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## A Mammalian Nerve—Muscle Preparation Suitable for Single-Fiber Experiments


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Studies on impulse transmission from nerve to muscle were facilitated when techniques were evolved for conducting experiments on single-fiber preparations. In the main, cold-blooded animals have been used (frog, *1, 2, 3,* and lizard, *4*). The isolation of a single mammalian muscle fiber with an intact blood supply and unbroken nervous connections has proved difficult in the past (*5, 6*). Investigations in this department requiring such biological material have led to the discovery of a suitable preparation in the M. serratus anterior of the guinea pig.

Exposure of the M. serratus anterior, and its motor nerve, is accomplished by division of the overlying M. pectoralis major and the M. rhomboidei. The M. serratus anterior has digitations consisting of parallel muscle fibers interconnected by, and enveloped in, a delicate transparent membrane. The fibers are unobscured by other major connective tissue. At its edges

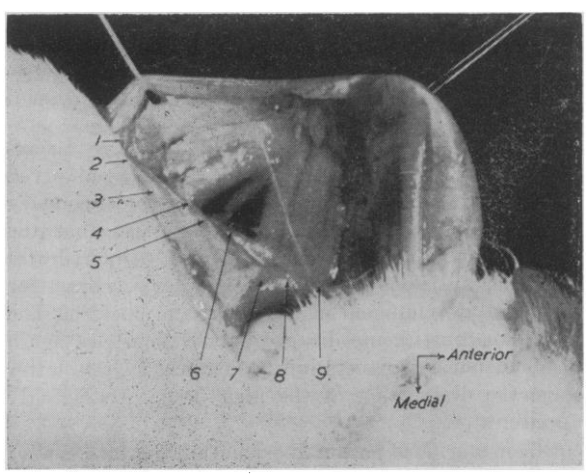


FIG. 1.

each digitation has a depth of only 1 or 2 muscle fibers. Upon laterad deflection of the scapula, the trunk and branches of the N. thoracalis longus, which furnish the motor nerve supply to the M. serratus anterior, are easily seen (Fig. 1). The end plates, or myoneural junction tissue, of the unstained living cells are readily distinguished under the microscope. A photomicrograph of such a preparation (Fig. 2)

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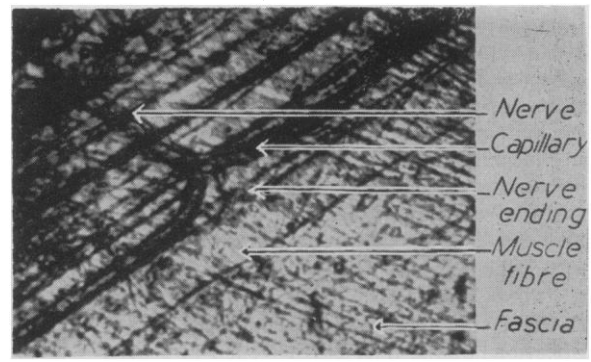


FIG. 2.

shows junction tissue between a muscle fiber and a nerve twig. The vascular supply of the muscle fibers is apparently not disturbed despite the abnormal position of the muscle. If the tissues are adequately irrigated with warm physiological saline or mineral oil the muscle fibers respond to electrical stimulation of the motor nerve for several hours after exposure. The fibers and end plates can be touched and pierced with micropipettes and microelectrodes.

The tendons of the M. serratus anterior are too short to permit easy dissection of the muscle away from its insertions. There is no difficulty, however, in removing the muscle, together with the bones upon which it is inserted, to provide an avascular preparation, which is of advantage at times.

This mammalian preparation may prove useful in various branches of physiology and pharmacology.


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## Fluorescence and Photoinactivation of Snake Poisons


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It has been shown by Fonseca Ribeiro and Guimarães (*1*) that potassium chlorophyllinate becomes active for the inactivation of the poison of *Crotalus terrificus terrificus,* either through aging or through light exposition. The mechanism of this phenomenon has not been satisfactorily explained.

In a recent study Ferri (*2*) was able to demonstrate that the photoinactivation of indolacetic acid (phytohormone) by riboflavin discovered by Galston (*3*) should be explained by a mechanism in which riboflavin did not act specifically, since the same inacti-


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