

The structures of the alkaloids isolated were confirmed by literature information, by UV, IR, NMR, and mass spectroscopy, and also by comparison with authentic samples.

According to the results of pharmacological trials, one of the main alkaloids of *Vinca major* L. — vincamajine — exhibits a specific activity.

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TANNING SUBSTANCES OF *Geranium rectum*

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UDC 547.56+547.985

Continuing a study of the composition of the polyphenols of *Geranium rectum* Trautv. [1-4], by extraction with 70% aqueous acetone followed by the evaporation of the acetone, treatment of the aqueous residue with ethyl acetate, drying the ethyl acetate extract, concentration, and the addition of petroleum ether to the concentrated extract, a preparation of tanning substances with a tannide content (TC) of 84% and a quality (D) of 88% (VEM) [5] was obtained.

When the preparation obtained was chromatographed on paper in the butan-1-ol-acetic acid-water (40:12:28) system, a number of substances of phenolic nature was revealed, four of which were predominating. To separate them we used column chromatography on rawhide powder. The column was washed successively with water, pure acetone, and 50% aqueous acetone.

The fractions eluted by water contained mainly two substances, with R_f 0.78 and 0.68, and of trace amounts of a substance with R_f 0.42 and had TC 48%, D 58%. The yield was 8% on the total amount of polyphenols eluted from the column.

The acetone fraction contained three substances, with R_f 0.68, 0.45, and 0.40, and also traces of a substance with R_f 0.42. The TC value of this fraction was 80% and the D value 84%. The yield was 47% of the total amount of polyphenols eluted from the column.

The aqueous acetone fraction with TC 92% and D 97.5% contained only two substances, with R_f 0.45 and 0.40 (yield 45%).

Thus, the substances with R_f 0.45 and 0.40 are the main tannins of *Geranium rectum*.

After further chromatography of the aqueous fraction on a column of polyamide (the eluents being mixtures of chloroform and methanol in various proportions), flavonols —

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quercetin, kaempferol, and rutin — were isolated. They were identified on the basis of qualitative reactions, melting points, R_f values in various solvent systems, the products of alkaline hydrolysis (for rutin, the products of acid hydrolysis), and the bathochromic shifts of the maxima in the UV spectra with ionizing and complex-forming additives.

Chromatography of the aqueous acetone fraction on a column of polyamide (with chloroform in methanol in various proportions as the eluent) and purification on a column of silica gel (with ethyl acetate as the eluant) gave a small amount of a substance with R_f 0.40 and trace impurities of a substance with R_f 0.45.

The results of UV and PMR spectroscopy, paper chromatography in the solvent system butan-1-ol-acetic acid-water (4:1:5) and 7% acetic acid, the molecular rotation (c 0.5; MeOH) and the results of a study of the products of complete acid hydrolysis showed that this substance was geranin, identical with that isolated previously from *Geranium thunbergii* [6, 7].

When geranin was subjected to stepwise hydrolysis, together with other substances, a compound with R_f 0.45 was detected. Judging from some of its physicochemical properties and chromatographic behavior, it was apparently corilagin — the biosynthetic precursor of geranin [8, 9].

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NITROGEN-CONTAINING METABOLITES OF THE MARINE SPONGE *Acanthella carteri*

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Marine sponges are unusually rich in physiologically active compounds. Our interests include the investigation of the secondary nitrogen-containing heterocyclic compounds containing metabolites of this class of invertebrates. Previously a series of nitrogen-containing heterocyclic compounds containing in their structures pyrrole and imidazole groups, biogenically related to one another, have been isolated from sponges of the families Axinellidae and Agelasidae [1-4]. We have investigated ethanolic extracts of the marine sponge *Acanthella carteri* from the collections of the 12th voyage of the Scientific Research Ship "Professor Bogorov" (island of Madagascar). By column chromatography on silica gel we isolated three compounds.

The physicochemical properties of (I) and (II) and their diacetates showed that one was identical with the "yellow compound" previously isolated from the Australian sponge *Phakellia flabellata* [2], and (II) with a compound from the Mediterranean sponge *Axinella verrucosa* and the sponge *Acanthella aurantiaca* from the Red Sea [4]. After the completion of our work, a report appeared of the isolation of compounds (I) and (II) from the Okinawa

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