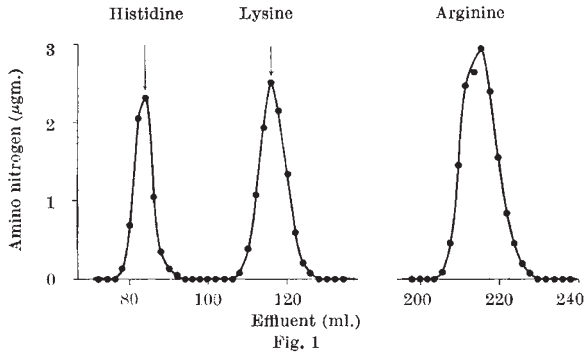

Fig. 1

collected. The histidine, lysine and arginine peaks thus obtained are shown in Fig. 1; the ammonia peak appearing between lysine and arginine was not estimated.

Two determinations were made on each of the two hydrolysates and gave the following values (corrected to a dry protein basis):

	Amino-acid (gm.)/100 gm. of fibroin
Histidine	0·370 ± 0·008
Lysine	0·537 ± 0·006
Arginine	1·000 ± 0·007

These values correspond (within ± 4 per cent) to an integral molecular ratio of 2 : 3 : 5, and indicate that the molecular weight of fibroin is of the order of 84,000 and that the number of amino-acid residues in the molecule is slightly greater than 1,000 (for an equivalent residue weight of 78); this agrees with the value for the molecular weight found by Holmes and Smith[2].

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Olefinic Nature of Anacardic Acid from Indian Cashew-nut Shell Liquid

Anacardic acid, the major component of the liquid extracted by solvent from cashew-nut shells[1], was regarded as a homogeneous chemical entity containing in its aliphatic side-chain of fifteen carbon atoms two double bonds until recently, when it was shown by Izzo and Dawson[2] to be in fact a mixture of olefinic components of which they identified the mono-olefin in the form of a crystalline glycol of the methylated anacardic acid. The present communication reports the complete separation of the mixture into its several components and the determination of their olefinic structure.

A sample of anacardic acid, prepared from Indian cashew-nut shells, was subjected to fractional crystallization, using as solvents acetone, methanol and petroleum ether, at temperatures of 0° to — 80° C., whereby pure specimens of four components were isolated, namely, a saturated one, and a mono-, di- and tri-olefin.

The saturated component (m.p. 91·5° C.)[3] was identified as 1-hydroxy 2-carboxy 3-pentadecyl benzene from a mixed melting-point determination with a pure sample of the compound obtained by catalytic hydrogenation of anacardic acid and carbon–hydrogen analysis.

Oxidation of the mono-olefin (m.p. 44–45° C.) with potassium permanganate in acetone gave azelaic, heptylic and oxalic acids, from which its structure was deduced as 1-hydroxy 2-carboxy 3-(8′ pentadecenyl) benzene, identical with the olefinic structure reported previously[2].

The di-olefin (m.p. 25–26° C.) on oxidation with permanganate in acetone at — 20° C. gave azelaic, butyric and oxalic acids. Further, the monophenol obtained by decarboxylation of the acid at low pressure, on methylation and subsequent oxidation with permanganate, yielded ω-(3-methoxy phenyl) caprylic acid[4,5], and butyric and oxalic acids. From these results, the di-olefin was assigned the structure 1 - hydroxy 2 - carboxy 3 - (8′,11′ pentadecadienyl) benzene.

A similar oxidation of the tri-olefin yielded azelaic, oxalic and formic acids; the methyl ether of the decarboxylated sample resulted, on oxidation, in ω-(3-methoxy phenyl) caprylic acid, and oxalic and formic acids. Tests for presence of conjugated double bonds were negative. On the basis of these observations, the tri-olefin was given the structure 1-hydroxy 2-carboxy 3-(8′,11′,14′ pentadecatrienyl) benzene.

A comparison of these results with those obtained recently on the monophenol from commercial cashew-nut shell liquid[5] points to the identity of the olefinic characteristics of the solvent-extracted and the commercial liquids. The composition of the heterogeneous mixture of the anacardic acid studied by us was found, on the basis of a typical careful fractionation, to be: saturated component, 4; mono, 15; di-, 44; and tri-olefin, 37 per cent.

A full account of this investigation will be published elsewhere.

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Bacterial Soft Rot of Avocado Fruit

Soft-rot diseases of avocado fruit are recorded in the literature as associated with fungi. So far, the only bacterial disease reported to affect avocado fruit is a dry rot caused by *Pseudomonas syringae* Van Hall[1]. In December 1953, however, a bacterial soft-rot disease in avocado fruits was found in Israel on several fruits picked from a single tree of the Californian variety, H. L.

In infected specimens of unripe, hard, green fruits a third or more of the fruit area had been turned dark and soft by a spreading decay. The flesh underlying such areas was soft, light to dark-brown in colour, and smelled putrid. Microscopic examination of Gram-stained affected tissues revealed numerous Gram-negative rod-shaped bacteria.

The organisms were isolated in pure culture on nutrient agar + 1 per cent glycerol plates and a distilled water suspension of 48-hr. old slant cultures