3,7-Dioxabicyclo[3,3,0]octane

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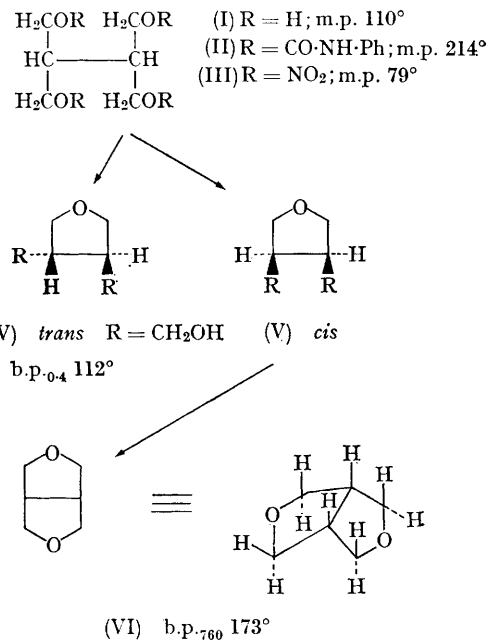
DERIVATIVES of 3,7-dioxabicyclo[3,3,0]octane (VI) occur naturally, *e.g.* as pinoresinol (the 2,6-diguaiacyl), sesamin (the 2,6-dipiperonyl), and syringaresinol (the 2,6-bis-3,4-di-*O*-methylpyrogallyl derivative), but the heterocycle (VI) itself has never been described. It is now obtained in 42% yield by dehydration of the crystalline tetralol (I), which can be made by reduction of the corresponding tetraester with lithium aluminium hydride. The yield of (VI) is high, considering that the first stage in the dehydration of (I) probably affords the *cis*- and the *trans*-3,4-bishydroxymethyltetrahydrofuran (V) and (IV) in 1 : 1 ratio and that only the *cis*-isomer (V) can yield (VI). The *trans*-isomer (IV) was isolated as a by-product and characterized. All the physical properties of 3,7-dioxabicyclo[3,3,0]octane determined are in accordance with structure (VI).

The structural similarity between (VI) and dioxan and the conformational peculiarity of (VI) suggest that it will have some interesting properties. Investigations of the solvent power of (VI) and of the corresponding compound 3,7-diiminobicyclo[3,3,0]octane are in progress and will be reported in full elsewhere.



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