

Weissenberg camera ($\text{CuK}\alpha$ radiation) and the film intensities were measured with a microdensitometer. The structure was solved with the symbolic addition procedure and has been refined with full matrix least-squares to an R index of 0.075.

Coplanarity of the central six atoms, $\text{S-C(2)-C(3)-S'-C(2')-C(3')}$, is guaranteed by the special position of the molecule; the two carbonyl oxygens deviate slightly (0.11 Å) from this plane. The short S-C(2) (1.734 Å)* and long C(2)-C(2') (1.380 Å) bond lengths suggest an appreciable mesomeric interaction involving sulfur and the central double bond. The C(2)-C(3) and C(3)-O distances (1.480, 1.221 Å), which are normal for these kinds of bonds, give no evidence for a sulfur-carbonyl interaction through the ethylenic linkage.** These data could indicate that a sulfur to sulfur interaction via the central double bond makes an important mesomeric contribution to the ground state of **L**. The carbonyl group may be necessary for the operation of this mechanism since a short $\text{S}\cdots\text{O}$ intramolecular distance (2.850 Å) is observed (the sum of the van der Waals radii for sulfur and oxygen is 3.25 Å).*** Several other compounds which are germane to these ideas are now being investigated.

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* The brevity of this bond becomes striking when it is compared with the S-C(5) distance of 1.830 Å.

** Bond lengths reported (5) for the S-C=C-C=O moiety in 2-acetyl-2-methyl-4-(1-methylacetyl-*idene*)-1,3-dithiacyclobutane ($\text{S-C} = 1.718$, $\text{C=C} = 1.377$, $\text{C-C} = 1.441$, $\text{C=O} = 1.271$ Å) suggest that a sulfur-oxygen mesomeric interaction is important in the ground state. The absence of such an effect can be seen in 2,4-diphenacylidene-1,3-dithiacyclobutane (6) ($\text{S-C} = 1.765$, $\text{C=C} = 1.324$, $\text{C-C} = 1.462$, $\text{C=O} = 1.216$ Å).

*** This is a further example of short, non-bonded distances between sulfur and oxygen atoms constrained to 5-membered rings (5).