

THE ISOLATION OF SOME SUBSTANCES FROM HIBISCUS LEAVES

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Flowers of various species of hibiscus, family Malvaceae have been studied in detail for their flavonoid content [1]. Substances of other classes from this plant, which is closely related to the cotton plant, have been studied little. The present paper gives the results of the isolation and study of some substances of the leaves of a hybrid hibiscus growing in the botanical garden of the Academy of Sciences of the Uzbek SSR.

The plant material collected was extracted with chloroform. The solvent was distilled off and the residue was treated with acetone. Acetone-soluble (A) and acetone-insoluble (B) fractions were obtained [2]. Fraction A was repeatedly extracted with petroleum ether (with heating). The petroleum ether extract was passed through a column filled with alumina. The column was washed successively with benzene, ether, acetone, and methanol. The petroleum ether eluate, after distillation of the solvent and fractional recrystallization from acetone, yielded two crystalline substances with mp 50-51°C and 55-56°C, identified as the high-molecular-weight hydrocarbons tetracosane $C_{24}H_{50}$ and hexacosane $C_{26}H_{54}$.

The benzene and methanolic eluates deposited a crystalline substance with mp 68-69°C identified by its elementary analysis and the preparation of the acetyl derivative and urethane as docosanol $C_{22}H_{45}OH$. The remainder of fraction A and of the petroleum ether extract were also saponified. The saponification products were passed through a column of activated carbon, and then a substance crystallized out with mp 64-65°C which proved to be stearic acid. A petroleum ether extract of fraction B was passed through a column filled with alumina and the eluate was saponified to give a mixture of fatty acids consisting of myristic, palmitic, stearic, and arachidic acids, as was shown by reverse-phase partition chromatography [3] in 90% acetic acid. These fatty acids could be detected only after the saponification of the extracts, which showed that they were present in them in the bound form.

The acetone-soluble fraction B yielded, in addition to fatty acids, another crystalline substance $C_{29}H_{50}O$ with mp 137-138°C giving qualitative reactions for sterols. The physicochemical properties of the substance itself and its derivatives (acetyl and benzoyl derivatives) showed that it was β -sitosterol.

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