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PETROL SOLUBLE CONSTITUENTS OF THE SEEDS OF *PYRACANTHA ANGUSTIFOLIA*

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Key Word Index—*Pyracantha angustifolia*; Rosaceae; fatty acids; sterols; alkanes; monoterpenes.

Plant. Pyracantha angustifolia, collected in Tokyo Japan. *Uses.* Not known. *Previous work.* Carotenoid[1] and triterpenoids.[2,3]

The light petrol. (b.p. 40–60°) extract of the seeds (800 g) yielded an essential oil fraction (218 mg), a fatty acid fraction (933 mg), and an unsaponifiable matter fraction (7·5 g). The essential oil was found to contain camphene, β-pinene and limonene along with C_{13}–C_{17} normal hydrocarbons. These compounds were identified by comparison with authentic materials by GLC and GC–MS analysis. The fatty acid fraction was esterified, and the major components identified by GC–MS analysis and by comparison with authentic samples by GLC. The minor components were inferred from their ECL values.[4] The acids present were 10:0 (10·6%), 12:0 (3·8), 14:0 (2·7), 15:0 (3·9), 16:0 (37·4), 16:1 (5·7), 17:0 (1·2), 17:1 (1·2), 18:0 (3·0), 18:1 (8·6), 18:2 (22·5) and 18:3 (7·5). The unsaponifiable matter was divided into three fractions by column chromatography over silica gel.

From the results of IR, GLC and GC–MS, the components of the light petrol. fraction were identified as a series of normal alkanes (C_{15}–C_{31}). The major alkanes were $C_{23}H_{48}$ and $C_{25}H_{52}$. Light petrol. –C_6H_6 (1:1) gave a solid (m.p. 74–76°). The IR spectrum showed the presence of a primary alcoholic group (3400 and 1055 cm^{-1}), and GLC showed the presence of two components. The MS of the first showed main peaks at *m/e* 296, 280, 278 and 252. In addition a series of peaks $C_nH^+_{2n+2}$ was observed. It was thus identified as eicosan-1-ol. The second (minor) component appeared to be docosan-1-ol. The C_6H_6 fraction gave needles (m.p. 135–137°). Liebermann–Burchard positive. IR: 3480, 1650 and 1040 cm^{-1}. NMR: 4·61 and 7·65–9·30 τ (60 MHz) which pointed to a sterol mixture. Comparison by GLC with authentic samples, showed that it consisted of sitosterol (96·9%), campesterol (2·8) and stigmasterol (0·3).

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