

It has been found that alcohols (2) and (3) are also formed in the cyclization of other labdane compounds, not only under the conditions described in this paper but also under different conditions.

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#### TRITERPENE COMPOUNDS OF *Campanula patula*

L. S. Teslov

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In an investigation of a chloroform extract of the epigeal part of *Campanula patula* L. (rambling bellflower) on Silufol plates we detected the presence of triterpenoids. A concentrated chloroform extract was treated with a 5% solution of KOH, the alkaline extract was acidified, and the precipitate that deposited was repeatedly washed with ethanol. Then it was chromatographed on a column of silica gel L 40/100  $\mu$  (Czechoslovakia): ursolic acid was isolated, and it was purified by a method described in the literature [1]. After repeated recrystallization from petroleum ether and ethanol, crystals were obtained with mp 268-270°C,  $[\alpha]_D^{20} +47.4^\circ$  (c 0.44; chloroform). The ursolic acid isolated had the same  $R_f$  values as an authentic sample.

The alkali-treated chloroform extract was also chromatographed in columns of silica gel with elution by petroleum ether-chloroform. In this way, three crystalline substances (A, B, and C) were isolated. They all gave a positive Lieberman-Burchard reaction and were revealed on Silufol with solutions of antimony tetrachloride and sulfuric acid.

Substance A, composition  $C_{32}H_{52}O_2$ , had mp 238-241°C (ethanol),  $[\alpha]_D^{20} +67^\circ$  (c 0.56; chloroform); mol. wt. 468 (mass spectrometry). IR spectrum: 1740 and 1250  $cm^{-1}$  (C=O of an ester grouping). In the PMR spectrum, a narrow signal at 1.98 ppm is due to an acetyl group. Analysis of IR, PMR, and mass spectra and a comparison of them with those given in the literature [2, 3] enabled substance A to be characterized as  $\beta$ -amyrin acetate [4].

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