INTRODUCTION

AND

REVIEW OF LITERATURE
INTRODUCTION AND REVIEW OF LITERATURE

The insects have world wide distribution and are found on land, water and also in the air due to their great amount of adaptability in the environment. These were known to the human beings since long as they were known to cause disease and also damaged their food, fruits and vegetation. For this reason, various aspects of their ecology, morphology, anatomy, physiology etc. have been studied in details by many workers during the past.


The authors like Imms, A.D. (1948), Wigglesworth, W.B. (1953) and Ross (1964) have reported that in most of the insects, a number of follicles are found enclosed within the testicular epithelium. The number of these follicles as well as their shape varies among the groups of insects. Baccetti and Bairati (1964) and Cantacuzene (1968) noticed that these follicles contain many
cysts having a group of germinal cells. Baccetti and Bairati (1968), Hoage & Kessels (1970) reported that the cell divisions are synchronous within the cyst. David M. Phillip (1970) pointed out that the arrangements of these cysts are in order of the increasing maturity, within the testicular follicles. The number of divisions occurring within a cyst is controversial. It appears that for a particular species the formation of definite number of spermatids is a characteristic feature. It was therefore considered worthwhile to undertake the present study to observe some of these vital points in the four species of coleopterans.

Regarding the number and the behaviour of the nucleolus during spermatogenesis, there are still some differences in opinion. Favard-Serrano C (1968), Klag, G (1977) and Roussel, A. (1978a) reported only one nucleolus in the nucleus of spermatogonial cells in most of the insects, while Noelle Richard Mercier (1979) reported two nucleoli in Dopyrphora and Leptinotarsa decemlineata. These maintain their identity up to the end of prophase stage. The nucleoli divide, during leptotene and align themselves according to the long axis of the nucleus. Herbault (1972) noted the fragmentation of the nucleolus in the spermatogonial cells.

In the present studies efforts have been made to observe
the number and size of the nucleolus, their duration of existence in the process of spermatogenesis.


Taking into account the existing knowledge of the cytology of the male germ cell cycles in beetles with particular reference to the above mentioned unsolved problems, it was decided to study and discuss these phenomenon in the four Indian species of Coleoptera viz., Aulacophora femoralis, Aulacophora indica, Aspidomorpha andrecorsi and Oocassida circumtata, which have not been studied so far by any of the authors.