

FLAVONOIDS FROM *Trifolium hybridum*
AND *T. ambiguum*

K. G. Shalashvili

UDC 547.972

The results of preliminary investigations of a number of species of the genus *Trifolium* growing in Georgia have shown that they are rich in flavonoid substances.

From the epigeal parts of *T. hybridum* L. and *T. ambiguum* M. B. we extracted the flavonoids with 80% ethanol, evaporated the extracts, purified the aqueous residue with chloroform, and extracted the flavonoid compounds with ethyl acetate. The combined flavonoids were separated on a column of polyamide sorbent, which was eluted with aqueous ethanol (of increasing strength).

From *T. hybridum* L. we isolated quercetin (mp 308-309°C, λ_{\max} 256, 370 nm), isoquercitrin (mp 220-222°C, λ_{\max} 257, 359 nm), and populnin (mp 269-270°C, λ_{\max} 264, 363 nm); and from *T. ambiguum* M. B. we isolated robinin (mp 194-196°C; λ_{\max} 265, 352 nm), hyperin (mp 230-232°C, λ_{\max} 259, 359 nm), and astragalin (mp 172-173°C, λ_{\max} 265, 349 nm) [1, 2].

The substances obtained were identified on the basis of the results of a study of their physicochemical properties, paper-chromatographic behavior, UV and IR spectral analysis, and comparison with authentic samples.

LITERATURE CITED

1. T. A. Geissman, *The Chemistry of Flavonoid Compounds*, Pergamon, New York (1962).
2. K. Neelakantam, P. S. Rao, and T. R. Seshadri, *Proc. Indian Acad. Sci.*, **17A**, 26 (1943).

Pharmacochimistry, Academy of Sciences of the Georgian SSR. Translated from *Khimiya Prirodnikh Soedinenii*, No. 5, p. 666, September-October, 1974. Original article submitted April 22, 1974.

©1976 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 \$15.00.