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The Cytology of Developing Muscle

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considered to have disappeared earlier than the right ovary in the phylogenetic history of the Aves.

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THE CYTOLOGY OF DEVELOPING MUSCLE

ISABELLE G. WEED

Development of myofibrils in myotome muscle of chick embryos may be divided into two phases. During the first, with which the present observations are concerned, "primary" fibrils arise in the cytoplasm of the presumptive muscle cells. During the second period the number of myofibrils increases, apparently by splitting of the primary fibrils.

At the beginning of the first phase, filamentous mitochondria become oriented parallel to the long axis of the myoblast, and coincidentally, homogeneous, unstriated, lightly staining fibrils arise in the cytoplasm. Fibrils and mitochondria may play an indirect part in fibril formation. However, the fibrils are apparently formed from the many granules (distinguishable from mitochondria) which at first fill the cytoplasm. The granules disappear progressively as the fibrils appear, and the cytoplasm becomes clear.

During this time the nuclei become large, stain lightly, and divide amitotically without division of the cytoplasm. The nucleoli are prominent and apparently divide before division of the nucleus. The Golgi material (plentiful at this time) extends in long streamers from the ends of the nuclei.

The close of the first developmental phase is marked by decrease in size of nuclei and nucleoli, and decrease in amount of Golgi material associated with each nucleus. The Golgi material now exists as a small cap of material at each end of the nucleus. The primary fibrils (now striated) are situated at the periphery of the muscle cell.

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