Cannabis", implying that only the flowering tops are active. In fact a person using the leaves only would probably have a legally sound defence against prosecution, although, as the above facts indicate, they may contain active material.

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* Numbered Δ^9 according to IUPAC rules.

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Isolation of speciogynine from the leaves of *Mitragyna inermis* (Willd.), O. Kuntze

It was reported by Shellard & Sarpong (1969) that the leaves of *Mitragyna inermis* (Willd), O. Kuntze contained 8 oxindole alkaloids together with the indole alkaloid mitraciliatine and traces of a second indole alkaloid. It was anticipated that this alkaloid might be speciogynine as the alkaloids then isolated would fit into a hypothesis proposed for oxindole biogenesis outlined by these authors. The alkaloid, designated Sp4, was, however, not speciogynine.

We have subsequently isolated from another batch of leaves of *M. inermis* small quantities of indolic substances, one of which is speciogynine. The alkaloids were isolated according to Shellard & Sarpong (1969), Fraction B being subjected to further column chromatography using chloroform–methanol (2:1) and to preparative thin-layer chromatography. Six alkaloidal substances were isolated, one corresponding to mitraciliatine (the bulk of which was in a different fraction), four were present in traces too small to characterize or identify with certainty, and the other was speciogynine. This was identified by comparing the hR_F values obtained on several thin-layer chromatographic systems and its spectral data ultraviolet, infrared and nmr with authentic speciogynine obtained from *Mitragyna speciosa* (Beckett, Shellard & others, 1966).

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'Metabolism' of 'amphetamines' to oximes as a route to deamination

Recently, a preliminary report of the metabolism of amphetamine to benzylmethyl ketoxime (isomer not specified) appeared (Hucker, Michniewicz & Rhodes, 1970). We have found that after injection of the (+) or (−)-isomers or the racemates of amphetamine, methylamphetamine and ethylamphetamine to rabbits or guinea-pigs, *syn* and *anti*-benzylmethylketoximes are present in urine in free and conjugated forms. The metabolic conversion of the parent drugs to oxime and the stereoisomeric composition of the oxime varied with the species and with the enantiomorphs administered; in general, the *anti*-isomer predominated. In some instances, more combined oxime isomers than unchanged drug were excreted, indicating the importance of the metabolic route.

The identity and the stereoisomeric content of the oxime mixture from metabolism was established by comparison with authentic samples by mass spectrometry, polarography, nuclear magnetic resonance, t.l.c. and g.l.c. using several columns, e.g. 5% Carbowax 20 M on Chromasorb W 3 m; 140°; gas 40 ml/min *anti* 25 min, *syn* 27 min (ref *p*-chloropropiophenone 8 min): 8% Apiezon L plus 4% Carbowax 20 M on Chromosorb G, 1 m; 130°; gas 25 ml/min *anti* 34 min, *syn* 36 min (ref 16 min): 3% Carbowax 20 M on Chromosorb G 1 m; 180°; gas 30 ml/min *anti* and *syn* 6 min (ref 2·5 min).

In t.l.c. the *syn*-oxime hydrolysed to benzylmethyl ketone more rapidly than did the *anti*-isomer. In aqueous solution at pH 1, the oxime isomers were rapidly hydrolysed to benzylmethyl ketone but little hydrolysis occurred at alkaline pH values. Thus, in metabolic studies, the amount of oxime converted to ketone and its stereoisomeric content will depend upon the pH of the urine, storage time, procedures used to isolate the isomers and the method of analysis. This instability of oxime in solution may account for the fact that despite many reports of the identification of benzylmethyl ketone as a metabolite of 'amphetamines', Hucker & others (1970) were the first to record the metabolism of amphetamine to benzylmethyl ketoxime.

The 'metabolism' of 'amphetamines' to oximes which are relatively unstable in weakly acidic solutions to yield benzylmethyl ketone constitutes a route to the deamination of 'amphetamines' (cf. Hucker & others for (+)-amphetamine).

We were unable to find norephedrine recently reported (Caldwell, Dring & Williams, 1971) in urine after normal doses of methylamphetamine to guinea-pigs.

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