

the refined product of which is sold in China and India. The oil was until recently carried down the Irawadi in barges to the refineries at Rangoon; but a steel pipe ten inches in diameter and 297 miles long has been recently laid.

An oil-field occurs in Beluchistan and Persia in rocks of the same age as those of Burmah, but the geological conditions are unfavourable to the collection of the oil in natural underground reservoirs, and thus the western field has remained unimportant.

This valuable guide to the mineral fields of India closes with a summary of the mining laws, a bibliography, a full index, and three sketch-maps that show the distribution of oil in Burmah and of the metallic and earthy minerals throughout the Indian Empire.

J. W. G.

COTTON GROWING IN THE WEST INDIES.¹

THE history of the modern cotton industry of the West Indies forms one of the most interesting chapters in the history of agriculture. When cotton was re-introduced some six years ago it was practically a new crop to all concerned. Managers of estates had to learn the methods of cultivation and management, and labourers had to be trained. The manurial requirements of the crop required to be studied, and insect and fungoid pests had to be dealt with as they arose, to prevent them killing off the new crop. Thanks largely to the staff of the West Indian Agricultural Department, to the enterprise of the planters, and to the assistance of the British Cotton-growing Association, the crop has now become a very important one, and has been the means of improving considerably the financial position of many of these colonies.

The bulletin before us contains several important papers discussing the various phases of cotton production. Perhaps the most striking feature is the rapidity with which the industry has spread.

Cotton was first planted on a commercial scale in 1902, when about 400 acres were put into cultivation. In 1903 this area was extended to 4000 acres, in 1904 to 7000 acres, in 1905 to 9500, in 1906 to 14,500, and for the season 1907-8 20,000 acres are under culture in this crop. In addition there has been a general improvement in the quality of the lint produced since the plants have become acclimatised, and the planters have gained experience in the methods of cultivation and preparing the products. Mr. Thornton, in his general review of the progress of the industry, adduces evidence to show that further progress is possible; numerous points remain to be settled, and still greater improvements can be anticipated.

Mr. Sands's paper on the cultivation of Sea Island cotton at St. Vincent forms very pleasant reading. St. Vincent had been reduced to very bad straits. There had been a severe hurricane in 1893, and the terrible eruptions of the Soufrière in 1902-3. The unremunerative prices for arrowroot and sugar, the staple products of the island, made it impossible for the planters to retrieve their disasters. In 1903, however, the cultivation of Sea Island cotton was introduced by the Imperial Department of Agriculture, and has proved to be the means of restoring prosperity to the island; the revenue is now exceeding the expenditure, exports and imports are rising rapidly, estates are in full cultivation, and there is full employment for the peasant and labouring classes. The value of cotton exported for the year 1905-6 was 6059*l.*, for 1906-7 was 16,922*l.* The total value of the 1907-8 crop, in-

¹ "West Indian Bulletin. The Journal of the Imperial Agricultural Department for the West Indies," vol. ix., No. 3, 1908.

cluding exports, value of seed, &c., is estimated at 45,000*l.*

In St. Kitts cotton is grown almost entirely as an intermediate crop with sugar-cane. Up to the present no injurious effect on the sugar-cane has been noticed, and with careful manuring there seems little risk in continuing this system of planting. An agricultural inspector has been appointed to instruct the smaller growers in the best methods of working, and the prospects are considered highly satisfactory. In others of the Leeward Islands Dr. Watts has an equally satisfactory report to make; the exports from this group rose from 383,477*lb.* of lint in 1904-5 to 526,382*lb.* in 1905-6, and 702,910*lb.* in 1906-7, while a further increase is anticipated during the current season.

The Imperial Department is studying the question of seed selection, which promises to lead to still further improvement. The manurial requirements of the crop are being investigated, and schemes devised for dealing with the pests. Mr. Ballou gives a summary of his experiments on the cotton-worm, the boll-worm, cut-worms, the stainers and other pests; constant vigilance will obviously be necessary, but with a strong Department of Agriculture there is no reason to fear that the pests cannot be coped with. The progress of the industry reflects the greatest credit alike on the Department and on the planters, and augurs well for the future prosperity of the West Indies.

E. J. R.

NOTES.

SIR RICHARD D. POWELL has been re-elected president of the Royal College of Physicians of London.

MR. T. EDISON has been awarded the gold medal of the Royal Academy of Sciences of Sweden for his inventions in connection with the phonograph.

PRINCE ALBERT OF MONACO, distinguished for his researches in oceanography, has been elected a foreign member of the Paris Academy of Sciences in succession to the late Lord Kelvin.

THE summer meeting of the Institution of Mechanical Engineers will be held this year in Liverpool, and will begin on Monday, July 26.

THE Royal Physical Society of Edinburgh—one of the oldest scientific societies in the kingdom—has now opened its doors to women members. At the March meeting of the society, Mrs. Elizabeth Gray, Edinburgh, Miss Marion I. Newbiggin, D.Sc., Edinburgh, Mrs. Ogilvie Gordon, D.Sc., Ph.D., Aberdeen, and Miss Muriel Robertson, London, were elected ordinary fellows.

REUTER's correspondent at Sydney reports that during a violent storm in the New Hebrides on March 29, Teouma was swept by a huge wave, which caused great destruction. The Government buildings at Vila were destroyed, and many vessels were stranded.

THE New York correspondent of the *Times* announces that Dr. W. H. Edwards died at Coalburo, West Virginia, on April 4, at the age of eighty-eight years. Dr. Edwards was the author of "The Butterflies of North America," a standard work on the subject, and contributed many papers on entomology to various scientific periodicals.

FROM Honolulu is reported the death, in his seventy-third year, of the Rev. Dr. Sereno E. Bishop, who had spent fifty-six years as an American missionary in the Hawaiian Islands. He was a frequent contributor to