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SOME MORPHOLOGICAL PROBLEMS IN BURSAL
DEVELOPMENT, GROWTH, AND INVOLUTION**

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The bursae of Fabricius in Japanese quails were investigated histologically, histochemically, and transmission and scanning electron microscopically. Absorption tests of bursal follicle-associated epithelium were also performed.

1) The growth period of bursae was divided into 8 stages based upon its morphological profiles: viz., primordium, lumen formation, lymphoid follicle formation, growing, maturation, early involution, late involution and residual stages.

2) Findings of the embryological study are summarized as follows: The bursal primordium is derived from the endodermal (urodeal) epithelium. The bursal membrane was located between the bursal endodermal portion and the ectodermal portion. This membrane was used as a landmark between the above-mentioned germinal layers. The bursal lymphocytes are derived from mesenchymal cells. The penetration of lymphocytes into the bursal epithelium may induce epithelial bud formation instead of alkaline phosphatase.

3) During development of the bursa, there were general enlargements of bursal follicles and plicae. During bursal regression, follicular size decreased, connective tissue proliferated, plicae fused, and bursal lumen disappeared. Lymphoid follicles disappeared due to regressive and cystic changes.

4) After intracloacal administration, carbon particles were gathered and deposited in the follicle-associated epithelium and follicles of the 16 day-old embryo to 6 weeks of age. This capacity of absorption was independent of aging. The medulla of follicle is opened partially to the bursal lumen by the bursal absorption cells.