THE ANATOMY OF THE MUSCULAR SYSTEM OF THE HORSE

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BY

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PREFACE.

Dr. Johnson has defined a big book to be a big evil—the author, therefore, of the few following pages bearing in mind this remark, has attempted to condense as much matter in as small a space as possible, and by this means, the exemplification of the motto "multum in parvo." In preparing the first chapter, which considers the Physiology of Muscular Tissue, he has consulted and freely collected from Kölliker's Manual of Histology, and Dr. Quain's Anatomy, edited by Dr. Sharpey and Mr. Ellis. He is also pleased to acknowledge the assistance he has received, in constructing the second chapter, from notes taken during attendance at lectures delivered by Professors Spooner, Varnell, and Dr. Monastier, and to state that the engravings have been carefully selected from Chauveau's work on the Anatomy of the Domestic Animals.

The work is written for the use of students; for whom, in the present instance, the author sincerely trusts he has not laboured in vain.

MYOLOGY.

MUSCULAR TISSUE.

General Nature.—Muscular tissue consists of fine fibres, which are, for the most part, collected into distinct organs, called muscles, familiarly known as the flesh of animals.

Contractility. Stimuli.—This tissue is endowed with contractility, by virtue of which it shrinks or contracts more or less rapidly under the influence of certain causes which are capable of exciting or calling into play the property in question, and which are therefore named stimuli.

Volition.—A large class of muscles, comprehending those of expression, respiration, and locomotion, and some others, are excited by the stimulus of the will, or volition, acting on the muscles through the nerves; although some of them habitually, and occasionally all, act in obedience to other stimuli.

Involuntary Muscles.—There are other

muscles which are entirely drawn from the control of the will, such as those of the heart and the intestinal canal; and these are accordingly named involuntary. These muscles differ both in the mode they are excited, and to a certain extent in their anatomical characters.

Voluntary Muscles.—The voluntary muscular fibres are for the most part gathered into distinct masses or muscles, of various sizes and shapes, but generally of an oblong form, furnished with tendons at either extremity, by which they are fixed to the bones.

Attachment, Origin, and Insertion.—The two attached extremities are anatomically named origin and insertion; the former being usually applied to the attachment which is considered most fixed, although the rule cannot always be strictly applied.

Belly. Biventral. Bicipital.—The fleshy part is named the belly, which in some cases is interrupted in the middle, or divided into two parts by a tendon, and then the muscle is said to be biventral or digastric: on the other hand, it may be cleft into two or three portions at one end, in which case it is called bicipital or tricipital, as the case may be.

Division into Fasciculi, Fibres, and

Fibrillæ.—The muscular fibres are collected into packets or bundles of greater or less thickness, named fasciculi or lacerti; the fibres themselves consist of much finer threads, visible alone by the aid of the microscope, which are termed muscular filaments, fibrillæ, or fibrils.

The Parallel Course of the Fibrils, Fibres, and Fasciculi. The Fasciculi of Voluntary Muscles, converge towards their Tendonous Attachments, but do not interlace.—The fibrils run parallel with one another in the fibres, and the fibres are parallel in the fasciculi; both extend continuously from one terminal tendon to the other, unless in such instances, as the dygastricus, in which the fleshy part is interposed tendinous tissue. The fasciculi also very generally run parallel; and although in many instances they converge towards their tendinous attachment with various degrees of inclination; yet in the voluntary muscles they do not interlace one another.

Sheath to Muscle. Sheath of Areolar Tissue to the Fasciculus.—An outward sheath of areolar tissue surrounds the entire muscle, and sends partitions inwards between the fasciculi, furnishing to each of them a special sheath.

Areolar Tissue only partially invests