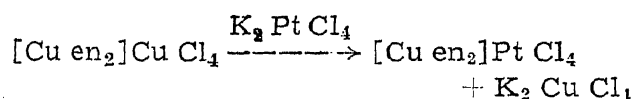


ALLEGED DIMERIC CONSTITUTION
OF ETHYLENE DIAMINO CUPRIC
CHLORIDE

CUPRIC CHLORIDE is known to give with ethylene diamine three types of salts to which the formulæ Cu en Cl_2 , $\text{Cu en}_2 \text{Cl}_2$ and $\text{Cu en}_3 \text{Cl}_2$ are usually given. In a recent paper¹ F. N. Chattaway and H. D. K. Drew observe that the supposed ethylene diamino cupric chloride Cu en Cl_2 is in reality a dimeric substance bisethylene diamino cupric cuprichloride $[\text{Cu en}_2] \text{Cu Cl}_4$. The proof given for the dimeric structure is that it forms, according to their observation, the copper compound $[\text{Cu en}_2] \text{Pt Cl}_4$ with an aqueous solution of potassium chloroplatinite. The reaction has been supposed to take place in the following manner:



Grienberg previously prepared this chloroplatinite from $\text{Cu en}_2 \text{Cl}_2$ and potassium chloroplatinite and described it as a violet red substance. Chattaway and Drew on the other hand observe it to be lilac pink in colour. The latter investigators represent the yellow substance obtained by Grossmann by the action of hydrochloric acid on ethylene diamino cupric chloride by the formula $[\text{en H}_2] \text{Cu Cl}_4$. They also attribute a dimeric constitution to the isobutylene analogue of the supposed bisethylene diamino cupric cuprichloride.

The present author first tried to find out whether propylene diamino cupric chloride obtained as a greenish blue precipitate from a molecular proportion of aqueous cupric chloride dihydrate and a molecule of propylene diamine, could be given the dimeric formula $[\text{Cu pn}_2] \text{Cu Cl}_4$. The monohydrate (m.p. 120°) dissolved in water and with hydrochloric acid gave the double chloride $\text{Cu pn H}_2 \text{Cl}_4$. It did not however form the chloroplatinite $[\text{Cu pn}_2] \text{Pt Cl}_4$ which was readily obtained from the deep purple aqueous solution of bis-propylene diamino cupric chloride $\text{Cu pn}_2 \text{Cl}_2$ and potassium chloroplatinite. The chloroplatinite $[\text{Cu pn}_2] \text{Pt Cl}_4$ was lilac pink and was also

easily formed by the unstable *tris*-salt evidently by its decomposition to the *bis*-salt. It was noted that with excess of Cu Cl_2 , the chloroplatinite of bis-propylene diamino cupric chloride yielded a greenish product, apparently the same substance which was produced by the action of potassium chloroplatinite on propylene diamino cupric chloride. It was difficult to separate the green substance from solution by filtration. Whether it is propylene diamino cupric chloroplatinite $[\text{Cu pn}] \text{Pt Cl}_4$ or not has yet to be ascertained. It may also be mentioned that ammonium chloroplatinate which is sparingly soluble in water readily formed a violet red chloroplatinate $[\text{Cu pn}_2] \text{Pt Cl}_6$ both from *bis* and *tris* propylene diamine salts of cupric chloride but not from the product obtained by mixing equimolecular proportions of cupric chloride and the diamine. The lilac pink chloroplatinite and the violet red chloroplatinate are precipitated only when there is more than a molecular proportion of propylene diamine for a molecule of the copper salt. Having failed to obtain any proof of the diameric structure in case of propylene diamino cupric chloride, experiments were performed with ethylene diamino cupric chloride. But the results obtained were exactly similar to the above. The present author therefore does not think that there is sufficient reason for giving a dimeric formula to ethylene diamino cupric chloride. It may simply be represented as the mono compound Cu en Cl_2 .

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¹ *J. Chem. Soc.*, 1937, 947.

TWO NEW GENES FOR COROLLA
COLOUR IN *CICER ARIETINUM* L.

AN extensive survey of morphological variability in *Cicer arietinum* L., has shown the occurrence of plants with various coloured petals. These are usually found to be white,