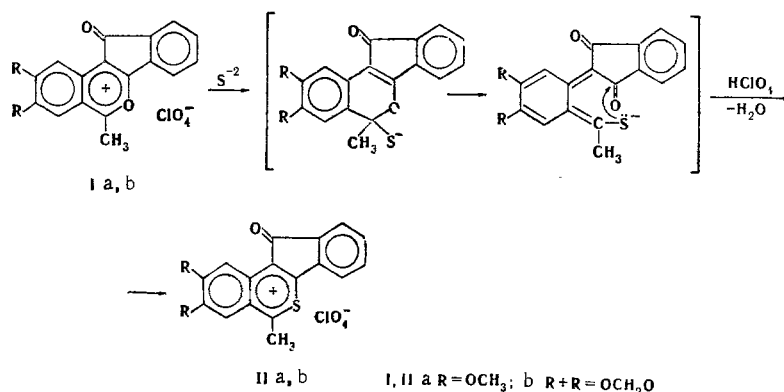


# SYNTHESIS OF 11-OXOINDENO[1,2-c]-2- THIABENZOPYRYLIUM SALTS

E. V. Kuznetsov, D. V. Pruchkin,  
Yu. D. Smetanin, and G. N. Dorofeenko

UDC 547.814'818.07:  
543.422.25.4

We have shown (despite the opinion expressed in [1] regarding the impossibility of replacement of the oxygen heteroatom by sulfur in 2-benzopyrylium salts) that 11-oxoindeno[1,2-c]-2-benzopyrylium salts (I) are readily converted to 2-thiabenzopyrylium salts (II) on treatment with sodium sulfide.



Thus a suspension of 0.41 g (0.001 mole) of 1-methyl-8,9-dimethoxy-11-oxoindeno[1,2-c]-2-benzopyrylium perchlorate (Ia) in 15 ml of acetone was shaken for 10 min with 3 ml of 10% aqueous sodium sulfide solution, and the resulting clear bright-red solution was treated with 5 ml of 20% perchloric acid solution. The precipitated salt was removed by filtration and recrystallized from glacial acetic acid containing one drop of 70% perchloric acid to give brown crystals of 1-methyl-8,9-dimethoxy-11-oxoindeno[1,2-c]-2-thiabenzopyrylium perchlorate (IIa), with mp 250°, in 49% yield. PMR spectrum: singlets at 2.87 (3H), 3.7 (3H), and 3.9 (3H) and multiplet at 7.16-7.75 ppm (6H). The character of the spectrum is very close to that of starting Ia.

1-Methyl-8,9-methylenedioxy-11-oxoindeno[1,2-c]-2-thiabenzopyrylium perchlorate (IIb) was similarly obtained as dark-red crystals with mp 230° (glacial acetic acid) in 85% yield. The results of analysis for C, H, S, and Cl of both substances were in agreement with the calculated values. Absorption at 1730 and 1600 cm<sup>-1</sup> is observed in the IR spectra of IIa, b.

## LITERATURE CITED

1. V. Dimroth and H. Odenwälder, *Ber.*, **104**, 2984 (1971).

Rostov State University. Scientific-Research Institute of Physical and Organic Chemistry, Rostov-on-Don. Translated from *Khimiya Geterotsiklicheskikh Soedinenii*, No. 6, pp. 858-859, June, 1976. Original article submitted December 19, 1975.

This material is protected by copyright registered in the name of Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission of the publisher. A copy of this article is available from the publisher for \$7.50.