

1970

/

Year Book
OF
PATHOLOGY
& CLINICAL
PATHOLOGY

— — — — —

— — — — — WARTMAN

THE YEAR BOOK *of* PATHOLOGY *and* CLINICAL PATHOLOGY 1970

EDITED BY

WILLIAM B. WARTMAN, B.S., M.D.

*Professor of Pathology, University of Virginia;
Surgical Pathologist, Hospital of the
University of Virginia, Charlottesville; formerly
Morrison Professor of Pathology, Northwestern University*

YEAR BOOK MEDICAL PUBLISHERS

INCORPORATED

35 EAST WACKER DRIVE

CHICAGO

There are twenty YEAR BOOKS in various fields of medicine and one in dentistry. Publication of these annual volumes has been continuous since 1900. The YEAR BOOKS make available in detailed abstract form the working essence of the cream of recent international medico-scientific literature. Selection of the material is made by distinguished editors who critically review each year more than 500,000 articles published in the world's foremost journals.

TABLE OF CONTENTS

The material covered in this volume represents literature reviewed up to January, 1970.

PATHOLOGY

| | |
|--|-----|
| GENERAL PATHOLOGY | 11 |
| Perspectives | 11 |
| Speaking at Medical Meetings, <i>by</i> ROY MEADOW | 11 |
| Immunity | 20 |
| Granulomatous Inflammation | 28 |
| Infection, Inflammation and Repair | 34 |
| Cellular Pathology | 40 |
| Genetics | 50 |
| Sundry Topics | 55 |
| TUMORS—WITH THE ASSISTANCE OF PAUL B. PUTONG, M.D. | 60 |
| Causes | 60 |
| Growth | 65 |
| Miscellaneous | 70 |
| CARDIOVASCULAR SYSTEM | 75 |
| Hearts on Loan | 75 |
| Myocardium and Myocarditis | 83 |
| Valves and Endocardium | 99 |
| Arterial Disease | 103 |
| Thrombosis and Embolism | 107 |
| LYMPH NODES AND SPLEEN | 113 |
| RESPIRATORY SYSTEM | 124 |
| Tumors | 124 |

| | |
|--|-----|
| Pneumonia | 133 |
| Immunologic Angles and a Paper Left Over | 140 |
| ALIMENTARY SYSTEM | 144 |
| Tumors | 144 |
| Inflammation and Other Questions | 151 |
| LIVER AND PANCREAS | 157 |
| Australia Antigen and Viral Hepatitis | 157 |
| Other Angles of Hepatitis | 164 |
| Cirrhosis | 167 |
| A Number of Different Sorts of Papers | 172 |
| Pancreas | 180 |
| KIDNEY | 186 |
| Transplantation | 186 |
| Nephritis, Glomerular and Other | 189 |
| Cysts and Stones | 202 |
| FEMALE GENITAL SYSTEM AND BREAST | 210 |
| MALE GENITAL SYSTEM | 222 |
| ENDOCRINE GLANDS | 226 |
| NERVOUS SYSTEM AND EAR | 230 |
| Infections | 230 |
| Trauma and Hemorrhage | 235 |
| Tumors and Glial Tissue | 238 |
| SKELETOMUSCULAR SYSTEM | 245 |
| SKIN AND SUBCUTANEOUS TISSUE | 253 |
| Pigmented Tumors | 253 |
| Disorders of Fibrous Tissue | 261 |
| Miscellaneous | 265 |

CLINICAL PATHOLOGY

| | |
|--|-----|
| CLINICAL CHEMISTRY—WITH THE ASSISTANCE OF EDWARD J. FITZSIMONS, PH.D. | 269 |
| Automation and Computers | 269 |
| Keeping Up Quality | 278 |

TABLE OF CONTENTS

5

| | |
|------------------------|-----|
| Hormones | 283 |
| Enzymes | 294 |
| Proteins | 307 |
| Inorganic Constituents | 318 |
| Sundries | 322 |

HEMATOLOGY—WITH THE ASSISTANCE OF JOSEPH C. SHER-

RICK, M.D. 326

| | |
|---------------------------------|-----|
| Anemias and Red Blood Cells | 326 |
| White Blood Cells | 348 |
| Leukemia | 355 |
| Bone Marrow | 363 |
| Platelets | 366 |
| Coagulation Defects | 371 |
| Transfusions and Their Troubles | 378 |
| Miscellaneous Topics | 390 |

CLINICAL MICROBIOLOGY—WITH THE ASSISTANCE OF HERBERT

M. SOMMERS, M.D. 393

| | |
|---------------------|-----|
| General Angles | 393 |
| Anaerobes | 400 |
| Neisseria | 407 |
| Mycobacteria | 410 |
| Fungi and Parasites | 412 |
| Viruses | 421 |
| Immunology | 424 |
| Serodiagnosis | 424 |
| Defense Mechanisms | 425 |

THE YEAR BOOK *of* PATHOLOGY *and* CLINICAL PATHOLOGY 1970

EDITED BY

WILLIAM B. WARTMAN, B.S., M.D.

*Professor of Pathology, University of Virginia;
Surgical Pathologist, Hospital of the
University of Virginia, Charlottesville; formerly
Morrison Professor of Pathology, Northwestern University*

YEAR BOOK MEDICAL PUBLISHERS

INCORPORATED

35 EAST WACKER DRIVE

CHICAGO

THE PRACTICAL MEDICINE YEAR BOOKS

Medicine: DAVID E. ROGERS, M.D.; CARL MUSCHENHEIM, M.D.; PAUL HELLER, M.D.; T. JOSEPH REEVES, M.D.; NORTON J. GREENBERGER, M.D.; PHILIP K. BONDY, M.D.; FRANKLIN H. EPSTEIN, M.D.

General Surgery: MICHAEL E. DE BAKEY, M.D.

Anesthesia: JAMES E. ECKENHOFF, M.D.

Drug Therapy: DALE G. FRIEND, M.D.

Obstetrics & Gynecology: J. P. GREENHILL, M.D.

Pediatrics: SYDNEY S. GELLIS, M.D.

Radiology: WALTER M. WHITEHOUSE, M.D.; HOWARD B. LATOURETTE, M.D.

Ophthalmology: WILLIAM F. HUGHES, M.D.

Ear, Nose & Throat: JOHN A. KIRCHNER, M.D.

Neurology & Neurosurgery: RUSSELL N. DE JONG, M.D.; OSCAR SUGAR, M.D.

Psychiatry & Applied Mental Health: SAM BERNARD WORTIS, M.D.; DOUGLAS D. BOND, M.D.; FRANCIS J. BRACELAND, M.D.; DANIEL X. FREEDMAN, M.D.; ARNOLD J. FRIEDHOFF, M.D.; REGINALD S. LOURIE, M.D.

Dermatology: ALFRED W. KOPF, M.D.; RAFAEL ANDRADE, M.D.

Urology: JOHN T. GRAYHACK, M.D.

Orthopedics & Traumatic Surgery: H. HERMAN YOUNG, M.D.

Plastic & Reconstructive Surgery: NEAL OWENS, M.D.; KATHRYN STEPHENSON, M.D.

Endocrinology: THEODORE B. SCHWARTZ, M.D.

Pathology & Clinical Pathology: WILLIAM B. WARTMAN, M.D.

Nuclear Medicine: JAMES L. QUINN, III, M.D.

Cancer: RANDOLPH LEE CLARK, M.D.; RUSSELL W. CUMLEY, Ph.D.

Cardiovascular Medicine & Surgery: EUGENE BRAUNWALD, M.D.; W. PROCTOR HARVEY, M.D.; JOHN W. KIRKLIN, M.D.; ALEXANDER S. NADAS, M.D.; OGLESBY PAUL, M.D.; ROBERT W. WILKINS, M.D.; IRVING S. WRIGHT, M.D.

COPYRIGHT 1970 BY YEAR BOOK MEDICAL PUBLISHERS, INC.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.

Printed in U.S.A.

There are twenty YEAR BOOKS in various fields of medicine and one in dentistry. Publication of these annual volumes has been continuous since 1900. The YEAR BOOKS make available in detailed abstract form the working essence of the cream of recent international medico-scientific literature. Selection of the material is made by distinguished editors who critically review each year more than 500,000 articles published in the world's foremost journals.

TABLE OF CONTENTS

The material covered in this volume represents literature reviewed up to January, 1970.

PATHOLOGY

| | |
|--|-----|
| GENERAL PATHOLOGY | 11 |
| Perspectives | 11 |
| Speaking at Medical Meetings, <i>by</i> ROY MEADOW | 11 |
| Immunity | 20 |
| Granulomatous Inflammation | 28 |
| Infection, Inflammation and Repair | 34 |
| Cellular Pathology | 40 |
| Genetics | 50 |
| Sundry Topics | 55 |
| TUMORS—WITH THE ASSISTANCE OF PAUL B. PUTONG, M.D. | 60 |
| Causes | 60 |
| Growth | 65 |
| Miscellaneous | 70 |
| CARDIOVASCULAR SYSTEM | 75 |
| Hearts on Loan | 75 |
| Myocardium and Myocarditis | 83 |
| Valves and Endocardium | 99 |
| Arterial Disease | 103 |
| Thrombosis and Embolism | 107 |
| LYMPH NODES AND SPLEEN | 113 |
| RESPIRATORY SYSTEM | 124 |
| Tumors | 124 |

| | |
|--|-----|
| Pneumonia | 133 |
| Immunologic Angles and a Paper Left Over | 140 |
| ALIMENTARY SYSTEM | 144 |
| Tumors | 144 |
| Inflammation and Other Questions | 151 |
| LIVER AND PANCREAS | 157 |
| Australia Antigen and Viral Hepatitis | 157 |
| Other Angles of Hepatitis | 164 |
| Cirrhosis | 167 |
| A Number of Different Sorts of Papers | 172 |
| Pancreas | 180 |
| KIDNEY | 186 |
| Transplantation | 186 |
| Nephritis, Glomerular and Other | 189 |
| Cysts and Stones | 202 |
| FEMALE GENITAL SYSTEM AND BREAST | 210 |
| MALE GENITAL SYSTEM | 222 |
| ENDOCRINE GLANDS | 226 |
| NERVOUS SYSTEM AND EAR | 230 |
| Infections | 230 |
| Trauma and Hemorrhage | 235 |
| Tumors and Glial Tissue | 238 |
| SKELETOMUSCULAR SYSTEM | 245 |
| SKIN AND SUBCUTANEOUS TISSUE | 253 |
| Pigmented Tumors | 253 |
| Disorders of Fibrous Tissue | 261 |
| Miscellaneous | 265 |

CLINICAL PATHOLOGY

| | |
|--|-----|
| CLINICAL CHEMISTRY—WITH THE ASSISTANCE OF EDWARD J. FITZSIMONS, PH.D. | 269 |
| Automation and Computers | 269 |
| Keeping Up Quality | 278 |

TABLE OF CONTENTS

5

| | |
|--|-----|
| Hormones | 283 |
| Enzymes | 294 |
| Proteins | 307 |
| Inorganic Constituents | 318 |
| Sundries | 322 |
| HEMATOLOGY—WITH THE ASSISTANCE OF JOSEPH C. SHER- | |
| RICK, M.D. | 326 |
| Anemias and Red Blood Cells | 326 |
| White Blood Cells | 348 |
| Leukemia | 355 |
| Bone Marrow | 363 |
| Platelets | 366 |
| Coagulation Defects | 371 |
| Transfusions and Their Troubles | 378 |
| Miscellaneous Topics | 390 |
| CLINICAL MICROBIOLOGY—WITH THE ASSISTANCE OF HERBERT | |
| M. SOMMERS, M.D. | 393 |
| General Angles | 393 |
| Anaerobes | 400 |
| Neisseria | 407 |
| Mycobacteria | 410 |
| Fungi and Parasites | 412 |
| Viruses | 421 |
| Immunology | 424 |
| Serodiagnosis | 424 |
| Defense Mechanisms | 425 |

STUDENT "ACTIVITIES"

I've flunked all my courses,
Of course it's a pity;
But Mother, oh! Mother!!
I'm on a committee!!!

Perspectives in Biology, Spring, 1969, p. 372,

JOEL H. HILDEBRAND.

SOME PERSONAL RECOLLECTIONS

HOWARD T. KARSNER

1879-1970

*Editor, The Year Book of Pathology and Clinical Pathology
1940-1952*

One warm sunny day last spring, my wife and I journeyed to the National Cathedral in Washington, D.C., to attend the funeral service of Howard T. Karsner. In the Jerusalem Chapel friends from the academic and military worlds had come together for this last occasion when the simple military funeral over the flag-draped coffin brought to an end a long and useful life.

My first knowledge of Doctor Karsner was as a student, when his book, *Human Pathology*, guided me into a life-long interest in the "harm that disease causes." Later I went to Cleveland where Karsner directed the Institute of Pathology of Case Western Reserve University, and spent the next 10 years working under him. The Institute was an exciting and stimulating place for a young man. Harry Goldblatt, Enrique Ecker and Alan Moritz were in the middle of their active careers and Robert A. Moore had just left to become Professor of Pathology at Washington University. The Institute was a new building then and Karsner's great joy. I well remember my first conference with him when we talked about the facilities of the building and its newness and how he intended it to remain that way and that everyone working in it must do his part in keeping it neat and tidy and in good repair. Nothing at all was said about my other duties or about a research assignment. Such matters, it became clear later, were brought up as interesting problems arose in the course of the daily work.

Karsner was at his zenith. He had come to Cleveland just before World War I from Councilman's department at Harvard and brought both the traditions of the Hopkins school, for Councilman was one of the famous Welch Rabbits, and the traditions of the Vienna school, where he had studied under Erdheim. Of course his keel had been laid in Philadelphia and

he had qualified in medicine at the University of Pennsylvania where he worked under Richard Pearce and Simon Flexner. By the time I knew him his experimental work on early myocardial ischemia and on pulmonary infarction had been done and he was no longer busy at the laboratory bench on experimental research, but his mind was busy with problems on which to set his young men.

Karsner was a great teacher although his methods were demanding and unorthodox. His guiding principle was that no teacher could teach a student anything—the student must learn himself. All that the teacher can do is to provide the student with the opportunity to learn. In practice this theory could be painful, but to my knowledge the young men and women in his department never resented it. On Thursday mornings the whole staff of the Institute gathered in the small autopsy room for the “organ recital” at which the cases of the week were reviewed. The resident who had performed the autopsy gave the history of the patient from memory, demonstrated all the organs and gave his opinions about the diagnoses. More often than not the chief interrupted the recital with sharp questioning and pointed comments, which at times could be quite devastating, about faulty technic. But if the resident were so fortunate as to have laid bare an unexpected lesion or to have done an unusually fine dissection, praise came forth just as easily. Work without care, topsy-turvy thinking and careless language were not let go without protest. The method may seem harsh today, but Karsner never asked anything of his students that he did not habitually do himself. He set us all an example of the highest order. His method produced noteworthy progeny—Harry Goldblatt, Enrique Ecker, Simon Koletsky and James Reagan at the Institute, Alan Moritz at Harvard University and the Institute, Robert A. Moore at Washington University and Downstate University, New York, J. Lowell Orbison at the University of Rochester, Thomas Kinney at Duke University and W. B. Wartman, T. C. Laipply, J. C. Sherrick, and M. C. Wheelock at Northwestern University, to name only the professors.

Somewhat the same methods of teaching were used for the medical students. No lectures were given and most of the didactic teaching was done by Karsner himself in his daily hour-long sessions with the whole class where he quizzed them closely on

the day's reading assignment and readily expressed his opinion about the probable future success of individual students. His pat on the back was frequently low enough and hard enough to make the student seriously consider learning his lessons. In addition to this drillmaster way of teaching, the course was enriched by what must have been one of the earliest uses in this country of experimental animals to emphasize certain basic principles.

In the 1930s and 1940s Doctor Karsner was widely known abroad and at home. He had become intimate with Sir Charles Martin in France during World War I when the laboratory of the Fourth General Hospital, the Lakeside Unit, of which Karsner was Chief, was attached to Martin's Base Hospital, and this friendship continued after the war when Sir Charles became director of the Lister Institute in London. H. R. Dean at Cambridge and Sir John Parkinson, the eminent cardiologist, were close friends. He was acquainted with most of the European pathologists of the time and was one of the founders of the International Society for Geographic Pathology. For many years he habitually spent every second summer in Europe.

At home Doctor Karsner was concerned with most things having to do with pathology. He served the American Association of Pathologists and Bacteriologists as its secretary for many years and was president of both this society and the American Society for Experimental Pathology. He was a founding member of the American Board of Pathology, a member of the Council on Food and Drugs of the American Medical Association, the Scientific Advisory Board of the Armed Forces Institute of Pathology and the long-time Chairman of the Committee on Pathology of the National Research Council/National Academy of Sciences. Was it any wonder that Doctor Karsner could command the respect and admiration of his men?

One of the delights of Doctor Karsner's life was golf. He played regularly in the middle of the week and on the weekends. Many of his closest friends in Cleveland were from the Country Club or the Hermit Club where he liked to play bridge on Saturday afternoons when the weather did not permit golf.

The Karsners' summers, when they were not in Europe, were spent at York Harbor, Maine. There they would go for several months and on occasion I was asked to drive east with them or to keep Doctor Karsner company if he drove alone while

Mrs. Karsner went by train. It was while spending a few extra days with them that I observed his pattern for a long summer holiday. The morning was spent at his desk, working on his book or on some other task of writing he had in hand, such as *YEAR BOOK*, and the rest of the day was spent at play in the cool sea breezes. It was a pattern that later I took for my own and can heartily recommend it as being most productive.

Karsner had clear ideas about the place of pathology in medicine. To him the pathologist and the clinician were teammates—physicians first and specialists second. Although he recognized with Abram Flexner that pathology had a university side to it and encouraged his students to undertake “basic” research, he always thought that the place of pathology should be primarily in the clinic, as near the bedside as possible. Would he think today that pathologists have isolated themselves from the mainstream of medicine and our teammates the clinicians? Perhaps he might even say that we ourselves should take the first steps to return to the fold.

When, at the age of 70, Doctor Karsner retired as Director of the Institute, he joined the Navy as Director of Medical Research and continued his usefulness in an entirely new environment for another 15 or more years. Finally he retired completely from medical affairs to enjoy fully his happy home life with his devoted wife and friends. Few men can have left more of a mark on their chosen field of endeavor than did Howard T. Karsner and few can have left it so much better than they found it.

As you can see on the frontispiece, I have moved to the University of Virginia during the last year where the chairman of the department of pathology, David E. Smith, and his colleagues, have made me feel quite at home in the new surroundings. I have taken full advantage of their kindness in answering my queries about questions that have come up during the course of preparing this book. I have also been fortunate enough to have had the continued help of my former associates at Northwestern University, E. J. Fitzsimons, P. B. Putong, J. C. Sherrick and H. M. Sommers, in selecting and commenting on the articles for clinical chemistry, tumors, hematology and clinical microbiology. No one could ask a more loyal, helpful team; I am deeply grateful for all that they have done.

WILLIAM B. WARTMAN

PATHOLOGY

GENERAL PATHOLOGY

PERSPECTIVES

"A dull speaker, like a plain woman, is credited with all the virtues, for we charitably suppose that a surface so unattractive must be compensated by interior blessings."

Uncommon Law, A. P. HERBERT, 1935.

SPEAKING AT MEDICAL MEETINGS*

ROY MEADOW†

Heard at a symposium in 1969: "This slide shows the data as an isobologram—for those of you not familiar with an isobologram, it is a . . . er . . . er. . . ." Long pause as the speaker shuffles through his notes in the darkness to find out what on earth it is.

The recent explosion of postgraduate meetings, symposia, and specialty medical conferences means that many doctors are finding themselves presenting papers at these meetings. Those not performing have plenty of opportunity to note the good and bad features of the speaker's presentation. All too often, many obvious points of technique are neglected. Some of these will be discussed.

To Speak or to Read

After a succession of papers which have been read, a spoken contribution comes like a breath of fresh air and is listened to regardless of its content.

The main reason for someone reading his paper is that he is

* Reprinted, with permission, from *Lancet*, Volume 2, pp. 631-633, Sept. 20, 1969.

† Department of Pediatrics, Guy's Hospital, London S.E. 1.

not confident at speaking. It does not matter reading a paper, provided it has been written to be heard rather than read. This is vitally important, for when we speak in conversation we repeat ourselves to make a point and therefore if a paper is to be read, the important points must be repeated—they must be repeated. It is a crime to read a paper in exactly the same form in which it is to be published; it cannot be ideal for both media.

The main disadvantage of speaking, as opposed to reading, is that one or more items will be left out by mistake. Other items will be mistakenly inserted. One can be trapped into including a purple passage of appealing sound, which is more or less irrelevant, simply because of the enchantment of hearing oneself say it. This can be partly overcome by writing out the piece in full beforehand and editing it strictly. Prompt cards can be made of phrases or headings for use during the presentation.

What to Say

Contributions are likely to be between ten and twenty minutes long. It is churlish to go on too long and foolish to pack too much information into a short paper. As only three or four points will be remembered, concentrate on communicating those.

At the start, make the aim of the paper clear, during the middle section elaborate, and at the end summarise the conclusions. New or contentious material, introduced at the end to make a dramatic finish, tends to detract from the main argument. The work may have taken many months to complete, but you still have to present it without the mass of detail which will bore everyone except yourself.

Long lists of references, which may be needed in written papers, sound pretentious in spoken communications; similarly, while you may wish to acknowledge the collaborative nature of the work, that information should be slipped in unobtrusively in the middle (where only the collaborators will notice it). Starting a talk with "This work was done in 1968 with Drs. J. N. F. Berncastle and A. L. Funglewoozle, junior, with the help of a grant from—&c., &c.," will lose the attention of the audience almost before it has been caught.

Make an effort to construct a strong start and finish. The first minute is critical; it is the one time when all the audience is listening and it must not be wasted.