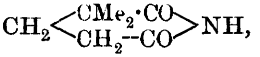
CLXXXVII.—3-gem-*Dimethylpiperidine.*

By the late JOHN GUNNING MOORE DUNLOP.

THE reasons for which it was considered desirable to prepare this compound have been explained in the paper on "The configuration of substituted ammonium compounds" (Jones and Dunlop, T., 1912, **101**, 1748), namely, as a starting point for the synthesis of a dicyclic quaternary ammonium salt, one of the rings of which should have no lateral symmetry with reference to the nitrogen atom, the compound which it was desired to prepare therefrom being 3:3-dimethyl-1:1-trimethylenepiperidinium iodide.

Unfortunately, yields in all experiments were so minute that it was not possible to proceed to this synthesis, but for various reasons it appears desirable to give a description of the parent base.

Of the various methods by which 3:3-dimethylpiperidine might be synthesised, the only one that appears practicable is the reduction of *αα*-dimethylglutarimide,  $CH_2<\begin{matrix}CMe_2\cdot CO\\ CH_2-CO\end{matrix}>NH$, the preparation of which is described by Blaise (*Bull. Soc. chim.*, 1899, [iii], **21**, 628). Of the many processes available for this reduction, several have been tried by the author, but one alone has given any result, namely, reduction with sodium in boiling amyl alcohol. In this case, a substance was obtained which boiled at 137°, had an odour like that of piperidine, and gave a strongly alkaline reaction with litmus. It was most readily purified by means of the aurichloride.

On passing a current of hydrogen chloride through a solution of the base in ether, a crystalline *hydrochloride* was formed, but this salt was too deliquescent to be examined further; the *iodide* was, however, obtained in slightly deliquescent crystals, melting at 200°, by treating the base with aqueous hydriodic acid:

0·3613 gave 0·3500 AgI. I=52·4.

$C_7H_{15}N,HI$ requires I=52·7 per cent.

The *picrate*, *oxalate*, and *platinichloride* were all extremely soluble in water and in alcohol, but the *aurichloride* was obtained in fine needles, melting at 182° and sparingly soluble in cold water:

0·3799 gave 0·1649 Au. Au=43·41.

$C_7H_{15}N,HAuCl_4$ requires Au=43·54 per cent.

A *benzoyl* derivative was obtained by the Schotten-Baumann method. This boiled at 204°/15 mm., and crystallised in needles, melting at 68—69°. These, however, could not be obtained pure in quantity sufficient for analysis.

It appears, therefore, the reduction of dimethylglutarimide has proceeded normally, at any rate in part, and that the base described is, in fact, 3-*gem*-dimethylpiperidine.

The author's thanks are due to the Government Grant Committee of the Royal Society for a grant in aid of the cost of this investigation.

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[*Received, October* 19*th*, 1915.]