

A CONTRIBUTION TO THE STUDY OF THE SUBSTANCES  
OF COTTON HULLS

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The composition of the fatty waxes of various organs of the cotton plant has been published previously [1-3].

In the present paper we give the results of the isolation and study of the fatty waxes of the hulls of the cotton plant of variety 108-F. These substances were isolated from the hulls by extraction with chloroform and the separation of the extract into two fractions: acetone-insoluble (I) and acetone-soluble (II).

Fraction I, by treatment with petroleum ether and passage of the solution through a column filled with alumina, gave four crystalline substances with mp 55-56°C, 65-66°C, 81-82°C, and 85-86°C, of which two were identified as hexacosane  $C_{26}H_{54}$  and triacontane  $C_{30}H_{62}$  and the other two as an octacosanol  $C_{28}H_{57}OH$  and a triacontanol  $C_{30}H_{61}OH$ . The residue from the treatment of fraction I with petroleum ether was saponified. The saponifiable part, after acidification, yielded a white crystalline substance with mp 91-92°C having the composition  $C_{25}H_{55}COOH$ , which proved to be identical with the montanic acid isolated previously from cotton fiber [3].

Fraction II was also saponified. The unsaponifiable fraction was separated on a column of alumina, giving a crystalline substance with mp 137-138°C and the composition  $C_{29}H_{50}O$ . On the basis of IR spectra, the properties of some derivatives (acetyl derivative with mp 129-130°C, benzoyl derivative with mp 145-146°C), and a mixed melting point with the known substance, this compound was identified as  $\beta$ -sitosterol. The saponifiable part of fraction II was acidified, giving fatty acids which, according to gas-liquid partition chromatography [4] were myristic, palmitic, palmitoleic, stearic, oleic, and linoleic acids. These acids could be detected only after saponification of the extracts, which shows that they are present in fraction II in the combined form.

LITERATURE CITED

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