I. GENERAL INTRODUCTION

There is adequate evidence to indicate the important role of metallic ions in biological processes. It is well-known that some metals are co-factors of a number of enzyme systems, while others influence specifically the kinetics of enzymatic reactions. Further, metallic ions are involved in the maintenance of a proper equilibrium between different body fluids. The rhythmicity of the cardiac muscles for instance, can be ascribed in part to the concentration of ions in the intra- and extra-cellular fluid compartments. Similarly, the metallic ions play a vital role in the normal functioning of the central nervous system. Metals like sodium, potassium, magnesium, calcium, manganese, cobalt, nickel, copper and zinc participate in haemopoiesis, nutrition, general metabolism and transport of metabolites to different parts of the body.

Recent refinement in the physico-chemical techniques have facilitated the detection of trace amounts of metals in tissues and body fluids. Nevertheless, in many instances the significance of their presence is not fully understood.

Investigations over the past two decades have demonstrated the presence of different metallic ions in the endocrine glands. The case of zinc and pancreas via a via the secretion insulin may be cited. Similarly, metals have potentiating or antagonising effect on different hormones. Further, certain metals have particular toxic effects on endocrine organs. A consideration of all these
facts led to the present series of investigations regarding the effect of different metallic salts on the genital organs of male rats and rhesus monkeys (*Macaca mulatta*). The metals included in this study are indicated by a red square in the accompanying Periodic Table.