

Siam.

THE GOVERNMENT LABORATORY, BANGKOK.

SECOND REPORT, FROM APRIL 1, 1922, TO MARCH 31, 1924.

THE Director of the Government Laboratory of Siam, Mr. A. Marcan, F.I.C., has given a report (dated March, 1926) of the work done in the two years ending March 31, 1924 (*cf.* ANALYST, 1924, 49, 88).

PREPARATION OF ESTERS OF HYDNOCARPUS OIL.—The oil is cold-pressed from the seeds of *Hydnocarpus anthelmintica*, and esterified by heating it for 20 hours with alcohol and sulphuric acid. The esters are washed with water, caustic soda, and again with water and are finally distilled *in vacuo*, mixed with animal charcoal, blown with air, filtered and sterilised. In all, 72·8 litres were prepared and distributed for the treatment of leprosy.

CHEMICO-LEGAL WORK.—Twelve of 51 articles tested for poison were found to contain it. Arsenic was found in 3, atropine in 4, atropine and arsenic in 1, calcium oxalate in 3; and boric and salicylic acid in 1 article. Human blood was detected in 5 of 23 cases investigated.

Of the 124 drugs examined under the Harmful Habit-Forming Drugs Law, B.E. 2465, twenty were found to contain opium alkaloids and one cocaine.

INDUSTRIAL MATERIALS.—The bark from a species of oak (Kaw Nun), which is reported to be much used for chewing purposes, was found to contain 28·8 per cent. of tannin, and to be a suitable tanning agent.

Various samples of bamboos, examined as to their suitability for paper-making, contained from 50·4 to 56·1 per cent. of cellulose (calculated on the dry material).

Various samples of hay (for fodder) and of paddy husk (for use as fuel) were examined.

LOCAL DRUGS.—"Kratom" leaves from *Mitrogyne speciosa* are widely used for chewing in Peninsular Siam and, to a certain extent, in Bangkok, where it is now planted in the market gardens. Two new alkaloids, mitrogynine and mitro-versine, were discovered in *M. speciosa* and *M. diversifolia*, respectively. The chemical and physiological properties of these are under examination.

Power Alcohol Production from Sugar Beet.

REPORT TO THE MINISTER OF AGRICULTURE *

THE cost of raw material, allowing for the value of residual products, is placed at 5 per cent. of the price per ton of beet, and the total cost of conversion at 9d. per gallon, so that with beets at £1 and £2, respectively, the cost per gallon of 95 per cent. alcohol, at the works, would be 1s. 9d. and 2s. 9d. respectively. Costs of denaturation, packages, transport and selling charges are additional to this. One gallon of 95 per cent. alcohol is taken as equivalent to three quarters of a gallon of petrol for internal combustion engines of present design, since full realisation of the higher compression ratios and thermal efficiencies possible with alcohol demands engines of special design. A moderate amount of fuel alcohol might be

* Obtainable at Adastral House, Kingsway, W.C. 2. Price 6d. net.

marketed at approximately the same price as petrol. The theoretical yield of alcohol from sucrose is 53·8 per cent. by weight or 8 gallons of 95 per cent. alcohol from 1 cwt. of sucrose, and the practical yield about 6·8 gallons per cwt. The prospects for the production of alcohol by synthetic processes are regarded as rather obscure, but the effect of development in this direction would be a restraining influence on the price of petrol, etc.

D. G. H.
