Voucher specimen No. P.S. (r) of the root has been preserved in our laboratory. This was collected by Home-O-Flora, Calcutta, and identified by botanist Dr. P. C. Dutta, Department of Botany, Calcutta University, Calcutta.

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PEPTIDE ALKALOIDS FROM *ZIZYPHUS MUCRONATA**

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Key Word Index—*Zizyphus mucronata* Willd.; Rhamnaceae; cyclic peptide alkaloids; mucronines $-A$, to $-H$; abyssenines $-A$, to $-C$; isoquinoline alkaloid; (−)*N*-methylcoclaurine.

Plant. The bark and the leaves of *Zizyphus mucronata*, collected in Nigeria, January 1971.

Previous work. The eight mucronines, $-A$ to $-H$[1,2] have been isolated from the bark of *Z. mucronata*, collected in Mali. The three abyssenines, $-A$, $-B$ and $-C$[2] have been found in the bark of *Z. abyssinica*, collected in Nigeria.

Present work. Extraction and identification of the alkaloids from the bark: the crude alkaloids (0·09%) were obtained by extraction of the powdered bark in the usual manner,[3] and separated to pure components by means of column chromatography and preparative TLC. The compounds were identified by MS, NMR, IR, m.m.p. and co-TLC. In addition to the alkaloids which have been isolated before: abyssenines $-A$, $-B$ and $-C$ have been identified. Extraction and identification of the alkaloids from the leaves: from the polar fraction of the crude alkaloids (0·06%) mucronines $-G$, $-H$ and abyssenine $-C$ have been isolated and identified. The polar fraction contains the isoquinoline alkaloid (−)*N*-methylcoclaurine[4] which has been identified by physical and chemical methods.

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[1] TSCHESCHE, R., DAVID, S. T., UHLENDORF, J. and FEHLHABER, H. W. (1972) *Chem. Ber.* **105**, 3106; *Ann. Chem.* **759**, 195.

[2] TSCHESCHE, R., DAVID, S. T., ZERBES, R., ECKHARDT, G. and KAUSSMANN, E. U. (1974) *Ann. Chem.* In press.

[3] TSCHESCHE, R., WELTERS, R. and FEHLHABER, H. W. (1967) *Chem. Ber.* **100**, 323.

[4] ARNDT, R. R. (1963) *J. Chem. Soc.* 2547.