PART I
CHAPTER I
INTRODUCTION
AND
OBJECTS OF THE PRESENT STUDY
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The testis is a gland of interest since the days of antiquity. The earliest known picture engraved (2,500 B.C.) on the stones over a tomb near Memphis, Egypt, shows the operation of circumcision and castration (Haggard, 1954).

My original idea was to work on the effects of vasectomy on the structure of the testis in albino rats. But while studying related literature I was attracted to a remarkable passage in a paper by Sniffen (1950) that reads as follows: "During the studies of the abnormal testis it became obvious that more exact knowledge of the normal gland and its variations was necessary to establish a base line with which the abnormal testis might be compared". This observation led me to extend the field of my study on the testis in some of the easily available vertebrates of different classes.

Review of literature dealing with the testis in general, shows that a good deal of work has been done in the past on the gross anatomy of the human testis, but the study of this gland in other mammals and submammalian groups of animals has not been done to that extent. There are omissions and lacunae existing even now regarding the different aspects of this gland in some common animals.

Characteristic differences in respect of actual situation, shape and colour of testis in different groups of
animals, are neither mentioned at all nor are they accurately stated in some common animals, particularly in submammalian classes.

The data on the absolute weight of the testis and its relative weight i.e., the proportion it bears to the weight of the whole body, which is an index for the assessment of the importance of this gland in the body of the animal, and its dimensions that give an accurate idea about the size of the organ, are not available except in man. The specific gravity of the testicular tissue, which is an index for the assessment of any pathological condition in which it is apt to be altered, is not known even in man, not to speak of other vertebrates.

Although quite an amount of histological work has been done on the testis of some mammals, the same in other common mammals and in the submammalian groups of animals has not received equal amount of attention.

Literature available does not provide adequate information about the characteristic differences in respect of the distribution or arrangement of spermatozoa within the seminiferous tubules and the overall character of histological sections although there exist differences in these regards in different phyla and in different species of the same phylum.
Though the data accrued from micrometric measurements as regards the thickness of tunica albuginea, tunica propria and basement membrane, width of intertubular space and the diameter of seminiferous tubules, are available for the human subjects, data in these regards are conspicuous by their total absence in other mammals and in submammalian classes of animals.

It is apparent therefore that our knowledge about this organ is fairly limited and needs to be pushed further ahead.

It has been decided, therefore, to study the different aspects of the testis in some of the easily available vertebrates on phylogenic line from cartilaginous fish to Man. By probing further into the matter, what practical utility could be gained, remains unpredictable at the moment, but it may be expected that an honest attempt shall, at least, throw some more light and enrich our scientific knowledge. It may also dispel some of the confusions existent concerning the effect of vasectomy on testis and epididymis dealt with in PART II.
PART I
CHAPTER II

(A) HISTORICAL RETROSPECT

(B) REVIEW OF LITERATURE