

### III. *d*-MANNITOL FROM 'GARDENIA TURGIDA'.

*By Martin Onslow Forster and Keshaviah Aswath Narain Rao.*

On requesting Mr. R. S. Pearson, C.I.E., Forest Economist, Dehra Dun, to supply Dekamali resin in quantity sufficient for completing the investigation of gardenin, it was found that this gum from *Gardenia lucida* was extremely scarce; but we were supplied instead with a material from *G. turgida* entirely different in appearance and properties from that examined by Stenhouse (*Annalen*, 1856, 98, 316; Stenhouse and Groves, *ibid.*, 1880, 200, 311). The product from *G. turgida* has a faintly pleasant smell in place of the odour suggesting cat's urine, and consists of loose fragments in which colourless crystals can be recognised under the lens. It dissolves almost completely in cold water with slight frothing, forming a pale brown, viscous liquid, slow to filter and depositing a brown syrup on evaporation. Furfural is not produced on boiling with hydrochloric acid, and the tests for nitrogen, aldehydes, and ketones were negative.

The powdered substance (50 g.) dissolved in water (200 c.c.) was shaken with tribasic lead acetate (15 g.) added in small quantities, and filtered after 20 hours, when the lead was precipitated completely by hydrogen sulphide; the concentrated filtrate from lead sulphide deposited silky, white needles identified as *d*-mannitol (dimorphous, soft needles or hard prisms; m. p. 165–166°, unchanged by admixture with *d*-mannitol; solubility, 14.7 parts in 100 H<sub>2</sub>O at 19°;  $[\alpha]_D^{20}$  in borax solution, 19.7°; m. p. of hexa-acetyl derivative, 120°). The yield corresponds to about 40 per cent. of the dried exudation.

Our thanks are due to Mr. R. S. Pearson for kindly supplying us with this material, which was collected during September and October (1924) in North Kandesh, where the rainfall is very small in those months. Thus the gum would not improbably escape dissolution by rain, particularly as it does not exude from the bark, but is obtained from the gum-cells in the wood. Mr. Pearson states further that exudation does not occur during the spring and hot months.

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