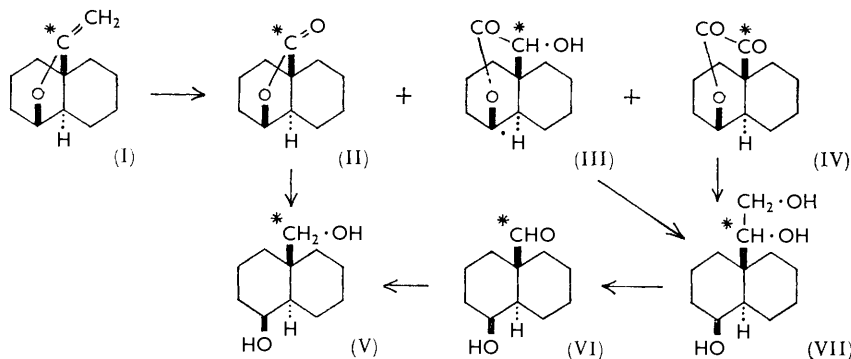


957. *The Oxidation of 1 β ,1'-Epoxy-10 β -vinyl-*trans*-decalin*

By G. BADDELEY and P. HULME

OXIDATION of the vinyl ether (I), labelled with carbon-14 at the 1'-position, with ozone in ethyl acetate, and with perbenzoic acid in chloroform, gives the lactones (II), (III), and (IV) of 4 β -hydroxy-*trans*-decalin-9 β -carboxylic, -gylcollic, and -glyoxylic acid, respectively, without displacing the labelled carbon atom.



The vinyl ether was prepared as previously described¹ by the interaction of decalin and Friedel-Crafts acetylating agent. The 1'-position was labelled by incorporating [1-¹⁴C]acetyl bromide in the acetylating agent. With ozone in ethyl acetate, and with perbenzoic acid in chloroform, the vinyl ether gave mixtures of the lactones (II), (III), and (IV), which were separated into their components. Ozone gave mainly the γ -lactone (II) and perbenzoic acid mainly the δ -lactone (III). Lactone (II) with lithium aluminium hydride gave 10 β -hydroxymethyl-*trans*-decal-1 β -ol (V), m. p. and mixed m. p. 112°, which was radioactive. Lactones (III) and (IV) were similarly reduced to the triol (VII), m. p. and mixed m. p. 133°, which with periodic acid gave formaldehyde, which was isolated as its dimedone derivative and was not radioactive, and the aldehyde (VI) which was reduced to the diol (V) and contained the radioactive carbon. The experimental procedures have already been described.¹

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¹ G. Baddeley, B. G. Heaton, and J. W. Rasburn, *J.*, 1960, 4713.