The present paper reports the structure of kesselridine, one of the new bases of the epigeal part of Colchicum kesselrii Rgl. [1, 2].

Kesselridine has the composition C_{18}H_{23}O_{4}N, mp 232-234°C, and [α]D -50° (in pyridine). M^+ 317. Its UV spectrum (Fig. 1) has absorption maxima at 219 and 290 nm. Its IR spectrum (Fig. 2) has the absorption band of hydroxy groups (3230-3420, 3590 cm⁻¹) and of the C=O bonds of an aromatic ring (1595 cm⁻¹).

The NMR spectrum of kesselridine (Fig. 3) has the resonance signals of one N-methyl group (3.10 ppm) and one aromatic proton (6.68 ppm). Thus, kesselridine lacks the oxygen groups such as methoxy, carbonyl, and methylenedioxy groups, that are so characteristic for the colchicine alkaloids.

To establish the structure of kesselridine and the functions and positions of the substituents, we used the mass spectrometric method.

The presence in the mass spectrum (Fig. 4) of the base of the main ions (M - 1)^+ and (M - 43)^+ shows that it belongs to the tetrahydroisoquinoline derivatives containing an N-methyl group [3-5], the intensity of the peak of the molecular ion being approximately half that of the maximum ion (M - 1)^+. According to the literature [3-5], such spectra are characteristic for the homoproaporphine alkaloids.

This is confirmed by the presence in the spectrum of kesselridine of peaks of ions with m/e 230 and 228. On the basis of biogenetic schemes, the aromatic proton in this base may be located at the C₃ atom, and then the ions mentioned can be assigned to the only possible structures (I) and (II), respectively, in Scheme I.

The presence of ions with m/e 230 and 228 simultaneously excludes an aporphine skeleton. The peak of the molecular ion of the product of the methylation of kesselridine with diazomethane - O-methyl-kesselridine - corresponds to a mass number of 331. Furthermore, the ions of O-methylkesselridine cor-
responding to the ions of kesselridine with m/e 230 and 228 are shifted by only 14, and not by 28 units. Consequently, one of the phenolic hydroxyls in the ions with m/e 230 and 228 is formed under the conditions of mass spectrometry by the cleavage of an ether bridge. The presence of an ether bridge in the fourth ring E is confirmed by the ion with m/e 242 (III).