STRABISMUS AND OCULAR MOTILITY DISORDERS

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Proceedings of the Sixth Meeting of the International
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Edited by

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PREFACE

This book is the collection of papers presented at the sixth Congress of the International Strabismological Association (I.S.A.) which took place from March 11th to 16th, 1990 at Surfers Paradise, Queensland, Australia. The meeting was under the Chairmanship of the I.S.A. President Gunter K. von Noorden. A Local Committee, chaired by Bill Gillies, provided an impeccable organization of every detail and made the Congress and the stay in Australia a memorable experience for all the participants.

There was a good attendance and many countries were actively represented. The Program Committee chaired by Peter Fells did an excellent job in providing many stimulating scientific sessions. Around 75 papers and posters were presented. The majority of them are published in this book. I am grateful to the authors for having accurately prepared their papers according to our request and for having provided them in due time in order to be able to have the book ready in a reasonably short time and thus serve the reader with an up-to-date and "fresh" product. I have also included the abstracts of those papers the manuscripts of which were missing, in order to have a proceedings volume as complete as possible.

The English used in this book may show some minor or major pitfalls, as it is not the native language of many authors. I believe, however, that this is a positive element because it shows the effort made by all our colleagues to use a common denominator to allow the international spread of their contributions. Some papers have had to be rewritten by the Editor.

One of the highlights of the Congress was a round table on the treatment of refractive accommodative esotropia. A transcript of this round table appears in this volume, thanks to the friendly cooperation of the moderator and the panelists.

With the preparation of this proceedings volume I end my office of Editor. I thank the I.S.A. Council and Membership for their support and confidence. I am particularly pleased by the fact that Macmillan Press has accepted to be our Publisher.

Emilio C. Campos
Modena, May 1990

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The Linksz Award and Medal

Past Recipients of the Linksz Award and Medal:

1978 Alfredo Arruga
1982 Robert Crone
1986 Alan B. Scott

Arthur Linksz

The 1990 Linksz Award and Medal was Presented to:

ELFRIEDE AULHORN
Professor Emeritus
Pathophysiology of Vision
University Eye Clinic
TÜBINGEN
Federal Republic of Germany

Elfriede Aulhorn

Introduction of the Recipient of The Linksz Award and Medal: Elfriede Aulhorn

by Gunter K. von Noorden

The Linksz Award was donated in memory of Arthur Linksz by the Smith-Kettlewell Institute, in recognition of a scientist whose contributions has advanced our knowledge in the field of strabismus. This year's recipient is Prof. Elfriede Aulhorn, a member of our association, whose name is familiar to all of you.

Elfriede Aulhorn, after graduating from Medical School, began her scientific career at the Physiological Institute of the University of Goettingen in Germany. In 1954 she started her residency in ophthalmology at the University of Tuebingen where she rapidly advanced through the ranks and eventually became professor and director of the department for the Pathophysiology of Binocular Vision. She was eminently successful in analyzing the quantitative correlations between different visual functions, to perform such investigations under normal conditions of seeing and to apply this knowledge to the development of clinical testing procedures. Her enthusiasm for research and great originality has propelled her to the forefront of visual psychophysicists.

She was instrumental in developing the Tuebinger perimeter and the mesoptometer. Through her perimetric research we have learned about abnormal retinal sensitivity profiles in amblyopic eyes and the pathophysiology of eccentric fixation. Perhaps her major contribution pertaining to the field of strabismus, however, was the ingenious design of the phase difference haploscope. With this instrument she has taught us about interocular inhibition in normal binocular vision and the spectrum of sensory disturbances in amblyopia and suppression.

I have had the good fortune of knowing Prof. Aulhorn for the past 30 years and ever since she generously offered us living quarters in her house during my postgraduate fellowship at the University of Tuebingen. Her great personal charm and warmth and her readiness to extend a helping hand make her a very special person. When I visited her a few months ago her house was brimming with refugees from Eastern Europe whom she had literally picked off the street to offer shelter. She told me then how much she was looking forward to receiving this award. Unfortunately and quite unexpectedly, however, she had to undergo a serious operation a few weeks ago which made it impossible for her to travel and has asked me to convey her gratitude to our organization for bestowing this honor upon her.

OBITUARIES

Thomas Keith Lyle (1904–1987)

by Kenneth Wybar

Thomas Keith Lyle, who died on Saturday 9th, May, 1987, at the age of 83 years, was a distinguished ophthalmic surgeon who achieved an outstanding reputation in ophthalmology, particularly in strabismus.

He was educated at Dulwich College, London, Sidney Sussex College, Cambridge, and King's College Hospital, London, where he was the Burney Yeo Scholar. He was awarded the Todd Medal for clinical medicine. He became a Licentiate in Medicine and Surgery of the Society of Apothecaries in 1928, and it is interesting that, although he became a Bachelor of Medicine in 1930, he continued to the LMSSA degree. This is almost certainly a reflection of his abiding love for the Worshipful Society of Apothecaries; he served on the Court for many years and became a highly regarded Master.

He became a Member of the Royal College of Physicians of London in 1930, and a Fellow of the Royal College of Surgeons of England in 1932. It was unusual at that time for an aspiring ophthalmic surgeon to obtain two such competitive higher qualifications in medicine and in surgery but his breadth of academic training is reflected in his interests in the problems of strabismus which reached out into the wider fields for medicine and neurology, rather than being confined to its sensory and motor complexities. He became a Master of Surgery in 1933, Doctor of Medicine in 1935, and Fellow of the Royal College of Physicians of London by election in 1963. He was created a Companion of the British Empire in 1963.

Keith Lyle was the son of an ophthalmic surgeon at King's College Hospital - Herbert Willoughby Lyle - who had been a physiologist in his earlier days, and subse-

quently become Dean of the Medical School at King's College. It is fascinating to try and imagine the scene in the billiard room of Willoughby Lyle's house in Bromley many years ago when, on certain Saturday evenings, father, with a billiard-cue as a pointer, directed a wide range of questions on ophthalmology to Keith, his half-brother Eric Lyle and his cousin Geoffrey Cashell. This is an unusual use of a billiard-cue, but it may well have fostered Keith's outstanding ability to blend a deep knowledge of the theoretical aspects of a topic with a characteristically decisive approach!

Keith Lyle had little time for the junior who showed only a causal interest in ophthalmology, but there is a generation of juniors who are for ever grateful to him for the solid grounding which he provided in their formative years. He also had little time for ophthalmologists, particularly strabismologists, who created only fanciful theories, and he dismissed them as "hot air merchants."

In the years between 1929 and 1933 he was House Physician, House Surgeon, Senior Surgical Registrar and First Assistant in the Neurological Department at King's College Hospital. It is the mark of an outstanding student to be appointed to so many post-graduate appointments in his Teaching Hospital. Later he became House Surgeon at the Royal Westminster Ophthalmic Hospital (subsequently Moorfields Eye Hospital, High Holborn) which sealed his abiding interest in ophthalmology.

He served with the Royal Air Force Volunteer Reserve in World War II, from 1939 to 1946 and reached the rank of Air Commodore. He was also Consultant in Ophthalmology to the Royal Air Force overseas, and was mentioned in dispatches. He played a vital part in the war years in emphasizing the importance of the diagnostics and treatment of disorders of ocular motility in pilots at a time when combat skills were dependent largely on straight-forward visual accuracy. He continued his work with the Royal Air Force after the war as Civilian Consultant, and was also Civilian Consultant to the Ministry of Aviation.

Keith Lyle was Surgeon to Moorfields Eye Hospital, Ophthalmic Surgeon to King's College Hospital, and to the National Hospital for Nervous Diseases. He was Dean of the Institute of Ophthalmology at a time when post-graduate teaching in ophthalmology with large numbers of students from home and overseas was in a thriving phase. His skill and enthusiasm as Dean contributed greatly to the enhancement of the Institute and Moorfields as cen-

ters of excellence.

He achieved many other recognitions: Examiner in Ophthalmology to the Royal College of Surgeons of England, and of Edinburgh; President of the Ophthalmological Society of the United Kingdom; President of the Faculty of Ophthalmologists; President of the Section on the United Services, and Vice-president of the Section of Ophthalmology of the Royal Society of Medicine; Founder Member and Vice-President of the Consilium Europaeum Strabismi Deditum - now the European Strabismological Association; President of the International Strabismological Association; Member of the Orthoptic Board; and, Hospitaller to the Most Venerable Order of the Hospital of St. John of Jerusalem which was an appointment very close to his heart. He expended much time and effort in maintaining the excellence of St. John's Ophthalmic Hospital in Jerusalem which attracts patients from widespread areas of the Middle East, and on his retirement in 1980 he was honored by the distinction of a Knight Grand Cross.

Keith Lyle's interests in the problems of ocular motility formed a wide spectrum, but he had a special interest in the motor aspects of squint, particularly of an incomitant nature; this was fostered almost certainly by his exposure to many cases of trauma in the Royal Air Force in World War II, and subsequently by his long association with the National Hospital for Nervous Diseases. His interest in incomitant squint is highlighted by his emphasis on the necessity of a comprehensive pre-operation assessment with a precise determination of the deviation (horizontal, vertical and torsional) in the cardinal positions of gaze and on near and distant fixation. It is also highlighted by his step-by-step approach to the surgical management of such cases in order to achieve a restoration of binocular fixation in the primary position and in as much as possible of the the binocular field of fixation. Sometimes this policy demanded a relatively minor final adjustment of one of the extrinsic ocular muscles, but this provided a long-term result which was out of all proportions to the trivial nature of the operation.

He contributed extensively over the whole of his working life to the journals, and he also wrote several textbooks. One of the early books - Practical Orthoptics in the Treatment of Squint - was published in 1937 with Sylvia Jackson, an orthoptist, which became the "bible" for orthoptic students in the United Kingdom and also many other countries. Keith Lyle asked me to collaborate in the production of the 5th edition with the addition

of several new chapters; it is poignant that some time before his death we were planning a new edition. He wrote the 8th edition of Worth and Chavasse's Squint, and subsequently he produced the 9th edition in collaboration with Geoffrey Bridgeman. He also edited the 13th edition of May and Worth's Diseases of the Eye with Alex Cross.

Keith Lyle gave several eponymous lectures - the Charles H. May Memorial Lecture in New York, the Doyne Memorial Lecture in Oxford and the Alexander Welch Lecture in Edinburgh. He was awarded the Nettleship Medal and the Richardson Cross Medal.

Keith Lyle was a man with vast intellectual abilities, with great clinical and surgical skills, and with an abundance of physical energy. I remember many years ago when Keith was Dean and I was Tutor at the Institute of Ophthalmology we traveled together on many occasions in foot around lunch-time from the Institute of Ophthalmology in Judd Street to Moorfields Eye Hospital at High Holborn. The rate of progress set by Keith was prodigious, but this was much less startling than the route taken. He had a profound belief that the shortest distance between two points is a strait line, but its application in crossing Southhampton Row in a diagonal way at rush-hour raised certain doubts in my mind. However, there was never any mishap; whether this was due to Keith's speed or his sheer determination remains a mystery!

Keith Lyle married Jane Bouverie Maxwell in 1949, and they have three daughters and a son. For the greater part of their married life they lived at a charming house - Cherrycroft - in Oxfordshire. It was always a pleasure to visit their happy family home.

Arthur Linksz (1900–1988)

by Gunter K. von Noorden

Arthur Linksz, one of the world's authorities on color vision, physiological optics, binocular and space perception died March 19, 1988, at the age of 87. Born in Hungary, he immigrated to the USA in 1939. He became a fellow and later an instructor at the famous Dartmouth Eye Institute in Hannover, New Hampshire, where he collaborated with Bielschowsky, Ogle, Herzau, Lancaster, Burian and Boeder. Later he moved to New York where he became Clinical Professor of Ophthalmology at New York University and New York Medical College and was engaged in private practice. He authored six books and numerous articles. An enthusiastic teacher with a keen and compassionate mind, Linksz held a lifelong interest in the arts, literature and humanities. He was a charter member of the I.S.A. and will be memorized through the Linksz Medal which is bestowed at each I.S.A. congress upon a scientist whose contributions have advanced our knowledge in the field of strabismus.

Charles Thomas (1906-1987)

by Annette Spielmann

Professor Charles THOMAS unexpectedly died the 29th of April 1987 at dawn after a heavy day of work. Indeed, still dynamic and enthusiastic at the age of 80, he continued to practise his art privately in the same way as he did during his hospito-university career.

Born the 25th of July 1906 in Avon, Professor THOMAS, student at the "Santé Militaire" school of Lyon, studied medicine in Nancy. His studies were brilliant: interne in 1929, "Chef de Clinique" of Ophthalmology in 1936, he was first "agrégé" in 1939. He was only 33 and already Professor of Ophthalmology. In 1948, at the age of 42, he became Head Professor of Ophthalmology.

Thanks to him, the ophthalmological service of Nancy acquired a reputation which became more and more wide-spread. Mr. THOMAS was indeed one of the most skilful surgeons of his generation. He was one of the pioneers of the new techniques for cataracts, for glaucoma, for retinal detachment and mainly for corneal grafts. It was his initiative that led to the creation of the French Eye Bank in 1944.

It was mainly a passion for strabismus that animated the life of this dynamic Chief of Service. His deep friendship with Professor Curt CÜPPERS from Giessen was particularly productive. The scientific collaboration of these two masters of European Strabismology gave new momentum to research in strabismus and in amblyopia. Professor THOMAS created the Orthoptic Center of Nancy and was the initiator of the French Certificate of Orthoptics. Thanks to him a new profession was born in France and Nancy became a renowned school of orthoptics. The department of orthoptics was not only limited to teaching, research and treatment, it was also the starting point for the prevention of functional amblyopia which practically disappeared in Lorraine.

It was not surprising that numerous well deserved honors were

bestowed on such an extraordinary man. He was "Officier of the Legion d'Honneur", "Commandeur de l'Ordre National du Mérite", "Commandeur de l'Ordre des Palmes Académiques", "Chevalier de l'ordre de la Santé Publique", "Commandeur de l'Ordre Grand Ducal de la Couronne de Chêne de Luxembourg", et "Commandeur de l'Ordre du Million d'Eléphants et du parasol Blanc du Laos". Because of the exceptional value of his contribution to the development of orthoptics, he was Laureate of the National Academy of Medicine in 1965 and Corresponding Member in 1984. President and Founder of the European Strabismological Association during the days of Giessen in 1954, he was elected Vice-President of the International Strabismological Association the same year.

In his service, Mr. THOMAS was one of the "Mandarins" of his era. A relentless and indefatigable worker, he oversaw everything, demanding the same of others as he did of himself and not understanding work badly done. Mr. THOMAS was certainly a Mandarin, but a Mandarin with a big heart. Heedful of the problems of all, available to both his patients and his students, he was firmly committed to the training and the promotion of his personnel.

He was a brilliant writer who sometimes wielded a pen "dipped in acid" when addressing letters to troublesome administrations whose rules he choose to challenge. This gift for writing, his brilliant and clear mind, his orational talent, was evident in his courses and conferences which were alway heavily attended. Mr. THOMAS was a highly appreciated teacher but he was above all a subtle clinician.

In his everyday life, Mr. THOMAS, a cultivated person, appreciated gastronomical pleasures and his boat on the Mediterranean. His vacations in Juan-Les-Pins were very dear to him. He spent all his free moments with Mrs. THOMAS, his companion, to whom he was deeply attached. A devoted husband, he adored his daughter and his two grandchildren. How proud he must have been to be a great grandfather !

Mr. THOMAS conserved his passion for life, for his family and for his work until the last moment. He couldn't reconcile himself to abandoning his consultations nor his operations. At 80 years of age, he had a steady hand and a mind which has lost none of its intellectual qualities. He remained full of curiosity, energy and humour: he was still young, that is the way his numerous patients saw him. It is in this way that we will remember this enthusiastic ophthalmologist and strabismologist of great merit unhindered by age.

Tunekazu Yuge (1906–1987)

by Shinobu Awaya

Dr. Tunekazu Yuge, Emeritus Professor of Kyoto Prefectural University of Medicine, who died December 18, 1987 at the age of 82 years, was an Honorary Member of the Japanese Ophthalmological Society and the Honorary President of the Japanese Association of Strabismus and Amblyopia. He was a distinguished ophthalmologist, who made great contributions in many aspects of ophthalmology, particularly in strabismus and amblyopia.

He published many scientific papers and books on motor and sensory anomalies of strabismus. Through his books and lectures he introduced many of his unique concepts and appropriate technical terms, which he himself coined, in various fields of ophthalmology. He was a strict but warm-hearted teacher and educated many young ophthalmologists and orthoptists, who showed interest in strabismus and amblyopia, not only from his own department but also from many other departments at universities all over Japan. He was the head of the Organization which established the official status of the certified orthoptist in Japan.

He was the Session Chairman of the III Congress of the International Strabismological Association held in Kyoto in 1978. Those who attended this meeting always remember the great success of the meeting both in terms of scientific level and of organization which was in the hands of the Local Organizing Committee headed by Dr. Yuge.

In 1986, Dr. Yuge accepted honorary membership in the International Strabismological Association. It is with deep grief that our Association marks the passing of Dr. Yuge who was an outstanding strabismologist and great teacher and we shall always remember him with respect and affection.