

CUPRIC-AMMINO-SULPHATES

A. K. DEY and A. K. Bhattacharya¹ have reported evidence from the electrical conductivity measurements of the existence of cupric-amino-sulphates having 2, 4, 5 and 6 molecules of ammonia for a molecule of copper sulphate. In another publication² these authors report that they have succeeded in isolating a blue amino-copper sulphate having five molecules of ammonia for one molecule of copper sulphate. The existence of the aforesaid amino-compounds and of others having intermediate composition has been concluded by previous workers from a systematic study of some physical properties of copper sulphate and ammonium hydroxide system. Bhattacharya and

Dey have observed the existence of a new compound containing six molecules of ammonia.

These amino-compounds are formed by the addition of ammonium hydroxide to a solution of copper sulphate. If this addition is done gradually, a precipitate first comes down; with further addition of ammonia it goes into solution developing an intense blue colour. A study of the absorption spectra of this solution by Bhatnagar, Goyle and Prasad has shown that the main blue colour is more or less identical in nature when various concentrations of ammonia are used. This would not happen if definite compounds of different compositions are formed, that is, cupric-ammonium sulphates containing ammonia in definite different proportions do actually exist. Bhatnagar, Goyle and Prasad³ have shown that the absorption band obtained with the intensely blue-coloured solution formed by the addition of ammonia to copper sulphate is identical with that obtained with a suitably prepared colloidal solution of copper hydroxide. These observations would lead to the conclusion that the variety of the copper ammonia compounds obtained by Bhattacharya and Dey and other workers are adsorption complexes, containing different proportions of ammonia, formed by the peptising action of ammonium hydroxide or ammonium salts on copper hydroxide.

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1. *Curr. Sci.*, 1945, **14**, 69.
2. *Ibid.*, 1945, **14**, 201.
3. *Koll. Zeit.*, 1928, **44**, 79.