

Committee on Prosthetics Research and Development—A Report

By A. BENNETT WILSON, JR.

*Committee on Prosthetics Research and Development,
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Toward the end of World War II, the Surgeon General of the Army requested the National Academy of Sciences to investigate the feasibility of applying some of the latest technology toward the improvement of artificial limbs. Accordingly, the Panel on Amputations of the Division of Medical Sciences under the chairmanship of Dr. Philip D. Wilson arranged for a meeting of surgeons, engineers, and prosthetists. At this meeting, held at Northwestern University January 30-February 1, 1945, it was recommended that a research program be developed by a technical committee to be established within the framework of the National Academy of Sciences. Funds were made available to the National Academy of Sciences, who made subcontracts with various universities and industrial laboratories to carry out certain phases of the program. In keeping with the policy of the Academy, the original Committee on Artificial Limbs, feeling that it had initiated a stable program, recommended that the Government agencies involved assume responsibility for the various contracts for research and that the Committee be reorganized so that its primary function would be that of advising the Government agencies in the conduct of the program and correlating and disseminating results. The new group was designated the Advisory Committee on Artificial Limbs and assumed its duties July 1, 1947.

Although there have been changes through the years in operational procedures to meet best the needs of the program, the National Academy of Sciences continues to serve those Government agencies responsible for the welfare of amputees, and in recent years has assumed responsibilities in the area of orthotics. The present group within the Academy, responsible for research and development in prosthetics and orthotics, is known as the Committee on Prosthetics Research and Development and operates within the Division of Engineering and Industrial Research of the National Research Council. It is supported by the Veterans Administration, the Office of Vocational Rehabilitation, and the National Institutes of Health.

The committee meets normally three times a year, or as often as there is need for review of program matters. When detailed studies are indicated, *ad hoc* committees are appointed. A Subcommittee on Child Prosthetic Problems considers problems peculiar to the juvenile amputee. A small staff carries on day-to-day activities. In addition to committee meetings, CPRD also sponsors conferences on specialized subjects when indicated. Research results are published in *Artificial Limbs* and in special reports.

Members of the Committee and staff are:

Howard D. Eberhart, *Chairman*; Professor of Civil Engineering, University of California (Berkeley)

C. Leslie Mitchell, M.D., *Vice-Chairman*; Surgeon-in-Charge, Division of Orthopedic Surgery, Henry Ford Hospital

George T. Aitken, M.D., Orthopedic Surgeon, Mary Free Bed Guild Children's Hospital

Charles O. Bechtol, M.D., Chief, Division of Orthopedic Surgery, University of California Medical Center (Los Angeles)

R. C. Doolittle, Capt., MC, USN, Director, Navy Prosthetics Research Laboratory, U. S. Naval Hospital (Oakland)

Herbert Elftman, Associate Professor of Anatomy, College of Physicians and Surgeons, Columbia University

Sidney Fishman, Project Director, Prosthetic Devices Study, New York University College of Engineering.

Chester C. Haddan, President, Gaines Orthopedic Appliances, Inc.

Verne T. Inman, M.D., Professor of Orthopedic Surgery, University of California Medical Center (San Francisco)

Fred Leonard, Chief, Plastics Development Branch, Army Prosthetics Research Laboratory

Anthony Staros, Chief, Veterans Administration Prosthetics Center.

Augustus Thorndike, M.D., Chief Surgeon, Department of Hygiene, Harvard University

Howard Thranhardt, Partner, J. E. Hanger, Inc. (Atlanta)

Tonnes Dennison, Executive Director

Earl J. Murphy, Executive Secretary

A. Bennett Wilson, Jr., Staff Engineer

As a result of the Research Program there have been introduced many new devices and techniques for the management of amputees. The suction socket for above-knee legs, the Bowden cable and simplified harness designs, the use of plastic laminates, the so-called UCB fitting and alignment principles for the above-knee cases, and the patellar-tendon-bearing prosthesis are but a few. However, there exist in both prosthetics and orthotics many problems which present real challenges. The Committee welcomes new ideas or suggestions and stands by ready to help in the development of any devices and techniques which offer promise.

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Hennessy on Prosthetic Mission in South America

Mr. Charles A. Hennessy, past president of the Association and at present consultant on prosthetics to the Prosthetics and Sensory Aids Service of the Veterans Administration, is in Caracas under the auspices of the Department of State to demonstrate and lecture on prosthetic development. He has been most warmly received, as shown by a half dozen illustrated newspaper articles forwarded to us via the Veterans Administration and the Committee for the Handicapped. Of these six articles, only two are in English, and the other four in Spanish. One three-column picture shows Mr. Hennessy with Dr. Tomas J. Isray, an AOPA member in Caracas.

One of the chief purposes of Mr. Hennessy's visit is to fit a Caracas youth, Edgar Gonzales, with artificial hands to replace those he lost in a battle with a shark. Casts of the stumps, which were made immediately on his arrival, were sent to Washington, D. C., by diplomatic pouch. The casts were then forwarded by air to A. J. Hosmer in Los Angeles, for manufacture of the prostheses. After completion of his lecture tour to La Paz, Santiago and Vina del Mar, Mr. Hennessy fitted Gonzales with his new hands and began training him in their use.