A CLINICAL ATLAS: VARIATIONS OF THE BONES OF THE HANDS AND FEET

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A CLINICAL ATLAS

VARIATIONS

OF THE BONES OF

THE HANDS AND FEET

BY

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PREFACE

THE constantly increasing use of the X-ray has shown that the study of variations is not a scientific fad but a matter of very great practical importance. Not only are the ordinary variations (still but little known to the surgeon) constantly appearing, but very uncommon ones are occasionally seen. In fact the number of hands and feet examined by the X-ray is so much greater than that of those seen *post mortem* by anatomists, that it is not surprising that variations thought excessively rare should repeatedly be brought to light.

For many years I have devoted myself to the study of variations in man, especially to those of the spine and of the bones of the hand and foot. The importance of these in the practice of surgery becomes clearer day by day. This Atlas has been prepared for the use of the practitioner. Some variations are discussed which are of interest to the orthopædist, but attention has been given chiefly to those which may be expected to appear in skiagraphs taken after an injury and which may suggest a fracture to the unwary.

As the work is meant first of all to be practical, scientific discussion has been reduced to a minimum. It is necessary, however, to give the plan of the hand and foot according to the views of the lamented Professor Pfitzner, whose name will live as that of the pioneer in this line of research. Although I do not accept his theory without reserve, and disagree with him on some points, I find it very useful as a working hypothesis.

Every single bone specimen shown in these photographs was observed by me and belongs to the *Harvard Medical School*. Almost all of them are in the *Warren Museum*. I wish to acknowledge the courtesy of the authorities of the *Journal of the American Medical Association* and of the *Anatomischer Anzeiger* in allowing the reappearance of illustrations which have been published in their pages.

The skiagraphs were taken at the *Massachusetts General Hospital*. I have much appreciated the hospitality of that institution by which I have been able to examine many hundred negatives and to publish such as I wished. I cannot express too strongly my indebtedness to Mr. Walter J. Dodd, the head of the X-ray department, for his unfailing patience, his valuable help and constant interest.

THOMAS DWIGHT.

HARVARD MEDICAL SCHOOL, October, 1907.

ILLUSTRATIONS

LIST OF FIGURES OF HANDS.

LIST OF FIGURES OF FEET.

LIST OF FIGURES OF FEET (*Continued*).

VARIATIONS

OF THE BONES OF

THE HANDS AND FEET

THE HAND.

PFITZNER'S plan of the hand is as follows: First, an ANTIBRACHIAL row composed of two bones very rarely met with in the adult, the *triangulare* and the *secondary pisiform*. Second, the PROXIMAL row, consisting of the *radial* and *ulnar scaphoids*, which normally form the greater part of the scaphoid, the *semilunar*, the *radial* and the *ulnar cuneiform*, which, however, have never been seen separate, and the *pisiform*; the CENTRAL row consisting of several elements none of which normally persists as a separate bone; they are the *radiale externum* joining the outer side of the tuberosity of the scaphoid, the *epitrapezium* a very rare and unimportant little ossicle on the dorsum of the trapezium, the *centrale* which Pfitzner divides into a dorsal and a palmar element, the latter of which may be left out of practical consideration, the *epilunatum* which normally forms the tip of the dorsal point of the semilunar, the *hypolunatum* in a corresponding relation to the palmar point, the *epipyramis* forming the radial angle on the dorsal surface of the *cuneiform*, and the *ulnare externum* on the dorsal aspect of the cuneiform at the edge of the hand near or against the unciform. The DISTAL row contains the *trapezium*, the *trapezoid*, or rather its palmar half, the *metastyloid* a small ossicle at the tip of the styloid of the third metacarpal between the trapezoid and the os magnum, the *capitatum proprium* which forms the proximal and the chief part of the *os magnum*, and the *unciform*. The CARPO-METACARPAL row consists of a number of bones none of which is seen in a normal hand; the *paratrapezium* constituting the outer angle of the trapezium, the *prætrapezium* on the palmar aspect of the tuberosity of the trapezium, the *trapezium secundarium*, the ulnar distal angle of the trapezium, the *secondary trapezoid* on the dorsum between trapezoid, trapezium and second metacarpal, the *epitrapezoid* which is essentially the greater part of the dorsum of the trapezoid, the *parastyloid* forming the dorsal ulnar projection of the base