Mr. ROGERS. Could you briefly tell us about these eye research centers?

Dr. STEWART. The first of the 11 eye research centers were established about 6 years ago and the 12 outpatient clinics, a little over a year.

Mr. ROGERS. Are these funded through the $20 million?

Dr. STEWART. Yes; they are by grants.

Mr. ROGERS. Actually part of this is clinical——

Dr. STEWART. These were an attempt to augment and put more emphasis on the clinical research area. We do have a list of all of the places that we could supply, Mr. Rogers.

Mr. ROGERS. And the amount of money and people involved and what seems to have been accomplished.

(The following information was subsequently submitted:)

SPECIAL REPORT: DISORDERS OF VISION [1]

Of all the disorders which afflict man, probably none causes greater problems than blindness. A recent survey shows that, next to cancer, people in the United States fear blindness more than any other handicap.

It is estimated that there are in the United States today 411,000 legally blind and 3,500,000 who have only partial vision. About half of the totally blind are not employed, and approximately 75 percent are 40 years of age and over. The National Health Survey estimates that one million people in the United States have visual impairment so severe that they cannot read a newspaper. Based on available figures, it is possible that the annual bill for aid to the blind approaches $1 billion.

Major causes of blindness and visual impairment include cataract, glaucoma, diabetic retinopathy, corneal scarring, uveitis, retinal detachment, tumors, amblyopia, and refractive anomalies.

Visual disability and blindness already can be reduced significantly by early detection and treatment. However, fundamental knowledge is still lacking in the understanding of causes and mechanisms of blinding diseases. The acquisition of this fundamental knowledge is essential to any major reduction in blindness and visual impairment. Too, since not only the eye but also the nerve pathways and the brain are necessary for vision, basic neurological research is involved. Sight depends upon the transmission of signals along nerve pathways to the brain and upon cognitive processes. This visual process profoundly affects learning, thinking motivation, and human communication.

Any concerted attack on eye disorders necessarily includes study of the systemic disorders which may involve the eye, such as diabetes, diseases of the blood vessels, and diseases of the nerve and brain.

Federal payments to the blind amount to more than $95 million annually. Based on limited figures from New York State and Massachusetts, it is estimated that payments for aid to the blind within the States total from $600 million to $900 million annually. It is thus quite probable that the annual bill for aid to the blind approaches $1 billion, a figure frequently used though not authenticated.

The incurably blind cannot benefit from either prosthetic devices, such as subnormal vision aids or drug therapy. The only recourse is to provide the people, if possible, with an electronic artificial eye. The Institute is interested in the research being conducted to further this goal and intends to support such activity.

Each step in understanding eye disorders, their nature and treatment represents solid progress toward an ultimate goal of good sight for all. As each discovery is made, however small it may seem in relation to the total problem, the goal is nearer.

During 1966, a number of significant steps were made in this direction.

[1] Prepared January 1967 as background information for the Director of the National Institute of Neurological Diseases and Blindness, Public Health Service, U.S. Department of Health, Education, and Welfare, in connection with fiscal year 1968 appropriations hearings.