AN ATLAS OF HUMAN ANATOMY: FOR STUDENTS AND PHYSICIANS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649052790

An Atlas of Human Anatomy: For Students and Physicians by Carl Toldt & Alois Dalla & M. Eden Paul

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

www.triestepublishing.com

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Trieste

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OF

HUMAN ANATOMY

FOR STUDENTS AND PHYSICIANS

BY

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Translated from the Third German Edition and adapted to English and American and International Terminology

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FIRST SECTION

A. THE REGIONS OF THE HUMAN BODY

B. OSTEOLOGY

(FIGURES 1 TO 377 AND INDEX)

NEW YORK:
REBMAN COMPANY
10 WEST 23D STREET

LONDON:
REBMAN LIMITED
129 SHAFTESBURY AVENUE, W.C.

1903

GENERAL TABLE OF CONTENTS

The six demy 4to. volumes complete, bound in cloth, **£3 3s.** net (**$18**).

TRANSLATOR'S PREFACE

THE science of human anatomy is purely descriptive in its methods, the field it covers is not very extensive, and its boundaries are sharply limited; it is, therefore, one of the few sciences in which something closely verging on finality and completeness has been attained. Even, however, if no new anatomical data are likely to be forthcoming, there is yet scope for originality in the method of presentation of those data of which the science now consists; and originality of this kind Professor Toldt's "Atlas of Human Anatomy" exhibits in a high degree. In the many admirable manuals of human anatomy now extant in English, the illustrations, even when numerous, as they are often, and when good, as they are occasionally, form a mere supplement—usually a very imperfect supplement—to the text. Atlases of anatomy, and useful atlases, also exist in English, but all are quite fragmentary. Some, like the well-known and valuable, but somewhat antiquated, "Illustrations of Dissections," consist of a series of pictures of selected regions carefully prepared on the cadaver: these are models for the imitation of the student in his own dissecting work, but are not of much value for private study. Others, like Bellamy's English edition of Braune's atlas of frozen sections of the human body, present a small number of anatomical facts from a striking and unfamiliar point of view. But among English works, an accurate pictorial representation of *all* the data of human anatomy, carefully drawn to scale from actual specimens, and arranged suitably for systematic study, has hitherto been lacking.

Whilst a true knowledge of anatomy, a knowledge that will through life supply the needs of the physician and the surgeon in their practical work, can be obtained only in the dissecting-room, the student's labours with scalpel and forceps must be preceded and supplemented by systematic private study. Now, for this purpose, the textual descriptive treatise is not alone sufficient; or, if sufficient, it is so at an excessive expenditure of time and labour. Both in his work preparatory to dissection and in his revision of his anatomical knowledge subsequent to dissection, the energy of the student will be enormously economized if he has at hand a graphic representation of every structure named and described in his systematic treatise. An increased use of the visual or graphic method, both in the acquirement and in the revivification of knowledge, is a feature of the age in all educational departments; but this English translation of Professor Toldt's work is, as far as the English-speaking races are concerned, the first adequate application of the method to the study of human anatomy.

In speaking of the finality and completeness of anatomical science, one exception must be made, and this exception relates to anatomical terminology, which, though nearly completed, has not yet attained finality. Had there been a universal anatomical nomenclature—a nomenclature, that is, adopted by, or even fully intelligible to, anatomists of all nationalities—an English edition of this work would have been superfluous. Anatomy, however, like all other sciences, has suffered from the dispersion of tongues that ensued on the Renascence, when the good and the evil of mediævalism became inextricably confounded, and were cast away together, and the inestimable gift of a language common to the learned of all lands was lost for ever. The German-speaking peoples have a fairly complete and fairly pure Latin anatomical nomenclature, needing, however, to be eked out here and there by the vernacular; whilst in England, as in France, a strange and bastard dialect, half Latin and half vernacular, has come into use. Uncouth jargon as it is, being current and familiar, it is not likely in England and America ever to be replaced by the more consistent terminology in use in the anatomical schools of Germany and Austria; I have, however, in this English edition of the "Atlas of Anatomy" retained the terminology of the original side by side with the English translation, distinguishing between the two by a difference of type.

In some cases, in the nomenclature used by the author, terms are met with which have no counterpart in English anatomical terminology: either because the author regards as normal a structure which English anatomists regard as a variety; or, and far more commonly, because the structure in question, though normal, is unimportant, and English anatomists have therefore neglected to name it. Sometimes, in such cases, I have given a literal English translation of the Latin name used by the author; sometimes, however, a periphrasis has been required to explain what the structure is, or to account for the absence of an English name, and this periphrasis, when lengthy, has been printed as a foot-note. In all such cases, *an asterisk* is prefixed both to the Latin name and to its English equivalent, to indicate to the reader that there is something unusual in the terms employed.

I must further point out that in a few instances the author's nomenclature actually conflicts with that commonly used in England, so that the literal translation of the author's name for a certain structure is applied in England to a structure totally different. For instance, what the author calls *canalis pterygopalatinus* is in England called the *posterior palatine* or *palatomaxillary canal*, while the *pterygopalatine canal* of English anatomists is called by the author *canalis pharyngeus*. But for this warning, beginners might imagine such divergencies to be due to carelessness on the part of the translator or to errors of the press.

A further difficulty has arisen from the fact that English anatomical nomenclature is itself not yet finally settled, nor even wholly consistent. Not merely is the same structure often known by several names; but, which is worse, the same

name is sometimes applied to two different structures. Reform is therefore needed, but it is not the part of a translator to undertake it, and I have perforce been content to follow the authorities. My leading authority has been the tenth edition of Quain's "Elements of Anatomy," but I have also had Macalister's "Text-book of Human Anatomy" in constant requisition. From these works I have, when more than one name is used to denote any structure, taken all those in common use, the order in which the alternative names have been printed showing most often the relative frequency of employment; in a few cases, however, where a name less commonly used has appeared to me distinctly preferable for any reason to an alternative name more commonly used, I have given the less usual but preferable name the precedence. To this small extent only have I been influenced by my own views in the matter of anatomical terminology; and, with the exception of those names which for the reason already furnished are preceded by an asterisk, all the terms in the English nomenclature are in use by one or more of the leading English authorities.

As regards the terminology employed in the United States of America, the contributions of the scientific investigators of that country to anatomy have, owing to the early perfection of this branch of study, been far less extensive than in the case of the other sciences ancillary to medicine; and the science of anatomy was for the most part taken bodily over, text-books, terminology, and all complete. A few differences, however, exist, and I have therefore collated my manuscript with that useful little work, Young's "Synopsis of Human Anatomy," and any divergent terms in use in America only have been inserted in my translation, and distinguished by the addition of the letters "U.S."

A considerable number of the references to the figures will be found to be in the English nomenclature only. These are either cases in which the English and the International descriptive terms were identical, and the printing of both was therefore superfluous; or else cases in which in the original the reference was wholly in German.

Measurements given in the original in centimetres have in all cases been reduced to inches. In illustrations of fœtal parts the age of the fœtus is given in months from the date of fertilization of the ovum. On the Continent, however, the period of utero gestation is usually reckoned as ten "months" of four weeks each; not, as with us, as nine calendar months. To avoid mistake, I have in all such cases after the word "month" or "months" added in parentheses the words "months of four weeks each."

I cannot dismiss mention of the works of reference I have employed without alluding to the German-English "Dictionary of Medical Terms," by Treves and Lang—a book invaluable to all those engaged in the translation of German medical works.

Since this Atlas is intended for the use of beginners, as well as for that of advanced students of human anatomy and of practitioners of medicine, I may fitly conclude this preface with a few words on the general principles of anatomical nomenclature. For descriptive purposes the body is regarded as being in the upright posture, with the arms extended by the sides, and the hands fully supinated, so that the palms look forward. With this attitude kept in mind, the meaning of the terms *superior* and *inferior*, *anterior* and *posterior*, *external* and *internal*, is obvious. Sometimes, however, descriptive terms of another kind are used, to remove the confusion liable to arise from the adoption by man of an attitude different from that of all the other vertebrata, and to homologize the nomenclature of human with that of comparative anatomy. Thus, *cephalic* and *caudal* in comparative anatomy correspond respectively with *superior* and *inferior* in human anatomy; *ventral* and *dorsal*, with *anterior* and *posterior*. Dividing the body into right and left halves by a vertical *median plane*, which cuts the surface of the body at the *median line*, *medial* or *mesial* and *lateral* correspond respectively with *internal* and *external* in denoting position respectively nearer to, or more remote from, the median plane. Other terms in frequent use are *superficial* and *deep*, *central* and *peripheral*, *proximal* and *distal*; these are self-explanatory.

In some cases descriptive terms applied to portions of certain structures denote the relation of these portions to other structures, as when we speak of the *vertebral* and the *sternal* extremities of the ribs, or the *acromial* and the *sternal* extremities of the clavicle. Terms of similar import are *radial* and *ulnar* applied to structures of the forearm; *tibial* and *fibular* (or *peroneal*) of the leg; *palmar* and *dorsal* of the hand; *plantar* and *dorsal* of the foot; *flexor* and *extensor* of any of the extremities. It is to be noted that *internal* and *external* are sometimes used in a sense different from that previously explained, being employed to denote the interior and exterior positions respectively, either in relation to the general axis of the body or to the axis of one of its cavities. In this sense, for instance, we may speak of the *internal* and the *external* tables of the cranial vault, or of the *internal* and the *external* oblique muscles of the abdomen; but it is, as a rule, better to use the words *inner* and *outer* to denote this relation, and to reserve *internal* and *external* for position in respect to the median plane.

Finally we have to explain the terms used to denote certain directions, more especially the direction of certain sections: these are *horizontal* and *vertical*, requiring no definition; *sagittal*, denoting a dorso-ventral direction either in or parallel to the median plane; and *frontal* or *coronal*, which are synonymous terms, denoting direction in a transverse vertical plane.

The definition of many of the terms used in descriptive anatomy, such as *condyle* and *tuberosity*, *process* and *tubercle*, *sinus* and *cavity*, *ligament*, *tendon*, and *aponeurosis*, would be superfluous, since the student will best gain an accurate notion of their meaning by an examination of the structures to which they are respectively applied.

M. EDEN PAUL.

ALDERNEY, *August*, 1903.

REGIONES
CORPORIS HUMANI

THE REGIONS
OF THE HUMAN BODY

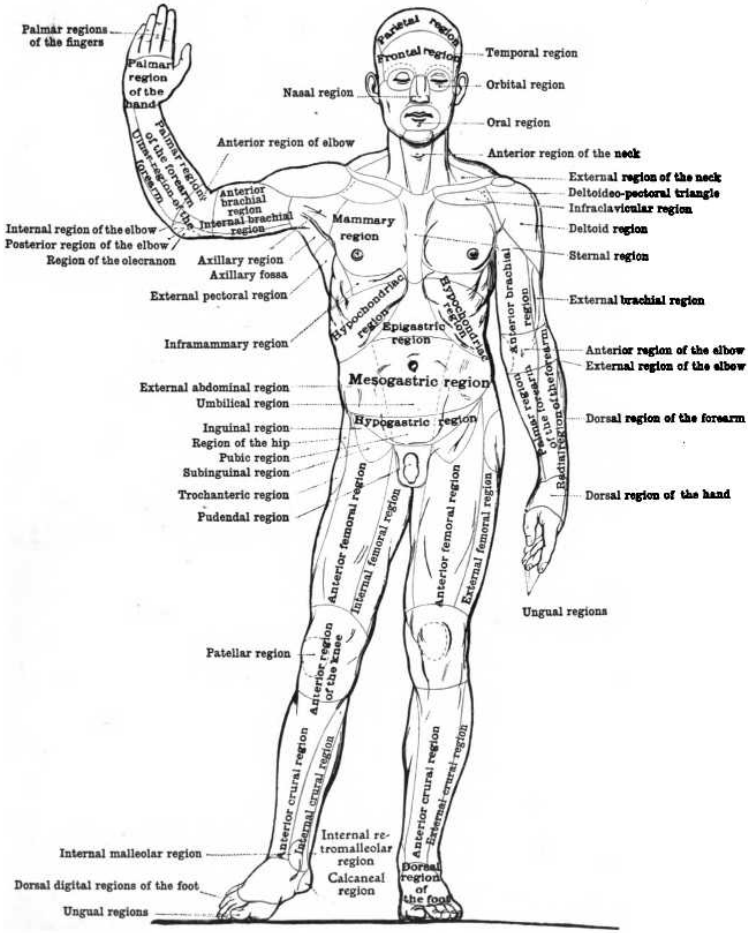

FIG. 1.—ANTERIOR SURFACE OF THE BODY.

Regions of the Human Body.

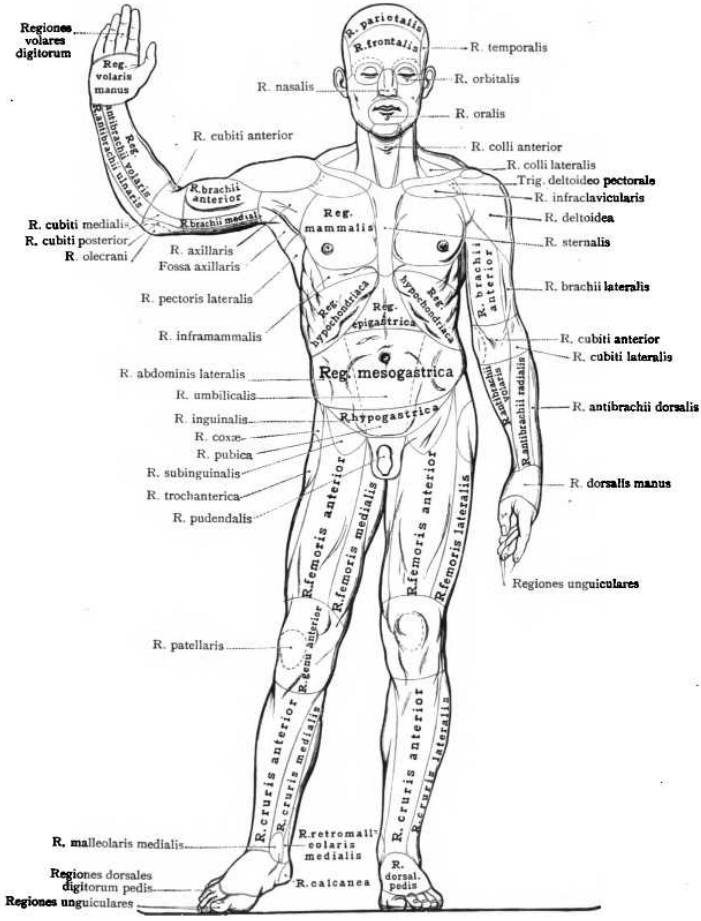

FIG. 1a.—ANTERIOR SURFACE OF THE BODY.

Regiones Corporis Humani.