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SCIENTIFIC AMERICAN SUPPLEMENT

No. 522,

For the Week Ending January 2, 1886.

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IMPROVE THE CHANNELWAYS.

The gradual shoaling, or filling up, of the harbor of New York has long been a cause of anxiety to those interested in the commerce of the port. The big steamers as they pass in and out constantly find bottom where before they ran clear, and the pilots complain that, unless something is soon done, it will become a difficult feat to guide the heaviest draught ships safely in, save under phenomenal conditions of tide. A hydrographic survey of the port and its approaches has been for some time in progress, and this serves only to corroborate the assertion made by the pilots that the channels are filling up.

Last week the agents of the transatlantic steamship lines appealed to the Chamber of Commerce to have something done in the way of deepening the channels. They say:

"Builders have now to construct vessels with limited draught to suit this particular port; but even under these restrictions they at times run great danger in having to drag themselves through the sand and mud, and over exceedingly shoal places, when the least error in handling or failure in machinery might cause most disastrous results, not only to property, but to human lives. New York requires a channel having a constant depth of not less than thirty feet and a width sufficient to allow ample working room for vessels to steam full speed through it at all states of the weather and tides, day or night; otherwise, she cannot retain the prominence and business she has a right to expect."

In response to this, the Chamber passed a resolution in which it is decided to ask Congress to appropriate money for the deepening and widening of a channel which shall have a depth of thirty feet at mean low water.

It seems proper that a body containing so many public-spirited citizens and merchants identified with the commerce of the port should take steps looking to its commercial welfare, and yet it cannot be denied that such attempts often fall short of their mark, and miscarry, by reason of ill-advised recommendations on the part of those who draw up the resolutions. Only recently the work of improving Gedney's channel was stopped after $80,000 had been thrown away, because Nature did not act in the way the directions going with the appropriations insisted it should. Congress was asked to appropriate $200,000 for loosening the sand at the bottom of Gedney's channel, it being declared that when thus loosened Nature would do the rest by carrying it safely out to sea on the ebb tide. Congress did what was expected of it, but Nature didn't, and there remains at this moment, so far as the lead line will determine, the same quantity of material at the bottom of Gedney's channel as there was before the work was begun, and also an unexpended balance of $120,000 in the hands of the government agents.

Apparently regardless of the result of this abortive attempt to interpret Nature's processes, the Chamber of Commerce last week pledged itself through its resolutions to "suggest" to Congress:

"That such contract have all payments conditioned upon actual accomplishment of work to the value of such payments, and the profits to be largely, if not wholly, dependent on the demonstration of the ability of such channel to maintain itself in depth and width chiefly by the operations of Nature after complete construction."

In other words, the prospective contractor must practically assent to the proposition that Nature will keep the channel clear by the process known as "scour" when he shall have once dredged it to the required depth.

It seems to be forgotten that the principal cause of the filling up of these channelways is the unlawful dumping of refuse into the waters of the harbor.

The intelligent physician always seeks to remove the cause which produced his patient's malady before seeking to give relief, and the physical hydrographer, if capable, would naturally seek to remove the causes of bar or shoal formation before beginning their forcible removal.

It was in this way Mr. Eads succeeded in removing the bars at the mouths of the Mississippi below New Orleans. The law says that the garbage scows must be dumped three leagues outside of Sandy Hook on the first of the ebb tide, and also fixes a severe penalty for throwing ashes and clinker into the bay or rivers from steam vessels. Yet it is well known by those who have looked into the matter that the scows are unloaded as soon as they are sufficiently far from land to escape detection. As a matter of fact, under conditions of wind and sea which often prevail, the loaded scows could not live at the distance to sea they are expected to go. As to the steamers, steamboats, and tugs, most of them dump wherever it is most convenient.

The writer, who assisted in a physical survey made of New York harbor by the United States Coast Survey some years since, can testify that marked material dumped in the bay and the North and East rivers found its way into the Swash, the East, Gedney's, and the main ship channel, and that dredgings in these channels disclosed the fact that they were partially filled with ashes, clinker, and other foreign material. Stop this unlawful dumping first, and dredge out the channels afterward.

THE BELL TELEPHONE CASE.

Associated Press reports state that the Interior Department has decided to recommend that the Attorney-General authorize suit to be brought in the name of the United States to test the validity of Bell's original patent. Although the full text of the decision will not appear for some days, it is said that it will set forth, among other things, that "the specification of Bell's patent contains nothing about the capability of Bell's instrument to transmit articulate speech, but only claims for it the power to transmit 'vocal sounds;' that an instrument may transmit 'vocal sounds' without being a speaking telephone; and that, in point of fact, Bell did not invent a speaking telephone until after the issue of his patent, as appears from the record." For these reasons, it will be urged, the validity of the Bell patent is fairly questionable.

An Enormous Granite Slab.

To separate from the main ledge a slab of granite 354 feet long, 3 to 4 feet thick, and 11 feet wide, is no ordinary feat to accomplish.

But this has been done at the Flynt Granite quarry, in Monson, Mass., and by the means usual in all quarries for separating slabs or blocks from the main ledge. A row of wedges were set, several hundred in number, and the workmen beginning at one end gently and carefully tapped the wedges, moving by degrees down the line, until the other end of them was reached, when the same operation was repeated.

In this manner, by careful and patient application, aided by favorable conditions of the weather, the slab of the above phenomenal size was successfully separated from the main rock.

The value of this immense slab, if it could have been transferred safely to one of our large cities, at not too great cost, would have been several thousand dollars. And it seemed almost sacrilegious that it was necessary to cut it up into smaller blocks for transportation and finally used for ordinary building purposes.

The possibility of getting out a slab of such size without breaking it indicates that the grain of the Monson granite not only runs evenly, but that it possesses great tenacity.

Separation of Solder from Old Zinc.

According to the *Revue Industrielle*, a new method has been introduced by M. Piallat for dealing with the clippings, shavings, turnings, and other forms of waste zinc resulting from various manufactures. The values of these forms of old zinc are very much lower than that of new zinc, because there is always an amount of solder present which spoils the zinc for rolling and for most other direct uses, and the difference in value is so considerable that M. Piallat considered the subject of treating this zinc debris to be well worth study and experiment. It is stated that he has fully succeeded in making a very profitable success of his labors.

He places the zinc cuttings, etc., in a sort of basket, in which they can be subjected to heat and to centrifugal force at the same time. The actual basket-like container is surrounded by an outer envelope. Superheated steam or heated air can be used, and the temperature regulated as desired. Under the influence of the heat and the centrifugal action, the solder is melted, detached from the zinc, and driven to the exterior of the container, where it collects and is drawn off. The solder thus collected is remelted and cast into bars. It is stated that the value of it alone will pay all the costs of the operation. The zinc remaining after this operation is further purified by fusion. It is then very suitable for use in making small castings, and can be sold at lower price than the brands of zinc which are now specially in use for this purpose.

This branch of trade is stated to be of considerable importance, great quantities of zinc being used in Paris alone for casting figures and in clock making. M. Piallat estimates that one of his machines, working ten hours per day, can extract the solder from three tons of old zinc. This amount of purified zinc will be too great to be all disposed of for casting purposes, and so the remainder is to be rendered pure and soft enough for rolling into sheets. It is stated that M. Piallat has also found a method of purification far superior to any in ordinary use, and producing a better quality of metal than any on the market, but this method is kept secret at present.

Wash-bottle for Chemical Laboratories.

Mr. J. F. Sleeper, of Portland, Maine, writes us that the improved washing apparatus for laboratory use, which was described by Mr. H. B. Battle in our issue of November 28, was first invented by himself a number of years ago, and introduced by him in a modified form into the Government Assay Office in New York. He says it was in practical operation for a couple of years, and gave complete satisfaction.