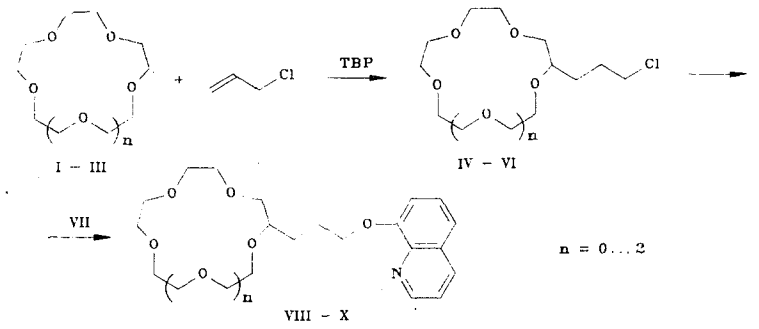
SYNTHESIS OF A COMPLEXONE CONTAINING 8-HYDROXYQUINOLINE AND CROWN ETHER FRAGMENTS

Yu. B. Zelechonok, V. V. Orlovskii,
S. F. Zelechonok, S. S. Zlotskii,
and D. L. Rakhmankulov

UDC 547.898'831.07

Crown ethers and 8-hydroxyquinoline are highly effective complex-forming agents [1, 2]. We have developed a synthetic method for the preparation of compounds incorporating in one molecule both crown ether and 8-hydroxyquinoline functional groups.

Reaction of the simple crown ethers I-III (3 moles) with allyl chloride (1 mole) at 125°C for 240 h in the presence of tert-butyl peroxide (TBP, 0.1 mole) gave the chlorine-containing crown ethers IV-VI (8-10% yield, based on crown ether at a conversion of 19-20%).



Further reaction of the crown ethers IV-VI (0.24 mole) with 8-hydroxyquinoline (VII, 0.24 mole) in the presence of NaOH in alcohol medium gave the desired final products VIII-X in greater than 70% yield.

The results of elemental analysis agreed with calculations.

The PMR spectra (in CCl_4) of the synthesized compounds contained signals for the side-chain methylene group protons (1.1-1.6 ppm), the macrocycle (3.3-3.7 ppm), and for the quinoline fragment (6.9-8.7 ppm).

LITERATURE CITED

1. M. Hiraoko, Crown Compounds [Russian translation], Mir, Moscow (1986), p. 98.
2. Yu. Yu. Lur'e, Handbook of Analytical Chemistry [in Russian], Khimiya, Moscow (1979), p. 150.

Ufa Petroleum Institute, Ufa. Translated from Khimiya Geterotsiklicheskih Soedinenii, No. 1, p. 137, January, 1990. Original article submitted March 21, 1989.

