Strabismus
Ophthalmic
Symposium II

JAMES H. ALLÉN

Strabismus Ophthalmic Symposium II

Edited by

JAMES H. ALLEN, M.D.

Professor and Chairman of the Department of Ophthalmology, School of Medicine, The Tulane University of Louisiana; Chief of Ophthalmology, Hutchinson Clinic; Senior Visiting Surgeon and Head of the Department of Ophthalmology, Tulane Unit, Charity Hospital of New Orleans; Senior Surgeon and Director of Training Program in Ophthalmology, New Orleans Eye, Ear, Nose and Throat Hospital, New Orleans, La.

With 251 Illustrations

Copyright © 1958 by

THE C. V. MOSBY COMPANY

(All rights reserved)

PRINTED IN THE UNITED STATES OF AMERICA

Library of Congress Catalog Card Number 58-2977

CONTENTS

Chapter 1.	
THE ANATOMY OF THE EXTRINSIC MUSCLES OF THE EYE (Walter H. Fink, M.D.)	17
Chapter 2.	
THE NATURE OF NORMAL BINOCULAR VISION—THE FUSIONAL PROCESS (Kenneth C. Swan, M.D.)	
Chapter 3.	
INTERRELATIONSHIP OF THE SENSORY AND MOTOR COMPONENTS OF BIN-OCULAR VISION (Kenneth C. Swan, M.D.)	
Chapter 4.	
THE VOLUNTARY MECHANISM FOR EYE MOVEMENTS (Francis Heed Adler, M.D.)	127
Chapter 5.	
THE INVOLUNTARY OR REFLEX MECHANISM (Francis Heed Adler, M.D.)	150
Chapter 6.	
THE REFLEX MECHANISM CONTROLLING OCULAR MOVEMENTS (CONTINUED) (Francis Heed Adler, M.D.)	165
Chapter 7.	
ETIOLOGY OF HETEROPHORIA AND HETEROTROPIA (Hermann M. Burian, M.D.)	174
Chapter 8.	
NORMAL AND ANOMALOUS CORRESPONDENCE (Hermann M. Burian, M.D.)	184
Chapter 9.	
THE BLIND SPOT MECHANISM IN STRABISMUS (Kenneth C. Swan, M.D.)	201

Chapter 10.	
DIAGNOSIS OF NEUROMUSCULAR ANOMALIES OF THE EYES (Hermann M. Burian, M.D.)	212
Chapter 11.	
THE COVER TEST (Harold Whaley Brown, M.D.)	225
Chapter 12.	
SOME USES OF OPHTHALMIC PRISMS (George P. Guibor, M.D.)	244
Chapter 13.	
CLINICAL APPLICATION OF NEUROLOGY (George P. Guibor, M.D.)	261
Chapter 14.	
THE PRACTICAL USE OF ATROPINE IN THE TREATMENT OF STRABISMUS (George P. Guibor, M.D.)	302
Chapter 15.	
PRINCIPLES AND TECHNIQUES OF NONSURGICAL TREATMENT (Frank D. Costenbader, M.D.)	312
Chapter 16.	
CLINICAL COURSE AND MANAGEMENT OF ESOTROPIA (Frank D. Costenbader, M.D.)	325
Chapter 17.	
DIVERGENT DEVIATIONS (Philip Knapp, M.D.)	354
Chapter 18.	
TREATMENT OF DIVERGENT DEVIATIONS (Philip Knapp, M.D.)	364
Chapter 19.	
THE SURGICAL TREATMENT OF STRABISMUS (Philip Knapp, M.D.)	377
Chapter 20.	
CONGENITAL STRUCTURAL ANOMALIES OF THE MUSCLES (Harold Whaley Brown, M.D.)	391
Chapter 21.	
SURGERY ON THE OBLIQUE MUSCLES (Harold Whaley Brown, M.D.)	428
Chapter 22.	
RECESSION UNDER TENON'S CAPSULE (Kenneth C. Swan, M.D.)	453

CONTENTS	13	
ROUND TABLE DISCUSSION	462	
Appendix A TERMINOLOGY WITH EXTENDED COMMENTS ON THE POSITION OF REST AND ON FIXATION (Walter B. Lancaster, M.D.)	503	
Appendix B		
FACTORS UNDERESTIMATED, FEATURES OVEREMPHASIZED, AND	503	

Strabismus

Ophthalmic

Symposium II



Strabismus Ophthalmic Symposium II

Edited by

JAMES H. ALLEN, M.D.

Professor and Chairman of the Department of Ophthalmology, School of Medicine, The Tulane University of Louisiana; Chief of Ophthalmology, Hutchinson Clinic; Senior Visiting Surgeon and Head of the Department of Ophthalmology, Tulane Unit, Charity Hospital of New Orleans; Senior Surgeon and Director of Training Program in Ophthalmology, New Orleans Eye, Ear, Nose and Throat Hospital, New Orleans, La.

With 251 Illustrations

Copyright © 1958 by

THE C. V. MOSBY COMPANY

(All rights reserved)

PRINTED IN THE UNITED STATES OF AMERICA

Library of Congress Catalog Card Number 58-2977

CONTRIBUTORS

FRANCIS HEED ADLER, M.D.

Professor of Ophthalmology and Head of the Department, University of Pennsylvania Medical School, Philadelphia, Pa.

HAROLD WHALEY BROWN, M.D.

Clinical Professor of Ophthalmology, New York University Post-Graduate Medical School, New York, N. Y.; Attending Ophthalmologist, Manhattan Eye, Ear and Throat Hospital, New York, N. Y.; Director of Myology, Brooklyn Eye and Ear Hospital, Brooklyn, N. Y.; Consultant in Ophthalmic Myology, Newark Eye and Ear Infirmary, Newark, N. J.; Consultant Ophthalmologist, New York Eye and Ear Infirmary, New York, N. Y.; Consultant Ophthalmologist, St. Clare's Hospital, New York, N. Y.

HERMANN M. BURIAN, M.D.

Professor of Ophthalmology, College of Medicine, State University of Iowa, Iowa City, Iowa.

FRANK D. COSTENBADER, M.D.

Senior Attending Ophthalmologist, Children's Hospital, Washington, D. C.; Senior Attending Ophthalmologist, Episcopal Eye, Ear and Throat Hospital, Washington, D. C.; Senior Attending Ophthalmologist, Washington Hospital Center, Washington, D. C.; Consultant in Pediatric Ophthalmology, Columbia Hospital for Women, Washington, D. C.; Lecturer in Pediatric Ophthalmology, Georgetown University School of Medicine, Washington, D. C.

WALTER H. FINK, M.D.

Consultant in the Department of Ophthalmology, Minneapolis General Hospital, Minneapolis, Minn.; Visiting Surgeon, Abbott Hospital, Minneapolis, Minn.; Visiting Surgeon, St. Mary's Hospital, Minneapolis, Minn.

6

GEORGE P. GUIBOR, M.D.

Attending Ophthalmologist, Ryburn Memorial Hospital, Ottawa, Ill.; Associate Attending Ophthalmologist, Children's Memorial Hospital, Chicago, Ill.; Consultant Ophthalmologist, Children's School Hospital, Chicago, Ill.; Associate Attending Ophthalmologist, St. Luke's Hospital, Chicago, Ill.

PHILIP KNAPP, M.D.

Instructor in Ophthalmology, Columbia University College of Physicians and Surgeons, New York, N. Y.; Assistant Ophthalmologist, Columbia-Presbyterian Medical Center, New York, N. Y.

KENNETH C. SWAN, M.D.

Professor and Head of the Department of Ophthalmology, University of Oregon Medical School, Portland, Ore.

The contributors and the editor
respectfully
dedicate this book
to
the memory of
Walter B. Lancaster, M.D.
and
Richard G. Scobee, M.D.



PREFACE

This volume is based on the second Symposium on Strabismus sponsored by the New Orleans Academy of Ophthalmology. Insofar as possible the panel was composed of the same group who met some six years earlier in Iowa City, Iowa, for the first Symposium of this type.

The material again represents the viewpoints of the various authors without alteration in respect to material covered by other men in the Symposium. Editing of the papers has been limited almost entirely to the arrangement of the material in the proper order for publication.

It is interesting to the editor that although basic differences still exist, many differences which apparently existed in the first Symposium have been resolved through more careful use of terminology as suggested by the late Dr. Walter B. Lancaster. For that reason and because his message is still timely, two of his papers from the first Symposium are reprinted in the Appendix.

The editor wishes to acknowledge the invaluable assistance of Dr. Edmund Leckert, Jr., for recording the discussions; Dr. Roderick Macdonald, Jr., and Ruth and Mary Helen Allen, for their assistance in reading and checking proofs; the several hard working secretaries who typed and retyped the material; and the various authors and publishers, for permission to use several illustrations.

James H. Allen, M.D.

New Orleans, La.



CONTENTS

Chapter 1.	
THE ANATOMY OF THE EXTRINSIC MUSCLES OF THE EYE (Walter H. Fink, M.D.)	17
Chapter 2.	
THE NATURE OF NORMAL BINOCULAR VISION—THE FUSIONAL PROCESS (Kenneth C. Swan, M.D.)	
Chapter 3.	
INTERRELATIONSHIP OF THE SENSORY AND MOTOR COMPONENTS OF BIN- OCULAR VISION (Kenneth C. Swan, M.D.)	
Chapter 4.	
THE VOLUNTARY MECHANISM FOR EYE MOVEMENTS (Francis Heed Adler, M.D.)	127
Chapter 5.	
THE INVOLUNTARY OR REFLEX MECHANISM (Francis Heed Adler, M.D.)	150
Chapter 6.	
THE REFLEX MECHANISM CONTROLLING OCULAR MOVEMENTS (CONTINUED) (Francis Heed Adler, M.D.)	165
Chapter 7.	
ETIOLOGY OF HETEROPHORIA AND HETEROTROPIA (Hermann M. Burian, M.D.)	174
Chapter 8.	
NORMAL AND ANOMALOUS CORRESPONDENCE (Hermann M. Burian, M.D.)	184
Chapter 9.	
THE BLIND SPOT MECHANISM IN STRABISMUS (Kenneth C. Swan, M.D.)	201