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## SCIENTIFIC COMMISSION OF JAPAN.

There are two parts of the world now rapidly advancing to the front rank as centers of civilization, which fifty years since were practically unknown to the Caucasian race, namely, Australia and Japan. The former has been transformed from a savage wilderness to a state of comparative cultivation and wealth with a rapidity only paralleled on the continent of America. The latter, which for ages has remained in a state of barbarism, has at last shaken off, in a great measure, the prejudice and superstition that prevented its progress, and has shown that it has the material, power, and resolution to take its place with the most civilized nations of the earth. A few years will affect this wonderful transformation. The present generation may live to see it.

It is worthy of remark, that the most powerful influence in bringing about this great change in the condition of Japan is the outcome of American civilization. One of the oldest nations on earth now sits at the feet of the youngest, and asks for aid and instruction in all that pertains to the material interests of its people. Our engraving gives accurate portraits of the distinguished American citizens selected by the Japanese Government as a scientific commission to investigate and report upon the commercial industries and agricultural resources of the country, and to give counsel as to the best means of developing such resources.

The chief of the Commission is General Horace Capron, long and favorably known as a thoroughly scientific agriculturist, conversant as well with the various sciences collateral to agriculture, and late Commissioner of the United States Agricultural Department, in which difficult position he has won richly deserved commendation, from those qualified to judge, in all sections of the country.

Professor Thomas Antisell, of Washington, accompanies the party as an expert in the subjects of mining and manufactures. Professor Antisell's reputation as a technical

chemist, mineralogist and geologist is well known, and General Capron is to be congratulated upon having secured his services.

The work of the Commission includes the examination of the country with reference to the introduction of railroads and other improved means of transportation. This branch is confided to Major A. G. Warfield, Jr., of Baltimore, Md. Major Warfield is looked upon in his profession as one of the most competent of its younger members; has already had much experience in the special class of work which is likely to be demanded in Japan, and is pronounced by no less an authority than Latrobe, of Baltimore, one of the best locating engineers of the country.

The Secretary of the Commission, Doctor Stuart Eldridge, of Washington, D. C., possesses high scientific and literary qualifications, and, although a young man, has achieved a prominent standing in his own profession.

The Commission is amply provided with the necessary equipments and instruments of precision; and, with such a *personnel*, there is much to be expected from its labors. We look confidently for a result which shall benefit not only our island neighbors, for neighbors they are both in interests and feeling, though so far distant in miles, but shall, perhaps, be of equal advantage to ourselves. While Japan is represented by such men as Mr. Mori, the Minister at Washington, and Consul Charles Wolcott Brooks, of San Francisco, international commerce must increase, community of interests be more fully recognized, and the good feeling, already existing between the great nations of the East and West, strengthen and become permanent.

By late advices from Japan we learn that the Commissioners were received with high honors by the Japanese Government, on arrival at Yokohama and Yeddo. At the former place a grand salute was fired from the forts, and on their landing they were received by a delegation of Japanese officials of high rank. On the next day they embarked on a

Japanese war steamer for Yeddo, being saluted by the fleet at that port on passing, and were received on landing by another delegation of Japanese officials, among whom were the Prime Minister and Minister of Foreign Affairs. A grand banquet was given there by the Prime Minister and Cabinet at the Summer Garden on the 9th of September, which was followed by a number of others at the residences of the different members of the Cabinet. On the 16th of September, the Commission had an interview with His Imperial Majesty, the Tumo, or Mikado, which is said to have been rarely accorded to foreigners, and was given on a scale of unusual magnificence. In every way the Commission have been most favorably received, and the members pleased beyond all expectation.

## HISTORY OF ICE-MAKING MACHINERY.

[Condensed from the Milk Journal.]

Cooling and ice machinery have been practically divided into two classes. First, those in which heat is directly applied in order to produce cold; as, for instance, in the air machines, where the air is first compressed and subsequently expanded, and in the ether machines, where the evaporation is effected *in vacuo*, the speed of the process being accelerated by the use of an air pump; and second, those machines in which cold is produced by direct heat without the aid of power, as, for example, in the latest ammonia machine. Each machine has its partisans, and dire battle is done occasionally; ink has flooded fields of paper, and thousands of broken pens must have strewn the lists. It is claimed for the air machine that it requires the assistance of no chemical agents; that the machinery acts direct upon the air and water; and that it will produce cold air, refrigerate fluids, or make ice continuously as wished, with the aid of fuel alone. On the other hand, it is claimed for the ammonia machine that more ice or heat reduction can be got out of the coal used by it than



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