LETTERS TO THE EDITOR.

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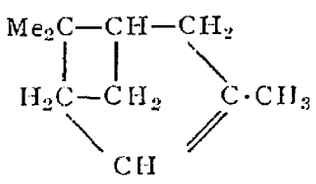
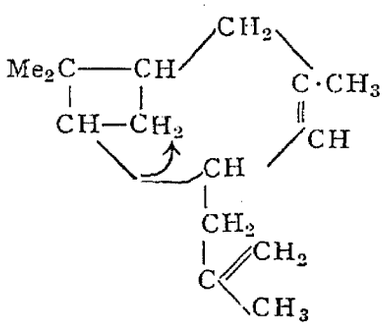
The Structure and Probable Biogenisis of β-Caryophyllene.

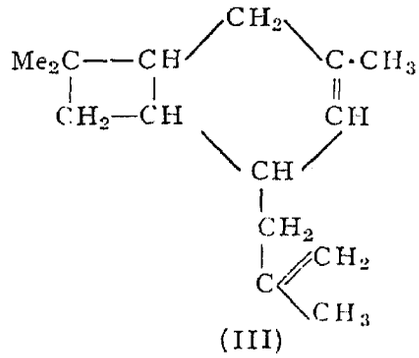
THE structure (III) assigned to β-caryophyllene by Ruzicka[1] has also been shown by Ramage and Simonsen[2] to be the most satisfactory representation. There seems to be some additional indirect evidence pointing to the correctness of the structure of Ruzicka [besides its being visualised as in (IV) to be made up of a unit of ocimene and one of isoprene], in that it has a very close resemblance to the bicyclic terpene, "orthodene" (I) which Fujita[3] has isolated from the oil of *Orthodon lanceolatum* along with caryophyllene. The similarity between the two structures (I) and (III) and the occurrence of the two terpenes in the same oil suggest that biogenetically both these compounds should be closely related. It is likely that β-caryophyllene is formed from orthodene by the addition of an isoprene unit (or its biological equivalent), probably by the isomerisation of the intermediate form (II).



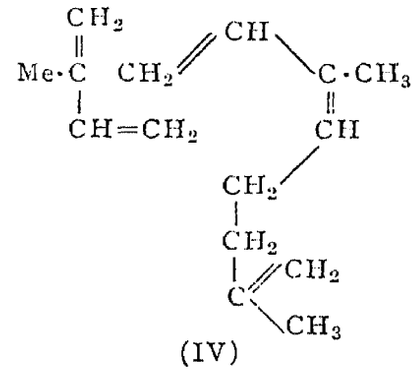
(I)



(II)



(III)



(IV)

It is significant that the formation of β-caryophyllene according to this mechanism is quite in conformity with the positions of the double bond and the isopropenyl group in the formula of β-caryophyllene as advanced by Ruzicka.

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May 5, 1937.

[1] *J. Soc. Chem. Ind.*, 1935, **54**, 509.
[2] *J. C. S.*, 1937, 73.
[3] *Am. Chem. Abs.*, 1934, **28**, 1470; *J. Chem. Soc.*, Japan, 1933, **54**, 1811.