# Crystallographic data for an *N*-benzyl-*N*-methylcamphidinium iodide. By J. WHITE and A. J.

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In the course of some studies on diastereoisomeric pairs of quaternary ammonium salts a ($\pm$)-*N*-benzyl-*N*-methyl-camphidinium iodide was obtained stereospecifically from the reaction of *N*-benzylcamphidine with methyl iodide in acetone under reflux (McKenna & White, 1963). The well-formed crystals are believed on chemical grounds to be the ($\pm$) form of I (the piperidine chair is however almost certainly distorted) rather than the isomeric substance II.

I

II
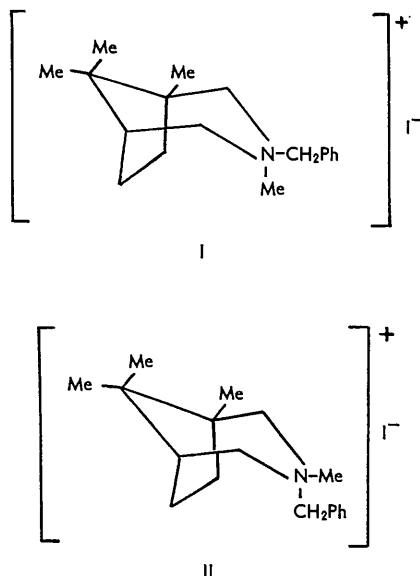
An X-ray examination yielded the following data. $C_{18}H_{28}NI$ ($M = 385 \cdot 3$) is orthorhombic with

$$a = 20 \cdot 54, \ b = 7 \cdot 91, \ c = 10 \cdot 63 \ \text{Å, all } \pm 0 \cdot 05 \ \text{Å}.$$

$\varrho_o = 1 \cdot 432$ g.cm^{-3}; $\varrho_c = 1 \cdot 482$ g.cm^{-3} for $Z = 4$. The space

group is $Pca2_1$ (C_{2v}^5). Systematic absences also permit $Pcam$ (D_{2h}^{11}) but, as the molecule possesses no plane of symmetry and the ($\pm$) form was studied, this space group with its eightfold general positions can be eliminated.

A partial powder pattern is shown below: the intensities were estimated visually.

No further work on this substance is planned.

I	d_o	d_c	hkl
10	5·317 Å	5·315 Å	002
8	4·733	4·720	202
8	4·383	4·411	012
9	3·717	3·709	312
4	3·542	3·487	221
9	3·034	3·032	222
3	2·937	2·924	313
5	2·689	2·699	422
2	2·588	2·588	620
6	2·513	2·519	614
		2·515	621
		2·511	522
5	2·375	2·380	811
1	2·313	2·312	802
2	2·169	2·173	713
		2·172	531
3	2·100	2·100	324
		2·099	604
3	2·031	2·029	614
2	1·9676	1·9683	140
		1·9666	315
1	1·8537	1·8544	624
		1·8535	042
		1·8528	922
1	1·7370	1·7384	832
3	1·6910	1·6914	914
		1·6906	641
		1·6900	12,0,1

Reference

MCKENNA, J. & WHITE, J. (1963). *J. Chem. Soc.* In the press.

Fine angle adjustments. A new use of the Weissenberg goniometer. By I. FANKUCHEN, *Polytechnic*

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In many fields of scientific work there is need for methods for adjusting a plane to make a very precise angle with a direction. In X-ray work two obvious examples are in obtaining rocking curves of crystals and in the study of the total reflection of X-rays at glancing incidence. In each of these cases, it is necessary to change the angle between the surface and an X-ray beam by a second

or so of arc at a time. In the past, rather fancy equipment has been used for this kind of work: long lever arms generally pushed by micrometer screws. It is the purpose of this paper to show that the equi-inclination Weissenberg goniometer can be used for this kind of work with no modifications whatsoever; this despite the fact that no angular reading on the Weissenberg goniometer or