MATERIALS AND METHODS

The specimen material was secured from one carcass each of chickens aged thirty-six hours (male), twenty days (sex unrecorded), five months (female), one and one-half years (male), and two years (female). Besides these, livers and some additional material were obtained from two groups of baby chicks. Several specimens of the bursa cloacae were obtained from other chickens. For the current revision, portions of several other specimens were utilized to check the original work and to verify the work of recent investigators.

The following methods were used: paraffin embedding with the exception of frozen sections of a specimen of each liver; Harris hematoxylin and eosin were used as a routine stain; Weigert's elastic tissue stain was used for elastic connective tissue; Van Gieson's picro-acid-fuchsin was used for white fibrous connective tissue; frozen sections of liver were stained with Scharlach R [alcohol-acetone method according to Mallory and Wright (1924)]; mucin was demonstrated by Mayer's mucicarmine method as given by Hoepke (1930); keratohyalin granules were stained by Pasini's (1930) method; reticulum, according to Foot and Menard (1927).

In the experiments with the baby chicks the chicks were killed at stated intervals and a section of the liver stained for fat to determine at what age the fat began to disappear and how long it persisted.

RESULTS

Observations were made on the digestive tract from the beak to the anus, including all appendages. No differences existed in the digestive tract of either sex, so the matter of sex will not be referred to again.

Beak

The beak, as shown in Plate IV, Figure A, consisted of three layers, bone (11), corium (6), and epidermis (1). The bone in the upper beak was the os incisivum and in the lower the os dentale. A layer of periosteum was observed outside the bone. (Pl. IV, Fig. A-10).

The corium (Pl. IV, Fig. A-6) extending from the periosteum to the epithelium was made up of connective tissue containing