A Novel *syn*-Elimination Reaction of Two *cis*-Hydroxy-tosylates

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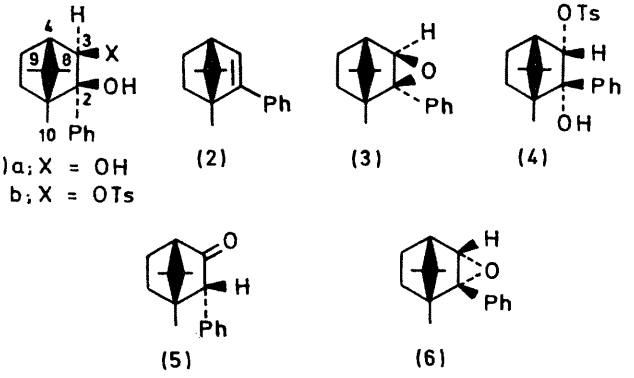
Summary The *cis*-hydroxy-tosylates (1b) and (4) on treatment with potassium t-butoxide in t-butyl alcohol give the corresponding epoxides (3) and (6) by a novel *syn*-elimination–ring closure reaction.

SKELETAL rearrangements of non-planar hydroxy-tosylates with base[1] to give carbonyl compounds are well known. We now report the formation of epoxides (3) and (6) by *syn*-elimination from the *cis*-diol monotosylates (1b) and (4), respectively.

Reaction of the *exo-cis*-diol monotosylate (1b) [n.m.r. (60 MHz, $CDCl_3$) δ 5·04 (s, 3-*endo*-*H*)[2], 1·34 (8-H_3), 0·87 p.p.m. (9-H_3 and 10-H_3) and formed from the diol (1a) produced[3] in the potassium permanganate oxidation of 2-phenylbornene (2)] with potassium t-butoxide in t-butyl alcohol gave the *exo*-epoxide (3; 88%), ν_{max} 917 cm^{-1}, δ 3·39 (d, $J_{3,4}$ 1·3 Hz, 3-*endo*-*H*), 1·29[4] (8-H_3), 1·02 (10-H_3), and 0·84 p.p.m. (9-H_3). Similar reaction of the *endo-cis*-diol monotosylate[3] (4) [δ 5·66 (d, $J_{3,4}$ 4·6 Hz, 3-*exo*-*H*),[2] 0·88, 0·82, and 0·77 p.p.m. (methyl groups)] gave a mixture (2 : 1) of the *endo*-phenyl-3-ketone (5) and the unstable *endo*-epoxide (6), δ 3·83 (d, $J_{3,4}$ 3·3 Hz, 3-*exo*-*H*), 1·27 (10-H_3), 0·85, and 0·83 p.p.m. (8-H_3, 9-H_3).

A full account of this and other related work will be published later.



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