Modern Cataract Surgery
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Although the first implantation of an intraocular lens (IOL) was undertaken just over 50 years ago (by Sir Harold Ridley, November 29, 1949 at St. Thomas’s Hospital, London, UK), removal of the natural lens with implantation of an IOL is the most commonly performed surgical intervention in humans. With small-incision surgery, using topical anesthesia, ultrasound or laser energy to remove the cataractous lens material and implantation of a foldable IOL, the patient can experience low invasiveness and fast rehabilitation of visual function. In this book, experts in the field of cataract surgery from all over the world have documented their clinical experience, research results and inventions to achieve the goal of successful modern cataract surgery.

The present volume starts with a summary on topical anesthesia, followed by new research on ophthalmic viscoelastic substances (OVD), formerly called ‘viscoelastics’. Many of the articles report on new equipment and techniques for cataract removal, particularly in difficult surgical situations such as hard nucleus, mature cataracts and loss of lens material into the vitreous cavity as a complication of cataract surgery. Following removal of the lens, the now aphakic patient should be made pseudophakic to achieve acceptable vision. One important element of IOL implantation is to choose the correct lens power. The improvement of IOL power calculations is demonstrated by optical coherence biometry, a new measuring device to determine axial length. Two elements of sophisticated cataract surgery are to implant the IOL through an incision which is as small as possible but still large enough to reduce the risk of inflammation and induced astigmatism, and to choose the best IOL material and design for good long-term results. New methods to correct aphakia include the implantation of more than one IOL in high hyperopes and myopes (piggyback implantation) and multifocal IOLs (treatment of presbyopia after natural lens removal).
I wish to thank Prof. Behrens-Baumann for the invitation to edit this book in the series of *Developments in Ophthalmology*, Susanna Ludwig and Susanne Stolz of S. Karger Publishers for their editorial help, and all contributing authors for their effort to provide scientific information in this exciting subspecialty of ophthalmology.

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