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13 April 1964

Kirov Urals Polytechnic Institute, Sverdlovsk

LETTERS TO THE EDITOR

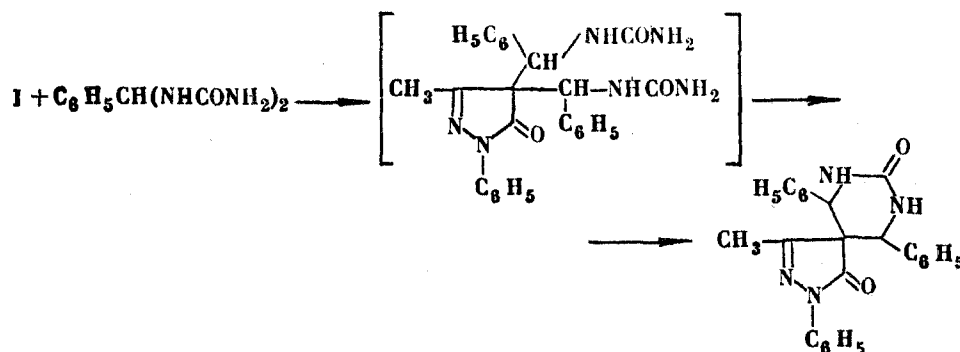
UDC 547.855

SUBSTITUTED SPIRO [PYRAZOLO-4, 5'-PYRIMIDINES]

V. P. Mamaev and M. A. Mikhaleva

Khimiya Geterotsiklicheskikh Soedinenii, Vol. 1, No. 6, p. 948, 1965

Continuing work on the reaction of arylidenebisureas with compounds containing the CH_2CO group, for the purpose of preparing pyrimidine derivatives [1], the reaction of benzalbisurea with 1-phenyl-3-methylpyrazolone-5 (I) has been investigated by the present authors. 1 mole I and 2 mole benzalbisurea in dry n-butanol (in the presence of HCl) at 100° gave an approximately 50% yield of a compound mp $237-239^\circ$. Its UV spectrum was similar to that of I; it was insoluble in alkalis, did not give a coloration with either ferric chloride or p-dimethylaminobenzaldehyde. When boiled with 10% NaOH the smell of benzaldehyde appears, and I and urea are found in solution (paper chromatography). The IR spectrum of the compound (in KBr) has an absorption band at 1680 cm^{-1} , which can be ascribed to vibrations of the CO group in urea, and an absorption band at 1703 cm^{-1} , characteristic of the CO group of 4, 4-disubstituted pyrazolones-5 [2]. The elementary analysis corresponds to a formula $\text{C}_{25}\text{H}_{22}\text{N}_4\text{O}_2$. From these results it can be inferred that the compound is 1, 4', 6'-triphenyl-3-methylspiro [pyrazolo-4, 5'-hexahydropyrimidine]-5, 2'-dione, and is a member of a new heterocyclic system. Its formation can be represented by the following equation:



Similarly, reaction of I with anisalbisurea gave 1-phenyl-4', 6'-bis(p-methoxyphenyl)-3-methylspiro [pyrazolo-4, 5'-hexahydropyrimidine]-5, 2'-dione, mp $200-204^\circ$.

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14 March 1965

Novosibirsk Institute of Organic Chemistry,
Siberian Division AS USSR