ISOLATION OF PAPYRIFERIC ACID FROM *Betula dahurica*

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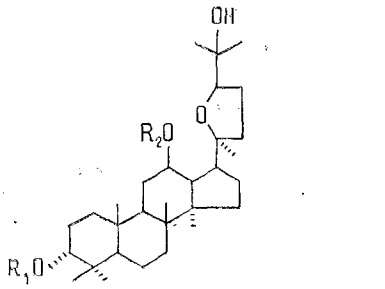
In birch leaves, triterpenoids are present in the form of carboxylic acid esters [1]. It was of interest to determine which acids esterified the triterpene alcohols.

On studying the unsaponifiable part of ethereal extracts of the leaves of the birches *Betula ermanii*, *B. lanata*, and *B. platphylla*, we isolated triterpenoid acetates [2-4]. The chromatographic separation of extracts of leaves not previously saponified is made difficult by the presence of a large amount of chlorophyll. Because of this, as the object of investigation we selected twigs of the current year, which contain a considerably smaller amount of chlorophyll.

Preliminary results of the TLC of an ethereal extract of young twigs of *B. dahurica* showed the presence of a single triterpene in the highest concentration. The chromatography on silica gel of the evaporated ethereal extract with the solvent system benzene–ethyl acetate (5:1) enabled us to isolate triterpenoid (I) with mp 202-203°C (acetone–petroleum ether) $[\alpha]_D^{20}$ −16° (c 0.5; $CHCl_3$).

On the basis of IR and ^1H and ^{13}C NMR spectral results, and also of its physicochemical characteristics, the triterpenoid was ascribed the structure of papyriferic acid (I) [5]. Saponification of the triterpene (I) with 1 N KOH in methanol led to the formation of betulafolienetriol oxide (II), i.e., the triterpene (I) was betulafolienetriol esterified at C-3 by malonic acid and at C-12 by acetic acid. It must be mentioned that this is the first time that the native triterpenoid (I) has been isolated from birches of Siberia and the Far East.



I. $R_1 = COCH_2CO_2H$; $R_2 = COCH_3$

II. $R_1 = R_2 = H$

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