

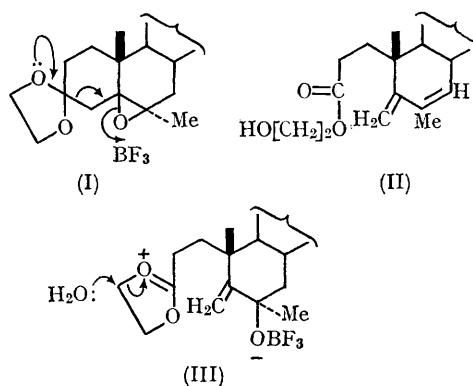
Reactions of Epoxides. Participation by a Neighbouring Ketal Group in a Boron Trifluoride-catalysed Rearrangement

By J. W. BLUNT, M. P. HARTSHORN, and D. N. KIRK

[*Department of Chemistry, University of Canterbury, Christchurch, New Zealand (J.W.B. and M.P.H.);
Department of Chemistry, Westfield College, London (D.N.K.)*]

THE ketone group is commonly protected by conversion into the ethylenedioxy-ketal while modifications are made to other functional groups in the molecule. We report the participation of a 3,3-ethylenedioxy-ketal group in the rearrangement of a 6 α -methyl-5 β ,6 β -epoxycholestane (I) with boron trifluoride etherate in benzene. The diene-ester (II) (45%), obtained in addition to 6-methylcholesta-4,6-dien-3-one (45%), was identified by infrared, ultraviolet and n.m.r. spectra.

The rearrangement leading to (II) is envisaged as proceeding by concerted electron shifts [*cf.* (I)] to give (III) which on treatment with water during isolation would suffer opening of the oxonium ion ring and dehydration to give the diene system.



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