Yu. A. Sharanin, Kh. Ya. Lopatinskaya, L. G. Sharanina, and S. N. Baranov UDC 547.814

2-Aminobenzopyrylium perchlorates (II) are formed in 50-90% yields when aromatic 2-hydroxy aldimines (I) are heated briefly with equivalent amounts of malononitrile and perchloric acid in glacial acetic acid:

$$\begin{array}{c} \text{CH=NR} \\ \text{OH} \\ \\ \text{I} \\ \text{I} \\ \text{R=CH}_3, C_2\text{H}_5, C_6\text{H}_5 \\ \end{array} \\ \begin{array}{c} \text{HCIO}_4 \\ \\ \text{III} \\ \\ \text{III} \\ \end{array} \\ \begin{array}{c} \text{CN} \\ \\ \text{NH}_2 \\ \\ \text{CIO}_4^- \\ \\ \text{III} \\ \end{array} \\ \begin{array}{c} \text{III} \\ \\ \text{III} \\ \end{array}$$

This method was used to obtain 2-amino-3-cyanobenzo[b]pyrylium perchlorate, with mp 235-238° (decomp.,) and (from 1-formyl-2-hydroxynaphthalene) 2-amino-3-cyanobenzo[f]chromylium perchlorate, with mp 285-288° (decomp.,). The products had melting points and IR spectra that were identical to those of genuine samples [1].

In ethanol, as a consequence of solvolysis, 3-cyanocoumarin (III), with mp 189-191° (from alcohol), is formed rather than II. This same compound was obtained in 95% yield by hydrolysis of salt II. It was identical to a genuine sample [2].

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