PROF. R.C. RAY, D.Sc., F.I.C.

SCIENCE COLLEGE
BANKIPORE P.O., PATNA
March 3, 1944

Dear Professor Krishnan,

I thank you for your letter of the 22nd February last. With regard to pyridine complexes of metallic perchlorates, I can supply you with the perchlorate of copper (bivalent) as well as its pyridine complex at once as we have sufficient quanities of these. The perchlorates of Mn, Co, Ni (bivalent), however, are almost exhausted, but these and their pyridine complexes can be easily prepared. I shall be glad to send you samples of all of them if you can send me a bottle (1 lb.) of 20 to 30% solution of perchloric acid for want of which our work is now practically held up. In the mean time I am trying to procure some perchloric acid from different sources, and if I succeed in getting it, I will send you all the salts as soon as I obtain my supplies. The dissociation pressure-temperature relationship and the isothermal curve for the system $Cu(ClO_4)_2$ -pyridine at 40°C have been determined. This will form the subject matter of Part II and I will send you a copy of the paper as soon as it is published.

A student of mine have prepared hydrogen compounds of Fe, Co, and Ni of the composition FeH_2, CoH_2 and NiH_2. The heats of formation and other phycal properties are being determined. It would be interesting to know the nature of these compounds--whether they are definite chemical compounds like the salt-like hydrides of the alkali and the alkaline-earth metals or they are merely adsorption compounds. Measurement of magnetic properties may reveal the nature of the bond between the hydrogen and the metals. If you are interested in this class of substances, I can send you a few grams of each for a study of their magnetic properties.

It has become extremely difficult to obtain pure chemicals. The last time we got a few pounds of pure pyridine was in January 1943 from Nadia Chemicals. You may, however, obtain crude pyridine from Bararee Coke Works, but purification is rather a tedious process.

With Kind regards,

Yours sincerely,

R.C. Ray.

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