

P R E F A C E

The work embodied in the thesis deals with an investigation on the sorption of complex ions by ion-exchangers. For this purpose, two natural exchangers, viz., Bentonite and Vermiculite and a synthetic exchanger, viz., Amberlite-IRC-50 have been selected. In order to understand the physicochemical aspects of exchange equilibrium considerable attention has been devoted to studies on desorption of ions such as $[\text{Coen}_3]^{3+}$, $[\text{Co}(\text{NH}_3)_6]^{3+}$ & Mg^{2+} from the respective exchangers. Monovalent and divalent inorganic cations as well as alkyl quaternary ammonium ions have been used as desorbing ions. A systematic attempt has been made to interpret the data of both adsorption and desorption in the light of prevalent approaches and models and also to express the data in qualitative and quantitative terms.

Materials partly presented in Chapter IV have been published in the following papers, the reprints of which are furnished at the end of the thesis:-

1. Adsorption and Desorption of Coen_3Cl_3 on Bentonite.

J. Ind. Chem. Soc. 44, 339, 1967.

2. Dependence of Selectivity Coefficient on Ionic hydration and Debye Hückel parameter a^0 in the Desorption of $[\text{Coen}_3]^{3+}$ from H- Coen_3 -bentonite.

J. Ind. Chem. Soc. 45, 281, 1968.

3. Studies on the Sorption and Desorption of $\text{Co}(\text{NH}_3)_6\text{Cl}_3$
on Bentonite.

J. Ind. Chem. Soc. 45 , 685, 1968.

The work was started in the Department of Chemistry,
University of Kalyani and completed in the Department of Chemistry,
University of North Bengal.