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REACTION OF FLAVYLIUM PERCHLORATE WITH CARBON MONOXIDE

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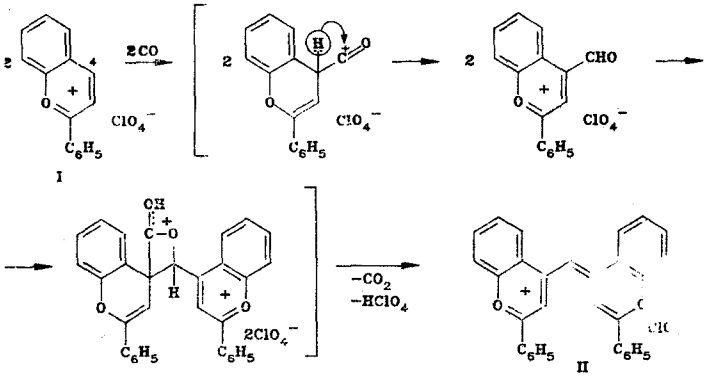
It is known that pyrylium and benzopyrylium salts, unsubstituted at the 4-position, react with nucleophilic reagents, such as triphenylphosphine [1], or for example malonodinitrile in the presence of triethylamine [2]. It could be expected that a similar reaction will proceed also with carbon monoxide, although such examples were not reported in the literature. In fact, it was found that when CO is passed for a long time into a hot solution of flavylium perchlorate I in glacial acetic acid, a small amount of blue dye is formed. The latter was isolated in individual state, and was identified as flavylomonomethinecyanine II, previously described in [3] (6% after heating for 6 h and passing CO). The initial salt I, contaminated by unidentified impurities, was also isolated from the reaction mixture.

The above described reaction is a new reaction in the series of pyrylium salts, a complex redox process, whose mechanism is still unknown. However, it can possibly be stated that at the first stage a nucleophilic addition of CO takes place at the 4-position of salt I, and the following mechanism can be suggested for this reaction:



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