

K. S. Rybalko, O. A. Konovalova,
and E. F. Petrova

UDC 615.31:547.913.21.5

The genus *Ambrosia* L. numbers more than 40 species, which grow mainly in America. At the beginning of the present century, four species were introduced into the USSR from America, and of these *Ambrosia artemisiifolia* L. has become widely distributed, being a troublesome weed of the southern regions of the European part of the USSR.

Plants of the genus *Ambrosia* have been studied in detail for their sesquiterpenoid content, interest in them being due to the antitumoral activity of some of them. More than 40 sesquiterpene lactones have been isolated and studied, and it has been established that the qualitative and quantitative compositions of the sesquiterpenoid lactones in plants of the same species differ considerably according to the growth site and phase of development [1]. In view of this, we decided to study the lactone composition of *A. artemisiifolia* growing in the USSR. The material was collected in Krasnodar Territory in the budding-incipient flowering phase.

The raw material was treated with hot water and the lactones were extracted from the aqueous extract with chloroform; the resin remaining after the chloroform had been evaporated off was chromatographed on silica gel L 100/250 μ and elution was performed with petroleum ether, petroleum ether-diethyl ether, diethyl ether-ethyl acetate, and ethyl acetate. In another experiment, elution was performed with chloroform, chloroform-ether, ether, ether-ethyl acetate, ethyl acetate, and ethyl acetate-methanol.

As a result, the following sesquiterpene lactones were isolated and identified: peruvín, $C_{15}H_{20}O_4$, mp 168-170°C (from ethanol-ether); artemisiifolin, $C_{15}H_{20}O_4$, mp 136-138°C (from ethyl acetate); cumanin, $C_{15}H_{22}O_4$, mp 115-117°C (from ethyl acetate); dihydrocumanin, $C_{15}H_{24}O_4$, mp 176-178°C (from ethanol-ether); and psilostachyin-C, $C_{15}H_{20}O_4$, mp 230-232°C (from ethyl acetate).

All the substances mentioned above are also characterized by IR and NMR spectroscopy.

The main components were peruvín, dihydrocumanin, and cumanin, the others being present in minor amounts.

LITERATURE CITED

1. H. Yoshioka, T. Mabry, and B. Timmermann, *Sesquiterpene Lactones*, Tokyo (1973), pp. 85-120.

All-Union Scientific-Research Institute of Medicinal Plants, Moscow. Translated from *Khimiya Prirodnykh Soedinenii*, No. 4, pp. 578-579, July-August, 1979. Original article submitted April 4, 1979.