A NOVEL SYNTHESIS OF HETEROCYCLES BY USE OF TRITHIOCYCLOPROPENIUM ION

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Several years ago we have found the formation of 1-methyl-2,3-di(*t*-butylthio)pyrrole from the reaction of *tris*(*t*-butylthio)cyclopropenium perchlorate (1) with dimethylamine in *t*-KOBu/DMF. This novel reaction could successfully be extended to synthesis of many kinds of heterocycles, among which some are shown below. In each case the reaction proceeds under mild condition, the product yield is relatively high, and the *t*-butylthio group(s) remaining on the heterocyclic ring can be readily removed.

For the formation of these heterocycles there are two patterns, in which three ring-carbons of 1 are involved in the heterocyclic ring formation (type A) and only one of them is used (type B). In addition, very recently we found a quite new type of reaction (type C) involving one ring-carbon and sulfur of *t*-butylthio group in heterocyclic ring formation. Such an example is given for the preparation of 1,3,4-thiadiazolinone from the reaction between 1 and semicarbazide.