SYNTHESIS OF SUBSTITUTED THIOPHTHALAN-1-SPIRO-2'-1,3,5-OXATHIAZOLES

D. A. Oparin and V. A. Shalygina

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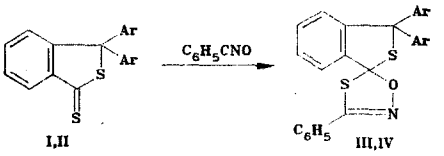
We have shown that 3,3-disubstituted 1,2-dithiophthalides can be used successfully as substrates in reactions of 1-3-dipolar cycloaddition, which permits the synthesis of varied five-membered heterocycles containing the thiophthalan group. Thus, in the interaction of the dithiophthalides I and II with the N-oxide of benzonitrile, formed *in situ* from the chloride of benzhydroxamic acid under mild conditions (5°C, 1 h), previously unknown 3,3-diaryl-4'-phenylthiophthalan-1-spiro-2'-1,3,5-oxathiazoles (III, IV) were obtained.



I,II III,IV

I, III Ar=4-$CH_3C_6H_4$; II, IV Ar=4-ClC_6H_4

In the IR spectra of oxathiazole derivatives III and IV characteristic absorption bands are observed in the region of 640-650 cm^{-1} (C–S–C), 910-920, 1310-1320, 1400-1440 cm^{-1} (=N–O–), 1490-1500 cm^{-1} (C=N). In the UV spectra absorption maxima are noted at 260-280 nm. The individuality of the compounds was monitored by the method of thin-layer chromatography on Silufol in the system ether–hexane, 1:3. The initial dithiophthalides I and II were synthesized by boiling the corresponding phthalides with P_2S_5 in xylene. We obtained (the substance, yield, %, mp, °C, and R_f are cited): I, 82, 98-100, 0.65; II, 72, 152-154, 0.66; III, 79, 111-113, 0.52; IV, 65, 78-80, 0.50. The data of elementary analysis of compounds I-IV correspond to the calculated values.

Division of Metabolic Regulation, Academy of Sciences of the Belorussian SSR, Grodno 230009.
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