



SYNTHESIS and SOLVENT EXTRACTION STUDIES
OF LAURYL HYDROXAMIC-ACID LIGAND

A DISSERTATION

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by

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S Y N O P S I S.

A ligand was prepared very simply, for the purpose of extraction and separation of metals, using relatively inexpensive starting materials such as methylated spirit, coconut oil and hydroxylammonium chloride. Extractions were done into solvents such as kerosene and petroleum ether (B.P. 40° to 60°C), readily available in Sri Lanka.

Absorption spectral studies revealed that, the complexes of iron(III), copper(II), titanium(IV) and vanadium(V) with the ligand Lavryl hydroxamic-acid, extracted into petroleum ether and kerosene at the same pH value were similar in nature; but at different pH values holds true only with iron(III) and copper(II). Titanium(IV) complexes formed at higher pH values (pH 2.0 to 6.0) show a similarity in structure but those extracted from a highly acidic-medium (5M hydrochloric acid) are of different composition with an abnormally high intensity. This phenomenon could be developed into a method for the detection and the estimation of titanium.

Highly satisfactory extractions of iron(III), copper(II), titanium(IV) and vanadium(V) into kerosene and petroleum ether (B.P. 40° to 60°C) are possible. Separation of more than 80 percent of titanium(IV) with only about 3 percent of iron(III), has been achieved using iron and titanium mixtures.