[Jour. Indian Chem. Soc., Vol. 41, No. 1, 1964]

Chemical Investigation of *Pyrus Pashia* Ham

D. Chakravarti, Nripendra Kumar Roy, and Nirendra Nath Chakravarti

Pyrus pashia, Ham (Family: Rosaceae) is a medium-sized tree, growing abundantly in the temperate Himalayan region from Kashmir to Bhutan.

The present work deals with the isolation of four different compounds from the light petroleum (b.p. 60-80°) extract of the bark and leaves. It has been possible to identify (*a*) Friedelin (0.5%) and β-sitosterol (0.01%) from the light petroleum extract of the dried bark and (*b*) the hydrocarbon, *n*-triacontane (1%), myricyl alcohol (0.005%), and β-sitosterol (0.04%) from the leaves.

Extraction of the Bark of P. Pashia

Air-dried, powdered bark was extracted with light petroleum (b.p. 60-80°). Chromatographic separation over Brockmann alumina of the solid, obtained after removal of the solvent, furnished two distinct crystalline products:

Fraction (I), m.p. 250-52°, $[\alpha]_D$ −28.5° ($CHCl_3$), responded to Burchard-Lieberman reaction; it did not exhibit any colour with tetranitromethane. Mixed m.p. with an authentic sample of friedelin[1-3] remained undepressed. The oxime crystallised from benzene, m.p. 290°; mixed m.p. with an authentic sample of the oxime of friedelin, 290°. (Found: C, 81.33; H, 11.35. Calc. for $C_{30}H_{51}ON$: C, 81.63; H, 11.56%).

Fraction (II), m.p. 138°, also responded to Burchard-Lieberman reaction and crystallised from methanol. The compound was acetylated and the product was crystallised from acetone, m.p. 126°, $[\alpha]_D$ − 40.5° ($CHCl_3$). The mixed m.p. with an authentic sample of the acetate of β-sitosterol remained unchanged. (Found: C, 81.41; H, 11.56. Calc. for $C_{31}H_{52}O_2$: C, 81.52; H, 11.48%).

It may be noted that from the ethanol extract of the bark a good yield of a red-coloured substance has been obtained which is under investigation.

Extraction of the Leaves of P. Pashia

Dried and powdered leaves were extracted with light petroleum (60-80°) and on concentration the extract afforded a semisolid mass which, when chromatographed over Brockmann alumina, furnished three crystalline compounds:

Fraction (I), m.p. 66°, crystallised from light petroleum. (Found: C, 85.38; H, 14.40. Calc. for $C_{30}H_{62}$: C, 85.31, H, 14.69%). The hydrocarbon was found identical with *n*-triacontane[4].

1. Drake *et al.*, *J. Amer. Chem., Soc.*, 1935, **57**, 1854, 1570.
2. Ruzicka *et al.*, *Helv. Chim. Acta*, 1944, **27**, 972.
3. Bruun, *Acta Chem. Scand.*, 1954, **8**, 71.
4. Klobb *et al.*, *Bull. Soc. Chim.*, 1910, *iv*, **7**, 940.

Fraction (II), m.p. 88°, crystallised from benzene. (Found: C, 82.14; H, 14.21. Calc. for $C_{30}H_{62}O$: C, 82.22; H, 14.15%). IR spectra (nujol): λ_{max} 3300cm^{-1}.

The chloro derivative, prepared with PCl_5, was crystallised from light petroleum, m.p. 65°. The chloro derivative was identified to be myricyl chloride[5].

Fraction (III), m.p. 138°, responded to the Burchard-Lieberman reaction. The acetyl derivative crystallised from acetone, m.p. 125-26°, $[\alpha]_D$ —41° ($CHCl_3$), identical (mixed m.p.) with an authentic specimen of β-sitosterol acetate. (Found: C, 81.38; H, 11.24. Calc. for $C_{31}H_{52}O_2$: C, 81.52; H, 11.48%).

The authors offer their thanks to Mr. B. B. Bhattacharya, Jadavpur University, for microanalyses of the samples. Their grateful thanks are also due to Dr. P. C. Maiti, Plant Chemist, Botanical Survey of India, Calcutta, for supplying plant materials.

Department of Pure Chemistry,
University Colleges of Science & Technology,
Calcutta-9.

Received October 18, 1963.

5. Pieverling *Annalen*, 1876, **183**, 348.