INTRODUCTION

The reproductive activities of rodents inhabiting temperate climatic regions, have been studied extensively during the past century. Although, India has a rich rodent fauna, details of reproduction are known in few species. The study of female reproduction in the tropical rate have received little attention. The female genetation of the eutherian mammals undergoes complex morphological, histological and physiological changes during various stages of reproduction. The female rat undergoes various reproductive phases such as oestrus, Gestation and Lactation.

The productivity of female may be measured not only by the number young ones they rear, but also by total mass of their young ones. This has definite correlation with a reproductive biology of animals. There is yet no information from the Indian wild rate on weight of litter at birth.

The mammalian reproductive processes are greatly influenced by the variation of factors provided by mother. This includes female genitalia, oestrus, pregnancy, lactation and allied physiological and endocrinological conditions.

The intamacy of physiological relation between different groups of vertebrates is reflected in the association of mother
with the young in mammals. The maternal impact by young deploys few characteristic and few more can be made obvious experimentally. It is imperative, therefore, to distinguish the influence of reproduction as under (a) the internal environment of the mother, this includes the genital changes associated with mother, (b) the direct effect of various reproductive phases on female animal as whole.

The use of varied techniques are also immense validity for evaluating reproductive activity in female reproductive organs. A much more complete picture of the physiology of the female reproduction of the rat emerges from the collective study of the measurement of its size, weight, histological studies, biochemical changes in the reproductive organs and biological rhythm.

Apart from the fact that the present investigation is almost first detailed observations on reproductive changes in the wild rat *Rattus rattus rufescens* (Gray), the study on reproduction of female and changes associated with it would be of interest and value. This is in view of the wide variations in functional and physiological aspects during various phases of mammalian reproduction. An attempt is made in present work to analyse various aspects of female reproductive changes during reproductive phases.