TRANSFORMATIONS OF 2,4,6-TRIARYL-2,6-DI(HYDROSELENO)-1-SELENOCYCLOHEXANES ON THEIR REACTION WITH ACIDS

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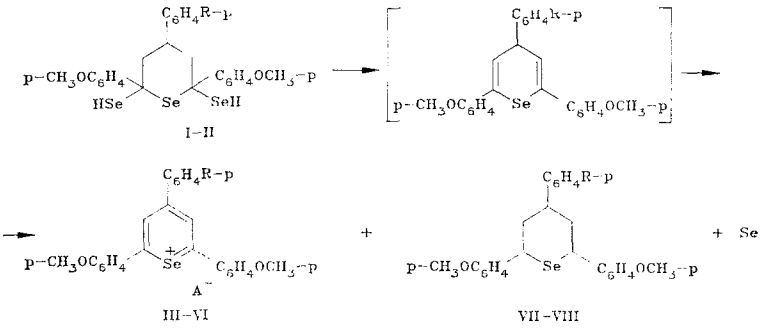
UDC 547.818.9

Compounds of the 2,6-di(hydroseleno)-1-selenocyclohexane series have not previously been known, since their formation as stable structures under the action of hydrogen selenide on 1,5-diketones under the conditions of acid catalysis has proved unlikely in view of their semiacetal nature. However, it has been established that compounds (I) and (II) are formed under the conditions given above with high yields and are characterized by adequate stability [1]. Furthermore, we have proposed a method for obtaining selenopyrylium salts by the reaction of the compounds mentioned with acids in benzene solution [2]. On studying this reaction, we have established that, in addition to selenopyrylium salts, the corresponding selenocyclohexanes (VII) and (VIII) are formed. In this case, there is probably a disproportionation of the 4H-selenopyrans formed on the splitting out from compounds (I) and (II) of hydrogen selenide, which is oxidized by atmospheric oxygen to elementary selenium.



I, III, V, VII R=OCH_3; II, IV, VI, VIII R=H; III, IV A=BF_4; V, VI A=ClO_4

As the acid reagents we used $BF_3 \cdot Et_2O$, CF_3COOH, and 70% perchloric acid. When CF_3COOH was used, the resulting selenopyrylium trifluoroacetates were converted without isolation into the corresponding perchlorates (V) and (VI). When perchloric acid was used it was impossible to isolate the selenocyclohexanes (VII) and (VIII).

We give the compounds, mp, °C, yield, %, and acid used: (III), 244-245, 60, $BF_3 \cdot Et_2O$; (IV), 221-222, 59, $BF_3 \cdot Et_2O$; (V), 268-270, 53, CF_3COOH; (VI), 214-215, 56, CF_3COOH; (VII), 115-116, 30; (VIII), 124.5-126.30. The structures and compositions of the compounds obtained were confirmed by the results of elementary analysis and IR and PMR spectra.

LITERATURE CITED

1. V. G. Kharchenko and B. I. Drevko, Khim. Geterotsikl. Soedin., No. 5, 704 (1982).
2. V. G. Kharchenko and B. I. Drevko, USSR Inventors' Certificate No. 1,051,083; Byull. Izobret., No. 40, 95 (1983).

N. G. Chernyshevskii Saratov State University. Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 9, pp. 1283-1284, September, 1984. Original letter submitted December 21, 1983; revision submitted March 22, 1924.

 0009-3122/84/2009-1056$08.50