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ALKALOIDS OF PEDICULARIS

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From the epigeal part of P. rhinanthoides Schrenk., collected on July 21, 1966, in the flowering period in the gorge of the R. Nura, KirgSSR, by chloroform extraction we have obtained 0.3% of total alkaloids.

The ethereal fraction of the total alkaloids was treated with acetone, giving 0.04% of plantagonine [1]. By separating the mother liquor on a column of alumina [eluant: ether–chloroform (9 : 1)] we obtained a liquid base with R_f 0.67 [in the butan-1-ol–water–acetic acid (20 : 20 : 1) system], $[\alpha]_D^{20}$ +5.9 (c 0.508; ethanol), $C_{10}H_{13}NO$, mol. wt. 163 (mass spectroscopy). The picrate has mp 151–152° C (water). IR spectrum: λ_{max} 263, 270 mμ (log ε 2.74, 2.70).

The IR spectrum of the base has absorption bands at 3400–3200 cm^{-1} (OH), 2960 cm^{-1} (C–CH_3), 1595 cm^{-1} (pyridine ring), and 895, 850, and 815 cm^{-1}. Oxidation of the base with potassium permanganate in an alkaline medium added two oxygen atoms with the formation of an acid with mp 218–220° C (decomp.). A mixture of this acid with plantagonine showed no depression of the melting point. Thus, the base that we have isolated is the dextrorotatory form of the known alkaloid *l*-tecostidine [2].

From the epigeal part of P. olgae Rgl., collected on June 15, 1968, in the flowering period in the village of Saed, TadzhSSR, we have obtained 0.65% of total alkaloids from which we have isolated 0.11% of plantagonine.

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MALATE DEHYDROGENASE FROM COTTON SEED

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From the seeds of the cotton plant of variety 108-F, we have isolated a fraction possessing malate dehydrogenase activity.

The seeds, freed from their coating and ground, were defatted [1]. The resulting acetonic powder (100 g) was mixed with 0.01 M phosphate buffer, pH 7.4 (1 : 10) containing 0.005 M EDTA and 0.005 β-mercaptoethanol. The extracts were centrifuged at 6000 rpm for 30 min. The supernatant liquid was fractionally precipitated with ammonium sulfate. The precipitate obtained at 20% saturation was filtered off with suction and the supernatant liquid was brought to 50% saturation. Then the precipitate was dissolved in the minimum amount of 0.1 M phosphate buffer, pH 7.4, containing EDTA and β-mercaptoethanol and was passed through a 2.5 × 45 cm column containing Sephadex G-25 equilibrated with the same buffer. The fractions containing protein were combined and the percentage protein content was