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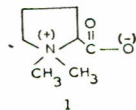
FIELD DESORPTION MASS SPECTROSCOPIC STUDY OF STACHYDRINE—A BETAINE FROM CADABA FRUITICOSA

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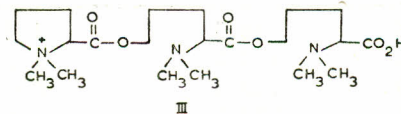
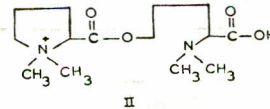
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We have recently reported¹ the first C-13 NMR spectrum of a betaine, stachydrine (I), isolated from *Cadaba fruticosa*. Since the low volatility of the zwitterionic material precluded mass spectral analysis by standard electron impact procedures, it was decided to study the material by field desorption techniques, particularly since no field desorption mass spectrometric study has previously been reported on any betaine although the utility of this technique has been demonstrated by Beckey and others with amino acids.³⁻⁴



Since stachydrine itself is hygroscopic and difficult to purify, the corresponding hydrochloride salt was prepared for this study. In contrast to the electron impact spectrum, stachydrine hydrochloride exhibited a prominent molecular ion at m/e 144 corresponding to the cation. Much more interesting was the presence of two other prominent peaks at m/e 287 and 430 formed by the dimerisation and trimerisation of the parent molecule. The structures of the dimer and trimer were assigned as (II) and (III) respectively. The peak at m/e 287 was in fact the major peak in the spectrum and the ion (II) readily lost a molecule of carbon dioxide to afford another significant peak at m/e 243.



The above study further demonstrates the utility of field desorption techniques in the analysis of the mass spectra of betaines which are generally not susceptible to conventional electron impact analysis.

References

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ISOLATION OF MANNITOL AND β -SITOSTEROL FROM SCHWEINFURTHIA SPHAEROCARPA A.BR.

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Schweinfurthia sphaerocarpa (scrophulariaceae), locally known as 'sonpat', grows wild in rocky places of Sind. β -Sitosterol and D-mannitol have been isolated from the alcoholic extract of the leaves of fresh plant.