

extracted with several small portions of chloroform. The chloroform extracts were dried and evaporated. The gummy residue obtained was treated with dry benzene (50 ml.) when the insoluble quaternary salt (0.25 g.) separated out. It crystallised from alcohol in needles, m.p. 227° and analysed for 1, 3, 5-trimethyl benzimidazolium iodide (Found: C : 41.5; H : 4.8; N : 9.5. $C_{10}H_{13}IN_2$ requires C : 41.7; H : 4.5; N : 9.7%).

The low melting solid obtained on evaporation of filtrate was dissolved in benzene (15 ml.) and chromatographed over alumina. The yellow band separated was eluted with benzene. First elutions gave compound (A), colourless needles from petroleum ether (40–60°), m.p. 74°. The final elutions with benzene-ethyl acetate mixture (2 : 1) gave compound (B), colourless needles from benzene-petroleum ether, m.p. 95°. The middle fractions gave an oil, which on resubmitting to chromatography gave further quantities of (A) and (B). The yields of (A) and (B) were 0.4 g. and 0.2 g. respectively. (A) and (B) have been found to be identical in all respects with 1, 6-dimethyl¹³ and 1, 5-dimethyl¹⁴ benzimidazoles respectively, synthesised by unambiguous methods.

Methylation of 2, 5 (or 6)-dimethyl benzimidazole.—Methylation of 2, 5 (or 6)-dimethyl benzimidazole (1.6 g.) with methyl iodide (1.6 g.) in acetone over potassium carbonate gave a low melting solid. This was triturated with benzene (75 ml.) and the insoluble quaternary salt was filtered (0.5 g.). It crystallised from alcohol as rectangular rods, m.p. 165–66°, and analysed for 1, 2, 3, 5-tetramethyl benzimidazolium iodide (Found: C : 43.5; H : 5.2; N : 9.1; $C_{11}H_{15}IN_2$ requires C : 43.7; H : 5.0; N : 9.3%). The residue obtained on evaporation of the filtrate (0.6 g.) was recrystallised from petroleum ether (40–60°) giving colourless needles, m.p. 140°. This compound was found to be identical in all respects with a synthetic sample of 1, 2, 5-trimethyl benzimidazole.¹² Its mixed melting point with 1, 2, 6-trimethyl benzimidazole¹² was depressed (80–98°).

Methylation of 5 (or 6)-methyl-2-phenyl benzimidazole.—Methylation of 5 (or 6)-methyl-2-phenyl benzimidazole (0.65 g.) with methyl iodide (0.5 g.) in dry acetone over potassium carbonate gave a solid. This was treated with dry benzene (50 ml.). The benzene insoluble compound (0.2 g.), crystallised from acetone petroleum ether in colourless needles, m.p. 215° and analysed for 1, 3, 5-trimethyl-2-phenyl benzimidazolium iodide (Found: C : 52.4; H : 4.9; N : 7.4. $C_{16}H_{17}IN_2$ requires C : 52.7; H : 4.6; N : 7.7%). The filtrate was passed over a column of alumina. Elution with benzene gave a compound (A; 0.2 g.), colourless plates m.p. 130°, from benzene petroleum ether. Final elutions with ethylacetate-benzene