International Glaucoma Symposium
Nara / Japan, May 7–11, 1978

President: W. Leydhecker

Organizers: W. Leydhecker, S. Mishima, Y. Kitazawa
in cooperation with: Japanese Glaucoma Club

Editors: G. K. Kriegstein and W. Leydhecker

Participants of the Nara-Symposium
We are indebted to the following producers for substantial help:

Allergan Pharmaceuticals, Inc., Irvine, Ca., USA
Alza Corporation, Palo Alto, USA
American Optical Comp., West-Germany
Bosotheim GmbH, Biberach, West-Germany
C.H. Boehringer Sohn, Ingelheim, West-Germany
Chemie Grünenthal GmbH, Stolberg, West-Germany
Optotechnik Heine K.G., Herrsching, West-Germany
Pharm-Allergan Vetr. GmbH, Karlsruhe, West-Germany
Stierlen-Muquet AG, Rastatt, West-Germany
Dr. K. Thomae GmbH, Biberach, West-Germany
Dr. Robert Winzer, Chem.-Pharm. Fabrik, Konstanz, West-Germany

Foreword of the President of the International Council of Ophthalmology ........ IX
Preface ................................................................. XI
List of Contributors ................................................. XIII
Carboanhydrase Inhibitor Test for Early Detection of Glaucoma (Erik Linfer) ... 1
Discussion ............................................................. 5
Discussion ............................................................. 17
Adrenergic Mechanism in the Outflow Channels of Normal and Glaucomatous Eyes (Maurice E. Langham) ............................................................. 19
Discussion ............................................................. 25
New Hypothesis on Anterior Chamber Developmental Anomalies Associated with Glaucoma (Carl Kupper) ............................................................. 27
Results of Goniotomy and Trabeculotomy as the Initial Surgical Procedure in the Treatment of Congenital Glaucoma (Celso Antonio de Carvalho, Alberto Jorge Betinjane, Mario Luiz Camargo) ............................................................. 33
Congenital Glaucoma: Light and Scanning Electron Microscopy of Trabeculotomy Specimens (Roberto Sampaiolesi, Jorge O. Zarate, Rafael Caruso) .... 39
Otto Barkan and the Pathophysiology of Primary Congenital (Infantile) Glaucoma (Robert N. Shaffer) ............................................................. 53
Discussion ............................................................. 57
Earliest Visual Field Disturbances in Glaucoma (Stephen M. Drance) ........... 61
Kinetic Perimetry: Interobserver Variations (Nassim Calixto, Yehuda Waisberg, Geralda F. Costa, Maria A. Gomes) ............................................................. 65
Automatic Perimetry in Secondary Prevention of Glaucoma (Bo Bengtsson and C.E.T. Krakau) ............................................................. 71
Discussion ............................................................. 77
Foreword

The International Council of Ophthalmology agreed to the creation of an International Glaucoma Committee, which should have a limited number of members, 40 at a maximum. This committee will hold a closed meeting every 4 years on the occasion of the International Congress of Ophthalmology and will report to the International Council on the practical and clinical advances in glaucoma detection and treatment. This report will be published in the proceedings of the International Congress. The committee will advise and direct the activities of the International Glaucoma Society, which will hold a glaucoma symposium prior to each International Congress of Ophthalmology and which will be open to anyone interested in glaucoma.

This is now the first meeting of the committee. When I look at the program and the names of the speakers, I am convinced that it will be very fruitful. This is my most sincere wish.

I should like to thank very warmly Prof. Leydhecker for preparing the organization of this group and the scientific program and Prof. Mishima, Prof. Kitazawa, and all of their staff for having so beautifully organized this symposium, which will be very successful, and for having received us with such generous hospitality.

I am very grateful to each of the members of the International Glaucoma Committee and to each of our Japanese friends involved in this symposium.

Prof. Dr. Jules François
President of the International Council of Ophthalmology
The first meeting of the International Glaucoma Committee was held at Nara, the ancient capital of Japan. The symposium continued the tradition of similar meetings preceding the International Congress of Ophthalmology: St. Marguerithe (1954), Liège (1958), Tutzing (1966), Albi (1974). Why did all participants decide to continue such meetings in the future? There are several reasons:

We need an international forum for the discussion of a disease that still continues its sinister role in all countries, in spite of the world-wide efforts to fight it. A discussion of experts from different regions of the world will show new facets of the disease, since ophthalmological traditions, research interests, and clinical decisions differ from country to country. The discussions show to what extent differences are based on facts and to what extent on beliefs and how much they are possibly influenced by a different structure of research and of clinical medicine. Only a meeting that allows more time to discussions than it does to papers will give more opportunity for criticism than a journal or a meeting of the traditional type could do. Discussions will necessarily have an open end character, which is not pleasing to anyone who hopes for thumb rules. At our symposium, all papers were precirculated to each member, and at the meeting only a short introduction was required for each contribution, so that most of the time was free for discussions. Further advantages of this type of meeting are that: (1) very recent work can be presented and criticized before publication; (2) it is possible to discuss research that gave unsatisfactory results and that one would not easily bring to the attention of a large audience; (3) prospects of research can be discussed; (4) it becomes clearer to each research worker where he will work at his best, basically or clinically; (5) the program can be kept very flexible; and (6) hopefully, efforts of different centres or individuals might be combined. By meeting each other, by talking and listening to each other, both inside and outside the lecture hall, we will succeed in understanding each other. This requires a small number of participants who live under the same roof for a few days, if possible in an area remote from the noise and distractions of a large city. This was or-
ganized at its best by Dr. Kitawa, who did a marvelous job together with his residents and secretaries to make the meeting a full success. The thanks of all participants are also due to the commercial companies who gave financial support to the meeting.

Finally, the thanks of the editors are due Springer Publishers for their co-operation in preparing this volume.

Würzburg, 12.7.78

W. Leydhecker

List of Contributors

Armaly, M.F.
George Washington University, Medical Center, Department of Ophthalmology
2150 Pennsylvania Ave., Washington, D.C. 20037, USA

Auborn, E.
University Eye Hospital
Schleichstraße 12, 7400 Tübingen, Federal Republic of Germany

Bengtsson, B.
University Eye Clinic, Department of exp. Ophthalmology
S-22185 Lund, Sweden

Calixto, N.
1177, Grao Mogol, Belo Horizonte,
Brasil

De Carvalho, C.A.
Rue Prof. Artur Ramos, 96 8° and.
Sao Paulo-01454, Brasil

Dreager, J.
Augenklinik Zentralkrankenhaus
St. Jürgenstraße, 2800 Bremen, Federal Republik of Germany

Drence, S.M.
University of British Columbia, Department of Ophthalmology
2950 Willow Street, Vancouver, B.C. V5Z 3N9, Canada

Ernest, J.T.
University of Wisconsin Hospitals, Center for Health Sciences
1300 University Ave., Madison, Wisc. 53706, USA

Harms, H.
University Eye Hospital
Schleichstraße 12, Tübingen, Federal Republik of Germany

Hayreh, S.S.
University of Iowa, Department of Ophthalmology, Iowa City
Iowa 52242, USA
Kitazawa, Y.
University of Tokyo, School of Medicine, Department of Ophthalmology
7-3-1 Hongo, Bunkyo-Ku, Tokyo-113, Japan ........................................ 169

Kolker, A.E.
Washington University, Department of Ophthalmology
660 South Euclid Ave., St. Louis, Miss. 63110, USA .............................. 11

Krasnov, M.
Director State Institute of Ophthalmology, 5 Pogodinskaja st.
Moscow-119435, USSR ................................................................. 201

Kriegstein, G.K.
University Eye Hospital
Josef-Schneider-Straße 11, 8700 Würzburg, Federal Republik of Germany ... 179

Kupfer, C.
National Eye Institute, National Institute of Health, Buildg. 31
9000 Rockville Pike, Bethesda, Maryland 20014, USA .......................... 27

Langham, M.E.
The Wilmer Institute, Johns Hopkins University, Ophthal. Research Unit
Baltimore, Maryland 21205, USA ......................................................... 19

Leopold, I.H.
University of California, California College of Medicine, Department of
Ophthalmology
Irvine, Cal. 92717, USA ................................................................. 149

Leydecker, W.
University Eye Hospital
Josef-Schneider-Straße 11, 8700 Würzburg, Federal Republik of Germany ... 101

Limér, E.
University of Göteborg, Department of Ophthalmology, Sahlgren's Hospital
S-41345 Göteborg, Sweden ..................................................................... 1

Mishima, S.
University of Tokyo, School of Medicine, Department of Ophthalmology
7-3-1 Hongo, Bunkyo-Ku, Tokyo-113, Japan ........................................ 159

Podos, St.
Department of Ophthalmology, Mount Sinai Hospital
New York City, N.Y., USA ................................................................. 141

Sampaiolesi, R.
Parana 1239, 1., A-Buenos Aires, Argentina ....................................... 39

Sears, M.L.
Yale University, School of Medicine
333 Cedar Street, New Haven, Conn. 06510, USA ............................. 153

Shaffer, R.N.
University of California, Glaucoma Clinic A 775
San Francisco, Cal. 94143, USA ....................................................... 53