

THE CENTENNIAL EXHIBITION.

To the People of the State of New York:

It is right that the people of the United States should know that the day and year which closed the century of American Independence—July 4, 1876—will be commemorated with ceremonies expressive of the gratitude and pride of a great nation; and, in accordance with the act of Congress of June 1, 1872, which created the Board of Finance, the following report is made over the signature of the President of the board:

The original law of Congress, enacted March 3, 1871, provided for "the celebration of the Centennial of American Independence by an international exhibition of the arts, manufactures, and natural resources of this and other countries, under the auspices of the government of the United States."

And the act of June 1, 1872, fixed the capital to complete this great commemoration at \$10,000,000, which was by the Commissioners apportioned among the several States and Territories on the basis of population.

Of this sum the State of Pennsylvania alone, aided by a subscription of \$100,000 from the State of New Jersey, has raised, in the form of subscriptions to the stock and by appropriations from its Legislature and the Councils of Philadelphia, about \$4,000,000, or nearly one half the amount necessary to insure success. This provision having been made, designs for suitable buildings were approved, and other preliminary and incidental arrangements have so far advanced as to justify an immediate commencement of the work of construction.

The Commissioners have appealed to the Congress of the United States, on the basis of these subscriptions, appropriations, and preparations, to maintain the spirit of the two laws above referred to, and the correspondence of the State department with foreign powers has induced the governments of the Netherlands, Belgium, Switzerland, Germany, Sweden, Liberia, Ecuador, the Argentine Confederation, Chili, Mexico, Hayti, and the Sandwich Islands, to express their intention to participate, and they have every reason to believe that this appeal to Congress will be generously responded to.

Subscriptions to the stock have also been made by individuals in the States and Territories of Missouri, Illinois, Nebraska, Montana, Indiana, Nevada, Oregon, California, Louisiana, Florida, Maryland, Ohio, Wisconsin, Michigan, Arizona, New Jersey, Delaware, Rhode Island, Arkansas, Alabama, New York, Virginia, Iowa, and Kansas.

Such in brief is the condition of the organization for the international commemoration of the close of the century of American Independence.

The city of Philadelphia was selected as the most fitting locality at which to celebrate the birth of American Independence, for the reasons:

1. That from Philadelphia the Magna Charta of human liberty, the immortal Declaration was uttered. The buildings in which the convention sat remains substantially as they were on that day; and

2. Of all the points of revolutionary interest, Philadelphia is the most central and accessible to the whole country. It is the Republic's celebration of its birthday at the very place of its birth.

The Finance Board earnestly urge their fellow countrymen to keep in mind the great fact that the event to be commemorated is the grandest and most momentous in history, that the commemoration is to take the form of an exhibition of the stupendous progress made by the American people in the first hundred years of their independence, in everything relating to the natural resources of the country and their development, and especially its progress in those industries, arts, and institutions which benefit mankind.

How diversified are the objects which must enter into that exhibition—how vast the buildings and the space required to present them with full effect—are suggestions that need only to be mentioned to bring home to every American the colossal magnitude of the undertaking.

Consider for a moment the industries, products, and devices necessary to an adequate expression of the progress of your own State, and the space that will be essential to their full presentation, and you can hardly fail to perceive that your State alone will require an area in the exhibition buildings and grounds equal to that occupied at Vienna by England or France. This is true of not less than ten of the older States. The other twenty-seven States and ten Territories will each of them require space in proportion.

That the stock of the Centennial Board of Finance might be within the reach of every citizen, the Congress of the United States fixed every share at \$10, which will be represented by a handsome steel engraved certificate, executed by the Treasury Department of the Government, and fittingly designed in commemoration of the event. The board in soliciting subscriptions to its stock feels assured that there is a patriotic desire to render the exhibition worthy of the occasion.

Notice is hereby given that checks and drafts can be addressed to the Financial Treasurer, Frederick Fraley, No. 904 Walnut street, Philadelphia, for any number of shares at \$10 each, and certificates of stock will be promptly returned. The International Exhibition will commence on the 19th of April, 1876, and close on the 19th of October, 1876.

The undersigned, President of the Board of Finance, speaking for his colleagues, and, he believes, for the great body of the American people, does not doubt the answer of that people to this earnest appeal. They are not unmindful of the patriotic interest in the Centennial of their own independence, nor of the high duty of honoring it as it deserves. Philadelphia, the scene of the immortal Declaration, not

only in the old hall where it was written, and whence it was proclaimed, but in the extensive park where the exhibition is to be held, sacred as the resort of Washington and the revolutionary worthies, has given many times her share to the memorial. It is not her celebration—it is the nation's. History has simply designated that city as the spot where the national sentiment can be historically expressed.

Every other city and State is inspired by the same sentiment. Every man and woman, North and South, is stirred by the same impulse. All the peoples of the earth are earnest spectators and students of our progress. The work, therefore, is at once national and international. It reaches every class and every interest. It will be the most remarkable comparison and interchange of ideas and inventions, of art and science, of the products of the earth, the brain, and the hands—the most friendly and complete intercourse between the races of all countries in modern civilization. It is impossible to believe that any portion of the American people will hesitate to unite in what is a sacred memory and a sacred obligation.

JOHN WELSH,
President of the Centennial Board of Finance.

The March of Improvements.

The twenty-first anniversary of the London Association of Foremen Engineers and Draftsmen was held in that city, March 14, Thomas Brassey, M. P., in the chair. A large number of distinguished men, engineers and others, members of the Association, were present. Sir Edward Belcher responded for the navy. Among other things he expressed the belief that every captain who commands an ironclad ought to be a thorough engineer, otherwise he cannot perform his duty as he ought to be able to do in such a ship, propelled by steam power.

Mr. Joseph D' A. Samuda, M. P., responded for the House of Common. He said:

At this moment I am only just reaching my sixtieth year, and yet I can recollect a series of improvements effected in my time which probably exceed in importance all the improvements witnessed for 600 years previously. I remember the first steamboat which ever plied between the Tower and Ramsgate; I remember when a boy going down to see it start from the Tower Stairs. I remember the rise of almost every great marine engineering establishment, and notably I remember the first marine engine ever made by a firm now of worldwide reputation—that of Messrs. John Penn and Sons. I remember the first railroad ever used on our shores for the conveyance of passengers. I remember the first introduction of telegraphy, which has so completely united together in one family the whole of these islands that you would scarcely believe that any distance separated the most remote and the nearest customers with whom we have to deal. I remember still more the culminating point of that particular science to which I have last referred, which enabled us to lay under contribution nations—no matter how distant—by passing under the broadest ocean the means of communicating with India and America, in about as brief a space of time as we can with our nearest neighbors. All these circumstances have tended to developed that great industry the heads of which are represented here on this occasion—I mean engineering in a general comprehensive sense. It is to those great inventions which have so startled the world that we owe so much; and yet I am convinced that they have not reached their maturity, but are only on the road to increased triumphs. How important then becomes a Society like yours, which must exercise a rapidly extending influence on the future of engineering for generations to come!

Mr. Brassey said:—Well, I know when I address a body of foremen engineers that I am speaking to one of the most intelligent classes in this country—to a class of persons who have contributed, perhaps more than any other, to establish the fame and reputation of our country. In whatever direction you look, you see monuments of their skill, their character, and their ability. The electric telegraph, the steam engine, the loom of Mr. Arkwright, and other improvements, are English inventions which have been the means of revolutionizing several great departments of industry to which the labor and ingenuity of man are applied, and which have established the claim of England to the pre-eminence as an engineering country. Speaking for myself as one owing so much to the invention of railways, I think I ought to be, and I assure you that I am, full of appreciation of the mechanical genius of my countrymen. While referring to railways, I would, before leaving that subject, just remark that, great and important as have been the inventions connected with the railway system up to the present period, we are still greatly needing a further development of ingenuity in order to make traveling by railways as safe as we must anxiously desire to render it. And speaking as a railway director, I can say to you, who, I am sure, very many of you, possess great capacities for invention, that if you can only discover a thoroughly satisfactory continuous brake, you will confer an almost unspeakable benefit on your countrymen.

I feel that, although at the present moment we are possessed of great eminence in engineering industry, we are threatened daily with great competition from abroad, and I am afraid that the competition may come, not, as we readily anticipate, from Germany, France, and other old countries of the world which command a cheaper supply of labor than we do, but possibly it may come from the United States, where, in spite of their most costly labor, they have the means, if they only properly adjust their tariff, to obtain raw materials better than we do; and they have also shown the most marvelous facilities for mechanical invention. Let us not then suffer ourselves to be outstripped in the race—let due provision be made for the technical education of our workmen; and if only they have the same chance as their brethren in other countries,

then I have no fear of their holding their own. I hope for a great deal of aid from the Government in the direction I have ventured to indicate; but I also feel that we in England have very rightly sustained the principle of self-help as one of the most considerable of our national virtues; and I find in the existence of your institution, which is intended to contribute something toward the technical education of our engineers, a manifestation of the noble principle of self-helpfulness.

The Works at Creusot.

It is refreshing, in the midst of the financial difficulties of France, and considering the unsatisfactory state of trade, to hear of the continuous growth of the works of the Schneider Society at Creusot.

The surface now covered by shops and other buildings belonging to the works exceeds 50 acres, and the entire area of the property, including mines, is 440 acres; the length of rail laid down at and from the works is 53 miles, of which two thirds are double ways; the number of workmen employed is 10,000; the steam engines are 234 in number, and of 12,700 horse power. The production amounts to 190,000 tons of coal; 180,000 tons of pig-iron; 90,000 tons of wrought iron; 60,000 tons of steel; value of the locomotives built, 100 per annum, \$1,400,000; and that of other machinery, with bridges, \$1,200,000.

The new works and extensions lately carried out and in contemplation consist, first, of providing an additional water supply. M. Droillard, who carried out the former waterworks, has planned others to bring the waters of a stream called the Rançon to Creusot. The supply required at Creusot is a volume of 4,000 tons, and the Rançon is calculated to supply that quantity in the driest season.

The main conduit will be more than twelve miles in length, and has been planned to deliver 10,000 tons at high water. It will be formed of cement, wherever the contours of the ground permit; but when the pressure surpasses fifteen or twenty meters, cast iron pipes will be substituted.

New Treatment of Cancer.

Another treatment of cancer has been brought out by Dr. Hasse, of Berlin. An account of it is given in the *Medicinishe Central Zeitung*, February 18. Dr. Hasse injects, with a hypodermic syringe, pure alcohol, to which one per cent of ether is added, not into the new growth, but around its edges, thus obliterating, he claims, the vessels, especially lymphatics, which convey the infection, and causing the atrophy of the growth itself. The pain is rather severe, but is much reduced by ice bags, and lasts only about two hours. The injections are repeated every eight to fourteen days, and have no alarming reactions. He claims striking success in carcinoma of the mamma, and in cauliflower excrescence of the uterus, but has failed in epithelioma of the lip, which he attributes to the impossibility of obliterating by this means the large and closely adjacent coronary artery.—*Medical and Surgical Reporter*.

New Railway Signal.

MM. Lartique and Laforest have recently invented a novel device, intended as a danger signal, which the *Revue Industrielle* states is now in successful use on some of the French railroads. A whistle is arranged on the locomotive so that it will, when once opened, continue sounding until shut by the engineer. The same device which turns the disk signal, so as to show the danger side, is extended to transmit a current of electricity to a little projection between the rails. When the engine passes over this spot, a metallic brush hanging between its wheels strikes on the projection and sweeps over it, at the same time transmitting the current to an electro-magnet which pulls the whistle open. The latter, by continuously sounding, warns the engineer.

Industrial Exhibition of the Franklin Institute.

The Franklin Institute of Philadelphia announces the celebration of the fiftieth anniversary of its foundation by an exhibition of arts and manufactures, to be held in the above mentioned city from the 8th to the 31st of October next. The plan is to secure as full a representation as possible of the mechanical improvements of the last half century, and all artisans, mechanics, manufacturers, and inventors are invited to contribute their best productions and to compete for the prizes which will be awarded to the most worthy. Facilities will be afforded for machinery in motion. All desiring to exhibit are requested to make early application for space, power, etc.

Mountain and Lake Surveys in New York.—A New Canvas Boat.

Mr. Verplank Colvin has recently submitted to the legislature of New York State his report for the past year of surveying operations in connection with the Adirondack mountain regions. Among other results he corrects the heights of several of the mountain peaks. Mounts Marcy and McIntyre, he finds, are correctly given at 5,000 feet altitude. He reduces Mount Dix to 4,879 feet, Mount Seward to 4,348 feet, and Santanoni to 4,607 feet. He finds Mount Haystack and Mount Skylight to be higher than heretofore reported, and gives new measures of several other mountains of important altitude.

Mr. Colvin also gives the measures of some two hundred new lakes, covering from forty to fifty square miles. He describes a novel portable boat used by him upon these lakes. The boat is made of canvas, and weighs only 10 pounds 8 ounces. A new signal, of his own invention, visible at a great distance, was also employed by this enterprising explorer.