

## Alcohol Incorporation in the Photolysis of Papaverine

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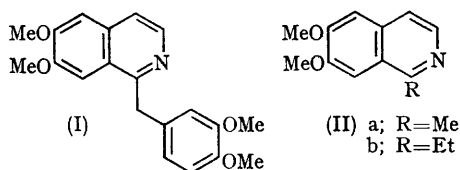
IRRADIATION of a  $10^{-3}M$ -solution of papaverine (I) in methanol or ethanol (200 w Hanovia type S lamp, Pyrex, under nitrogen) for 6 days results in about 50% photolysis, with a single nitrogen-containing product being formed in corresponding yield. In the case of methanol, the product is 6,7-dimethoxy-1-methylisoquinoline (IIa) and with ethanol as solvent the product is 1-ethyl-6,7-dimethoxyisoquinoline (IIb).

This finding represents an interesting incorporation of alcohol solvent in a photochemical reaction. As a result of this observation, we believe that a general mechanism can now be written which will correlate the present results with two, formally dissimilar, literature observations<sup>1,2</sup> of alcohol incorporations in other photochemical reactions.

Although a mixture of products arises from the other half of the papaverine molecule, the primary

product has been found to be methyl veratryl ether (methanol solvent) or ethyl veratryl ether (ethanol solvent). In the case of extended irradiation times, these primary products are further converted into veratraldehyde.

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<sup>1</sup> P. Cerutti and H. Schmid, *Helv. Chim. Acta*, 1963, **46**, 1992; 1964, **47**, 1964.

<sup>2</sup> J. S. Shannon, H. Silberman, and S. Sternhell, *Tetrahedron Letters*, 1964, 659; P. J. Collin, H. Silberman, S. Sternhell, and G. Sugowdz, *ibid.*, 1965, 2063.