Scientific American.

MUNN & COMPANY, Editors and Proprietors

PUBLISHED WEEKLY

At No. 37 Park-row (Park Building), New York.

O. D. MUNN, S. H. WALES, A. E. BEACH.

TERMS—Two Dollars per annum.—One Dollar in advance, and the TERMS—I WO DOINGS per annual remainder in six months.
Single copies of the paper are on sale at the office of publication, and at all the periodical stores in the United States and Canada.
Sampson Low, Son & Co., the American Booksellers, No. 47 Ludgate Hill, London, England, are the British Agents to receive subscriptions for the Scientific American.

See Prospectus on last page. No Traveling Agents employed.

Vol. III., No. 2.....[New Series.]...Fifteenth Year.

NEW YORK, SATURDAY, JULY 7, 1860.

A CONTINENTAL RAILROAD - THE JAPAN AND CHINA TRADE.:



IF the plain question were asked-"For what purpose have we provided national vessels to carry a few semibarbarous Japanese chiefs across the ocean, and made feasts and processions for them at such a vast expense?" it would, perhaps, not be difficult for most persons to return a definite answer. The people, however, have formed some kind of a notion respecting the nature of these demonstrations,

and if this notion is not correct, these pageants and expenditures must be set down as contemptible absurdities. The feeling in the public mind is that, as a piece of policy, our government officials have done all these things to astonish the Orientals, and overpower them with a sense of our greatness and generosity, in order to break down their long-established exclusiveness, so that a profitable trade may be established between the ports of Japan and those of our Pacific States. These objects deserve praise, whether the means sought to attain them will ultimately be successful or not. A more lofty scheme than this—vet embracing this one in its foldshad been previously presented to our people. This was the grand Pacific Railroad of Whitney, which was the topic of general discussion about 15 years ago. It involved the idea of making our continent the "half-way house" between the East Indies, China, Japan and England. It was intended to construct this railroad from the Atlantic Ocean to the Pacific; and all Asiatio products designed for European markets, as well as articles of European merchandise for Asiatic consumption, were to pass through the whole breadth of our country; thus making the United States the grand caravanserai of nations. The project was really sublime and plausible. and some day it may be executed; but what we wish particularly to direct public attention to, at present, is the utter want of sustem in our present railroad system for the consummation of such a laudibly ambitious project.

Supposing that a railroad were completed in a few years hence from California to St. Louis, as many expect, it would be unsuitable for an international carrying trade, owing to the frequent loading and unloading of freight to accommodate the cars of the different lines. In New York, the general rail gage is 4 feet 81 inches, with the exception of the Erie Railroad; it is the same in New Jersey, Pennsylvania, Maryland, Kentucky, Illinois and Indiana; but the Ohio gage is 4 feet 10 inches, and the Pacific line west of the Mississippi is the broad gage. With particular cars having broad wheels, freight is sometimes run direct from New York to St. Louis; but what we want is a continental trunk line, of a uniform gage, from the Atlantic to the Pacific. We are no admirers of the 4-foot 81-inch gage; but as it is the most general, we think Ohio should endeavor to contract her rails, and we advise the people of Missouri to come to the same rational conclusion. As a railroad will be carried to the Pacific some day not very far off, it is certainly desirable that it may form one entire system from ocean to ocean, in order that we may be able to take advantage of our growing trade between China and Japan. It is wise to concert measures for further contingencies, so as to be prepared for all exigencies favorable or unfavorable. At the North, our Canadian neighbors have already laid the foundation of a great Atlantic and Pacific Railroad. The Grand Trunk Rail-

the Pacific, and make Canada, instead of the United States, the public highway of the nations—the "half- The peculiarity of the lager bier process is that the ferwav house" between China and Europe. It thus aprailroad, which was first proposed by an American, is in a fair way of being appropriated successfully by the Canadians; and unless our people awaken to a true sense of their interests, the benefits of the fetes which we have given to "John Japan" may yet travel in a direction straight for Uncle John Bull.

THE LOST ARTS.

A great deal of nonsense has been uttered by sensation lecturers and magazine writers about wonderful arts which perished with the ancients. To trust in the lamentations of these wiseacres over the "lost arts," one would think we had fallen upon very degenerate times indeed. But none of the doleful stories are true. Cleopatra, no doubt, was a very fine woman; but she never dissolved pearls in wine. Archimedes was a great man in his day, but he never set fire to the Roman ships with burning glasses as the fable relates.

The ancients had no useful arts which we do not understand better and practice more skillfully than they did. The humblest American mechanic could teach the polished Greek and the cunning Egyptian sciences and arts of which they never dreamed. The ancients, indeed. did many wonderful things which have not been since repeated; but they were only such things as are not worth doing over again. If we had occasion to build such a foolish thing as a pyramid, we would improve on our model in every respect; and instead of keeping a hundred thousand half-starved slaves at the work for twenty years, we would turn it out finished in a few months. George Law and a hundred others would be willing to take the contract at a day's notice.

If any people, now-a-days, lived in a condition like the ancients, they would be objects for sincere pity, and it would be our duty speedily to send missionaries among them. What a lamentable sight would be a nation of great mental vigor, half-clothed and poorly fed, tilling the earth with wooden plows; without soap, pins, friction matches or india-rubber! How queenly would one of our factory girls appear to them! How magical the art of a Yankee clockmaker! Beggars, now-a-days, with regard to the substantial comforts of life, fare better than ancient kings.

Our modern civilization is surely just what is suited for the welfare of humanity. The steam engine, politics, electricity, morality, and every good thing move on together harmoniously. We look back into the Past, to note, as warnings, the paths of error which our predecessors trod, and we push on cheerfully and confidently, feeling that the Present and the Future are of the utmost importance to us.

WHAT IS LAGER BIER?

There are thousands of people in New York who seem to have quite forgotten the use of plain water as a beverage. In certain quarters of the city "lager" is the main staple of life, being for sale in almost every house, and the drink, and even the food, of all the men, women and children. There is no single article of manufacture and sale which employs so many people and requires so much space. There are at least five thousand places in the city where you may buy a glass of lager, and many of these places accommodate their customers by thousands. At the Volk's Garten, for example, on a warm Sunday night, enough lager is carried away in capacious stomachs to float a navy. The flow of lager is incessant—the voices which call for lager are never still-lager is king!

Lager is one of our most most modern institutions. Ten years ago it was only a vulgar German word of unknown import; then it was looked upon as an insipid Dutch beer; but finally, a majority, perhaps, will vote that it is "the people's nectar." Lager has defenders, now, among all classes; they say it is not intoxicating, and that it contains a great deal of nourishment. An examination of the method of manufacture of lager and its composition will clearly show what foundation there is for the virtues claimed.

Beer and ale are the fermented extracts of malt, hops being added to give an agreeable flavor. Malt is steeped and boiled in water, and the infusion or solution is then at the Patent Office on the 3d of September.

road has a gage of 5 feet 6 inches, and 1s now 1,100 | fermented by the addition of yeast. The specific differmiles in length. The intention is to carry it forward to ences of the various beers and ales is due to the methods of making the malt and conducting the fermentation. mentation is conducted at a very low temperature, and pears that the great design of a national continental continued for a very long time. The chemical change in the fermentation consists in the decomposition of the malt extract into carbonic acid gas and alcohol; the malt extract disappears and alcohol takes its place. The longer the fermentation continues the less will the beer be nourishing as food, and the more intoxicating it will be as drink. By the conversion of grain into beer its nutritive substance is mostly lost, being changed into alcohol and gas. Grain extract-even in the best shape, as gruel or porridge—is not the most fit food for a healthy man; and to claim that beer is nourishing from its homeopathic dose of malt extract is ridiculous. Lager bier, on account of the long continued fermentation, contains less nutritive matter and more alcohol than other beer or ale. A comparison of about twenty chemical analyses of lager and other beer show that, in lager, the alcohol is always in excess over the malt extract, while in other beer the excess is in favor of the malt extract. In lager the malt extract does not reach five per cent, so that one would be obliged to drink two or three gallons in order to get from this villainous food such an amount as would be required if taken in a civilized way. Ale often contains a larger per-centage of alcohol than lager, but the malt extract is still in excess unless the al be verv old.

> Certain witnesses have testified and courts ave decided that lager is not intoxicating; but in view of the fact that a pint of lager contains as much alcohol as an ordinary glass of brandy, it might be suspected that those witnesses and courts had been indulging in lager just at the time they needed their soher judgment. Finally, it is claimed that lager is a pleasant bitter tonic, stomachic, anti-dyspeptic, &c. But healthy men need no medicine; and a friend of ours, who prides himself on being an American, suggests that lager is too-tonic.

AN EXPENSIVE LUXURY.

The municipal authorities of this city appropriated \$30,000 to entertain the Japanese during their stay in New York. The ambassadors and their attendants have princely quarters provided them at the Metropolitan Hotel, and are enjoying "all the luxuries of the season" at the expense of the tax-payers. It is estimated that the hotel bill alone will reach the snug sum of \$65,000, and, in all probability, before we get fairly rid of these Orientals, the bills will foot up against the city to nearly \$100,000. The committee have "gone it with a perfect looseness," and will make their helpless constituency smart under their extravagance.

It is quite probable that the Japanese Ball (which came off on Monday evening, the 25th ult.) will very nearly engulph \$25,000 out of the original appropriation. It was undoubtedly the greatest affair of the kind that ever occurred on this continent; the guests actually numbering from 10,000 to 12,000-male and female; and if the proprieters of the hotel do not make more money out of the affair than the merchants of New York will out of the commerce which will occur between the two countries for 10 years to come, then we shall be most happily disappointed.

The Japanese are a shrewd people, and will no doubt return home only to laugh heartily at our foolishness. Verily, we are a set of asses. Kossuth found out this fact sometime ago, and the Japanese have just discovered the same "auricular extension."

All that is now necessary to "cap the climax" of this ridiculous tomfoolery is to get the Common Council (the commonest in the known world) to seduce his Royal Highness, the Prince of Wales, to make us a visit, and Tal Shaffner to lay a cable from Siberia to Greenland.

40+ APPLICATION FOR THE EXTENSION OF A PATENT.

Double-seaming Machine for working Sheet Metal .-George B. Moore, of Mt. Pleasant, Pa., has applied for the extension of a patent granted to him on the 19th of September, 1846, for an improvement in the abovenamed class of inventions. The testimony will close on the 20th of August next; and the petition will be heard