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CHEMICAL INVESTIGATIONS ON CASSIA TORA LINN.

Cassia tora (Leguminosæ) is a common herbaceous annual occurring as a weed throughout India.¹ Both the leaves and seeds constitute a valuable remedy in skin diseases.² The isolation of a glucoside emodin and chrysophanic acid from the seeds has been reported besides the chemical composition of its fatty oil.³⁻⁵ As no systematic chemical investigations of the whole plant material have been reported so far, studies on the leaves and stems of the plant were undertaken.

The whole plant material in the pre-flowering stage was collected from the Institute area and properly identified. Preliminary chemical examination of the air-dried and powdered plant material indicated the presence of tannins, reducing sugars and glycosides. Analysis of total ash (10.5%) for inorganic constituents showed the presence of sulphate, phosphate, calcium, iron, magnesium, sodium and potassium.

The plant material was percolated with alcohol and the combined percolates were concentrated to a small volume and filtered. The precipitate obtained on the filter was washed with alcohol and treated with hot water. Aqueous filtrate was decolourized, concentrated and excess of methanol was added. It was

allowed to cool in the refrigerator when colourless crystals adhering to the sides of the flask were obtained, which on crystallization from alcohol melted at 165°. The compound was very sweet and highly soluble in water. From its characteristic reactions and the derivatives, the compound has been identified as sugar alcohol, *d*-mannitol.

The water-insoluble residue was taken in boiling alcohol and filtered while hot. The precipitate obtained on cooling was redissolved in acetone, decolourized and treated with excess of methanol when a white compound was precipitated out. It crystallized from chloroform-methanol mixture and melted at 87°. Acetyl derivative (m.p. 72°) and the other reactions indicated the compound to be myricyl alcohol.

Alcoholic extract was further evaporated to dryness and exhausted with solvent ether. From the unsaponifiable product of the solvent ether extract was isolated a sterol melting at 137°. It yielded an acetate, m.p. 124°. The sterol was identified as β -sitosterol from the characteristic colour reactions and the derivatives.

Solvent ether-insoluble residue was treated with hot absolute alcohol and the insoluble traces of granular material gave a mixture of inorganic salts on purification. They were found to be sodium chloride and sodium sulphate. The alcohol soluble was evaporated to dryness, dissolved in water, treated with lead acetate and basic lead acetate. The filtrate was finally freed from lead, concentrated and precipitated with excess of alcohol. The hygroscopic precipitate answered the tests for carbohydrates and yielded an osazone derivative melting at 205° indicating the presence of glucose.

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