LACTONE FROM INULA GERMANICA

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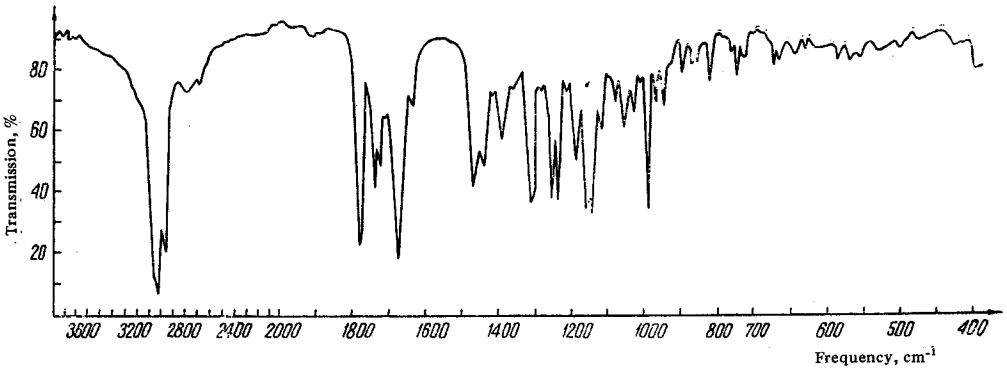
By aqueous extraction from the epigeal part of Inula germanica L. collected on July 7, 1968 in eastern Georgia in the environs of the town of Zil'ch we have isolated a colorless optically inactive substance, $C_{20}H_{26}O_6$, mp 154–157° C. Its IR spectrum (figure), ν_{max}, cm^{-1}: 1770 (γ-lactone), 1730 (OCO), 1670 (α,β-unsaturated carbonyl), 1630 (C=C).



Spectrum of the lactone isolated from Inula germanica (taken on a UR-10 instrument in $CHCl_3$).

The substance is soluble in ethanol, ether, benzene, and chloroform, and sparingly soluble in carbon tetrachloride and water; it dissolves readily in alkalis in the cold (consuming 2 g-eq of alkali). On hydrogenation in ethanol with PtO_2 (according to Adams), a tetrahydro derivative was obtained with the composition $C_{20}H_{30}O_6$, mp 166–168° C; the dehydrogenation of the substance over Se at 310–330° C for 15 min yielded chamazulene. All these facts indicate that the isolated substance is a sesquiterpene γ-lactone containing an ester group. The study of the substance is continuing.

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