1. G. Becker and H. P. Beck, Z. Anorg. Allg. Chem., <u>430</u>, 91 (1977).

2. G. Becker, M. Rossler, and G. Uhl, Z. Anorg. Allg. Chem., <u>495</u>, 73 (1982).

A NEW TYPE OF REACTION OF  $\beta$ -DICARBONYL COMPOUNDS:

## TRANSFORMATION OF DIBENZOYLCHLOROMETHANE TO

2-CHLORO-3-PHENYLINDENONE BY THE ACTION OF SbCl<sub>5</sub>

Yu. G. Gololobov and I. V. Chernoglazova

UDC 542.97:547.638.1'131: 546.865'131:547.665

 $\beta$ -Dicarbonyl compounds, which are capable of undergoing enolization, may react to give chelate complexes [1]. However, dibenzoylchloromethane (I) [2], which is found entirely in the keto form, is converted to 2-chloro-3-phenylindenone (II) upon the action of SbCl<sub>5</sub> under mild conditions.

$$\frac{PhC(O)CHCIC(O)Ph}{(1)} \xrightarrow{ShCl_{s}} (1) + 2HCI$$

$$(1) \qquad (11) \qquad (11) \qquad (11)$$

A sample of 0.006 mole  $\text{SbCl}_5$  in 10 ml hexane was added to a suspension of 0.006 mole diketone (I) in 30 ml hexane. The mixture was stirred for 3 h at 20°C and then at reflux for 2 h. After cooling, ether was added and the reaction mixture was filtered. The filtrate was evaporated and the residue was crystallized from octane to give (II) as red crystals in 80% yield, mp 100°C (mp 99-100°C [3]). The structure of (II) was confirmed by elemental analysis and PMR, IR, and UV spectroscopy.

Reaction (1) is the first example of the preparation of indenones by a new scheme based on the dehydration of nonpolymerizing  $\beta$ -diketones using antimony halides.

## LITERATURE CITED

- 1. H. A. Meinema and J. G. Noltes, J. Organomet. Chem., <u>16</u>, 257 (1969).
- A. S. Dneprovskii, I. V. Kranyuchenko, and T. I. Temnikova, Zh. Org. Khim., <u>14</u>, No. 7, 1514 (1978).
- 3. E. R. H. Jones and R. Mestres, An. Quim. Real. Soc. Esp. Fis. Quim. Ser. B, <u>62</u>, 377 (1966).

A. N. Nesmeyanov Institute of Heteroorganic Compounds, Academy of Sciences of the USSR, Moscow. Translated from Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No. 11, p. 2671, November, 1990. Original article submitted July 26, 1990.