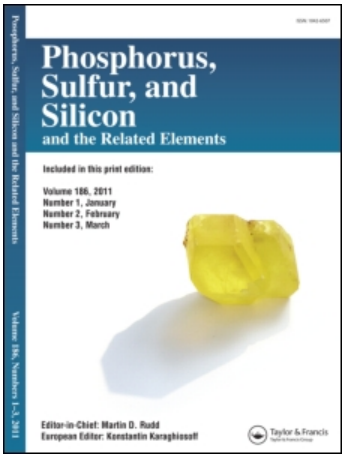

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New Reactions with Thioketone *S*-Sulfides and *S*-Disulfides

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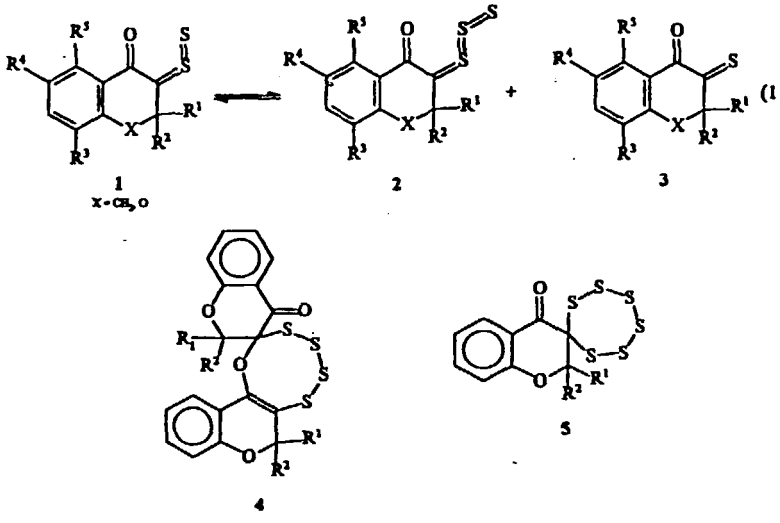
The long-standing interest in thiosulfines such as **1** in our laboratory and elsewhere has more recently been supplemented with an interest in thiocarbonyl *S*-disulfides **2** which appear to be in equilibrium with **1** and their parent compounds **3**, eqn. (1).[1]

We have found[2] that the thiosulfines **1** which can be prepared from the corresponding acetyl α-chloroalkyl disulfide precursors by «unzipping» with a nucleophile such as morpholine are subject to the disproportionation (1) and that the corresponding *cis*- and *trans*-1,2,4-trithiolanes can be formed from **1** and **3** and *cis*- and *trans*-1,2,4,5-tetrathianes by non-concerted dimerization of **1**.

Moreover, we have found[2a] that the thioketone *S*-sulfides **1** apparently are able to act as 1,5-dipoles with formation of unsymmetrical dimers such as **4** in an unprecedented [3+5] cycloaddition of the Woodward-Hoffmann allowed type [$_{\pi}4_{s} + _{\pi}6_{s}$].

Finally, extensive sulfur scrambling involving **1**, **2**, and/or **3** also occurs under our remarkably mild conditions with formation of hexathiepanes such as **5**.[2b]



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[1] J. Fabian and A. Senning, *Sulfur Rep.* **21**, 1 (1998) and literature cited therein.

[2] a) F. A. G. El-Essawy, S. M. Yassin, I. A. El-Sakka, A. F. Khattab, I. Søtofte, J. Ø. Madsen, and A. Senning, *J. Org. Chem.* **64**, 9840 (1998); b) M. I. Hegab, F. M. E. Abdel-Megeid, F. A. Gad, S. A. Shiba, I. Søtofte, J. Møller, and A, Senning, *Acta Chem. Scand.* **53**, 133 (1999).