

TEXTILE INDUSTRIES IN JAPAN.

The United States Consul at Hiogo, Japan, has recently forwarded to the State Department a very interesting report concerning the textile industries in Japan. Much of the information that he sends seems to be obtained largely from a recent report to the British Foreign Office on the textile industry of Japan, which is regarded as more representative of the present conditions than the report made by Robert P. Porter to the United States Government a few years ago. The estimates of the cost of labor given by Mr. Porter are far below the present standard of wages. The cost of labor in many trades has more than doubled since his report was written, and this position has greatly enhanced the cost of production.

The manufacture of textile goods in Japan is not confined to certain localities, but extends by means of hand looms all over the country. The spinning wheel was formerly in general use, but during the last twenty years it has been almost wholly displaced by spinning mills using machinery. More than 1,000,000 spindles are now thus operated, 47 mills in Japan producing last year an estimated yield of 650,000 bales of yarn of 400 lbs. each. Present returns show that more than 200,000 bales will be shipped to China during the current year, and the home demand for counts averaging 10's will be nearly supplied by the remaining 450,000 bales. Only one of the spinning mills in Japan has imported the machinery necessary for spinning the higher counts above 30's. The Nippon mill, of Osaka, has done this, but so far has probably not made a success of it. Higher counts are steadily imported from England, and in greatly increasing quantities, to meet the home demand. When mill hands with greater skill are to be procured in Japan, the spinning of the higher counts will increase more rapidly in order to supply the domestic market and the demand from China and Korea. Increasing demand for the higher counts of cotton yarn explains the rapidly growing market for American cotton, from which it is produced. It would be well for American cotton producers to note this fact, with a view to educating a sufficient number of Japanese workmen to become expert and teach others, in order to extend the sale of American cotton from which the higher counts are made.

Many of the large class of persons formerly employed in spinning by hand are now engaged in weaving textiles on hand looms. It has recently been computed that more than 600,000 hand looms are in use in Japan, and it is stated that they employ 80,000 women and 50,000 men. As these hand looms are generally operated in private houses, giving a home character to the work, it can readily be seen why such slow progress is being made in the introduction of power weaving machinery. The hand looms now in use are called "battan," and are an improvement on those formerly used. They cost about \$2.50 gold each, and take up little room in a house, while a power machine would require a separate building, and with the necessary power would cost, say, nearly \$250 gold. The hand loom will produce about half as much as a power loom, but one person could attend to perhaps four or five of the latter at a time, and thus be able to turn out, say, eight or ten times the product with a power loom as with a hand loom. The convenience, however, of having the hand loom in the house and the difference in its cost will, perhaps, be sufficient to delay the introduction of power looms to any great extent for some time to come. The comparative cost of labor is about 1 to 8 or 10 in favor of the power looms, and this should tend to crowd out the hand looms very fast; but it is not doing so yet, though the progressive spirit of the Japanese will no doubt ultimately cause them to substitute power looms for the hand looms now in use. In regard to spinning machinery, the labor cost is about 1 to 150 in favor of the machine, and this very great difference is of course, the cause of the rapid introduction of spinning ma-

chinery. The hand looms are hand made, and are principally used in supplying some 1,000,000 pieces of goods, say, 14 inches in width and from 12 to 25 yards in length, to the home market, and for export to China and Korea. The Japanese manufacturers are very conservative in their business methods, and manufacture large quantities of goods only on orders. The largest silk factory in Japan using power looms is the Kyoto Orimono Kaisha, of Kyoto. It imported these machines from France. It was the intention of the company to manufacture silk fabrics for export; but after some years of unsuccessful attempt, the project was abandoned, and the company commenced making satins and "obi" materials for home use. In these lines, it is said, it has been very successful. This mill also manufactures curtain and upholstery materials, and it has found a good market in England and Australia. The power looms first obtained have been copied here, and the company is using large numbers of them; but they are not equal to the imported ones.

Silk in its various forms, from the raw material to the finished product, is mainly exported from Yokohama. The industry dates back to an early period, and is to-day in an advanced condition.

There is no doubt a great misapprehension exists in our country, as to the necessity for the use of woollen goods in Japan. The climate is thought by many to be such as not to require warm clothing in winter, but this is not the case. During the last winter, which was said to be not as cold as usual at this port, foreigners were clothed as warmly as persons need to be during the cold season in Washington, D.C., and the masses of the Japanese people needed, but did not have, the same protection; and it must be remembered that this locality is a warm one in comparison with some other parts of the Empire. The manufacture of woollen goods is a new industry, and a small one, as only about 13 per cent. of the woollen textiles used in Japan are made in this country. The raw material is all imported from China, Australia and London. The four woollen factories of the country are located in Osaka and Tokyo. One is owned and operated by the Imperial Government, and manufactures supplies for the army and navy. Some of the better grades of cotton and woollen yarns are made there, but they are mostly imported. A large proportion of the woollen cloths used are made on hand looms. A much more general use of woollen products is requisite for the comfort of the people, and all classes are constantly becoming more able to purchase them, hence there is no doubt that the demand for them will increase.

Japanese rugs have deteriorated in quality to such an extent as to greatly check the American demand. The materials used are hemp, jute, cotton, wool and silk, the two latter separately and in combination. They are made on upright hand looms, which vary from 3 to 24 feet in width. The pattern is worked from the front. This is also largely a home industry. There are no large factories. Only one or two employ more than 100 hands each. Kobe is the centre of the rug-making district. Nearly all the spinning machinery still comes from England. American manufacturers of machinery have obtained large orders for other kinds; but they seem to have utterly ignored the constant demand for spinning machinery and for all the other spinning mill requirements, including engines and boilers. This may also be said in regard to almost all the weaving machinery in the country. The first spinning machines used in Japan were sent from England, where a single firm has supplied more than half the spindles. Another English firm supplies a complete mill equipment, including boilers and engines. Weaving machinery is largely furnished by a third. French and German makers have supplied a considerable quantity of the silk and woollen weaving machinery, and some woollen machinery for an Osaka mill came from the United States; but