

order to connect the baths more closely with the city schools, the head swimming instructor visits the public educational institutions before the close of the school year and teaches the children the motions of swimming. The aim in Boston has been to dignify the practice of bathing and to furnish an innocent recreation and to cause the people to regard bathing establishments as necessary to their well-being as the water supply, school house, library, or parks. The course of Boston in this matter cannot be commended too warmly, and the object lesson is of great value outside of the immediate advantage to her citizens.

CALIFORNIA OLIVE INDUSTRY.

The olive is one of the oldest known fruits. It is noted by Pliny and is frequently mentioned in the Bible, where it forms the basis of many parables and figures of speech. In Grecian mythology the olive tree occupies an important place, and to-day the "olive branch" is the world symbol for peace. The olive tree itself is rather melancholy in appearance, but the eye soon becomes accustomed to the tone which the olive trees give to the landscape, and in nearly all of the Mediterranean countries they are found almost everywhere. In general, the olive will flourish wherever the vine can be cultivated for wine-growing purposes. It will not bear a temperature below 21° or 22° F., and in Europe it cannot be grown above 46° latitude. The young plants and fruit are very delicate, but the tree itself is quite tough. Naturally, in Italy, where the olive forms one of the principal agricultural products and contributes so largely to the wealth of the country, the trees are cultivated with the greatest care. The kernel of the olive requires about two years to germinate naturally, but it is found by mixing clay and goat manure nature's processes can be hastened so that it will germinate the same year. The trees attain great age, and a large olive tree near Nice is believed to be a thousand years old and is said to have yielded 500 pounds of oil in a single year.

The culture of the olive in the United States is increasing rapidly, and in California the industry has attained such proportions that already \$500,000 is invested in it. Olives were first introduced into the State by the Franciscan Missions almost a century ago. The oldest olive trees in California date from the last century. They are six in number and are stationed at the San Gabriel Mission and are still bearing fruit and are a living monument to the wisdom of the Franciscan Brothers. According to some authorities, the oldest tree is at the Capistrano Mission, thirty miles south of Los Angeles. The seed from which this tree was grown came from Corsica in 1769. It is now 50 feet high and the trunk is at least 5 feet in diameter. The old trees at the Missions are as robust and thrifty as when they first commenced bearing fruit. The Franciscans raised most of their trees from cuttings which they brought from Spain. They found the soil and surroundings most congenial for olive raising, and that the trees flourished even better than on their native soil. The oil enabled the exile of the Fathers to be more supportable by supplying one of the accustomed luxuries of their far-away homes in distant Castile.

The modern history of the California olive culture began about twenty years ago, when the Hon. Ellwood Cooper, of Santa Barbara, who is regarded as the father of the industry, began his investigations on raising the olive as a commercial possibility. He first secured cuttings from the trees of the old Mission and set out a number of olive orchards in Santa Barbara and other places. The result has amply justified his venture. Now there is hardly a part of the State that has not its olive orchard. The olive seems to thrive best under the influence of sea breezes. It takes to almost any character of soil where the drainage is good and flourishes in the localities beyond the range of very heavy frosts. The tree does not require a great deal of attention, and does not resent neglect. The care of an olive orchard is less than for almost any other kind of fruit. The trees are highly symmetrical when grown, and on some ranges are planted along the roadside for the shade and the added beauty which they afford to the landscape. Olives are almost never raised from the seed, as this requires a long time. They are usually raised from cuttings, and have been produced by Mr. Cooper in the fourth year, and a good crop in seven years; 122 pounds is the average per tree. The method of propagation requires constant attention and great experience, but the plants are grown on such an enormous scale the cost of them is very small. In the spring, after the cuttings are rooted, they are transferred to olive-growing nurseries, where they become trees of from three to five feet high in from twelve to eighteen months.

In California opinions are much at variance regarding the variety of olive to grow. Formerly the Mission was the only olive planted. In recent years many different varieties have been brought from Europe. Different locations may require different varieties, but above all other considerations is the quality of the oil produced. The varieties that make the best oil should be selected in all cases, provided that quantity is a fair average to a given acreage planted. This rule is also

applicable as well for pickling unless the fruit is too small for economic handling.

Mr. Cooper has trees twelve to fifteen years old which yield 250 pounds of olives, but they do not bear every year. It is estimated that there are now no less than 24,223 acres of olive trees in California, with 1,162,739 trees, of which half are now bearing. The soil must be occasionally cultivated and the trees must be pruned and sprayed to exterminate numerous insects. The greatest drawback to the successful cultivation of the olive is the black scale.

Olive oil making is a simple process; the quality depends on the care exercised from the picking of the fruit through every stage of manufacture until it is put into bottles and corked. About 8½ pounds of olives are required to a large bottle of oil. The fruit is gathered later in the season than other crops, and in the best orchards the olives are plucked one by one from the branches and not shaken from the trees or allowed to drop. Special ladders mounted on wheels are run among the branches of the trees, and the pickers ascend the ladders and pluck the olives, which they drop into a specially made device, usually of tin, strapped about the waist, and which is adapted to hold a considerable amount of fruit.

The olives must not be allowed to stand in heaps, in sacks or any sort of package long enough to heat through, otherwise the oil will become musty and rancid. Absolute cleanliness is required in every step of the process. The olives are first dried, during which process they lose about half of their weight; they are then crushed by a heavy stone rolling over them, and are next pressed the same as in cider making. The first expression is what is known as the "virgin" oil; the lower grades follow in succession. There are at least a dozen oil mills in the State of California.

A considerable part of the olive oil imported is adulterated by cotton seed and other oils, but now with the splendid olive oil made in California there should be no difficulty in getting the pure article in any part of the United States. It is a mistake to believe, however, that absolutely pure olive oil made in Southern Europe cannot be purchased here. It is expensive, but it can be bought; but the ordinary olive oil bought of grocers is apt to be adulterated, if it is not entirely fictitious. Large quantities of olives are pickled in California and are shipped in bottles or small barrels.

The olive industry is an example of what may be accomplished in the way of introducing a new agricultural pursuit in the splendid South west.

THE WORLD'S COAL PRODUCTION.

The coal production and consumption of the world during the past fifteen years are presented in some tables just prepared by the Treasury Bureau of Statistics. These show that while the United Kingdom is still the largest coal producer of the world, the United States is a close second, and if the present rate of gain is continued, will soon become the leading coal-producing country of the world. The coal production of the United Kingdom in 1897 was 202,000,000 tons; that of the United States, 179,000,000 tons; Germany, 91,000,000; France, 30,000,000; Belgium, 22,000,000; Austria-Hungary, 12,000,000; Russia, nearly 10,000,000; Australasia, nearly 5,000,000; Japan, over 5,000,000; British India, 4,000,000; Canada, nearly 4,000,000; and Spain, 2,000,000, while no other country reached 1,000,000 tons in production. The United States, however, has gained much more rapidly during the fifteen years under consideration than has the United Kingdom, or, indeed, any of the important coal-producing countries of the world, her gain during the fifteen years being over 73 per cent and that of the United Kingdom less than 24 per cent. The announcement just made by the Geological Survey that the coal product of the United States in 1898 was 219,836,000 short tons against 226,287,000 for Great Britain shows that the United States is rapidly gaining upon that country as a coal producer, and will soon become the leading coal-producing nation of the world.

As an exporter of coal, however, the United States takes low rank in proportion to its production, and stands fourth in the list of coal-exporting countries. In 1897, the exportations of coal from the United Kingdom were 48,000,000 tons; from Germany, 12,000,000 tons; from Belgium, over 6,000,000; and from the United States, a little less than 4,000,000, though in 1898 the quantity exported was slightly above 4,000,000 tons. Australasia comes next to the United States as a coal-exporting country, her exports amounting to nearly 3,000,000 tons, while France exported about 2,500,000, Japan 2,000,000, and Canada about 1,250,000 tons in 1897.

France is the largest coal-importing country, her importations in 1897 being nearly 12,000,000 tons, while Germany imported 6,000,000; Austria-Hungary, 5,600,000; Italy, 4,250,000; Canada, nearly 4,000,000; Belgium, nearly 3,000,000; Russia, 2,500,000; Sweden, over 2,250,000; the United States, nearly 1,500,000; and Australasia, 1,000,000 tons, while no other country imported as much as 1,000,000 tons.

Great Britain is also the largest consumer of coal in proportion to population, her coal consumption in 1897

being 387 tons per capita, that of Belgium 270 tons, the United States 242, Germany 158, Canada 125, France 098, Australasia 097, Sweden 050, Austria-Hungary 037, Spain 019, Italy 013, Russia 009, and Japan 007 of a ton per capita.

According to these figures, which are summarized from a report of the production of the principal countries of the world, just issued by the British government, the United States now produces about 30 per cent of the coal of the world, the coal production of the fourteen countries enumerated being in 1897, 566,000,000 tons, of which the United States produced 179,000,000, while in 1888 she produced but 27 per cent of the total product. The 1898 figures make an even more satisfactory showing for the United States.

THE DEATH OF FRANK THOMSON.

The American railroad is celebrated all over the world on account of the extent of the various lines, and the system and enterprise upon which they are conducted. Successful railway management calls for qualities akin to those of statesmanship, and this must be combined with technical training and business ability of the most exacting kind. Mr. Frank Thomson, of the Pennsylvania Railroad, who died on June 5, was the type of such a railway president. As the head of one of the largest of our systems, he had an opportunity which is given to few men, and he had a faculty for divining public needs before the public itself was aware of the fact. It is to him that we owe the introduction of our present dustless stone roadbeds, our block signals, and the system of prizes for faithfulness and great efficiency. It will readily be seen that the debt of the traveling public to Frank Thomson is very great.

Mr. Thomson was born at Chambersburg, Pennsylvania, in 1841. He entered the Pennsylvania Railroad shops at Altoona at the age of seventeen years, after a rudimentary education in the local schools. In four years at the Altoona shops he mastered all the mechanical principles of railroad engineering. His energy and ability were promptly recognized by the General Superintendent of the road, and when the war broke out, young Thomson was put in charge of the military railroad. He restored the Orange and Alexandria and the Loudon and Hampshire railroads. He also played an important part in the construction of the road across the "Long Bridge," over the Potomac, at Washington. In 1862 he reported for duty on the military route south of Nashville. After his return to Washington he assisted Col. Scott in the transportation of 20,000 men to the relief of the Army of the Cumberland. He enjoyed the rather unique distinction of being called to a Council of War in 1864. When he arrived in Washington, the Council was convened in Stanton's bedroom, where the latter lay sick. The War Secretary said on seeing him, "Is it possible that we waited for three days to get the opinion of that red-headed stripling?" The opinion given by the stripling was so conclusive, however, that the movement projected was not made. In 1864 he was appointed Superintendent of the eastern division of the Pennsylvania road; in 1873 he was made Superintendent of motive power. Soon afterward he became General Manager, and in this capacity he introduced the standard track, solid roadbed, the system of track inspection and the award of prizes for the best sections of track. He was a good disciplinarian, and the high grade of efficiency for which the Pennsylvania Railroad is noted is largely due to him. In 1882 he became the second Vice-President, and in 1897 he succeeded George B. Roberts as President of the road.

Mr. Thomson was a splendid example of what a bright young man can accomplish in America provided he has reasonable opportunities for the display of his talent.

TRADE WITH CUBA AND OUR NEW POSSESSIONS.

American producers are already finding an enlarged market in Cuba, Porto Rico, Hawaii, and the Philippines, as is shown by the figures of the Treasury Bureau of Statistics, which indicate that the exports of the fiscal year, which ends with the present month of June, will show a larger exportation to Hawaii and the Philippines than ever before, and larger to Cuba and Porto Rico than in any previous year, except those in which the reciprocity features of the McKinley law were in operation.

The total exports to Cuba, Porto Rico, Hawaii, and the Philippines in the full fiscal year will be about \$30,000,000, against \$17,000,000 last year. Our sales to these islands for the fiscal year 1899, even under the unsettled conditions which have prevailed in most of them, exceed those of any previous year, save those of 1893. Of course, these figures do not include any of the supplies sent by the government to any of its troops in the islands.

It is also interesting to know that the exportations to Spain are approaching their normal conditions; those for the ten months ending with May were \$8,000,000, against \$10,000,000 for the corresponding months of last year.