3333

Changes in the Growth of Skeletal Muscle Following Thyroidectomy in the Sheep.

ETHEL D. SIMPSON. (Introduced by H. S. Liddell.)

From the Department of Physiology, Cornell University Medical College, Ithaca, N. Y.

A comparative study of skeletal muscle from 5 normal sheep and 11 thyroidectomized animals was undertaken, to determine whether definite structural changes in the fibers are present which would account for the development of the pot-belly and general muscular weakness in cretins. Following early thyroidectomy, the normal development of cytoplasm is prevented, and the ratio of muscle to sarcoplasm in the cretin remains more nearly like that in the young animal, than that in the normal of the same age. No degeneration of the fibers is evident, and all the structures of normal muscle are demonstrable.

3334

Auditory Conditioned Reflexes in the Thyroidectomized Sheep and Goat.

H. S. LIDDELL AND T. L. BAYNE.

From the Department of Physiology, Cornell University Medical College, Ithaca, N. Y.

The lethargy of the cretin sheep or goat, and its apparent indifference to its environment, suggest a fundamental defect in cerebral function, but when the animal is subjected to simple learning tests the deviation from the normal, under experimental conditions, is less striking. For example, the animal, unless it is suffering one of its recurrent periods of prostration, learns the maze with a single *cul de sac* as well as the control. It is only when the blind alley is reversed in position, at every trial, that striking deviations from normal behavior appear. The extreme complexity of the animal's response in the labyrinth makes the analysis of the data in physiological terms very difficult. For this reason the maze studies have been abandoned in favor of the conditioned motor reflex method.[1]

A systematic investigation of cerebral activity involves, accord-