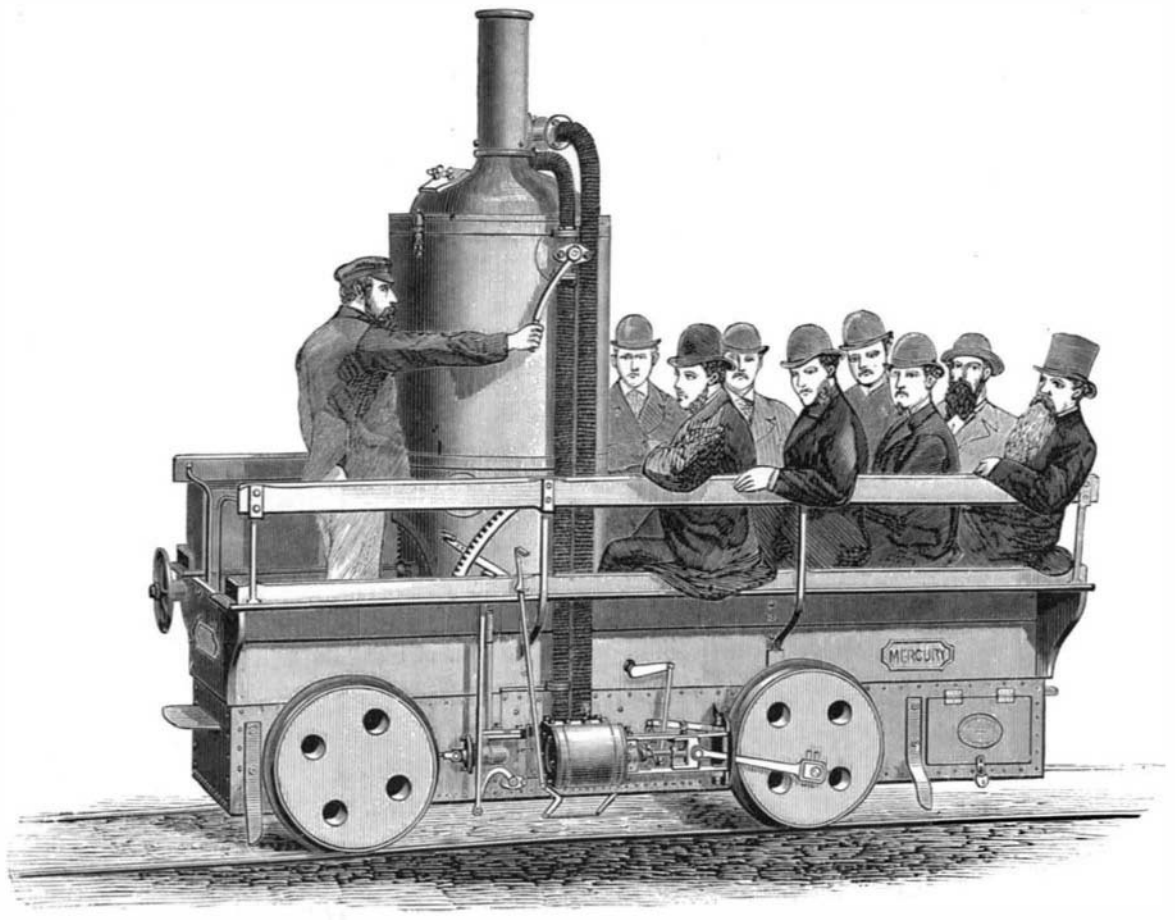
A NOVEL STEAM CAR.

We give herewith an engraving of a novel steam car, designed and built by Ransomes & Rapier for one of the English colonies. It is a combination of engine, tender, brake, and car, all in one, and is said to be the least expensive engine yet made for traveling twenty miles an hour. The boiler is of the vertical type, with ample grate and heating surface. The engine has two cylinders, and is provided with reversing gear and all the other fittings usual in the best locomotive work. The car is mounted on springs, and can be made either open, as shown in the engraving, or closed with roof and glass windows.

With four wheels coupled the engine will draw a load of fifty tons on a level at eight miles an hour.

The machine represented in the engraving will carry eight passengers at a speed of twenty miles an hour. It can also draw two supplementary cars, each containing sixteen passengers, at a speed of fifteen miles an hour.



NEW STEAM CAR.

Carbolized Air.

As an offshoot of Listerism, air which has been passed through liquid carbolic acid is recommended by Professor Sneller, of Utrecht, as a substitute for the carbolic spray. The method suggests itself as a good one. The object of Lister's method is to destroy the bacteria, but the acid employed for this purpose is itself a foreign matter, and, as such, must irritate to a greater or less degree. The carbolized air has the advantage of purity, and is, at the same time, free from objections to the spray. In practice, the air has been found to diminish the bleeding from a cut surface, while the spray encourages bleeding by the moisture it maintains.—*Mich. Med. News.*

A NEW BRICK MACHINE.

The accompanying illustration represents an improved brick machine made by Messrs. Boulet Brothers, of Paris. It consists of three distinct parts—the crusher, the pug mill, and the press, all combined to operate harmoniously together. An elevator carries the clay from the crusher to the pug mill, whence it passes to the cylinder press seen on the right, which forces the clay through a rectangular mouthpiece, and delivers it to the apron in the form of a rectangular prism, which is cut into the required sizes by wires carried by the frame shown at the extreme left of the engraving. Messrs. Boulet were awarded a gold medal for this machine at the Paris Exhibition.

RECENT AMERICAN PATENTS.

An improved shoe, having its upper made of but two pieces of material, opening at the back and adjusted by straps and buckles to fit any ankle, has been patented by Mr. Louis Rose, of Paris, Mo. The object is to furnish a cheap and substantial shoe that can be easily put on and off.

Mr. George E. Wickens, of Tampico, Ill., has patented an improved shirt protector, consisting of an elastic net made of rubber cords or tubes. It is to be worn under the shirt front next to the body, and is designed for keeping the shirt from contact with the body.

Mr. Ebenezer Fisher, of Kincardine, Ontario, Canada, has patented improvements in steel horse collars, which relate to the attachment of the cover or protecting piece to the flanged parts of the collar, also to an arrangement of filling pieces, and other novel features that cannot be described without an engraving.

A novel device for holding doors open has been patented by Mr. Lucian B. Leech, of Smithfield, Pa. It may be adapted to doors opening at different angles. It consists of a spring catch attached to an adjustable bar mounted on a semicircular plate to be attached to the base board.

An improved gate, which may be opened and closed by a person riding in a vehicle, has been patented by Mr. Henry Petry, of Red Oak, Ohio. It consists in a swinging gate having its top bar projecting beyond the rear of the post, and having its end forked to receive a bell crank lever, by which the latch of the gate is operated as the gate is pulled one way or the other by ropes attached to the projecting end of the top rail.

An improved oil can, patented by Mr. Edward T. Jones, of Toronto, Ont., Canada, is made so that it is hermetically sealed when not in use, so that the contents cannot escape either by evaporation or wasting when the can is accidentally tipped over.

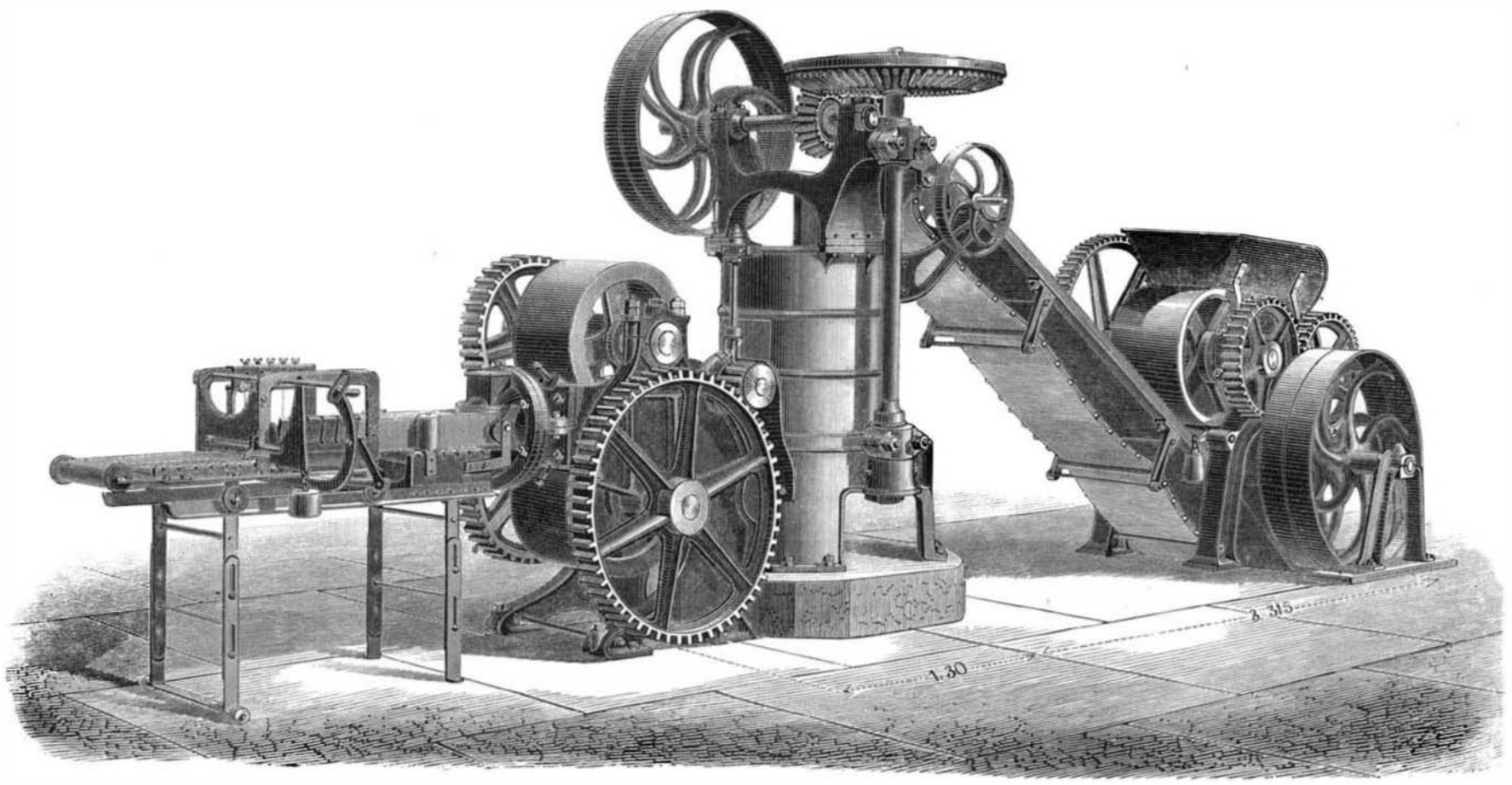
An improved vaginal syringe, in which the discharge tube is provided with a wire guard or shield, has been patented by Mr. John H. Guest, of Brooklyn, N. Y.

A novel gate, patented by Mr. Orlando F. Fuller, of Lamont, Mich., is arranged so that it is opened and closed by the wheels of a vehicle passing over cranks connected with the gate by a peculiar arrangement of chains and pulleys.

An improved apparatus for exhibiting photographic pictures has been patented by Mr. Philipp Costa, of New York city. It is contrived so that the margin of the picture is covered and is provided with a device for intercepting the view while the picture is being changed. It is also provided with stained glass screens through which colored light may be thrown on the picture.

An improvement in hatchway doors, patented by Mr. William H. Cooke, of Wilton, Conn., consists in providing the hatchways with double doors, arranged to slide to and from each other and to be operated by the elevator, which, in ascending and descending, comes in contact with levers fulcrumed in the cleading and connected with the doors, so that the door ahead of the elevator is opened and the one behind it closed simultaneously by the movement of the elevator.

A combined oven door and roaster has been patented by Mr. Henry C. Atkinson, of Franklin, Ky. It consists of a rotary cylinder attached to an oven door for roasting coffee, popping corn, etc.



BOULET BROTHERS' BRICK MACHINE.

An improved edging tool for leather working has been patented by Mr. Zenas B. Putnam, of Thomaston, Me. The invention consists in a flat cutting blade fitted to a handle, and carrying an adjustable gauge arm, to which is attached a gauge plate that acts as a guide for the knife.

A hog holder, consisting of a stout rod bent into a loop with crossed legs, and having hooked ends, to which is attached a cord or chain, has been patented by Messrs. John R. Wilson and Wilson M. Baker, of Urbana, O. The chain or cord is placed in the hog's mouth, and the loop is turned, forming a hitch over the hog's nose.

An improved hog ring and ringing implement has been patented by Mr. Anthony St. Mary, of Decatur, Ill. The ring in its central section is single, and it widens out toward each end into a two-pronged fork, the prongs being sharpened to facilitate penetration through the septum of the nose. The ringing implement is especially designed for applying this form of ring.

Mr. William Hart, of Berea, Ky., has devised an improved butter stamp, consisting of a cylinder containing a piston which is moved by a screw, so that the thickness of the print can be exactly gauged and its weight indicated.

An improved atmospheric churn dasher, constructed so as to confine a quantity of air while descending, and to allow it to escape and pass through the cream when it begins to ascend, has been patented by Mr. Moses Ray, of Valley Grove, West Va.

Mr. James L. Sprague, of Minneapolis, Minn., has patented an improved rotary churn, having a concave cover provided with air tubes, and having a dasher which propels the cream from the ends of the churn toward the center. The inventor claims that this dasher is much more effective than those of the usual design.

An improved milk cooler, patented by Messrs. Charles L. and Sanford P. Bacheller, of Canton, N. Y., consists in the combination of three concentric pans, provided with connecting pipes, a waste pipe, and water faucet. The pan is mounted on a pivot, so that it may be turned to bring every part of it within reach.

Mr. Gideon E. Wolcott, of De Kalb, Ill., has patented an improved riding plow, which is calculated to cut a uniform furrow in all kinds of plowing, and will turn the last furrow in finishing up the land as evenly as the other furrows. The plow is provided with two oblique furrow wheels, and is arranged so that it may be readily adjusted to its work.

An adjustable window protector and ventilator, patented by Mr. J. L. Walton, of Bolton, Miss. It may be applied to windows of various widths, and it consists of a lattice formed of bars pivoted together diagonally, and having at the ends pivoted jaws and standards to support it in the window.

Mr. George H. Hull, of Montello, Wis., has patented an improved insect destroyer, particularly intended for destroying potato bugs. It consists in a syringe and reservoir combined, so that a constant quantity of the liquid is supplied to the syringe.

Mr. William B. Brown, of Wheat Ridge, Ohio, has patented an improved ventilator for removing vapors and foul air from kitchens, school rooms, and other places. It may be adapted to the ceiling of any room.

An improved copy holder has been patented by Mr. Chas. S. Caldwell, of Wichita, Kan. It consists of a sheet metal tube provided with a longitudinal opening, through which the manuscript projects, the uncopied portion of the manuscript being contained by the tube.

An improved harness coupling, consisting of a T shaped head provided with an eccentrically grooved neck or shank, and adapted to receive and hold a suitable hook, has been patented by Messrs. Frank Reynolds & G. D. Hayes, of Shelby, Iowa.

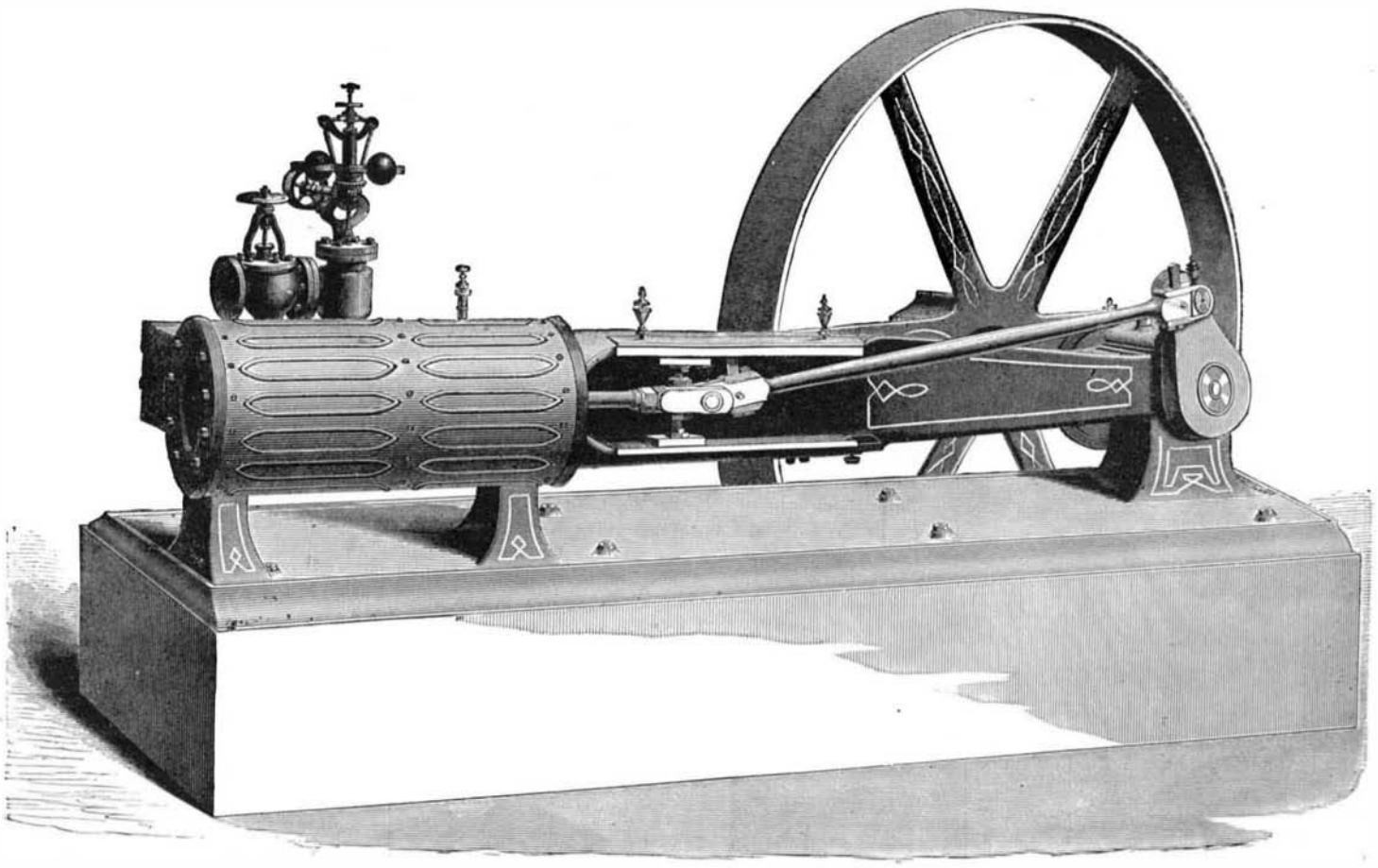
Mr. James Stephens, of Canisteo, N. Y., has patented an improved extension table, which may be lengthened or shortened, and its leaves properly adjusted to either condition without removing them.

Mr. Jean A. Hitter, Jr., of St. Martinsville, La., has patented an improvement in printing telegraphs, in which a type writing machine, previously patented by him, is combined with an arrangement of magnets and telegraphic apparatus.

THE EXETER STEAM ENGINE.

The accompanying cut represents the steam engine made by the Exeter Machine Works, and gives a good idea of its construction and general appearance. The larger engines are similar to the one shown, varying only in those particulars essential to their increased size. They are made from entirely new patterns; and the manufacturers claim that they combine all that is desirable in a steam engine.

The cylinder is accurately bored, and made of more than the ordinary thickness. It is capable of being rebored a number of times, still leaving ample strength for hard work. The cylinder is connected with the main bearing by a rigid casting, which, with the slides, forms one piece, giving the maximum strength and stiffness, and keeping the slides always "in line." The slide casting is separate from cylinder.



THE EXETER STEAM ENGINE.

The piston rods and valve rods are made of steel, and move through composition bushings. We are informed that only the best of materials are used; and where it will add to the efficiency or durability of the machine steel is always used.

As regularity of speed is of the utmost importance in the economy and durability of the steam engine, especial attention has been given to this point; and the makers have provided a governor which maintains a uniform speed under varying load. These engines are very simple, economical in the use of fuel, and may be run successfully by persons of limited experience. The smaller sizes, when used in connection with the "Exeter boiler," do not require the services of a regular engineer.

Further information may be obtained from Exeter Machine Works, 50 Federal Street, Boston, Mass. The manufactory is located at Exeter, N. H.

American Competition in England.

In a recent discussion in the House of Commons, relative to the appointment of a royal commission to inquire into the causes of the agricultural depression and how far they were created by or are remediable by legislation, all sides agree that a great cause of the depression was American competition. Mr. Chaplin said he regarded free trade as a question definitely settled, but he could not shut his eyes to the failure of many of the predictions of the advocates of free trade. He did not propose a remedy now, but only asked for an inquiry. He pointed out that the future fate of British agriculture was dependent upon the cost of production in America. If the cost of importation fell below the cost of production at home, the ruin of British agriculture was not far distant. Liberals, such as Messrs. Brassey, MacDuff, and Duff, blamed the British land system and the game laws for the depression. Their arguments were summed up in a speech by Mr. Bright, who warned the land-owners that the competition of the United States would go on increasing, and the only way of meeting it was to get rid of the stupid and mischievous legislation regulating the tenure and transfer of land. Messrs. MacIver and Bentinck advocated protective measures, but both the Marquis of Hartington and the Government—as represented by Viscount Sandon (Conservative), member for Liverpool, and Sir Stafford Northcote, Chancellor of the Exchequer—declared that no cause had been shown for such measures, which certainly would never be sanctioned. The Marquis of Hartington attributed the depression primarily to the bad season.

The anxiety felt in England with regard to American competition in agriculture is almost paralleled with regard to manufacture. An influential London journal points out that the natural inference to be drawn from recent commercial statistics is, that while American manufacturers are gradually monopolizing the whole of their own markets, and thus ousting from them English merchants, they are also attacking with not a little success the chief centers of demand in Europe. "This latter theory receives support from the fact that in 1878 the States sent abroad cotton, iron, and steel manufactures to the value of nearly £1,000,000 sterling in excess of the previous year's exports. Within a comparatively short period the markets of Europe knew no Yankee products under these heads, except a few miscellaneous 'notions,' which had no appreciable influence on current rates. True, the quantity exported still remains insignificant compared with what we ourselves send abroad. But every trade must have a beginning, and it must be confessed that Cousin Jonathan has made a very good start in foreign business. In cotton, especially, he seems determined to make the most of his advantages, for the quantity produced in the States last year was very nearly double what it amounted to in 1870, although trade was supposed to be utterly stagnant in every branch."

Phosphate of Potash as a Condiment.

Professor Galloway proposes the use of phosphate of potash as a condiment, especially where much salt meat is eaten. He points out that phosphate of potash is the principal material extracted from meat in the process of salting, and holds it evident that it ought to be replaced to give the salted meat its original nutritive value. He also suggests that phosphate of potash will be more useful than lime juice in preventing scurvy. It would be interesting to know whether the Arctic plants, which are such a specific for scurvy, are in this salt.

THE shad hatching camps on the Hudson below Albany were closed Thursday, June 19. It is said that more shad fry have been put into the Hudson this year than ever before. It is also reported that Mr. Seth Green has found a new fish parasite which preys upon brook trout and suckers, eating holes in their sides. It looks like a bat-shaped drop of jelly, and would naturally be mistaken for a little swelling under the skin.