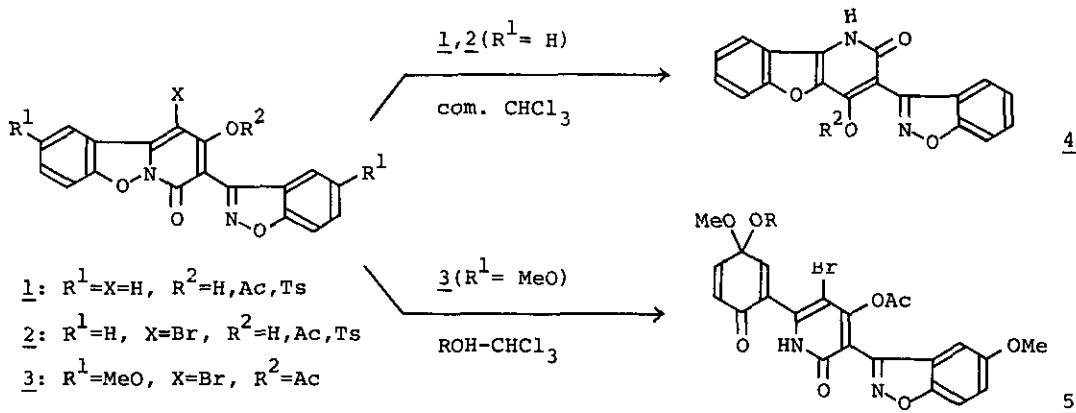


MECHANISMS OF PHOTO-INDUCED ISOMERIZATION OF
4-OXO-4H-BENZISOXAZOLO[2,3-a]PYRIDINE DERIVATIVES

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4-Oxo-4H-benzisoxazolo[2,3-a]pyridine derivatives 1-3 underwent novel photo-induced (a low pressure Hg-lamp or sun light) isomerizations to give benzofuro-[3,2-b]pyridines 4 or quinone ketal derivatives 5 in good to excellent yields.



A plausible mechanism for the ring transformation of 1 and 2 may involve the homolytic fission of the N_5-O_6 bond to give diradicals 6, followed by isomerization and recyclization. In the case of the 9-methoxy derivative 3, the first step may be the heterolytic cleavage of the N_5-O_6 bond to give a zwitter ion 7, which is stabilized by both the methoxy and carbonyl groups; this stabilization effect is considered to enable the zwitter ion 7 to be formed, despite the fact that the electronegativity of oxygen is greater than that of nitrogen.

