

group in position 3. Our first scheme resulted in the synthesis of thujane starting from menthol.¹

In the present communication, we are going to describe the synthesis of thujane according to our second scheme starting from ethyl 1-methyl-3-isopropylcyclopentane-2-one-1-carboxylate (I). This compound was prepared according to the method of Kotz and Schuler² starting from diethyl adipate. Compound (I), b.p. 133°/12 mm., was reduced with sodium amalgam to the corresponding secondary alcohol (II), b.p. 153-56°/11 mm. (phenyl urethane derivative, m.p. 144-45°) which in its turn was converted into the cyclopentene derivative (III), (b.p. 114-15°/11 mm.) by the action of phosphorus pentoxide in benzene solution. The unsaturated compound (III) reacts with diazomethane on being allowed to stand in ethereal solution at 0° during two weeks to yield the bicyclo-0:1:3-hexane derivative (IV, b.p. 130-32°/12 mm.) giving on hydrolysis with 5 per cent. KOH the corresponding croboxylic acid (V), m.p. 93-94°; Eq. Wt. found 180.9; required 182. The acid on being distilled with soda lime under reduced pressure gives thujane (VI), b.p. 155-56°;

n_D , 1.4400; d_{20}^{20} , 0.8143, the corresponding values of thujane as given by Semmler and Feldstein³ being b.p. 156-57°; d_{21}^{22} , 0.8158; n_D , 1.44121.

P. C. GUHA.
 S. KRISHNAMURTHY.

Department of Organic Chemistry,
 Indian Institute of Science,
 Bangalore,
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¹ *Ber.*, 1937, 70, 931.

² *Annalen*, 1906, 350, 226.

³ *Ber.*, 1914, 47, 387.

Occurrence of Rotenone in *Millettia pachycarpa*.

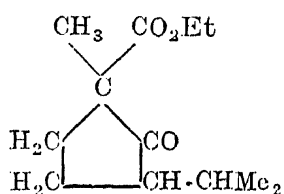
THE importance of rotenone as an insecticide is now well established and the demand for rotenone-bearing plants is daily increasing. In a previous communication¹ we had reported the discovery of the rotenone-bearing *Derris elliptica* in India. Since then we have continued our exploratory work on other fish poison plants and we are now able to report the presence of rotenone in *Millettia pachycarpa* (N. O. Leguminosæ).

These samples of roots were obtained from two different localities, Kalimpong and Gauhati and from both of these we have isolated 4% total resins and 1.2% of pure crystallised rotenone. Presence of one per cent. rotenone in *Millettia* does not, however, make it an important source of the insecticide but, in view of the fact that the plants investigated were wild and of very uncertain age, the results are encouraging and lead to the hope that on cultivation and proper harvesting the amount of the insecticide might increase. Furthermore, the interest in this finding lies in the fact, that some of the *Millettia* species are pests in some of our forests and a systematic investigation might lead to an economic use being found for them.

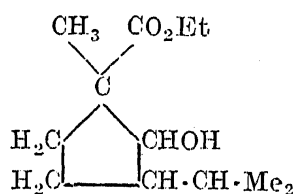
T. P. GHOSE.
 S. KRISHNA.

Forest Research Institute,
 Dehra Dun,
 July 8, 1937.

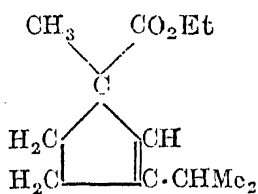
¹ *Curr. Sci.*, 1936, 4, 857.



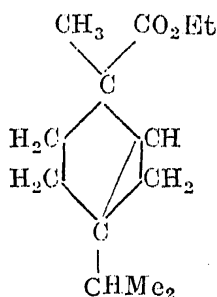
(I)



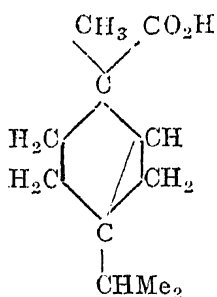
(II)



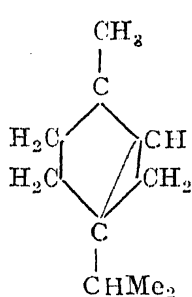
(III)



(IV)



(V)



(VI)