$\lambda_{\max}$  values, and IR and NMR spectra to be identical with phellavin. Since the glycosides that we isolated are the main flavonol components of the plants investigated, it may be assumed that various authors previously isolated just this glycoside and described it under different names.

Thus, it may be considered as established that the main flavonol glycoside of the species of the genus Phellodendron investigated is phellavin – isonoricaritin 7–O- $\beta$ -D-glucopyranoside [4',5-dihydroxy-7- $\beta$ -D-glucopyranosyloxy-6-( $\gamma$ -hydroxypentyl)flavonol].

## LITERATURE CITED

1. M. Hasegawa and T. Shirato, J. Am. Chem. Soc., 75, 22, 5507 (1953).

- 2. T. Bodalski and E. Lamer, Dissert. Pharm., 15, 319 (1963).
- 3. O. I. Shevchuk, N. I. Maksyutina, and V. I. Litvinenko, Khim. Prirodn. Soedin., 77 (1968).
- 4. V. I. Glyzin and A. I. Ban'kovskii, Phenolic Compounds and Their Physiological Properties [in Russian], Alma-Ata (1973), p. 145.

## POLYPHENOLS OF Alhagi kirgisorum. III

G. Sh. Burasheva, M. M. Mukhamed'yarova, and T. K. Chumbalov UDC 547.972

Continuing a study of the polyphenol composition of the epigeal part of Alhagi kirgisorum Schrenk, by column chromatography on polyamide we have isolated substances with mp  $250^{\circ}$ C and  $145-147^{\circ}$ C.

Substance (VIII) with mp 250°C (acetate with mp 210-212°C) contained, according to a spectral study, hydroxy groups in position 3, 3', 5, and 7, and on alkaline cleavage it formed phloroglucinol and isovanillic acid, and its IR spectrum had a band at  $2860-2900 \text{ cm}^{-1}$  which is characteristic for a  $-\text{OCH}_3$  group. By comparing the results obtained with literature information it was identified as tamarixetin (3,3',5,7-tetrahydroxy-4'-methoxyflavone).

Substance (IX) formed yellow-green crystals with mp 145-147°C,  $[\alpha]_D^{24}$  -42° (c 0.335; pyridine), M<sub>D</sub>· K<sub>P</sub> = -111.5 [2]. Isorhamnetin, rhamnose, and galactose (1:1:1) were found in the products of acid hydrolysis (2% HCl, 100°C, 2 h).

The arrangement of the bonds in the biose was  $1 \rightarrow 6$  (positive reaction with diphenylamine) [3].

From the results of UV and IR spectroscopy, acid and enzymatic hydrolyses, and peroxide oxidation, substance (IX) was identified as isorhamnetin 3-O-galactopyranosyl- $(1 \rightarrow 6)$ -rhamnopyranoside.

## LITERATURE CITED

1. L. M. Utkin, Khim. Prirodn. Soedin., 162 (1966).

2. I. P. Kovalenko and V. I. Litvinenko, Khim. Prirodn. Soedin., 239 (1965).

3. R. W. Bailey, J. Chromat., 8, 57 (1962).

S. M. Kirov Kazakh State University, Alma-Ata. Translated from Khimiya Prirodnykh Soedinenii, No. 5 p. 663, September-October, 1976. Original article submitted May 12, 1976.

This material is protected by copyright registered in the name of Plenum Publishing Corporation, 227 West 17th Street, New York, N.Y. 10011. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, microfilming, recording or otherwise, without written permission of the publisher. A copy of this article is available from the publisher for \$7.50.