SUMMARY

AND

CONCLUDING REMARKS

SUMMARY AND CONCLUDING REMARKS.

SUMMARY:

A critical analysis of the existing literature on gall bladder of vertebrates shows that very little attention has been paid to this organ as compared to several other organ-systems such as alimentary tract, respiratory system, reprodutctive tract and gonads, nervous system, kidney muscles, salivary glands, tongue, nongonadal accessory glands and in some neoplastic cells. This is particularly true of the submammalian vertebrates like birds, though some detailed studies have been carried out on mammalian gall bladder. Among the mammals also, most of the studies concentrated on laboratory and experimental animals only. Moreover, among mammals, the gall bladder of man have been studied in connection with the adenocarcinoma, inflammation condition and the gall stone formation. Besides this, there are only a few reports on the histology and distribution of mucosubstances in different histological sites of gall bladder of vertebrates, particularly in birds. Although at comparative level, some detailed studies have been carried out on histology and distribution of mucosubstances in the gall bladder of vertebrates by only one investigator, no one has studied this aspect more. Similarly, there are very few reports on the histology and distribution of mucosubstances in the gall bladder of mammalian fetus. Therefore, the present investigation aimed at histological architecture of the gall bladder of birds and mammals and fetus of some mammals as well as the distribution of mucosubstances in different histological sites of the gall bladder. The present investigation deals with the structure of gall bladder in some birds, mammals and fetus of hare,

guinea pig and man and the mucosubstances in various histological sites of gall bladder such as brush border and apical granules in the epithelial cells and glands (wherever present). Following is the brief summary of the results obtained and the conclusions drawn in the present investigation:

1) The gall bladders in birds and mammals under present investigation differed in thickness of the wall;
2) The mucosa of the gall bladder was either smooth or folded. The folds were thin and elongated in some of the animals, whereas broad and short in others;
3) The epithelium of the gall bladders in the animals used in the present investigation consisted of only singular type of cells;
4) The mucosal epithelium consisted of cells which varied from cuboidal to tall columnar epithelial cells in different birds and mammals;
5) In the submucosa of the gall bladder of some birds and mammals, definite glands were observed;
6) The mucosubstances identified histochemically differed in the brush border, apical granules of gall bladder epithelial cells and glands in some animals;
7) The results obtained in the present investigation showed the species diversity in the mucosubstances in the gall bladder of different vertebrates used;
8) The results obtained in the present investigation state that no relationship exists between the mucosubstances present in various histological sites in the gall bladder of different vertebrates and their dietary habits;

9) The present investigation reveals more or less identical histological architecture in the gall bladder of fetus and adult of hare but the gall bladder of fetus and adult individual in guinea pig reveals different histological structure;

10) The mucosubstances identified histochemically differed in the gall bladder of fetus and adult individuals of hare and guinea pig;

11) Some functions have been suggested to the mucosubstances in the gall bladder of these vertebrates which are based on the results obtained in the present investigation as well as those obtained by other investigators previously.

CONCLUDING REMARKS:

The aims and objectives that stimulated to undertake the present investigation were to study the histology of gall bladder in different birds and mammals, histochemically the identification of mucosubstances in different histological sites in the gall bladder of birds and mammals, relationship if exists between the presence or absence of goblet cells and/or glands as well as the mucosubstances in different histological sites of gall bladder and the dietary habits of birds and mammals, comparison between the histology and nature of mucosubstances in the gall bladder of some mammals during the embryonic development and adult condition and the comparison between the results obtained in the present investigation and the existing literature. It is hoped that in the present investigation, the aims and objectives have satisfactorily been achieved.

The author is fully aware of the shortcomings during the tenure of the present investigation. Further, the author had to depend

mainly on the histochemical techniques which give the exact location of the mucosubstances in the given histological site, but do not provide information on the exact quantity of the various mucosubstances in mathematical terms. The bioassay studies would have given the exact amounts of various mucosubstances in different histological sites of gall bladder. Though the bioassay studies have not been used in the present investigation, approximate staining investities by visual estimation such as trace, poor, weak, moderate and intense may indicate roughly the relative amount of mucosubstances in the given histological site of the gall bladder. The use of recent techniques such as autoradiography, immunohistochemical techniques and electron microscopy would have provided some additional information and confirmed the results obtained in the present investigation with histochemical techniques. The histochemical results concerned with species diversity and dietary habits are based on a limited number of animals selected in the present investigation and these results should be confirmed with the studies involving a large number of animals differing in their feeding habits and species.

Inspite of all shortcomings, the author feels gratified that she has atleast presented a preliminary information on the histology and mucosubstances in the gall bladder of birds and mammals. The results obtained will be published in due course of time.

* * *