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OPERATIONS OF THE CANADIAN PATENT OFFICE.

We are indebted to the Minister of Agriculture of Canada for a copy of his report for the year 1892, which contains the proceedings of the Canadian Patent Office.

In Canada patents are granted very much on the same system as in this country, but the life of the patent is eighteen years, divided into three periods of six each, according to the amount paid by the applicant. Payments on the great majority of patents are not continued beyond the period of six years. An American patent that is not more than one year old can be patented in Canada, but it is necessary, in order to maintain the validity of the patent, that it shall be worked in Canada within two years.

In 1892 there were granted a total of 3,417 Canadian patents, of which 2,227 were taken by American citizens, 671 by Canadians, 298 by Englishmen, 106 by Germans, 26 by Frenchmen, and 89 by persons of other nationalities. It will thus be seen that nearly two-thirds of all the patents granted in Canada are to American inventors, and but for them the Canadian Patent Office would make a very poor showing. The entire receipts of the Canadian Patent Office were \$84,720, and the expenditures were \$39,643, leaving a profit of \$45,000 over expenses. It may be said that American inventors chiefly support the Canadian Patent Office as well as the Patent Bureau at Washington.

TREATMENT OF POTATOES TO PREVENT POTATO SCAB.

A recent number of the *Rural New Yorker* contains an article by H. L. Bolley, illustrated by photographs, showing the advantage of soaking the seed tubers in corrosive sublimate solution. The author says it has been demonstrated that the blackened, pock-marked condition of potatoes, commonly spoken of as potato scab, is due to the direct action of a parasitic cause which not only originates disease on the tubers, but also affects the roots and bases of the vines. The disease is propagated in the new crop from that on the seed tubers, and the author claims that, if the tubers are treated with the substance mentioned, the plants will be free from the disease.

Photographs are given of potatoes grown without having the seed tubers treated and those that were treated. The treated seed yielded potatoes that were clean and free from disease. The treatment is easy of application and the yield is increased. The seed tubers were soaked for one and one-half hours in a one-thousandth solution of corrosive sublimate. The author claims that the ordinary method of spraying the vines is simply a waste of energy, as the inception of the disease is from below.

OPENING OF THE WORLD'S COLUMBIAN EXPOSITION, CHICAGO, MAY 1, 1893.

The formal dedication of the Exposition buildings in October last was attended with much pomp and ceremony. It was, therefore, decided that the exercises pertaining to the opening of the great affair should be impressive, yet at the same time very simple. Among the most prominent guests who received invitations for the opening exercises were: The President of the United States, the Duke of Veragua, the lineal descendant of Columbus, the Vice-President, members of the Cabinet, the judges of the Supreme Court, the diplomatic corps, senators, members of the House of Representatives, the governors of the several States, the mayor and city government of Chicago, Chicago park commissioners, the members of the governing boards of the Exposition, and the members of the board of lady managers.

The programme is as follows:

1. Music—Columbian March and Hymn—John K. Paine.
2. Prayer.
3. Presentation of chiefs of departments and foreign commissioners by the Director-General.
4. Music—"In Praise of God"—Beethoven.
5. Address and opening of the World's Columbian Exposition by the President of the United States.
6. Starting of machinery, during which time will be performed "Hallelujah Chorus"—Handel.
7. Official visit from the President of the United States and the officials of the World's Columbian Exposition and the World's Columbian Commission to the various departments, arrangements having been made previously with each chief to receive them.

The formal opening exercises were arranged to take place in the Grand Plaza, on the east front of the Administration building. The invited guests of the occasion were seated on the platform, as well as the members of the grand chorus. It is estimated that 100,000 people may here witness the exercises without being overcrowded. After the opening programme has been carried out and President Cleveland has declared the Exposition opened, and pressed the electric button by which the machinery is put in operation, the guests were to be escorted through the buildings and grounds.

How to Reach the Grounds.—The accompanying official map of Jackson Park shows the arrangement of

the Exposition grounds and buildings, and the relation of the Midway Plaisance to it. The steamboats land their passengers at the great pier. The Illinois Central Railroad has built a station at 60th St., where all passengers by this route will be landed. All the other railroads land their passengers in the Great Railway Terminal station inside the grounds. The elevated railroad has built a station over the annex to the Transportation building, which is near the heart of the grounds. Most of the visitors reaching the grounds by the cable roads land at the north end of the grounds, near the 57th St. entrance. The more important entrances to the grounds are 57th St., 59th St., 60th St., 62d St., and 64th St.

The Midway Plaisance, as will be seen from the map, comprises a strip of land between 59th and 60th Sts., extending from Stoney Island Avenue to Cottage Grove Avenue. It is here that all concessions have been granted, with two or three exceptions, that are not necessary features of the Exposition. There are several entrances to the Midway Plaisance, and it is reached from the Exposition grounds by a large entrance opposite the Woman's building. A viaduct has been built by which Stoney Island and the other avenues crossing the Plaisance are elevated, so that visitors can pass back and forth without crossing any highways.

The Entrances.—Entrance tickets to the grounds are on sale at hotels, railway stations and in many other designated places throughout the city and also at an abundance of ticket offices at the entrances to the Exposition grounds. There are nearly two hundred ticket windows at the entrances to the grounds and 325 turnstiles. The several routes by which the grounds are reached from all parts of the city are so far perfected in their arrangements for carrying passengers that there is little doubt that they will be able to accommodate all who may attend.

The Japanese make one of the most complete and comprehensive exhibits of any foreign nation, being represented in all but two or three of the larger buildings, in addition to some special exhibits and concessions. Their displays in the Manufactures and Liberal Arts building include silks, pottery, porcelains, art work and other manufactures, while in the Agricultural building is a fine exhibit of tea and other products, and in the Horticultural building many plants, flowers and examples of Japanese gardening and floriculture. At the north end of the Wooded Island the Japanese government has erected a very attractive structure, which has just been dedicated with considerable ceremony, and which will be formally presented to the Chicago park commissioners at the close of the Exposition as a permanent memorial. The building is a fine specimen of Japanese handiwork and architecture. It is one story high and consists of three pavilions, each representing an important era in architecture and decoration in the history of Japan. The right wing represents an era corresponding to the period of the discoveries of Columbus. Other features of the Japanese exhibit will be the Japanese village, concession for which was granted on Midway Plaisance, and tea houses in the Exposition grounds proper. The Art Gallery, Fisheries building and other buildings also contain interesting exhibits from these people.

Side Shows and Concessions.—So many concessions have been granted by the World's Columbian Exposition that the impression has got abroad that the fifty cents admission fee to the grounds entitles the visitor to see only a part of the Exposition proper. This impression is erroneous, decidedly so. All the buildings, both those erected by the Exposition and those erected by the several States and foreign nations, are open to the public without cost, and all the exhibits in the Exposition are also open to the inspection of the public without additional cost. The fifty cents admission permits the visitor to see the whole Exposition and enjoy many comforts such as seats in the buildings and grounds, retiring rooms, drinking water, and the like. But there are many duplicates of these comforts, besides other extras, for which a small charge is made. Visitors will have an abundant supply, without cost, of all the conveniences necessary to their comfort; but if they are willing to pay for extras, they will secure a little more seclusion and perhaps somewhat more luxurious arrangements. There are always plenty of people who are willing to pay extra for special conveniences, and the Exposition proposes to take advantage of this tendency and benefit by it, so as to increase its legitimate income in every way possible. The estimated cost in round numbers is \$22,000,000 to open the Exposition to the public. In addition to this, there will be large running expenses during the six months it is open; so that in order to meet the outlay from entrance admission alone, there would be necessary an attendance of about 50,000,000 people. In order to make the Exposition a model as an exposition and also a success as a business venture, the management has availed itself of every possible source of revenue.

The many concessions must bring in returns to the amount of some millions of dollars. It need not be a necessary part of the programme of each visitor to pay a visit to the promenade on the roof of the Manu-

factures and Liberal Arts building; to buy spring water, when sterilized lake water is furnished free; to pay for the use of retiring rooms, when equal conveniences are furnished for nothing, and so on through a long list of similar concessions, so long as none of his legitimate rights are interfered with; but if he can spare the cost, he will indulge in some or all of these extras and not begrudge the few cents they may cost, if his money goes toward making the Exposition a success financially.

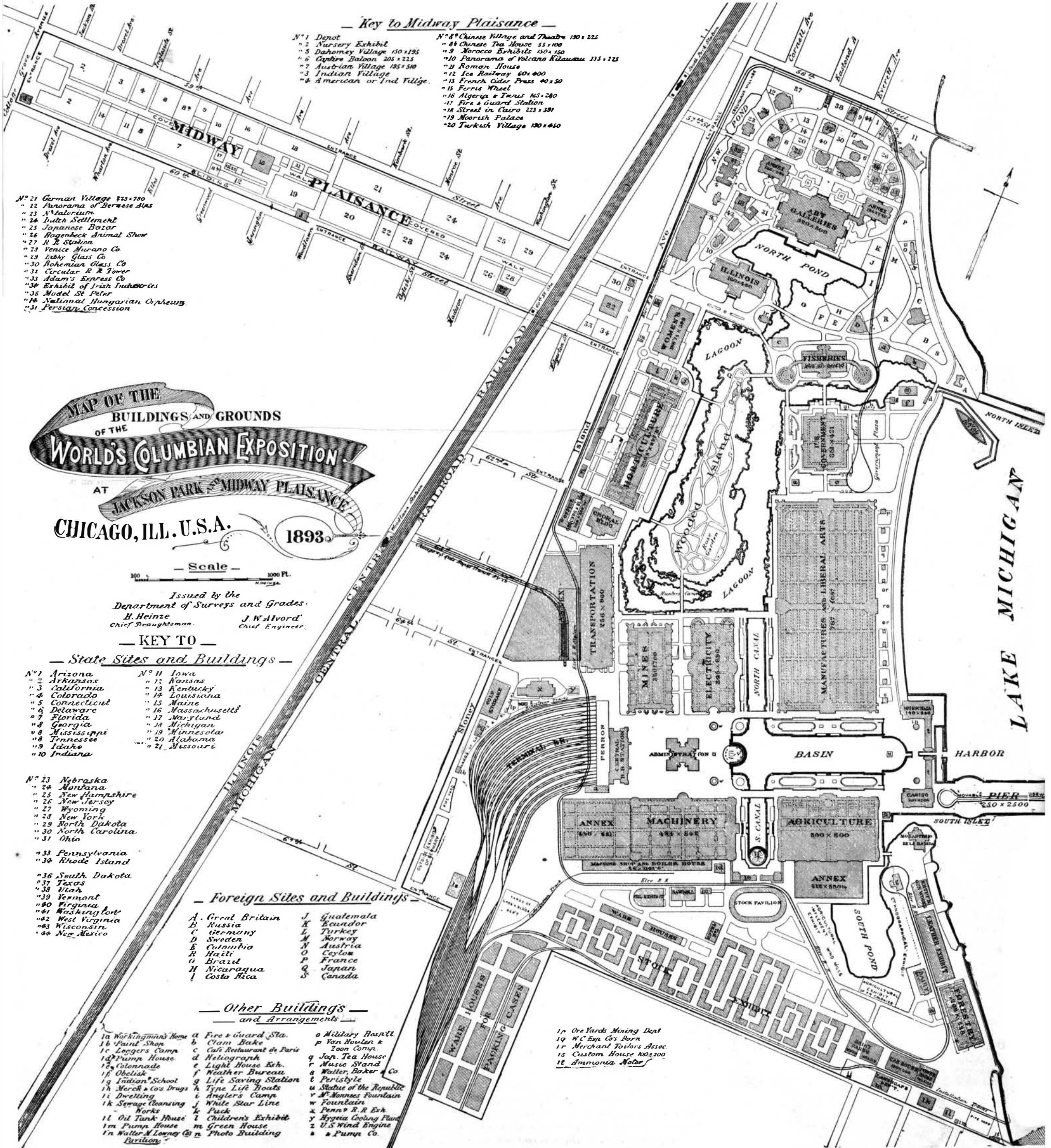
The various enterprises on the Midway Plaisance are under the auspices of the Exposition management, but strictly speaking are not a legitimate part of the Exposition, though an interesting and perhaps a necessary adjunct to it. These various enterprises require an admission fee.

Tests of Dairy Cattle.—For some time past there has

been an interesting herd of cattle at the Exposition grounds which has attracted considerable attention from its early arrival. This herd consists of forty-nine Jersey and thirty-two Guernsey, but others are coming in rapidly. The tests which will be made of dairy cattle will be very complete, and the matter of making the tests will be in the hands of a committee composed of representatives of the several cattle associations and other experts. The tests begin May 1 and close October 27. The main purpose of the tests is to compare the relative merits of the various breeds of dairy cattle. The best methods of handling milk, cream, and their products, butter and cheese, will be illustrated. Each breed competing in the more important tests will be represented by twenty-five registered cows, except the Brown Swiss and the Red Polled breeds, which

will be represented by at least fifteen cows. The milk from each cow will be weighed as soon as drawn, and be tested as to its percentage of butter, fat, and other solids. The milk from all the cows of the same breed will then be mixed and tested in a like manner. The cream is to be separated from the milk by improved mechanical processes and the following scale of points will be used in testing the butter; flavor, 55; grain, 25; solidity, 10; color, 10. The scale for testing cheese will be as follows: flavor, 55; texture, 25; keeping quality, 15; color, 5.

A PHILOSOPHICAL statistician calculates that in the year 2000 there will be 1,700,000,000 people who speak the English language, and that the other languages will be spoken by only 500,000,000 European people.



THE WORLD'S COLUMBIAN EXPOSITION, CHICAGO, 1893—OFFICIAL MAP OF GROUNDS AND BUILDINGS.