeting. In the archæan rocks is graphite, which must have been derived from plant tissues, but all possibly have been obliterated. In the Cambrian only seaweeds have been found. In the Lower Silurian the presence of land-plants had been claimed, but without satisfactory evidence. In the Upper Silurian a few club mosses have been met with in Europe and America. In the Devonian the land was clothed with plants, some 200 species having been described by Dr. Dawson. They were ferns, lycopods, and equiseta. In the Devonian Sea were islands near where Cincinnati stands, and they were covered with tree ferns and giant club mosses.

The carboniferous flora was known the world over. It consisted of ferns, lycopods and equiseta, conifers and cycads. In the time of the Trias, to which the New Jersey brownstone belongs, the vegetation was mainly sago palms and pines, with many ferns peculiar to the age. In the cretaceous age the vegetation of the globe was revolutionized, angiosperms and palms taking the places of the cycads, etc., of the Trias and Jura. In New Jersey and in the far West perhaps 250 species of trees had been found resembling those now living, as they included oaks, birches, and willows, as well as the tulip tree, sweet gum, sassafras, magnolias, etc.

The Tertiary was the age of North America for animals and plants. For them a mild climate prevailed to the Arctic Sea, and the land was covered with splendid forests, of which the great sequoias of California and the finest of our trees are a remnant. Then there was land connection between America and Europe and Asia at high latitude, and the American flora which began here in the cretaceous extended into both continents. When the ice period came on the forests were driven south. In Europe the Mediterranean prevented their escape, and then American plants were destroyed, to be succeeded by an Asiatic vegetation when the climate became milder. The floras of Japan and Eastern America are very like the remains of typical trees of the American flora of this age. Tulip trees, sassafras, and magnolias were found in Europe as far south as Italy. In China and America part of this vegetation survives, and the vegetation of Japan and Eastern China is so very like that all botanists are agreed that they must have had a common origin. Curiously enough some of the plants extinct in America had survived in China, among which are the ginko and glyptostrobus, two beautiful conifers once common on the Upper Missouri, now found only in China.

New Machine for Manufacturing Bone Black and Ammonia.

Messrs. H. Y. Castner & Brother, analytical chemists, of New York, have patented a machine for the manufacture of bone black and ammonia, which, if their claims are to be credited, promises to cause a revolution among manufacturing chemists. The process consists in passing crushed bone continuously through a heated vessel or cylinder, charring the bone thereby; then conducting it without exposure to an air-tight receptacle, where it is cooled, and the gases emitted therefrom are drawn off and subjected to such chemical action as to recover all the ammonia. By this process the bone black and salts of ammonia are produced continuously at a great saving of time, labor, and heat.

The patentees have erected in Jersey City, at considerable cost, an experimental machine, which has been visited by a number of chemical experts, all of whom unite in pronouncing it a great success, not only as a piece of ingenious mechanism, but for the superior quality of its products. With a consuming capacity of one ton of bone per day the patentees claim that they can effect a saving of over twenty-five per cent by this machine; and we understand that a company is being formed with the view of erecting another one capable of burning ten tons a day, in the operation of which, they claim, a still greater percentage of saving will be effected.

FALL OF A METEOR.—During a heavy thunderstorm at Lebanon, Pa., on the 8th of September, a meteor, weighing one pound and eleven ounces, fell in the center of the principal street, appearing like a ball of fire as it struck the ground. It is now in the possession of Dr. Mears.