Fiji

REPORT OF THE GOVERNMENT CHEMIST FOR THE YEAR 1931

In his annual report to the Department of Agriculture, Fiji, Mr. J. W. Blackie states that 717 samples were analysed as against 541 in 1930. These included 130 of milk, 51 of other foods, 27 of drugs, and 17 of aerated waters.

Milk.—As a result of the rigid inspection of dairies the milk has been much cleaner than in former years. It has been argued in the past that it is impossible to produce milk in Fiji up to the standard required by law in England, namely, 3·0 per cent. of fat, 8·5 per cent. of solids-not-fat. This feeling has resulted from the consistently poor quality of the milk offered for sale. The figures obtained during this year, which has not been exceptional, show definitely that milk can be produced in Suva of a quality equal to that in temperate countries, and, provided that the herds are healthy, there is no reason why a standard of 3·2 per cent. of fat and 8·5 per cent. of solids-not-fat should not be enforced, instead of the low requirement of the dairy by-laws now in force, namely, 3·0 per cent. of fat and 8 per cent. of solids-not-fat.

The research work carried out during the year included the following investigations:

Didi Resin.—The resinous substance exuding from *Canarium vitiensi* is used locally as an adulterant of kauri resin. It was found to contain 26·5 per cent. of a resene (m.pt. 183° to 185° C.), soluble in ether and in chloroform; 53 per cent.

of other resenes, soluble in alcohol; and 5·8 per cent. of an essential oil. The alcohol-soluble portion would have some value as a lacquer for metals.

Toxic Principle of Lantana Crocea.—A strange cattle disease, attributed to ingestion of *Lantana crocea*, was investigated. The veterinary evidence indicated that substances akin to lupino-toxins were present, but, up to the present, these have not been detected. A trace of an alkaloidal substance was isolated, and is under investigation. Feeding experiments and injections with extracts of the plants under examination failed to produce the characteristic lantana symptoms, but, as the veterinary officers obtained positive results with other specimens, it is suggested that there may be seasonal variation in the active principle.

Ethyl Esters of Calophyllum (Dilo) Oil.—The "ethyl esters" of dilo oil, obtained from the kernels of *Calophyllum inophyllum*, were found to consist of about 50 per cent. of unesterified material containing the glycerides of oleic, palmitic and stearic acids, together with resin acids and resenes. The esterified portion contained about 20·6 per cent. of ethyl oleate and 79·4 per cent. of ethyl palmitate and ethyl stearate in approximately equal proportions. The natives use the oil for massaging purposes, and some success has attended the use of the ethyl esters for the treatment of leprosy.

Rotenone-Content of Derris Uliginosa.—The local species of *Derris*, termed *duva* by the natives, has some reputation as a stupefying agent for fish, but, in general, the imported species, *Derris elliptica*, is used. Comparative analyses of the two species showed that the "derrid" content (*i.e.* ethereal extract) of the latter is at least six times as much (*e.g.* 12·0 and 1·8 per cent.). For the determination of the rotenone content the apparatus previously described (*J. Soc. Chem. Ind.*, 1932, **51**, 129T) was used for extracting the material. The following results were obtained with a composite sample of stem and root:—Moisture, 12·2; rotenone on air-dried substance, 0·3; on dry substance, 0·34 per cent. Derris root has been reported to contain as little as a few tenths of a per cent. of rotenone, but the best commercial samples contain from 4 to 5 per cent.