Thus, the leaves and flower heads of Artemisia juncea contain the sesqiterpene lactone deacetylmatricarin. Santonin was not found in this plant.

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THE STRUCTURE OF MERISTOTROPIC ACID

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The triterpene hydroxyketoacid (I) of composition $C_{32}H_{48}O_4$, $[\alpha]_D$ −67° C, called meristotropic acid has been found in the roots of Meristotropis xanthoides Wass. The ketone group of this acid is unreactive; judging from the ease of saponification of the methyl ester the carboxyl does not suffer much steric hindrance; the absorption in the UV region shows the presence of a conjugated diene [1].

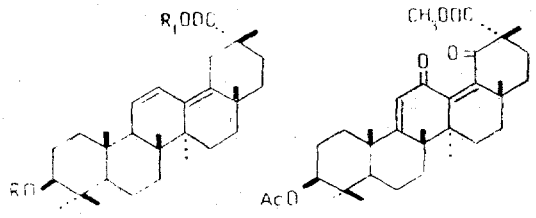
Data	Substance	Mp, ° C	$[\alpha]_D$, deg	Absorption in the UV spectrum
Hour results	(VIII)	222—224	−120	—
	(IX)	227—228	−170	λ_{max} 278 mμ (log ε 3.9)
Reference [6]	(VIII)	229	—	—
	(IX)*	233—234	−168	λ_{max} 277 mμ (log ε 4.12)

* This sample melted at 229°–230° C in our experiments; a mixture with the dienedione (IX) from meristotropic acid had mp 228.5°–229.5° C.

From the plant mentioned we have isolated meristotropic acid (I) with mp 358° C, λ_{max} 242, 250, 258 mμ (log ε 4.38, 4.43, 4.34, and have obtained derivatives of it: methyl ester (II) with mp 278 ° C, acetate of the methyl ester (III) with mp 248° C, triol (IV) with mp 230° C, λ_{max} 244, 252, 260 mμ (log ε 4.34, 4.39, 4.18), and its triacetate (V) with mp 238°–240° C, deoxymeristotropic acid, (VI), with mp 323° C, its methyl ester (VII) with mp 235°–237° C, $[\alpha]_D$ −125° C, λ_{max} 242, 250, 260 mμ, and the acetate of the methyl ester (VIII) with mp 222°–224° C, $[\alpha]_D$ −120° C.

Substance (IV) was obtained by reducing (II) with lithium aluminum hydride, and (VI) by reducing (II) by Nagati and Itazaki's method [2]. The other substances were prepared by the usual methods. The analysis of six of these compounds led to the formula $C_{30}H_{44}O_4$ for meristotropic acid. This formula, the high negative rotation $[\alpha]_D$, and the characteristic absorption in the UV region of all the compounds investigated permit the conclusion that meristotropic acid has the hydrocarbon skeleton of oleana-11, 13(18)-diene. The hindered ketone group cannot be located at C_3, and since all the natural compounds of the oleanane group with an unbroken carbon skeleton have an oxygen atom at C_3, there must be a hydroxyl in this position. The acetylation of the methyl and ethyl esters of (I) [1] and also of substance (VII) lead to practically no change in $[\alpha]_D$. Consequently, the hydroxyl is in the equatorial position (the acetylation of (I) took place anomalously in our experiments). The carboxyl cannot be at C_4 because the triol does not form an acetonide. It may occupy position 28 or 30: such compounds are known [3, 4] and are different from deoxymeristo-

tropic acid (VI). An angular position of the carboxyl does not agree with its low degree of hindrance [5]. Consequently, only position 29 remains for the carboxyl and deoxymeristotropic acid must have the structure (VI). The acetyl of the methyl ester (VII) of this compound (dehydroepikatonic acid) and also the dienedione (IX) corresponding to it have been synthesized from katonic acid by King and Morgan [6].



IX

VI R = R_1 = H

VII R = H R_1 = CH_3

VIII R = Ac R_1 = CH_3

The acid of the methyl ester of deoxymeristotropic acid that we obtained and the product of its oxidation with selenium dioxide were identified as (VIII) and (IX) respectively by their constants and mixed melting points.

Thus, deoxymeristotropic acid has the structure 3β-hydroxyoleana-11,13(18)-diene-29-oic acid (VI). The most probable position of the hindered ketone group in meristotropic acid in system (VI) is at C_6.

The sample of the dienedione (IX) was kindly sent to us by King and Morgan (Forest Products Research Laboratory, Princes Risborough, Aylesbury, Buckinghamshire).

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PEPTIDE DERIVATIVES OF DNA FROM ESCHERICHIA COLI

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It is known that DNA from various sources contains a small amount of peptides covalently bound to it [1, 2]. These peptides apparently fulfil the role of "stitches" connecting the individual bihelical fragments of the DNA molecules [1].

Recently, in the laboratory of protein chemistry of the chemical faculty of Moscow State University the nature of the bond between peptides and highly polymeric RNA has been studied. Now we have taken up the study of the DNA–peptide structure.

The DNA preparation was obtained from the cells of E. coli (strain C_4) by repeated deproteination with phenol in association with sodium dodecyl sulfate and chloroform. As can be seen from the data given below, the DNA was characterized by a fairly high peptide content (the amino acid composition of the peptide was determined by means of an automatic amino acid analyzer after hydrolysis with 6 N hydrochloric acid at 105° C for a day). The exceptionally high content of tyrosine in the sample of DNA is the main point of interest.