

## POLYPHENOLS OF *Myricaria*

### IV. A HYDROLYZABLE TANNIN SUBSTANCE

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We have investigated the stems of *Myricaria alopecuroides* Schrenk. collected in the flowering period in the Great Alma-Ata Gorge of the Trans-Ili Ala-Tau. An aqueous acetone extract was concentrated in vacuum under mild conditions and was repeatedly extracted with ethyl acetate. Then the aqueous solution was hydrolyzed with 5% hydrochloric acid on the boiling water bath for 7 h, after which it was exhaustively extracted with ether and then with ethyl acetate. The combined material of the ethyl acetate extract was subjected to gel filtration on a column of Sephadex LH-20 with water and then with aqueous methanol, leading to the isolation of a substance  $C_{27}H_{20}O_{18} \cdot 2H_2O$ , mp 230°C (decomp.),  $[\alpha]_D +48.6^\circ$  (c 0.5; methanol),  $R_f$  0.35 in BAW (40:12.5:29), 0.80 in 15% acetic acid (Filtrak FN-3 paper, ascending chromatography). The substance formed a blue coloration with a 1% solution of ZhAK, but was not revealed with the o-toluidine chromogenic agent [1, 2]. Under the action of 5% hydrochloric acid on the boiling water bath the substance was hydrolyzed with the formation of glucose and gallic, dehydrodigallic, and dehydrotrigallic acids [3].

The IR spectrum of the compound investigated contained the absorption bands of hydroxy groups (3450-3150  $cm^{-1}$ ) and carbonyl groups (1720  $cm^{-1}$ ) and of an aromatic system (1620, 1570, 1500  $cm^{-1}$ ).

The NMR spectrum (DMSO- $d_6$ , TMS - 0) contained the signals of four aromatic protons at 6.80 (2H, s), 6.90 (d, 2), and 6.96 ppm (d, 2) belonging to dehydrotrigallic acid and the signals of glucose protons (6.35 (d, 2) and a multiplet in the range of 5.48-3.50 ppm). The nature of the recording of the first glucose proton shows its  $\alpha$ -configuration. The protons of the phenolic hydroxyls formed a broad signal in the range of 9.50-8.00 ppm.

By methylation with diazomethane and then with methyl iodide in the presence of silver oxide, we obtained a permethyl derivative in the form of colorless crystals with mp 134°C (subl.),  $[\alpha]_D 12.4^\circ$  (c 0.5; acetone). Titration showed the presence in the substance of three ester groups, and periodate oxidation the presence of two glycol units. Among the products of the acid hydrolysis of the permethyl derivative 4,6-dimethylglucose was detected by comparative paper chromatography with markers.

On the basis of the results obtained it has been established that the substance is 1,2,3-dehydrotrigalloyl- $\alpha$ -D-glucose. It has not been described previously in the literature, and we have called it myrinin.

#### LITERATURE CITED

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2. O. T. Schmidt, R. Schanz, R. Eckert, and R. Wurmb, *Ann. Chem.*, **706**, 131 (1967).
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