The substance acts in general like ordinary manganous chloride, except that, as would be expected, it does not lose water of crystallisation when dried over calcium chloride, while the ordinary form loses two of its four molecules under these conditions. Analysis showed that the same salt was obtained from a solution containing lithium chloride as from one containing magnesium chloride. From the conditions of formation a pure product could not, however, be expected. The analyses here given were made first with a sample which had been dried between filtering paper, and, second, with one dried to constant weight over calcium chloride.

Analysis of salt dried between filtering paper gave the following results:

0.3924 gram salt gave 0.6753 gram AgCl (42.56 per cent. Cl), and 0.1788 gram Mn_3O_4 (32.82 per cent. Mn).

When dried over calcium chloride the salt gave the following figures on analysis:

0.3346 gram salt gave 0.5902 gram AgCl (43.62 per cent. Cl), and 0.1581 gram Mn_3O_4 (34.03 per cent. Mn).

0.2975 gram lost at 105°–110° 0.0326 gram H_2O = 10.96 per cent. H_2O.

At higher temperatures further, but slow, loss was observed, no doubt due to decomposition of the salt.

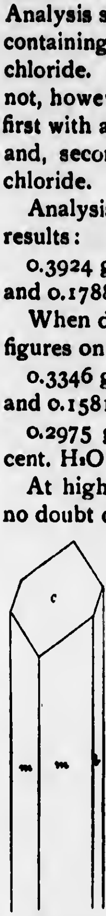

FIG. 1.

	Calculated for $MnCl_2.2H_2O$.		Found In dried salt.	Found In undried salt.
Mn	54.8	33.94	34.03	32.82
2Cl	70.74	43.81	43.62	42.56
H_2O	17.96	11.125	10.96	
H_2O	17.96	11.125		
	161.46	100.000		

It is evident, therefore, that the salt has the formula $MnCl_2.2H_2O$, and loses one molecule of water at 105°.

Crystallography of the salt.—It crystallises in slender prisms (Fig. 1), which were shown by their optical properties and angular measurements to be monoclinic. The crystals were usually hollow towards the end, so that the basal plane was very imperfectly developed. On this account the crystallographic angle β was found (roughly) by measurement on a petrographical microscope, the crystal