

Thesis Title    Effects of Vertebrate Hormones and Ovotestis Homogenate on The  
Reproductive System of *Achatina fulica* (Gastropoda:Stylommatophora).

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## ABSTRACT

The effects of vertebrate hormones, namely, Estradiol, Testoviron, Progesterone and Human Chorionic Gonadotrophin (HCG) and the ovotestis homogenate on the reproductive system of *Achatina fulica* were studied. The snails were injected with these hormones and ovotestis homogenate. Histological changes in the reproductive and accessory sex organs, such as ovotestis, albumen gland, prostate gland and uterus were studied by light microscopy. The tissues were fixed in Bouin's fluid and processed for light microscopy. The study revealed that there was a marked increase in the number of oocytes in the ovotestis of snails injected with Progesterone (60 oocytes in ovotestis), HCG (58) and Estradiol (44) when compared to that of the control groups (30). Testoviron and the ovotestis homogenate seemed to exert the least effect on oocyte production.

Histological changes were observed in the albumen gland of the snails injected with Estradiol, Progesterone, HCG and the ovotestis homogenate. The glands became larger in size and their albumen canal was filled with secretory material. The gland cells or secretory cells were large and contained globular secretory material in the cytoplasm.

The histology of the prostate gland and uterus of the control snails and snails injected with vertebrate hormones and the ovotestis homogenate were very similar. The prostate gland consisted of acini of various sizes. There were two types of gland cells in the acinus : those with eosinophilic granules and those with clear granules. There were more gland cells with clear granules than those with eosinophilic granules. The prostate canal always contained colloid.

The uterus was a long tube with a uterine canal which contained colloid. The uterine wall was composed of three layers : the inner layer of simple ciliated columnar epithelium, the middle layer of gland cells and the outer layer of smooth muscles.