

Carrying the Sea to Inland Cities.

Among the numerous engineering projects of the age, that of carrying the sea to inland cities is, perhaps, one of the most important. The first project of this kind was that by which Glasgow has been made the chief port of entry for Scotland. Situated about midway between the opposite coasts of that country, and on the banks of a river where formerly in some places only from two to three feet of water could be found, it was determined to so deepen said river as to enable deep-water ships to come up to the city. Up to 1851 nearly \$10,000,000 had been spent in bringing about that result and in preparing the three miles of wharves and docks to accommodate the shipping. The enterprise has proven a most successful one and the outlay most profitable. The net income from these improvements is now about \$800,000 annually, to say nothing of the immense increase of population and wealth which they have brought to the city.

The Sea Coming up to Manchester.

And now, profiting by the example of Glasgow, the inhabitants of Manchester have also determined to bring the sea directly up to the looms of the great Cottonopolis of England. The promoters of the Manchester scheme propose to strengthen, deepen and widen the little river Irwell, by which that city stands, down to its junction with the Mersey, and to apply the same process to the latter river down to Liverpool, so that the grain-laden ships of California and the cotton ships of the Southern States can land their cargoes just where they are wanted for consumption and use.

This improvement, which will cost from \$17,000,000 to \$18,000,000, will provide a tidal canal for sea-going ships from Manchester to the sea, 33 miles in length, 200 feet in width and 22 to 25 feet in depth. The ships will be taken through the canal by tugs, as they are now moved through the Suez canal.

An American Engineer's Triumph.

Notwithstanding the many doubts thrown out against the probability of the success of Captain Eads' present efforts to open a deep ship channel through the mouth of the Mississippi by means of the jetty system, he has already accomplished far more than he had ever supposed possible at the present early stage of that enterprise. Recent dispatches from New Orleans announce the passage out to sea of well freighted cotton ships through the jetties at the South pass, which are as yet but partially constructed.

When the work of this jetty system was commenced a year or so ago, the bar on that pass had but seven feet of water upon it; now it has a depth of nearly twenty feet, a depth almost incredible to all but the engineers in charge. It seems from all advices, and from those business men from England and St. Louis, and other points interested in the success of this enterprise of Captain Eads, who have recently visited the jetties, that this masterly triumph of science over the continual obstructions created at the mouth of the Father of Waters is a fixed fact.

This recalls what Captain Eads spoke to the citizens of St. Louis at a recent banquet given by them in his honor when he was on the point of starting on this enterprise of deepening the mouth of the Mississippi:

"If the profession of an engineer were not based upon exact science I might tremble for the result, in view of the immensity of the interests which are dependent on my success. But every atom that moves onward in the river from the moment it leaves its home amid the crystal springs or mountain snows, throughout the 1,500 leagues of its devious pathway, until it is lost in the vast waters of the gulf, is controlled by laws as fixed and certain as those which direct the march of the heavenly spheres. Every phenomenon and apparent eccentricity of the river, its scouring and depositing action, its curving banks, the formation of the bars at its mouth, the effect of the waves and tides of the sea upon its currents and deposits, are controlled by laws as immutable as the Creator, and the engineer needs only to be assured that he does not ignore the existence of any of these laws, to feel positively certain of the result he aims at. I therefore undertake the work with a faith based on the ever constant ordinances of God Himself."

The highest mission of the Patrons of Husbandry is to introduce a reformation in the educational system of the country. Our schools and colleges, as now conducted, seem designed only to prepare children for the learned professions—to put them in the way to become lawyers, doctors, clergymen, etc. The Grange idea of education, while it would secure all of the "higher education" that is compatible with individual circumstances, would seek to prepare the great mass of our young men for practical life—to become intelligent workers in the shop and manufactory, or improved tillers of the soil; and our young ladies for their future duties as housewives and matrons. There is a great work to be done in this direction, or the American people will fall lamentably behind in the great national race for superiority in which the leading nations of the earth are now engaged.

A CAR LOAD.—It is now a matter of interest to many people to know what constitutes a car load. Nominally, a broad gauge car load is 20,000 pounds, dead weight, as follows: 70 barrels lime, 70 barrels salt, 90 barrels flour, 60 barrels whiskey, 200 sacks flour, 340 bushels wheat, 300 bushels corn, 680 bushels oats, 400 bushels barley, 360 bushels flaxseed, 360 bushels apples, 430 bushels Irish potatoes, 360 bushels sweet potatoes, 1,000 bushels bran, 6 cords soft wood, 4 cords hard wood, 18 to 20 head cattle, 50 to 60 hogs, 80 to 100 sheep, 9,000 feet solid boards, 17,000 feet siding, 15,000 feet flooring, 40,000 shingles, 20,000 do. hard timber, 10,000 do. green timber, 40,000 feet joist, scantling and all other large timbers.

EUCALYPTUS FOR HEALTH.—Abundant testimony is at hand of the health giving influence of the eucalyptus. The latest is the following, from the *Journal of Horticulture*: At the Mokis iron mines, 20 miles inland from Bona, in Algeria, *Eucalyptus globulus* was first planted eight years ago, and with such beneficial effects that fever is reduced very considerably. The foreman who showed me over the works said they had not above one case of fever now where formerly they had four. The consequence is that the company are planting it by the million. Another benefit is said to belong to it, viz: that mosquitoes will not come within its influence.

SOFTENING FILES.—Cover them with oil and hold them over the fire until the oil blazes; as soon as the flame runs all over the file, plunge it into the water. Or, put them into a moderate hot oven, for half an hour, if large files; but if small files, the first plan is the best.

The bill of Lane of Oregon to provide for paying the expenses of the Modoc war will give California \$44,000 and Oregon \$70,000

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