(4); C_8H_7NO $^+$ 133 (95) C_7H_7N 105 (100).

$$[\alpha]_{24^\circ}^{\lambda} = \frac{589 \quad 578 \quad 546 \quad 436\,\text{nm}}{-34.8 \quad -34.8 \quad -39.0 \quad -58.0} \quad (c = 1.0)$$

Dehydroisosenaetnin (7). Farbloses, zähes Öl, IR: $>C=O$ 1773, 1750, 1725 cm^{-1}. MS: M$^+$ *m/e* 387.131 (3%) (ber. für $C_{20}H_{21}O_7N$ 387.132); $C_8H_7NO^{7+}$ 133(100); $C_7H_7N^{7+}$ 105 (28).

$$[\alpha]_{24^\circ}^{\lambda} = \frac{589 \quad 578 \quad 546 \quad 436\,\text{nm}}{-45.6 \quad -46.1 \quad -48.8 \quad -89.0^\circ} \quad (c = 0.5)$$

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A NEW PIPERIDINE ALKALOID FROM *PIPER PEEPULOIDES*

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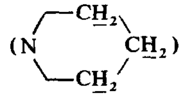
Key Word Index—*Piper peepuloides*; Piperaceae; 2-methoxy-4, 5-methylenedioxy cinnamoyl piperidine

The genus *Piper* has received considerable attention in recent years because of its reputation for producing a number of new chemical compounds, [1–8]. In earlier communications [1, 9, 10] we have reported the presence of a new pyrrolidine alkaloid, peepuloidin, from the leaves of *P. peepuloides* and from the fruits of the same plant a number of interesting compounds such as [+]-diaeudesmin, pipataline, 5-hydroxy,3′,4′,7-trimethoxyflavone, 5-hydroxy-4′, 7-dimethoxyflavone, *N*-*iso*butyl dodeca-*trans*-2-*trans*-4-dienamide, *N*-*iso*butyldeca-*trans*-2-*trans*-4-dienamide and sesamin. We now wish to report the isolation and structure elucidation of a new piperidine alkaloid from the leaves of *P.peepuloides*, identified as 2-methoxy-4, 5-methylenedioxy cinnamoyl piperidine.

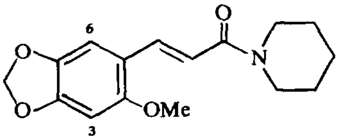
The petrol extract of the leaves on repeated column chromatography over neutral Al_2O_3 and repeated crystallisation furnished a white crystalline compound.

The compound analysed for $C_{16}H_{19}NO_4$, M$^+$-289. 1318 (Cal. for. $C_{16}H_{19}NO_4$, M$^+$289.1313); UV 333, 305 and 240 nm. The IR (KBr) spectrum of the compound showed characteristic bands for $>C=O$ (1650 cm^{-1}) indicating the compound to be an amide and lack of an —NH stretching frequency demonstrated that it was a tertiary amide; C═C (1660 cm^{-1}) and methylenedioxy group) (1260, 1040, 930 cm^{-1}). The 60 MHz PMR ($CDCl_3$) spectrum of the compound showed a broad multiplet between δ1.0 and 1.9 which is attributed to 6 protons



a triplet and a multiplet at δ3.30 and 3.55 respectively accounts for 4 protons $\left(N\begin{smallmatrix}\diagup CH_2\\ \diagdown CH_2\end{smallmatrix}\right)$; a singlet at 3.75 has been assigned to 3 protons (O—Me). A doublet at 5.85 (1H, J = 14 Hz), indicating a *trans* olefinic proton (α) adjacent to carbonyl; a singlet at 5.85 is due to two protons of methylenedioxy group. A doublet at 6.78 (J = 14 Hz) is assigned to one (β) olefinic proton, singlets at δ6.45 and 6.9 are attributed to C-3 and C-6 aromatic protons respectively. The MS is also in complete agreement with the proposed structure (**1**).

On hydrogenation (Pd/C) the compound quickly absorbed one mole of H_2 to give a waxy dihydro derivative (M$^+$-291). The $KMnO_4$ oxidation of the compound furnished an acid mp 147–147.5° (lit., [11] mp 148–149°). identified as 2-methoxy-4, 5-methylendioxy benzoic acid.



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EXPERIMENTAL

The air dried powdered leaves of *P. peepuloides* Roxb. (0.9 kg) were continuously extracted in a Soxhlet with petrol (bp 60–80°) for 75 hr. The extract was concd under red. pres. and the resultant viscous liquid was subjected to column chromatography over neutral Al_2O_3 and eluted with different solvents in order of increasing polarity. The fractions eluted with C_6H_6 gave a crude viscous liquid which on repeated column chromatography over neutral Al_2O_3 gave a dirty white crystalline compound, mp 90–92°. Repeated crystallization from petrol- Me_2CO furnished a TLC pure, white crystalline compound (180 mg) mp 98–99° R_f 0.36, EtOAc-*n*-hexane, 1 : 1).

Hydrogenation. The compound (50 mg) in MeOH (200 ml) was hydrogenated over 10% Pd/C (40 mg) at room temp. and pres. Absorption of H_2 was complete after 1 hr during which 1 mole of H_2 was absorbed. The catalyst was filtered and the solvent removed under red. pres. leaving behind a viscous residue. The residue (40 mg) on purification by chromatography over neutral Al_2O_3 yielded a TLC pure, white waxy compound, $C_{16}H_{21}NO_4$, M^+-291 (R_f 0.42, EtOAc–*n*-hexane, 1:1).

Oxidation. To the compound (50 mg) dissolved in 3 ml Me_2CO was added $KMnO_4$ in small batches and the mixture allowed to reflux. Addition of $KMnO_4$ was stopped when a permanent pink colour persisted in the mixture. $MeCO_2$ was removed and 1 ml of 10% KOH soln was added and filtered hot. The residue was washed with hot H_2O and the filtrate added to the alkaline aq. portion. The aq. soln was extracted with Et_2O to remove the unreacted alkaloid and then acidified with dil. HCl to pH 2. This was extracted × 3 with Et_2O, solvent removed and the residue chromatographed over Si gel. EtOAc fractions yielded a crystalline residue which on repeated crystallisation from Me_2CO–EtOAc (1 : 1) furnished a white crystalline compound (5 mg), $C_9H_8O_5$, mp 147–147.5°, identified as 2,methoxy-4,5-methylenedioxy benzoic acid by PMR, IR and MS.

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