when a large excess of manganous chloride was present the salt $(NH_4)_2MnCl_4.2H_2O$ was invariably obtained. From a consideration of all the evidence, the conclusion is drawn that the salt obtained by Hautz was really $(NH_4)_2MnCl_4.2H_2O$ in an impure condition, and that no salt exists having the formula $NH_4MnCl_3.2H_2O$. This conclusion was quite unexpected, as it was naturally supposed that there would be an ammonium salt corresponding to the potassium salt obtained. The relations between all the members of this series of salts will be referred to farther on.

The salt $(NH_4)_2MnCl_4.2H_2O$, as obtained and analysed by v. Hauer, seems to have been quite impure. He describes it as crystallising in cubes of a yellow or pale red color, which became almost white after recrystallisation. This description is entirely erroneous, except in regard to the pale redness of the salt.

The belief in the existence of the salt $(NH_4)_2MnCl_4.H_2O$ rests on the authority of Rammelsberg and of Pickering. The former states that it crystallises in the regular system, and publishes a partial analysis in proof of the formula given by him. His figures are as follows:

	Calculated.	Found.
Mn	21.97	21.03
4Cl	56.52	...
$2NH_4$	14.34	14.08
H_2O	7.17	...
	100.00	

While the figures obtained in the case of ammonium are fairly close to those calculated, it should be observed that in the case of manganese the figures found are about $\frac{3}{10}$ of a unit nearer to the formula with *two* molecules of water of crystallisation, than to that given by Rammelsberg. Pickering obtained a salt crystallising in hard brown cubes, which after recrystallisation from water gave figures, on analysis, which "corresponded perfectly to the formula" $(NH_4)_2MnCl_4.H_2O$. Unfortunately these figures were not published.

In regard to this salt a series of experiments was carried out, the results of which are here given. The samples analysed were obtained under widely differing conditions.

I. Obtained by rapid cooling of a solution containing manganous chloride and ammonium chloride in proper proportions for the formula $(NH_4)_2MnCl_4$.