

and in millions in China, which is called the hand process. The pulp is spread upon a fine wire sieve, and the sieve is turned over upon a piece of felt. A second piece of felt is laid upon this, and then another layer of pulp is deposited upon it. In this way a pile of alternate layers of felt and pulp is formed, and it is then placed under a press and the water is pressed out of it. It is then spread upon grass and dried in the sun. When first laid upon the felt, the layers of pulp are half as thick as my finger, but under the press they are brought down to the desired thickness of board. I had a lot of board made in this way. I wanted it stronger than common. In the cylinder process the fibers are drawn partly parallel, and consequently the board is not as strong as when the fibers cross in all directions. Better paper is made in this way than by machines, and at not greatly increased expense.

The same subject was chosen to be continued for the next week, and the Association adjourned.

A FLORAL PATENT.

There has been standing upon the sill of our office-window, for the past two or three months, one of Chamberlain's moss-baskets, containing a peach tree of the dwarf kind. We have witnessed the gradual ripening of the green fruit into large and luscious peaches; the buds for the next season have become well set, and a fine growth of new wood has been made. Seldom have we seen a more thrifty specimen of the dwarf peach; and this growing in an open wire basket lined with moss without earth.

To give a rough idea of the manner in which the growing of plants in these baskets is managed, we may state that within the wire frame, hidden by the moss, is a small partitioned basin, forming a receptacle for the roots of the plant and also for a preparation, either a liquid or a powder, from which the roots derive nutriment.

We are assured that the growing of small fruit trees, vines, plants and flowers in this manner, is not a subject of recent experiment, but has been practically carried on by the inventor for the past seven or eight years. The ladies will find in it a very desirable improvement over the heavy flower-pots loaded with earth, to which they have heretofore been limited. These baskets are comparatively light in weight; each may contain several different varieties of flowers; they may be hung in the most favorable places in the green-house or dwelling for growth, and when in bloom can be readily removed to grace the dining-table or the drawing-room. They are in fact, living bouquets. At a recent exhibition of the Brooklyn Horticultural Society the collection of these baskets formed quite a feature of the occasion. There were grape vines, pear trees, camellias, roses, lilies, aralias, fuschias and all sorts of pretty flowers growing together in tropical luxuriance, but hung up on hooks and apparently living in the air.

By reference to page 343, Vol. V, (new series) SCIENTIFIC AMERICAN, our readers will see an engraving of the invention. We call renewed attention to it at this time because the inventor, Mr. A. C. Chamberlain has lately come among us to settle. He is an experienced gardener; his residence and green-house are at the corner of Ryerson street and De Kalb avenue, Brooklyn, N. Y.

WHAT ARE PAPER CONSUMERS TO DO?

Owing to the scarcity of rags for paper stock, and the high rate of foreign exchange, together with the scarcity of water to operate paper mills, the price of paper has advanced 25 per cent within ten days. What paper consumers are to do is now a serious matter for the consideration of publishers. If there is any substitute for rags, which is destined to take the place of them in the making of paper stock, now is the time to bring the article forth.

EXPLOSION OF A LOCOMOTIVE.—The boiler of a locomotive exploded in Jersey City on the 25th inst. It was a disastrous accident as the engineer, fireman and three other persons were killed. The coroner's jury has brought in a verdict that the deaths of the deceased persons were caused by the explosion through the fault of the engineer. The gage, before the explosion, showed a pressure of steam much higher than the boiler was capable of bearing safely.



Pensacola and the Navy Yard.

MESSRS. EDITORS:—We came here yesterday for coal, having been relieved temporarily off Mobile by the *Brooklyn*. As the Admiral is here, the question will probably be decided whether we are to remain in the Gulf during the remainder of the winter or not. The *Susquehanna's* engines have broken down, which decreases our chances of getting home for repairs quite considerably. General Butler came over last night from New Orleans to visit the Admiral, and was received with a salute.

I have this afternoon visited the Pensacola Navy Yard, or rather its ruins. The rebels did their destructive work well before they allowed this place to return to our hands. But a single one of the splendid buildings in the navy yard enclosure was left standing. That one, for a wonder, was the chapel. The yard has been a much finer one than that at Brooklyn, occupying a larger extent of ground. Its long, shady avenues, nicely paved and flanked by the usual extensive buildings, must have been very pretty and inviting. The avenues and walks have been cleared of rubbish by order of Admiral Farragut, and even the holes plowed in them by Fort Pickens' shells have been temporarily filled. The fine shade trees still remain, so that the yard now is a place for a pleasant stroll. The large gun park is uninjured, and, though the guns are removed, the accumulated piles of 32-pounder shot still remain as in times of peace, except where one shows the effect of the bombardment. As we pass along the avenues, the ruined blackened walls of building after building greet our gaze, and whichever way we go the sight is the same. Even the immense cisterns built above ground at such great expense—and beautiful specimens of architecture they are—are rendered worthless by the caving-in of their roofs, thus filling them up with rubbish. The quick-growing foliage of this climate has thus soon given the ruins an ancient appearance, by partially covering them and making the scene look more like nature. It makes one feel very unpleasant to look at so much desolation. The portions of the walls still standing show the marks of the severe bombardments that Pickens thrice inflicted, but no traces of machinery are left. Even all movable parts of the hydraulic pump, used to haul up ships, were destroyed or carried off. The "shears" or frames used in hoisting heavy weights still remain on the wharf, but they are bored by the treacherous foe, and the holes nicely plugged up, so that if we unsuspecting Yankees undertake to use them, they will send their whole weight down upon our heads. The officers' dwellings were very fine, and their destruction was disgraceful. Many marks of taste are yet visible about the ruined buildings, formerly the homes of the commissioned officers of the yard. The front door-yards were neatly laid off in flower plots. They also evidently had beautiful gardens in the rear, now in a very neglected condition. In strange contrast with former times were the pieces of shell lying on the grass, with here and there in the gardens a great hole plowed out by their explosion. I easily picked a bouquet along the northern avenue, on which the dwellings faced. I send a few flowers plucked from the neglected yards and put inside my diary hastily, without noticing or hardly knowing what they were. Perhaps, though faded, you can imagine them showing their heads in all their true beauty above the grass and weeds, in the neglected yards of buildings in ruins—the granite and brown-stone fronts in many cases still standing to show what they once have been.

I visited Woolsey, a little village just north of the yard, which was partially burned a year ago by the shells of Fort Pickens, when the *Richmond* was engaging Fort McRae. The houses are mostly small wooden structures, and were formerly occupied by the employees of the yard. The place was deserted till Admiral Farragut commenced a few weeks ago to clear up the yard. A few families have now returned from their retreats in the woods near the city of Pensacola, and others are coming. We got into conversation with an old washwoman that had returned in

this way. She told us many things about the brutality of the rebel soldiers—how they spoiled the houses of the poor inhabitants, carrying off part of the doors and windows to make winter quarters, and smashing the rest for no reason whatever. When the navy yard was in flames, Fort Pickens opened a fierce bombardment to prevent the rebels from fully destroying everything. Woolsey was within range and the inhabitants fled, some taking nothing with them, so great was their fright. The rebel soldiers plundered the houses at such a time as this! The old woman says she told her daughter and son-in-law to go outside the village, and she went and took their few things out to them, saying that it was no matter if she (old as she was) was killed. One shell struck within 20 feet of her, she says, but did not explode. She had had so many troubles that she did not care much what did happen to her. She was evidently "grit" in the highest extent. * * *

Pensacola Navy Yard, Oct. 9, 1862.

Steam Cylinders.

MESSRS. EDITORS:—Will you be kind enough to state in your column of "Notes and Queries" whether any of the ocean steamers have cylinders as large as 100 inches in diameter and 12 feet stroke, or are there many more than two or three larger than that in the world? One of the above dimensions is to be put up here for the use of the Water Works, and the statement has been made that there are only two or three larger ones erected. I think some (how many I do not know) of the ocean steamers have as large, and would be obliged to you if you would correct me if wrong. A. S.

Cincinnati, Oct. 22, 1862.

[Our correspondent is correct in his surmises. There are many engines in the world whose cylinders have a larger diameter than the one he speaks of. In this vicinity have been made four whose cylinders were 105 inches diameter and 12 feet stroke. The *Persia* has cylinders of 102 inches diameter, as has also the *Adriatic*; the last vessel was built by George Steers. In London there is a pumping engine of 112 inches diameter of cylinder, and the last and largest known to us, is the one by which the Haarlem Lake in Holland was drained; this engine has two steam cylinders, one within the other, whose diameters are respectively 144 inches and 84 inches. This monstrous machine drives eleven pumps of 63 inches diameter each. The engine is, we believe, now in active operation.

Clearness of the Waters of Lake Superior.

MESSRS. EDITORS:—In August last, during a calm on Lake Superior, I took the opportunity to test the transparency and purity of its water, and thinking it might be of some general interest, give the result. A piece of white canvas one foot square was attached to the lead and lowered down into the water. After reaching a depth of 82 feet below the surface the canvas disappeared; it was clearly to be seen at the depth of seventy-five feet, but below that it faded from sight rapidly.

At the time the experiment was tried, the sun was only about 30° above the south-western horizon; had it been directly over-head it would have no doubt considerably increased the visible depth.

F. A. MORLEY.

Sodus Point, N. Y., Oct. 15, 1862.

A Rat Exterminator.

MESSRS. EDITORS:—Having seen in the SCIENTIFIC AMERICAN of this week an inquiry as to an exterminator of rats, I send you the following electuary; it having been given to me by those who have used it and found it excellent:—Take equal parts of powdered nux vomica and oatmeal and mix them thoroughly together and put the mixture a short distance from the holes. J. L. L.

Boston, Oct. 25, 1862.

[It is very easy to poison rats, but this is very objectionable in dwelling-houses, as the stench from their decaying bodies is worse than the living pest. What is wanted is some remedy that will effectually clear them from the premises.

Fresh Water Manufacture.

MESSRS. EDITORS:—In your column of "Miscellaneous Summary" (page 259, No. 17), under the head of "Manufacturing Fresh Water at Fort