

THE HAND:

Its Anatomy and Diseases

By

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BLACKWELL
SCIENTIFIC PUBLICATIONS
OXFORD

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Published and copyrighted 1959 in the United States of America by

CHARLES C THOMAS • PUBLISHER
301-327 EAST LAWRENCE AVENUE, SPRINGFIELD, ILLINOIS

Published simultaneously in Canada by

THE RYERSON PRESS
QUEEN STREET WEST, TORONTO 2

Printed in the United States of America

PREFACE AND ACKNOWLEDGMENTS

I am indebted to many people who knowingly or unknowingly have contributed to this book. During the period before World War II, Dr. Henry Marble and Dr. William Browne, of Boston stimulated my interest in Hand Surgery by numerous lectures on this subject. They were probably the only men in this area who devoted so much time to teaching this subject to scores of house officers and medical students.

During World War II, Dr. Sterling Bunnell came to the Boston City Hospital and gave a brilliant lecture to the house staff which opened up a new view of the reconstructive possibilities in hand trauma. He showed examples of hands seemingly hopelessly lost which regained useful function with the proper choice of operative procedure. The inspirational value of this talk will never be forgotten.

While in the Army, I served as neurosurgeon under Dr. Frank Mayfield and Dr. Russell Meyers who taught me much concerning peripheral nerve injuries and their management.

On joining the staff of the Boston City Hospital I was invited to serve on the Hand Service which had recently been organized by Dr. J. Edward Flynn. This opportunity to see large numbers of hand cases in a short period of time and discuss them with other members of the Hand Service has been a rewarding experience for which I shall always be grateful to Dr. Flynn. Some of the photographs of interesting cases included in this book have been loaned me by members of the Hand Service.

Many of the x-rays of bone diseases have been selected from the files of the Boston City Hospital X-ray Department by Dr. Max Ritvo, Director of the Department of Radiology. Some of the fracture x-rays were borrowed from the files of the Shortell Fracture Unit through the courtesy of Dr. Albert M. Moloney, Roentgenologist-in-Chief for Orthopedic Surgery, Boston City Hospital.

I am grateful to the following editors for permission to reproduce illustrations from their respective journals: Dr. Thurston S. Welton, *The American Journal of Surgery* (Figures 33, 42, 44, 45, 46, 52, 53, 59, 66, 67, 75, 77, 88, 109, 110, 135, 140-147, 153, 154, 163, 166); Dr. Austin Smith, *The Journal of the American Medical Association* (Figures 86, 87); and Dr. Loyal Davis, *Surgery, Gynecology and Obstetrics* (Figure 39).

My deep appreciation goes to Mr. William O'Leary for the time consuming study and long hours of careful work that went into the clear, concise drawings which he created for this book.

Special acknowledgment must be given my secretary, Ruth E. Brody, without whose unselfish and seemingly tireless devotion to duty, this book never would have been completed. She has worked long and hard at editing, typing and advising as well as being a constant source of encouragement.

J. J. B.

CONTENTS

	<i>Page</i>
<i>Preface and Acknowledgments</i>	vii
Part I	
STRUCTURE AND DEVELOPMENT	
<i>Chapter</i>	
1. Anatomy	5
Bones	5
Joints	9
Sesamoid Bones	13
Muscles	14
Fascia	27
Tendon Sheaths	31
Nerves	33
Blood Vessels	38
Lymphatics	41
Flexion Creases	41
References	43
2. Embryology	45
Arm Bud	45
Bones and Joints	45
Muscles	51
Nervous System	52
Arteries	53
Veins	55
Skin and Skin Appendages	55
An 8½ Week Fetal Hand	56
References	60
Part II	
INFECTION	
3. General Principles	63
References	65

<i>Chapter</i>	<i>Page</i>
4. Bacteriologic Factors	66
Micrococcus Aureus (Staphylococcus Aureus)	67
Streptococcus	69
Symbiotic Infection	70
Mycobacterium Tuberculosis	80
Treponema Pallidum	82
Pasteurella Tularensis	82
Pasteurella Multocida	83
Bacillus Anthracis	83
Malleomyces Mallei	84
Neisseria Gonorrhoeae	84
Erysipelothrix Rhusiopathiae	84
Actinomyces Bovis	85
Blastomyces Dermatitidis	86
Sporotrichum Schenkii	86
Coccidioides Immitus	87
Mycobacterium Ulcerans	87
References	87
5. Anatomical Localization	91
Pulp Spaces	91
Paronychia	96
Web Spaces	98
Superficial Palmar Fat Pads	100
Thenar and Hypothenar Muscle Spaces	100
Pretendinous Palmar Space	100
Mid-Palmar Space	101
Thenar Space	104
Dorsal Spaces	107
Quadrilateral Space of the Forearm (Parona)	108
Tendon Sheaths	108
Joint Spaces	112
Lymphatics	112
References	113

Part III
TRAUMA

<i>Chapter</i>	<i>Page</i>
6. General Principles	119
References	122
7. Skin	124
Laceration	124
Amputation	127
References	134
8. Tendons	135
Healing	135
Methods of Repair	137
Flexor Tendons	140
Extensor Tendons	142
Aftercare	143
Ruptured Tendons	144
Baseball Finger	144
Buttonhole Rupture of the Extensor Tendons ...	146
Rupture of the Extensor Pollicis Longus Tendon .	147
Extensor Communis Digitorum	148
Flexor Tendons	149
References	150
9. Nerves	153
Healing	153
Nerve Injury Patterns	155
Ulnar Nerve	155
Median Nerve	157
Combined Median and Ulnar Nerves	158
Radial Nerve	158
Methods of Repair	158
Aftercare	159
Compression Palsy	160
References	162
10. Bones and Joints	165
Bones	165
Fractures of the Distal Phalanx	165

<i>Chapter</i>	<i>Page</i>
Fractures of the Middle and Proximal Phalanges	166
Metacarpal Fractures	169
Metacarpal Thumb Fractures	170
Sesamoid Bone Fracture	174
Wrist Fractures	174
Joints	177
References	182
11. Special Injuries	184
Thermal Burns	184
Radiation Burns	186
Grease Gun Injuries	188
Ring Injuries	189
Aerosol Bomb Injuries	190
Beryllium Granulomas	190
Compressed Air Injuries	190
Porcelain Faucet Injuries	191
Wringer Arm Injuries	191
The Corn Picker Hand	192
Welder's Injuries	192
Indelible Pencil Wounds	192
Plastic Injuries	192
Gunshot Wounds	193
Hydrofluoric Acid Burns	193
Hard Edema Following Trauma to the Dorsum of the Hand	194
References	195

Part IV

OTHER DISEASES

12. General Diseases and Occupational Stigmata	201
Medical Diseases	201
Bones	206
Developmental	206
Endocrine Disturbances	208
Vitamin Deficiencies	208
Mineral Poisoning	209

<i>Chapter</i>	<i>Page</i>
Blood Disorders	209
Aseptic Necrosis	210
Joints	210
Occupational Stigmata	214
References	215
13. Fibrous Hyperplasia	218
Dupuytren's Contracture	218
Stenosing Tendovaginitis	227
Traumatic Tendinitis	230
References	231
14. Tumors	237
Skin	237
Connective Tissue	244
Joint and Tendon Sheaths	246
Vessels	253
Bones	258
Miscellaneous	261
References	263
15. Congenital Disorders	267
Absence of Parts	267
Fusion of Parts	270
Multiplicity of Parts	272
Altered Growth of Parts	274
References	276
16. Vascular Diseases	279
Trauma	279
Chemical Gangrene	283
Cold Gangrene	284
Occlusive Diseases	287
Spastic Disease	289
Infections	291
References	293
17. Painful States	297
Dystrophy	297

<i>Chapter</i>	<i>Page</i>
Phantom Limb	297
Amputation Neuromas	298
Reflex Sympathetic Dystrophy	299
Causalgia	301
Shoulder Outlet Syndrome.....	302
References	304

Part V

RECONSTRUCTIVE SURGERY

18. Scars and Missing Digits	307
Skin Contractures	307
General Principles	307
Special Instances	310
Amputations	314
Thumb	314
Loss of all Digits	320
References	321
19. Tendon Reconstruction	323
Tendon Grafts	323
Tendon Transfers	330
Radial Nerve Palsy	331
Median Nerve Palsy	333
Ulnar Paralysis	339
Combined High Paralyses of the Median and Ulnar Nerves	342
Tendon Damage	343
References	344
20. Bones and Joints	346
Fractures	346
Joint Reconstruction	348
References	351
21. Ischemic Muscle Contracture	352
References	358
<i>Index</i>	361

**THE HAND:
ITS ANATOMY AND DISEASES**

PART I
STRUCTURE AND DEVELOPMENT

CHAPTER 1

ANATOMY

The anatomy of the hand will be presented by first describing the bony framework and then the more superficial structures. It is hoped that this sequence of exposition will give a three dimensional viewpoint and aid retention of the salient information.

BONES

The distal extremity of the *radius* is expanded into the carpal and ulnar articular surfaces. The carpal articular surface is triangular on the radial side for articulation with the navicular bone, and quadrilateral on the ulnar side for articulation with the lunate bone. The ulnar articular surface is narrow and smooth and articulates with the head of the ulna and the base of the triangular cartilaginous articular disk. The dorsal surface of the distal radius is grooved by the extensor tendons with the most prominent landmark being Lister's tubercle which separates the extensor pollicis longus from the extensor carpi radialis brevis (Fig. 1). The lateral surface of the distal end of the radius is prolonged as the styloid process which is grooved for the tendons of the abductor pollicis longus and extensor pollicis brevis.

The distal extremity of the *ulna* is slightly expanded to form a rounded articular surface which is prolonged medially as the styloid process. The articular surface or head of the ulna articulates with the triangular disk distally and with the ulnar articular surface of the radius laterally.

The proximal row of carpal bones consists of the navicular, lunate and triquetrum. The *pisiform* articulates with the triquetrum and really does not form a part of the proximal row. The *navicular* bone is on the radial side of the carpus with its long axis passing downward and laterally. It articulates proximally with the lower end of the radius; distally, it has an articular surface for a juncture with the greater and lesser multangular. At the distal lateral angle of the ventral concave surface is the

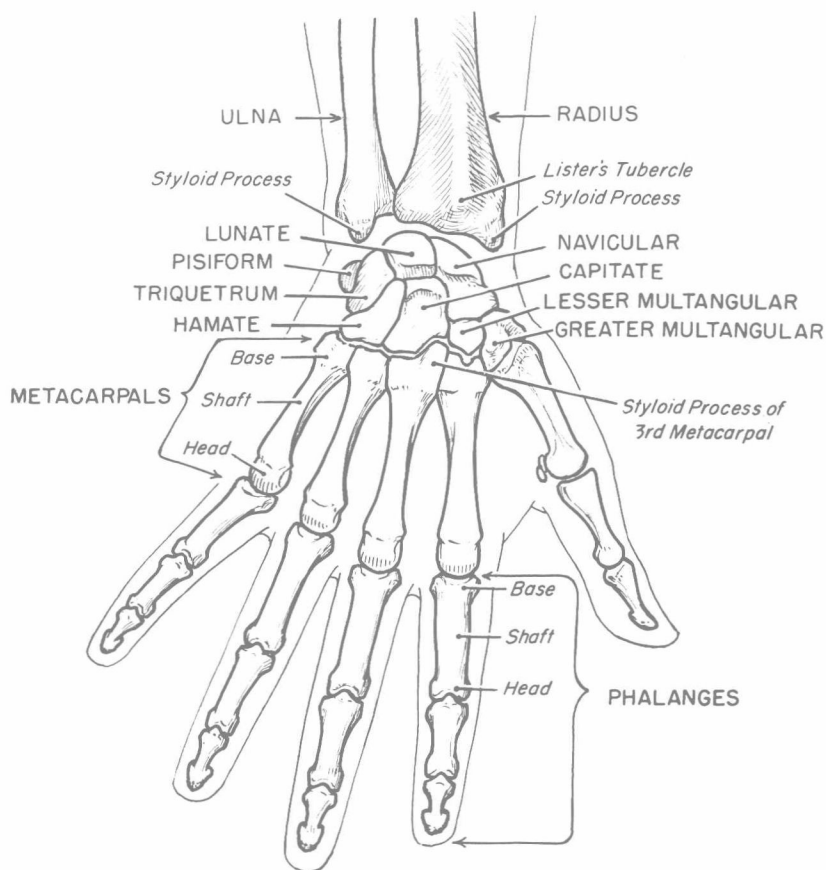


Figure 1. Dorsal view of the bones of the wrist and hand.

tubercle which may be grooved by the flexor carpi radialis (Fig. 2). The medial surface has two articular faces for the capitate and lunate bones. The *lunate* is characterized by its semilunar inferior articulation for the head of the capitate and hamate bones. The convex proximal surface articulates with the radius. There is a small lateral concave face for articulation with the navicular and a small medial quadrilateral face for juncture with the triquetrum. The *triquetrum* presents a concave inferior surface for articulation with the hamate and a lateral quadrilateral articulating face for the lunate. There is a small medial oval facet for articulation with the pisiform.