The present study examined the ultrastructure of the thyroid gland of West African Dwarf (WAD) goat, in order to further understand the ultrastructural changes in the components of the thyroid gland in relation with age. Thyroids glands obtained from fifteen (15) apparently healthy WAD goats of different ages and sexes slaughtered at the local abattoirs were used for this study. Electron microscopic techniques were used to study of fixed tissue with emphasis on the follicular and parafollicular cells. Thyroid tissues showed marked regional variation in structure and ultrastructure. The results showed that the follicular cells were cuboidal in thyroid of young goats but appear flattened to columnar, especially in the thyroids of much older goat (5-7 years). These cells were characterized by the presence of markedly dilated cisternae of rough endoplasmic reticulum and well developed Golgi apparatuses, which decreased in the older goats. Microvilli were short and sparse on the follicular cells and their numbers decreased in the older goats. Different sizes of apical vesicles of varying electron density (i.e measuring from 250nm to 1600nm) were encountered, with membrane bound colloid droplets, lysosome-like bodies, abundant secretory vesicles and the presence of these vesicles appear to differ with age. Parafollicular cells were encountered in the basal position between follicular cells in all the thyroids examined. Numerous dense cytoplasmic granules were observed and they were not apparently different from that described in several mammals. This finding indicates that the morphological features of the follicular epithelial cells of thyroid gland in WAD are generally similar to that reported in some domestic animals.

Acknowledgement: Authors wish to thank University of Nigeria, Nsukka for providing the ETF-ASTD grant (No. 06-2010) for the project and Mrs. Erna Van Wilpe of the Electron Microscopic Unit, Dept. of Veterinary Anatomy and Physiology, Faculty of Veterinary Science (University of Pretoria, South Africa) for her technical support.
**Fig. 1:** A. Electron micrograph of a high cuboidal follicular cell taken from 3 years-old WAD goat showing a basal nucleus (N). The Golgi stacks (G) close to the nucleus. The cytoplasm is rich in organelles that included abundant mitochondria (M), Rough Endoplasmic Reticulum (RER), and secretory vesicles (S), Colloid droplets (L) (Scale 2.4μm).

**Fig. 2:** B. Electron micrograph of parafollicular cells taken from 2 years-old WAD goat. Note the extensive cytoplasm containing numerous profiles of dense secretory granules (S) and golgi complex (G). Note the rim of cytoplasm of the follicular cell (F) abutting the colloid. (Scale 2.0μm).

**Fig. 3:** C. Electron micrograph of apical cytoplasm of follicular cells showing some organelles close to the colloid lumen (C). Note the abundant mitochondria (M), Rough endoplasmic reticulum (RER), Lysosomes (L), Colloid droplets (D) and presence of tight junctions (white arrow) between the cells. (Scale 5μm).

**Fig. 4:** D. Electron micrograph of a follicular cell showing a typical intercellular junctional complex with tight junction (T), desmosome (D). Note the presence in apical cell membrane, a few short microvilli (thin black arrow), mitochondria (M) with visible cristae, some colloid droplets (C) and few ribosomes in the cytoplasm. (Scale 2μm).