

Mr. ROGERS. We would like to see some accomplishments. Are we making any progress or are we just spinning around without getting too many results.

(The following information was subsequently submitted:)

PROGRESS IN EYE RESEARCH IN THE NATIONAL INSTITUTE OF NEUROLOGICAL DISEASES AND BLINDNESS

Because of impressive advances in the conquest of visual disorders made by Institute-supported studies in recent years, many thousands of men, women, and children have useful sight who might otherwise have faced their days in darkness.

At least 5,000 infants have been saved from blindness since Institute grantees a few short years ago discovered that too much oxygen was the cause of retrolental fibroplasia, a disease that strikes prematurely born infants in their first few months of life. Thousands of senior citizens have had their sight restored following cataract surgery that would have been impossible a decade ago. Recent techniques for transplanting corneas have restored sight to many blinded persons. Detection of glaucoma in its early stages, now possible due to Institute-supported discoveries, and new means of keeping the disease under control, assure many thousands of people that they will not lose their sight due to this insidious disease. There are many other accomplishments to which the NINDB can point with pride.

One of the most significant advances in therapeutics was the discovery by an NINDB grantee that herpes simplex, the most common cause of corneal ulcers and blindness, could be cured by the drug IDU. This was the first drug ever to be proved effective against any virus and has opened up new approaches into the broader study of antiviral drugs.

Continued advances in our understanding of the management of glaucoma and a more sophisticated use of drugs reduce the need for surgical intervention. New knowledge of the hereditary patterns of the disease now makes it possible to predict which individuals are prone to develop glaucoma and to treat persons at an early stage of the disease before any vision is lost.

Chemical research has provided valuable data on the physical and chemical properties of lens proteins, thus adding to our understanding of cataracts. Laboratory studies recently revealed the presence of the German measles virus within the cataractous lens of infants whose mothers had the disease early in pregnancy, a very important discovery in terms of our understanding of the mode of action of this virus in producing cataracts. The discovery of the safety and usefulness of alpha chymotrypsin to loosen the lens in cataract operations has aided in making cataract surgery one of the most successful operations in medicine.

Institute scientists were among the first to discover that the infection, toxoplasmosis, is a prominent cause of uveitis. Additional understanding of eye destruction as a reflection of a hypersensitivity of the body tissues of the eye represents another advance in the final conquest of this disease. The inflammation from both causes can now be modified by use of drugs.

Clinical studies in ophthalmology demonstrated that blindness could result from large doses of chloroquine, sometimes used to treat rheumatoid arthritis and related disorders.

Institute studies of corneas for transplantation have resulted in improved methods of freezing and dehydrating donor material for long-range shipment and storage. Discovery of the use of transparent silicone in implants offers new hope for some patients for whom corneal transplants are unsuccessful or cannot be used. Some plastic corneal implants have been used with success in experiments which also offer hope for the future. The effective use of suppressive drugs has been assured through studies connected with corneal transplant surgery.

Accurate understanding of the retina has been increased through NINDB studies. More is known about the causes of retinal detachment and improvements have been made in surgical techniques. Grantees now report successful laser reattachments in many patients.

Greater understanding and better management of many other visual disorders have been accomplished over the past few years, particularly as related to diabetic retinopathy, retinitis pigmentosa, exophthalmos, and color blindness. We have learned more about the processing of visual information, including the initiation