OBJECT
The object of the present thesis is to study carbohydrate metabolism in protein-calorie undernutrition in children. It is physically not possible to undertake studies on all parameters for operational reasons. Therefore, certain selections have been made.

Ideally speaking the study of carbohydrate metabolism should include the synthesis and degradation of all the carbohydrate constituents of the body. The carbohydrate constituents of an infant or a child number a few thousands but virtually all of them are derived by the metabolism of the monosaccharides, of which (quantitatively speaking) glucose is the most important. Therefore the metabolism of glucose occupies a prominent place in the study of carbohydrate metabolism.

The metabolism of glucose can be studied in various ways. As it is the principal exchange that can be bartered, it undergoes many transformations. Clinically speaking, however, the glucose content of the blood under basal conditions gives an idea of the steady state obtained from the ingress and egress of glucose to the system. The processes involving addition to and subtraction from the blood glucose proceed simultaneously and it is the extent to which the different processes operate that determines the level of blood glucose at any given time. In health as well as in disease the regulatory processes in carbohydrate metabolism try to keep the blood glucose at a steady concentration by gearing a number of metabolic processes tending
either to bring more glucose to the system or to remove it from the system by converting it to either storage forms or by oxidizing it or converting it to other compounds. The whole gamut of such processes can be studied in various ways. We have concentrated to investigations on the following parameters of carbohydrate metabolism in our attempts to study protein-calorie undernutrition in children.

(a) Content and metabolism of glycogen, the storage form of carbohydrate.

(b) The basal blood sugar content and its regulation when glucose is added to the system.

(c) Some hormonal regulations on the carbohydrate metabolism.