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In connection with an investigation of the chemical nature of the resistance of the vine to the fungal disease mildew caused by the fungus *Plasmopara viticola* Berl. et de Toni, we have studied some constitutional antibiotic substances of this plant.

We studied healthy leaves of a form of the vine V-4213 (*Vitis vinifera*), resistant to this disease, which were gathered under natural conditions. The pre-dried material was subjected to successive extraction with hexane, chloroform, diethyl ether, ethyl acetate, and methanol. Biological trials of the ethyl acetate extract on the test organism — the spores of *Plasmopara vit.* — showed a high fungitoxicity. By TLC on Silufol in the butanol-ethanol-water-chloroform (2:2:1:2) system we detected the presence of about 20 compounds differing by their fluorescence in UV light before and after treatment with various chromogenic reagents. The majority of them were phenolic compounds. To separate these compounds we used column chromatography on polyamide. In a preliminary test, the ethyl acetate extract was separated by percolation into two fractions — substances absorbing and fluorescing in UV light.

From the fraction of substances absorbing in UV light we succeeded in isolating four individual compounds A, B, C, and D. Substance A, with the composition $C_{21}H_{20}O_{12} \cdot H_2O$ mp 220–222°C (247–249°C anhydrous). $[\alpha]_D^{20} -115^\circ$ (c 0.5; pyridine), $\lambda_{max}^{C_2H_5OH}$ 360, 255 nm, proved to be a glycoside of quercetin. A comparison of the IR spectra of substance A and of hirsutrin isolated from the flowers of the cotton plant [1], showed that they differed only at 1010–1100 cm^{-1} (sugar region). We assume that the glycoside that we have obtained is an isomer of hirsutrin.

Substance B has the composition $C_{27}H_{30}O_{16}$, mp 182–185°C (ethanol) $\lambda_{max}^{C_2H_5OH}$ 256, 359 nm $[\alpha]_D^{21} -33^\circ$ (c 0.08; ethanol). From the products of hydrolysis, its UV and IR spectra, and a mixed melting point it was identical with rutin.

Substance C has the composition $C_{21}H_{20}O_{11}$, mp 185–187°C, $[\alpha]_D^{21} -29^\circ$ (c, 0.5; dimethylformamide), λ_{max} 260, 252 nm. On the basis of its physicochemical constants, IR and UV spectra, and comparative chromatography behavior with an authentic sample, it was identified as quercitrin [2].

From the physicochemical properties and the absence of a depression of the melting point in a mixture, substance D was identified as the aglycone of the glycosides described above — quercetin. This is the first time that compounds A and C have been found in vine leaves.

LITERATURE CITED

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