Qualitative Observations on Cyanoplatinate(II)-Compounds

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It is the purpose of the present note to point out that simple, qualitative experiments indicate the existence of a number of hitherto unreported cyanoplatinate(II) compounds, and that the methods implied most likely would be of help in a more systematic search for new materials of this type. The technique makes use of the fluorescence excited in the crystals by ultraviolet radiation, through the fact that the color of the fluorescence usually is characteristic of the species under study.

The formation of salt hydrates of a single cyanoplatinate(II) salt can be observed in the following way. A dilute solution of the salt is placed in a thin layer on the surface of a porous porcelain plate. After a gentle drying the centre of the plate is heated with a micro-burner. Under an ultraviolet lamp the colors corresponding to different salt hydrates can now be observed as rings going out from the centre. The color changes can be reversed when water vapor is admitted to the plate. It is in this way seen that the cyanoplatinate(II) salts in general form several salt hydrates. Only in very few cases are detailed investigations¹ available for comparison.

Evidence for the formation of double salts comes from small scale crystallization experiments. Solutions of two salts are mixed on a watch glass and allowed to crystallize. Double salt formation can now be deduced from the appearance of fluorescence colors not belonging to the constituents. Many such cases were observed.

A search for new cyanoplatinate(II) materials should be of special interest since it has recently been shown², in a study involving 11 salts, that a number of these show promise for scintillation counting. Thus, $\text{Cs}_2\text{Pt}(\text{CN})_4 \cdot \text{H}_2\text{O}$ has a light yield of 70 % relative to $\text{NaI}(\text{Tl})$ and a decay time of 0.47 μsec , and must be regarded as having certain advantages in experimental nuclear physics and other fields where radiation detection is involved. It would indeed be very valuable if a reinvestigation of the cyanoplatinate(II) salts should result in a scintillator providing better energy resolution than $\text{NaI}(\text{Tl})$. However, even without the stimulus of

practical and experimental applications a study of the chemistry and luminescence properties might well be rewarding.

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1. *Gmelin's Handbuch der anorganischen Chemie*, "Platin, Teil C". Very little has been added to the chemistry of the cyanoplatinate(II) salts since this volume was completed in 1940.
2. Bergsøe, P., Hansen, P. G. and Jacobsen, C. F. *Nuclear Instruments and Methods*, *In press*.

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On the Labelling of Sulphur-containing Amino Acids and γ -Glutamylpeptides after Injection of Labelled Sulphate into Onion (*Allium cepa*)

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In order to establish the utilization of sulphate in the biosynthesis of the numerous sulphur-containing amino acids and peptides in the onion, sulphate labelled with ^{35}S was injected into onions in dilute NaCl solution. 0.2 ml of a solution containing 0.5 mC of ^{35}S was injected into the onion in five different places. The onion sets were placed for six days in moist sand before the injection. Subsequently, the enzymic reactions were inhibited by placing the onions in ethanol after certain intervals: the first onion 7 days after the injection, the second after 24 days, the third after 46 days, when some roots had been formed, and the last after 85 days, when the onion had green leaves. The experiment was started in September 1961, onions harvested in August being used as onion sets. Growth was extremely slow, as is revealed by the fact