

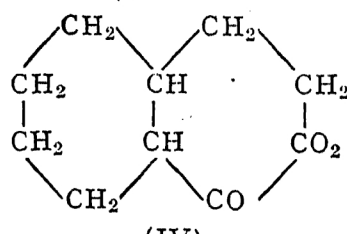
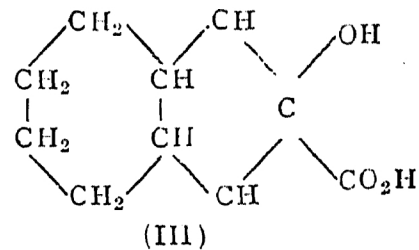
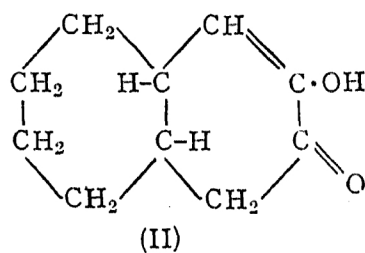
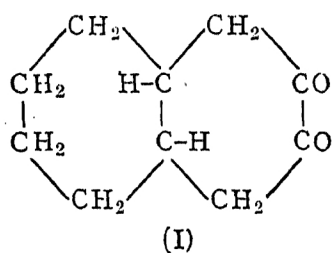
a small quantity of a diketonic compound (m.p. 99–100°) not investigated. Recently, Rao and Kuppusamy² obtained by oxidising *trans*- β -decalone with selenium dioxide in boiling xylene (24 hours) two fractions: (i) b.p. 106–08°/6 mm. (yield, about 25%), and (ii) b.p. 126–30°/6 mm. (yield, about 35%), of which the former was considered by them to be the diketone (2 : 3 or 1 : 2) of *trans*decalin and latter was not investigated. The diketone prepared in connection with some other work is now found to be different from that of Rao and Kuppusamy.

Trans- β -decalone was readily oxidised by selenium dioxide in boiling ethyl alcohol (3 hours) to yield a crystalline product, m.p. 99–100° (yield, 60–65%) along with a small quantity of a liquid, b.p. 96–130/5 mm. (5–10%), which on fractionation yielded some decalone and the solid. The compound, m.p. 99–100° (dioxime, m.p. 229°, yielding a characteristic red nickel salt; disemiacarbazone, m.p. 264–65°; quinoxalin derivative, m.p. 177–78°), has now been shown to be *trans*-2 : 3-diketodecalin (I), exhibiting properties of the diosphenol form (II), (i) by oxidation with hydrogen peroxide in quantitative yield to *trans*cyclohexane-1 : 2-diacetic acid, (ii) by reduction with sodium amalgam to 2 : 3-dioxy*trans*decalin, m.p. 141°³ and (iii) by converting to *trans*hexahydrohydrindenol-carboxylic acid (III), m.p. 134°⁴ by boiling with N-sodium hydroxide.

The product m.p. 99–100°, of Wallach and Wissenborn (*loc. cit.*) is evidently 2 : 3-diketotransdecalin, probably formed by the contamination of their *cis*- β -decalone with a little of the *trans*-form; the isomerisation of the diketone (m.p. 88–89°) from the *cis*- to the *trans*-form (I) is not probable since the keto groups in the com-

2 : 3-Diketotransdecalin.

ON treating the dibromo compound from (*cis*)- β -decalone with aqueous potash, Wallach and Wissenborn¹ obtained (*cis*)-2 : 3-diketodecalin (m.p. 88–89°), along with



pound are in the β -position and their experimental conditions are not favourable to such an isomerisation.

During halogenation and condensation reactions only the carbon atom in position 3 of *trans*- β -decalone is found to be reactive.⁵ *Trans*- β -decalone yields on oxidation with nitric acid *cyclohexane*-1 : 2-diacetic acid along with a small quantity of the 1-carboxy-2-propionic acid, indicating that the carbon atom in position 1 is also affected. Hence, a careful search is being made for the 1 : 2-diketodecalin (IV) in the products of oxidation of *trans*- β -decalone with selenium dioxide.

Full details will be published elsewhere.

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¹ *Annalen*, 1924, **437**, 163.

² *J. Annamalai Univ.*, 1937, **7**, 23.

³ Lehmann and Kratschell, *Ber.*, 1934, **67**, 1867.

⁴ — —, *ibid.*, 1935, **68**, 360.

⁵ Feu, Mc Quillon and Robinson, *J.C.S.*, 1937, 53 ;
cf. Cook and Lawrence, *J.C.S.*, 1937, 877.