

The Dissection of the Cat

A LABORATORY MANUAL

HARRISON

THIRD EDITION

THE DISSECTION OF THE CAT

(AND COMPARISONS WITH MAN)

A Laboratory Manual on *Felis domestica*

By

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THIRD EDITION

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PREFACE TO THIRD EDITION

The widespread acceptance of the first and second editions of this manual has resulted in the third edition based on the same general plan. Many parts have been rewritten or supplemented with the object of enriching or making it more easily understood or more practical. Some of the more complicated drawings have been divided, making them less appalling and more easily comprehensible for the student.

A closer comparison between the cat and man has been made, since the cat is being used as a substitute in many courses in human anatomy where the human body cannot be dissected. Dissecting is essential for the student in courses in anatomy, in order to obtain first-hand information and learn by visualization rather than by textbook or lecture notebook memorization.

This manual is prepared so that it can be used with any textbook on Vertebrate, Comparative or Human Anatomy. A set of twenty-five representative cat bones, one double injected cat, and a dissecting set are all the supplies necessary. The order of dissecting the various systems has a definite sequence, so that as each system is dissected, those not previously dissected suffer very little, if any, damage. However, any portion may be omitted if desired.

The general plan or sequence of the manual has not been changed, but a point has been made that as a student dissects and exposes a certain structure, it is named at once, and some significant facts concerning it are given. Later it is usually discussed more completely. The student is thereby made aware that he knows more nearly what he is doing; that he is able to discover some facts for himself; that he does not waste so much time; nor does he demand so much time from the instructor. The attempt is made in this manual not only to explain to the student how to dissect without spoiling the specimen for later work, but also to inform him about what he has exposed.

As in the former edition, a list of the more striking or significant differences in structure between the cat and man is given at the end of each major section, and also a page of questions is included. These questions are to be answered by the student and handed to the instructor for correction. It is recommended that emphasis be made not only on learning the names and relationships of structures, but also on making a good, careful, and skillful dissection. Thus a more practical training for human dissection may be obtained.

A few illustrations from *Human Anatomy and Physiology*, by Mallard and King, are included, and grateful appreciation is hereby expressed to the authors and to W. B. Saunders Co. The author also wishes to express appreciation to Miss Glennis Sayers for making most of the drawings; to Robert J. Lyon for assistance with the original manuscript and for suggestions on human anatomy in this revision; to James L. Aiken, Howard Winters, Miss Hazel Toy, and Tom Weiner for checking dissections; and to Lessie C. Harrison, my wife, for proofreading and many helpful suggestions.

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A. THE SKELETON

I. INTRODUCTION TO CAT SKELETON (*Felis domestica*)

A box containing about twenty of the larger representative cat bones should be issued to each student. Select each of the following italicized bones from your set, place it on the accompanying drawing in its proper position, and neatly print its name at the end of the proper leader line in a horizontal position: The *skull*, *lower jaw*, *cervical* or neck *vertebrae*, the first two of which are the *atlas* and *axis*, respectively, the *thoracic vertebrae* of the chest, to which the *true* and *false ribs* are attached. The lower ends of ribs join the sternum, the anterior or front bone of which is the *manubrium*, followed by several *body* or *sternbrae* bones, and the posterior portion the *xiphoid* or *ensiform process*. Next in the spinal column comes the *lumbar* vertebrae, in the small of the back, then the *sacrum*, consisting of three vertebrae, to which the *ilium* or hip bone is attached. The tail bones are the *caudal* or *coccygeal vertebrae*. There are usually a few remnants of hemal arches known as *chevron* bones on the lower surface of the fourth, fifth, and sixth caudal vertebrae. The first nine ribs are called "*true ribs*" since each has its own cartilage attaching it to the sternum. The last four ribs are called "*false ribs*" since each does not have its own attachment to the sternum. The last of the false ribs is also called a "*floating rib*" since it has no cartilage attaching it to the sternum.

The *clavicle* is a small bone anterior to the lower end of *scapula*, and the *hyoid* is posterior to lower jaw. These may be seen on a well-mounted skeleton. The anterior or foreleg bones consist of the following: *humerus*, *radius*, *ulna*, *carpals* or wrist bones, the *metacarpals* or palm of the hand bones, and the *phalanges*, the finger or toe bones.

The bones of the posterior limb or leg are as follows: *femur*, *patella* or knee cap, *tibia*, *fibula*, *tarsal* or ankle and heel bones, *metatarsal* of the instep, and *phalanges* or toe bones. Be sure to print the name of each of the italicized parts in a horizontal position as a label on the drawing whether or not you have it in your set of bones. Arrange the skull and the representative bones of the spinal column in a straight line with the head farthest away. After determining whether each of the remaining bones belongs to the right or left side, place it in its proper position on the right or the left of the vertebrae representing the spinal column. Reference to the mounted cat's skeleton should be made to aid in determining whether or not a given bone is the right or the left.

Compare the two following drawings and observe that the skeletons of cat and man are constructed on the same general plan.

II. DORSAL VIEW OF CAT SKULL

In the study of the cat skull, use the name of each part italicized in the following discussion as a label at the end of the appropriate leader line on the drawing. Look in the back of the manual for definitions of many of the technical terms used.

Observe the *premaxillary* bones at the sides of the *external nasal apertures*. These bones bear the *incisor teeth*. How many are there? At each side of the mid-dorsal line, immediately caudal to the nasal apertures, are the *nasal bones*. Lateral to these, and also to the premaxillary, are the *maxillary bones*. Each maxillary normally bears one *canine*, three premolars, and one small molar tooth. Further posterior, on the dorsal surface, are the *frontal bones*, which meet one another along the mid-dorsal suture and project laterally as the *postorbital* or *zygomatic process* of the *frontal* bone. All parts which are italicized are to be used as labels on the accompanying drawing.

The orbit of the eye is bounded laterally by the *malar*, or *jugal*, sometimes also called the zygomatic bone, which bears at its caudal extremity the *postorbital* or *frontal* process of the