PATHOBIOLOGY OF OCULAR DISEASE

A DYNAMIC APPROACH

edited by

Alec Garner

Gordon K. Klintworth

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(IN TWO PARTS) Part B

edited by

Alec Garner
University of London
London, England

Gordon K. Klintworth
Duke University Medical Center
Durham, North Carolina

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FOREWORD

No systematized presentation of the pathology of the eye existed in any language until 1808 when James Wardrop, a Scotsman then aged 26, published his first edition of *Essays on the Morbid Anatomy of the Human Eye,* followed the next year by *Fungus Haemotodes or Soft Cancer* which established retinoblastoma as a recognized entity. Although these books were not the first to describe or illustrate specimens of ocular disease, and in fact contained little morbid anatomy as now defined, they introduced, by dissections and macroscopical studies, an area of investigation eventually to become the specialty of ophthalmic pathology.

The subsequent development of microscopy in the late nineteenth century and early twentieth century and its wider use throughout all aspects of laboratory science led to an immense and still expanding increase in knowledge. The revelations of histology and histopathology had as dramatic an impact as those of electron microscopy in modern times, and ophthalmic pathology in its turn became largely concerned with the documentation of macroscopical and microscopical features of diseased ocular tissues. There followed many textbooks dealing exclusively or predominantly with these aspects; the most widely admired are beautifully illustrated first with superb paintings and drawings and later by photographic reproductions, which in the last two decades reached the highest quality. These remain classic textbooks in ophthalmology and are of inestimable value, but curiously ophthalmic pathology continued to be confined to morbid anatomy long after pathology itself had branched out to found the present main disciplines of histopathology, chemical pathology, hematology, medical microbiology, and immunopathology. Even today ophthalmic pathology is usually equated with histopathology of the eye; that is certainly the main interest of American, Canadian, and European ophthalmic pathology societies. This has been at least partly due to the fact that for many years ophthalmic pathology was a part-time pursuit of ophthalmologists engaged in exacting clinical practice, and perhaps it would be as reasonable to expect them to have had the time to become conversant with the many developments in pathology as it would be to expect a general pathologist to be skilled, for instance, in the latest methods of cataract extraction or the management of glaucoma. Thus while freely acknowledging that the present sum of knowledge in ophthalmic pathology is much indebted to them, I have always been convinced that future progress must be more widely based. In 1957 I wrote

> If in the future, eye pathology is to be taught and practised in the traditional way, as an elaborate recording of histologic minutiae, then the subject is not too demanding and may well be undertaken as a part-time pursuit, and probably best by the ophthalmologist who is most able to extract the greatest clinical value from the findings. But if the study of ocular pathology is to have its full meaning, the eye must be regarded as a unit of an entire organism, and its behavior in disease must as far as possible be related to that of the whole. Research in this field, in common with the general tendency, should concern itself with disease mechanisms rather than with disease patterns, and for this purpose the widest possible knowledge of pathologic

processes is desirable and the whole armamentarium of modern scientific method should be available. To establish ocular pathology on this broad basis will demand the full and concentrated attention of workers trained and experienced in the appropriate disciplines.*

Nearly a quarter of a century later I have nothing to add to these convictions and I warmly welcome this monumental work in two volumes planned and executed on the lines I had so hopefully visualized, and I am proud that such a notable work should have been assembled by Professor Alec Garner, my successor as director of the Department of Pathology at the Institute of Ophthalmology in London, and Professor Gordon Klintworth some-time visiting professor there. With their able collaborators they present in these comprehensive volumes exactly the approach to ocular disease that is essential both for its immediate elucidation and for the whole future development of the subject, not in isolation but within the context of pathology as a whole.

With this conviction I warmly commend this book to everyone interested and involved in this fascinating field of learning, and wish all those concerned in its production the success so richly deserved.

Norman Ashton
Emeritus Professor of Pathology
University of London and
The Royal College of Surgeons of England

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PREFACE

Such is the volume of ophthalmologic and pathological writing that only by stepping aside completely from one's commitment to engage actively in these disciplines would it be possible to absorb all that might profitably be read. It would be irresponsible of any potential author or editor to unleash on the busy student yet more reading matter should it not fill a real need. There are in existence already several excellent treatises relating to the pathological anatomy of the eye, and it would have been redundant for us to seek to emulate them; rather we have sought to direct attention to dynamic considerations and disease mechanisms, and so complement the emphasis on descriptive pathology to be found in other writings on the subject. Hence the title *Pathobiology of Ocular Disease: A Dynamic Approach*.

It is our belief that knowing the appearance of a lesion and being able to recognize it is only the beginning of the story. If appropriate and rational treatment is to be instituted, it is also necessary to understand what is happening and, where possible, why. For instance, from the practicing clinician's standpoint, more important than to recognize granulomatous inflammation when seen in a microscopical preparation is to have some idea of what that means in terms of causative factors and likely behavior. That is not to say we decry descriptive pathology—far from it, for morphology and function are but the two sides of the same coin and are patently interdependent. But the job of the pathologist is both to identify disease processes and to interpret them in behavioral terms. It was with this dual role of pathology in mind that we invited the various contributors to compose their chapters.

However, success is an elusive goal when the brief is so demanding. To state what and where is one thing; to ask how and why is quite another. Nevertheless, as editors, we feel that our contributors have responded magnificently and it is our fervent hope that the result will meet the needs of serious students of ophthalmology, be they trainees or more experienced practitioners, who are keen to understand the nature of the disorders they are called on to treat. The emphasis on dynamic disease processes inevitably encompasses the whole gamut of pathological disciplines—microbiology, immunology, and biochemistry, as well as histopathology, and this all-embracing interpretation of pathology serves further to distinguish our book from existing texts.

For a variety of reasons, which need not be spelt out here, ophthalmic pathology is commonly viewed with suspicion by other pathologists. Trained as general pathologists ourselves, we as editors hope that, by relating the specific matters of ocular pathology to the basic and more general aspects of disease processes, we will have gone some way towards persuading our colleagues that study of the eye is both fascinating and rewarding.

Inevitably, to assemble a multiauthor compendium of the sort we have compiled, such that there is not too much diversity of approach, has involved a great deal of effort, not only for the editors, but also for the gallant contributors who have had to contend with a seemingly endless stream of queries and comment. We want to thank them for their cooperation and forbearance.

Other people whose assistance has been invaluable are acknowledged elsewhere but we would also put on record our appreciation of the unstinting advice and practical help provided by the staff of

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Alec Garner
Gordon K. Klintworth

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CONTRIBUTORS TO PART B

Thomas M. Aaberg, M.D. Professor, Department of Ophthalmology, Eye Institute, Medical College of Wisconsin, Milwaukee, Wisconsin

G. Winston Barber, Ph.D.* Chief, Biochemistry Section, Wills Eye Hospital and Research Institute, Philadelphia, Pennsylvania

Elaine R. Berman, Ph.D. Professor of Experimental Ophthalmology and Head, Eye Biochemistry Unit, Department of Ophthalmology, Hadassah-Hebrew University Medical School, Jerusalem, Israel

Alan C. Bird, M.D., F.R.C.S. Professor, Department of Ophthalmology, Moorfields Eye Hospital, London, England

Edward H. Bossen, M.D. Professor, Department of Pathology, Duke University Medical Center, Durham, North Carolina

Anthony J. Dark, M.D., F.R.C.S.Ed.† Associate Professor, Department of Ophthalmology, State University of New York Upstate Medical Center, Syracuse, New York

Frederick T. Fraunfelder, M.D.‡ Professor and Chairman, Department of Ophthalmology, University of Arkansas for Medical Sciences, Little Rock, Arkansas

Alec Garner, M.D., Ph.D., F.R.C.Path Professor and Director, Department of Pathology, Institute of Ophthalmology, University of London, London, England

Calvin Hanna, Ph.D. Professor of Pharmacology and Ophthalmology, Department of Pharmacology, University of Arkansas for Medical Sciences, College of Medicine, Little Rock, Arkansas

Gordon K. Klintworth, M.D., Ph.D. Professor, Department of Pathology, and Professor and Director of Research, Department of Ophthalmology, Duke University Medical Center, Durham, North Carolina

William R. Lee, M.D., F.R.C.Path Professor, Departments of Ophthalmology and Pathology, Glasgow University, Glasgow, Scotland

*Deceased

Present Affiliation:

† Head, Department of Ophthalmology, University of Sheffield, Sheffield, England

‡ Professor and Chairman, Department of Ophthalmology, University of Oregon Health Sciences Center, Portland, Oregon

Kenneth A. Lindberg, Jr., Ph.D. Medical Research Associate, Department of Medicine (Dermatology), Duke University Medical Center, Durham, North Carolina

Robert Machemer, M.D. Professor and Chairman, Department of Ophthalmology, Duke University Medical Center, Durham, North Carolina

John Marshall, Ph.D. Reader in Experimental Pathology, Departments of Pathology and Visual Science, Institute of Ophthalmology, University of London, London, England

Brian R. Mullin, M.D. Pathologist, Department of Pathology, Cleveland Metropolitan General Hospital; Assistant Professor, Department of Pathology, Case Western Reserve University School of Medicine, Cleveland, Ohio

Sheldon R. Pinnell, M.D. Professor, Department of Medicine (Dermatology), Duke University Medical Center, Durham, North Carolina

Merlyn M. Rodrigues, M.D., Ph.D. Head, Department of Clinical Eye Pathology, National Eye Institute, National Institutes of Health, Bethesda, Maryland

Barbara A. Wiard Streeten, M.D. Professor, Departments of Ophthalmology and Pathology, State University of New York Upstate Medical Center, Syracuse, New York

George O. Waring III, M.D. Associate Professor, Department of Ophthalmology, Emory University Medical School, Atlanta, Georgia

Anthony F. Winder, M.A., B.M., B.Ch., Ph.D. Senior Lecturer and Head of Chemical Pathology, Department of Pathology, Institute of Ophthalmology and Moorfields Eye Hospital, University of London; Honorary Lecturer, Department of Lipids and Diabetes, St. Bartholomew's Hospital, London, England

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