Proctor Lecture, 1974

On the presentation of the Proctor medal of the Association for Research in Vision and Ophthalmology to Jin Kinoshita

It is indeed a privilege to present the Proctor Medal to Dr. Jin Kinoshita on behalf of the Trustees of the Association for Research in Vision and Ophthalmology. This highest award in vision research clearly should be given not only in recognition of outstanding research but for the impact that such accomplishments have had on the community of fellow scientists. Such an impact should stimulate and expand both laboratory and clinical activities and result in the proliferation of new ideas and new concepts that can be tested experimentally. In addition, this award should also signify the recipient's continued contributions to vision research, which will lead ultimately to an understanding of the etiology and pathogenesis of a particular disease. Such insight could provide a cure for the disease or, better still, bring about its prevention.

This year's Proctor Medalist is eminently suited in all these qualifications. In the decade following his receiving a doctorate in the Department of Biochemistry at Harvard Medical School, Dr. Kinoshita quickly rose to a position of leadership among ophthalmic biochemists throughout the United States. At that time it was a small group indeed. However, Dr. Kinoshita organized an annual informal meeting of ophthalmic biochemists held each year on Washington's Birthday in Boston. This leadership brought new investigators into this field, both in his laboratory at Harvard as well as in other laboratories throughout the country. Although still relatively small, the field of ophthalmic biochemistry continues to be recognized as one particularly high in the quality of its research.

In the early 1960's, Dr. Kinoshita began a series of experiments which culminated in the first experimentally verified hypothesis of the formation of cataract in galactosemia and, perhaps, in diabetes as well. The concept of "osmotic shock" with its attendant consequences for the lens led to studies of the enzyme, aldose reductase, in the lens. The role that this enzyme played in bringing about the osmotic imbalance between the inside and the outside of this tissue won the Friedenwald Award from the Association for Research in Vision and Ophthalmology for Dr. Kinoshita in 1965. His research continued to be directed toward attempts to delay the formation of cataract in experimental galactosemia by the use of aldose reductase inhibitors. First successful in the test tube and then successful in vivo, Dr. Kinoshita has now been able to slow down considerably the rate of development of experimental galactose cataracts in rats by the use of eye drops containing specific aldose reductase inhibitors. Yesterday's folly of trying to prevent the formation of cataracts by the use of eye drops has now been placed within the actual reach of the ophthalmologist of tomorrow. Surely these findings will rank among the most significant contributions to the field of vision research.
during the last 20 years. Dr. Kinoshita's efforts are now directed toward developing more potent aldose reductase inhibitors preparatory to clinical trials among diabetic patients in whom cataract develops at an earlier age as compared with nondiabetic patients. Thus is the cycle complete, beginning in the laboratory and ending in the clinic.

More recently, Dr. Kinoshita has turned his attention to the biochemistry of congenital cataracts, specifically one form occurring in mice. In a relatively short time, this research has established a most exciting hypothesis based upon the finding of an inhibitor of the enzyme, sodium-potassium-actuated ATPase, in the lens of such mice. Again, this work has had a profound effect on the ophthalmic biochemistry community, for it is the excitement generated by the leaders in a field which attracts the bright young investigators to seek their research fortunes in similar areas of investigation.

I am certain that Dr. Kinoshita's efforts in the laboratory will be further increased following awarding of the Proctor Medal as they were after receipt of the Friedenwald Medal. Today he provides leadership to the Laboratory of Vision Research at the National Eye Institute and continues to exert a profound influence upon the course of ophthalmic biochemistry, not only in the field of cataract research, but also in corneal and retinal research. This far-reaching influence is due in part to his brilliance as an investigator, to his broad interests and understanding in anatomy and physiology, as well as biochemistry, and perhaps most significantly, to his insight into the clinical aspects of the disease which forms the continuing backdrop against which his research in the laboratory continues. For all these reasons does Dr. Kinoshita deserve the Proctor Award. But above all, just as he is concerned and dedicated to the field of vision research in its broadest sense, he is also concerned and interested in the individual investigator with whom he comes in contact. All those who know him appreciate his warmth, his unlimited ability to understand and to help, and his ever present sense of honesty, sincerity, and dignity. It gives me great pleasure and personal satisfaction to be able to present Dr. Jin Kinoshita with the Proctor Medal for this year.

Carl Kupfer, M.D.