## LETTERS TO THE EDITOR

## RECYCLIZATION OF DIGLYCIDYL CARBONATE ON REACTION WITH PHENOLS

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Instead of the expected linear products of opening of the oxide ring, viz., glycerol 1,3-disubstituted ethers, we have detected a glycerol monophenyl ether and colorless crystalline substances that do not contain hydroxy and epoxy groups in the products of the reaction of diglycidyl carbonate (I) with phenol and 4,4'-diphenylolpropane in the presence of catalytic amounts of ammonium or phosphonium salts. The IR spectra of these substances contain an intense absorption band at 1805 cm<sup>-1</sup>, which we identified as a cyclocarbonate  $\nu_{CO}$  band. The decrease in the multiplicities of the signals of the methylene and methylidyne groups that is characteristic for the products of opening of an  $\alpha$ -oxide ring is not observed in the PMR spectra. The reaction of epoxide I with phenols evidently does not stop at the step involving opening of the oxide ring but is accompanied by recyclization to give cyclocarbonates 11.



The yields of cyclocarbonates II based on the starting phenol were quantitative. The results of elementary analysis of II were in agreement with the calculated values.

**4-Phenoxymethyl-1,3-dioxolan-2-one (II).** This compound was a colorless crystalline substance with mp 162.5-163°C (from chlorobenzene). IR spectrum: 1805 cm<sup>-1</sup> (C=O). PMR spectrum (200 MHz, d<sub>6</sub>-DMSO),  $\delta$ : 4.15 and 4.22 (1H, each, dq,  $\alpha$ -H), 4.36 and 4.61 (1H each, dq, 5-H), 5.23 (1H, m, 4-H), 7.14 and 6.47 (H<sub>Ar</sub>), 1.60 ppm (<sup>2</sup>J = 11.6 Hz, <sup>3</sup>J<sub>4-H,\alpha-H</sub> = 3.4 and 4.3 Hz, <sup>2</sup>J<sub>55</sub> = 8.4 Hz, and <sup>3</sup>J<sub>45</sub> = 8.5 and 5.4 Hz).

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