
CYCLIC SECRETORY ACTIVITY OF THE COWPER'S GLAND OF THE INDIAN FRUIT BAT, *ROUSETTUS LESCHENAUTI* (DESMAREST)

A. A. Nerkar, M. M. Gadegone and M. P. Gujar
Reproductive Biology Section, Department of Zoology,
Institute of Science, Nagpur-440 001 (MS), India
E mail: archnerkar@gmail.com

ABSTRACT: The present study describes the cyclical changes in the secretory activity of the Cowper's gland in the Indian fruit bat, *Rousettus leschenaulti*. The secretory activity in the Cowper's gland during the breeding-quiescence cycle is not well marked in *Rousettus*. During the sexually quiescent period (July), Cowper's glands are regressed, acini are small and are lined by low columnar cells with darkly stained basally to centrally placed nuclei. The cytoplasm shows eosinophilic granular secretion. During the prebreeding (September) and the active breeding period (October to April), the acini are enlarged and are lined by tall columnar epithelial cells. The secretory granules are carried towards the apical plasma membrane and released into the lumen. In some secretory cells, the apical secretory blebs are seen on the surface of the plasma membrane. They detached from the apical plasma membrane and releases into the lumen. Thus, secretory cells show merocrine and apocrine modes of secretion in this species of bats. The lumen of acinus contains a homogenous secretion during active breeding period. Regressive changes in the Cowper's gland are evident from May. The acinar cells undergo gradual hypotrophy as the quiescent period approaches in June.

KEYWORDS: Bat, Cowper's gland, Epithelial cells, Secretory activity, Reproductive cycle.

INTRODUCTION

Bats are the only flying mammals and they have a wide range of feeding and roosting habits, social behaviour and reproductive strategies. Their nocturnal habits and diversity in their biology not only make bats a fascinating group of animals to study but also a difficult one. Breeding biology of some Indian bats was reviewed by⁹ and male reproductive cycle in Indian bats was reviewed by¹⁰ and reported that species of Indian bats inhabiting this Country reveals a variety of breeding patterns and adaptation for successful reproduction. Gopalakrishna and Chaudhari⁸ studied the sex cycle of *R.*

leschenaulti and stated that there are two peak periods of male activity, first in October-November and second in February-March. The structure of male genitalia of this bat was studied and reported that the accessory sex gland complex consists of prostate, urethra and Cowper's glands and seminal vesicles⁷.

The histomorphology of the accessory sex glands of Chiroptera remains poorly known¹³ and very few reports are available on the histomorphology and ultrastructure of the accessory sex glands of chiropteran bat, *Artibeus planirostris*³, *Eidolon helvum*⁴ and *Rousettus leschenaulti*¹⁵. Proteins and mucins are secreted by Cowper's gland in mammals