DIKA FAT.

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(Read at the Meeting, November 1, 1905.)

DIKA FAT, dika butter, dika oil, oba oil, wild mango oil is the fat obtained from the seed-kernels of various kinds of *Irvingia* (*I. gabonensis*, Aubry-Lecomte; *I. Barteri*, Hooper. *Mangifera gabonensis* is also recorded in the literature of this subject as the tree yielding dika fat, but it appears that *Mangifera gabonensis* is identical with *Irvingia gabonensis*). The trees belonging to the *Irvingia* family are indigenous to the West Coast of Africa, from Sierra Leone to Gaboon. They are termed by the natives "udika," "dika," "dita," and "oba." The fruits are known in Gaboon as "iba." By boiling the kernels with water and skimming off the oily layer the natives obtain the dika butter.

Through the kindness of Professor W. R. Dunstan, I received a considerable quantity of both decorticated nuts and seeds. The seeds were stated to be those of *Irvingia Barteri*, Hooker, from South Nigeria. Unfortunately the nuts were in so advanced a state of mouldiness that it was useless to extract the fat from them. For the same reason it was impossible to ascertain the proportion of seeds to shells

THE ANALYST.

395

in the nuts. The mouldy seeds formed 20 per cent. of the total nuts, but this is, of course, much below what would be actually the case.

The decorticated seeds contained 54.3 per cent. of fat. This fat was in a comparatively fresh state, as the percentage of free fatty acids amounted to 3.35 per cent. only.

The following numbers were found :

FAT.

Specific gravity at 40° C. (water at 40° C. = 1)	...	0.9140
Melting point (capillary tube)	...	38.9
Solidifying point	...	29.4 – 27.2
Saponification value	...	244.5
Iodine value	...	5.2 per cent.
Reichert-Wollny value	...	0.42 „
Unaponifiable matter	...	0.73 „

FATTY ACIDS.

Mean molecular weight	...	214
Solidifying point	...	34.8° C.
Stearic acid	...	absent.

The iodine value is much lower than the one given by Dieterich—viz., 30.9 to 31.3. Since Dieterich also records a low melting-point—viz., 29°—he evidently did not have genuine dika fat in his hands. The iodine number I found is in good agreement with Oudemans' statement that dika fat consists of laurin and myristin only, to the exclusion of olein. It should, however, be mentioned that the absence of olein was only inferred by him from the fact that an ether-soluble calcium salt could not be obtained. Heckel confirmed Oudemans in that he could not obtain an ether-soluble lead salt; but, of course, this cannot be taken as proof for the absence of oleic acid.

The absence of stearic acid, the low mean molecular weight of the total fatty acids, and the somewhat large quantity of insoluble volatile acids obtained in the Reichert-Wollny test confirm in the main the composition given by Oudemans. We must, however, allow a small proportion of olein. Since Oudemans showed by careful examination that palmitic acid is absent, the fat may be taken as consisting of myristin and laurin and a few per cent. of olein.

DISCUSSION.

Mr. CHAPMAN said that in the latex of several of these gutta trees were found higher alcohols, which appeared to be closely allied to cholesterol, and it would be interesting to know if any such bodies occurred, as seemed possible, in the seeds also. He might call Dr. Lewkowitsch's attention to an alcoholic body having the formula $C_{28}H_{46}O$, which had recently been obtained by Marek from the sap of the *Asclepias Syriaca*, and to which the name "Asclepiol" had been given. It seemed not improbable that the unsaponifiable matter, to which reference had been made, might contain some such substance as this.

Dr. LEWKOWITSCH said that he had not examined the unsaponifiable matter, which might contain more or less considerable quantities of phytosterol.