

the above-mentioned date was 10,745,002. The number of trees tapped during the year was 441,488, and the production of dry rubber was 861,732 pounds. At the botanical station encouraging experiments have been made with the planting of camphor trees. The forests yield timber, resins, oils, and a great variety of fruit. The states are the chief source of the world's supply of tin, the output of which was 50,991 metric tons in 1905 and 48,616 metric tons in 1906. The gold output in 1906 was 11,580 ounces, of which 10,089 ounces came from Pahang. Other minerals found are lead, copper, bismuth, mercury, arsenic, manganese, plumbago, silver, zinc, and iron. The total imports and exports in 1905 were valued at 43,165,229 dollars and 78,249,804 dollars respectively (the average value of the dollar having been about 50 cents). In 1906 (the average value of the dollar having been about 58 cents) the imports amounted to 50,926,606 dollars, and the exports, 80,832,325 dollars. The principal imports are live animals, cotton piece goods, foods (rice, flour, bran, and provisions), liquors and beer, metal manufactures, oils, tea, sugar, tobacco, and opium. The principal exports are tin, gold, rubber, copra, gutta percha, gambier, sugar, tapioca, etc. In 1906 there were 428 miles of railway and about 1250 miles of telegraph.

The various protected states were federated in July, 1896. The highest authorities are the High Commissioner, who is the Governor of the Straits Settlements, and the Resident-General. There is also a Subordinate Resident in each state. The highest authority in each state is a Council composed of the native Sultan, the Resident and his Secretary, and some of the leading Malay chiefs and Chinese merchants. There is a military force of 900 Sikhs and Pathans, and a police force of 2800 men, partly Malay and partly Indian. The revenue and expenditure in 1906 were 27,223,476 (about one-half from customs) and 18,899,425 dollars respectively. The export duty on tin yielded 10,588,824 dollars in 1906.

FENCING. The fourteenth annual inter-collegiate fencing tournament was won by the trio of swordsmen from Annapolis, Dickman, Perdick, and Brandt. The preliminaries were held March 29, and the finals the following evening, at the New York Athletic Club gymnasium. Cornell defeated Columbia 5 to 4. Yale defeated Pennsylvania 7 to 2, and Yale in the semi-finals won from Cornell 4 to 3. Annapolis wrested the championship from West Point, which had held it the year before. The final scores were: Annapolis won 14 and lost 4 bouts; West Point won 10 and lost 8; Cornell won 3 and lost 15. Yale, Columbia, Harvard, Pennsylvania, and Princeton finished in the order named. In dual meets, West Point beat Cornell 5 to 4; Annapolis beat Pennsylvania 6 to 3; Princeton beat Pennsylvania 6 to 3; West Point beat Yale 6 to 1; West Point beat Columbia 7 to 2; Columbia beat Cornell 5 to 4; Annapolis beat Cornell 7 to 2; West Point beat Princeton 7 to 2; Annapolis beat Columbia 5 to 4. Cornell won in a triangular contest with 6 points to Yale's 2 and Harvard's 1. Yale won in a triangular contest with 12 points to Columbia's 10 and 5 for Massachusetts Institute of Technology. The contest for the Saltus cup and medals, held in New York, April 15, under the auspices of the Amateur Fencers' League, was won by the New York Athletic Club from

the Brooklyn Fencers' Club and the Turn-Ver-ein. C. Waldbott, F. Sage, and V. Curti won national championships with the foil, W. D. Lyon, P. Benzenburg, and W. Eckard with the dueling sword, and A. G. Anderson, K. B. Johnson, and F. J. Byrne with the sabre. The champion team cup for foils was won by Anderson, Curti, and Lyon, for the New York Athletic Club.

FERTILIZERS. The necessity for increasing the productive capacity per acre was one of the leading topics in agricultural and economic discussions in 1907, as the matter was becoming more apparent and pressing every year. Already the fertilizer business had grown to such size that it was considered necessary to enact laws for their inspection and control in 36 States and Territories, including all those east of the Mississippi River and Arkansas, California, Kansas, Louisiana, Missouri, North Dakota, Oklahoma, Texas, and Washington west of that river, as well as Porto Rico. The rapid extension of the use of fertilizers in the United States was also indicated by the census figures. The census of 1880 reported the value of fertilizers then annually used in the United States to have been \$28,500,000; that of 1890, \$38,500,000; that of 1900, \$54,750,000. The value of fertilizers annually consumed in the United States in 1907 was probably from \$65,000,000 to \$70,000,000.

The increasing demand for fertilizers resulted in great activity in the development of new sources of supply of fertilizing materials and in the study of better methods of utilizing those already available. Geological explorations had showed the existence of almost unlimited deposits of phosphate in this country. To the immense deposits of the Carolinas and Florida, long known, the more recently added were the large deposits of Tennessee, and deposits of economic importance within a few years discovered in Arkansas, Idaho, and Wyoming. No potash deposits of importance up to 1907 were being exploited in this country, but the potash beds of Germany were easily supplying the greater part of the world's demand for potash.

The third essential element of fertilizers,—nitrogen,—was being derived mainly from the nitrate deposits of Peru and Chile and from the nitrogen of the air through the growth of plants which assimilate this nitrogen. The early exhaustion of the nitrate deposits with a consequent bread famine was freely predicted by such eminent scientists as Sir Wm. Crookes and Professor Silvanus Thompson. The production of the deposits in 1907 was about 2,000,000 tons. From 1830 to 1907 they produced over 36,000,000 tons of nitrate, two-fifths of it from 1897 to 1907. Consul A. A. Winslow was authority for the statement that the deposits were probably good for 200 to 300 years even at double the present rate of production. The rising price of nitrogen and the possibility of early exhaustion of the larger sources of supply tended to stimulate activity in the development of other sources of supply of this element. Nitrate deposits of more or less economic importance have been discovered in certain alkali deserts of California, and increased attention was being given to the utilization of certain by-products and wastes, such as inedible fish and fish scraps, slaughter-house refuse (tankage), and cotton-seed meal, which are essentially nitrogenous fertilizers; to the use of peat de-