

## NEW PUBLICATIONS

Bulletin of Prosthetics Research, BPR 10-19, Spring 1973, U.S. Veterans Administration, 254 pp., 149 illus., available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; \$2.05\* (payable in advance).

### FEATURED IN THIS ISSUE:

Editorial—We've Come a Long Way—W.M. Bernstock

Ischial and Patellar-Tendon Weight-Bearing Braces: Function, Design, Adjustment, and Training—J.F. Lehmann and C.G. Warren

The Modern Ankle-Foot Orthoses (AFO's)—G. Rubin and M. Dixon

Prefabricated Below-Knee Sockets for the Maturing Stump—J.W. Breakey

Pressures in Critical Regions of the Below-Knee Patellar-Tendon-Bearing Prosthesis—J.R. Pearson, G. Holmgren, L. March, and K. Oberg

Bent Knee Pylon for the Below-Knee Amputee—C.R. Pennell and G.W. Mayfield

Fitting and Fabrication of a Prosthesis for a Severe Flexion Contracture: Case Study—H. Titner

Transferring Load to Flesh—Part V. Experimental Work—L. Bennett

Interim Report on VA Clinical Evaluation of Externally Powered Upper-Limb Prostheses (June 1971-June 1972)—C.A. Ross

The Care and Feeding of Nickel-Cadmium Batteries—R.W. Cummings

Games for the Severely Disabled—S.J. Sheredos

Summary of Activities of the Committees on Prosthetics Research and Development and Prosthetic-Orthotic Education for the Period July 1 to December 31, 1972

VA Prosthetics Center Research Report—A. Staros and E. Peizer

Highlights of Other VA Research Programs  
Prosthetics—Edited by E.F. Murphy and W.M. Bernstock

Sensory Aids—Edited by H. Freiburger

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COMPREHENSIVE MANAGEMENT OF MUSCULOSKELETAL DISORDERS IN HEMOPHILIA, Committee on Prosthetics Research and Development, National Academy of Sciences, 1973; Edited by Newton C. McCollough, III, 214 pp., \$6.95.

This publication is a report of a symposium held in October 1972 sponsored by the Committee on Prosthetics Research and Development to provide an environment for interchange of information among clinical and research personnel involved in care of hemophilic patients, and then to develop recommendations for future action in both research and clinical application.

The first two-thirds of the report consists of 22 papers prepared especially for the symposium, while the remainder of the report is devoted to recommendations for future action. This seems to be the first time that a symposium has produced a comprehensive document on the subject of management of orthopaedic disorders of the hemophilic patient. It should be read by all who are responsible in any way for the care of patients suffering from hemophilia—orthotists, therapists, physicians, and administrators.

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Editor



**CHILD AMPUTEES: DISABILITY OUTCOMES AND ANTECEDENTS**, Final Report—December 1972. G.E. Sharples, Ph.D. and R.L. Crawford, Ph.D.<sup>1</sup>, University of Michigan.<sup>2</sup> 121 pp., 248 tables.

This report presents the results of a long-term follow-up study of 185 prosthetic patients who were or had been patients at the children's orthopedic facility at the Area Child Amputee Center, Grand Rapids, Michigan.

This is the second part of a research study done in two steps. The first study<sup>3</sup> involved a review of 159 unilateral upper-limb amputees, whereas the group reviewed in this report (part 2) includes 29 bilateral upper-limb patients and 156 unilateral lower-limb patients. Statements in the report often seem to imply comparisons between these two groups which can be misleading due to the obvious extreme differences of the disabilities. The reason why the authors excluded bilateral lower-limb patients is not given.

The authors state in the preface that they "have sought in this report to provide something, in fact a great deal, for everyone." They have accomplished this goal; there is so much information provided that a few shorter reports on specific topics might have been more readable.

Information was acquired by means of questionnaires and home interviews and then categorized and presented in 248 tables, which are all included in addition to the 119-page text. All of the questionnaires are also included.

Drs. Sharples and Crawford have presented their material in a well-organized, informative manner. Topics include family and environment characteristics, prosthetic experiences, social developmental experiences, and financial considerations, and recommendations are given in each area.

Some of the statements that I found interesting were:

- "... 40% of upper bilateral congenital amputees (in this study) were not fitted until

the fifth grade level or later, age 10 through 17."

- Concerning the lower-limb congenital patients, "... more than ⅔ had had five limbs or more." Sixty percent of each group needed some prosthetic adjustment at the time of the interview, usually fitting.
- Problems concerning the effect of temperature change on comfort and concerning length of prostheses were most common among all of these patients.

I would recommend this report to anyone involved in providing services to these patients through clinics (and other social services) and particularly to vocational and rehabilitation counselors. Physicians, prosthetists, and therapists would also be provided with a deeper insight into management of the child prosthetic patient by reading this objective report.

Michael Quigley

**LOWER LIMB MODULAR PROSTHESES: A REPORT ON AN INTERNATIONAL CONFERENCE ON SPECIFICATION**, Department of Health and Social Security, London; Her Majesty's Stationery Office, London, 1973, 170 pp., £2.45 net.

This document is a report of an international meeting convened in England late in 1972 by the Department of Health and Social Security, London, for the purpose of refining the prime clinical and functional requirements of lower-limb "modular" prostheses with the hope that some standardization among the Western nations might be effected. This meeting was a follow-on of one on the same subject that was held by the Committee on Prosthetics Research and Development in San Francisco in March of 1971.

There were 41 full-time participants from nine countries. Medicine, prosthetics, and engineering were well represented. Leading administrators in the English Department of Health and Social Security also participated. Representing the United States were Alvin Muilenburg, Robert Klebba, Cecil Benton, Anthony Staros, Joseph Traub, and A. Bennett Wilson, Jr.

It was the consensus that modular prostheses have the potential to improve the time factor in service and also to improve cosmesis, but none available to date is truly satisfactory. Further work was encouraged, a plan for the develop-

<sup>1</sup> Members of the Disability Research Group, School of Public Health II, Ann Arbor, Michigan

<sup>2</sup> Project supported by the Maternal and Child Health Service, Health Services and Mental Health Administration, Department of Health, Education and Welfare, through grants PC-1003 and MC-R-260044-05

<sup>3</sup> Child Amputees: Disability Outcomes and Antecedents, Final Report—July 1969 (PC-1003) (PC-1003 C1)



ment of specifications on a cooperative international basis was developed, and a number of other recommendations concerning service to lower-limb amputees were made.

The report is quite detailed, is well written, is printed in a very nice soft-back edition, and should be read by all who are engaged in research and development in the area of lower-limb prostheses. It also contains information that is worthy of attention by administrators concerned with providing amputees with services.

A. Bennett Wilson, Jr.

#### NEURAL ORGANIZATION AND ITS RELEVANCE TO PROSTHETICS. W.S.

Fields and Lewis A. Leavitt, eds. International Medical Books Corporation, New York, 1973.

This book is a collection of selected papers and discussions given at a symposium sponsored by the University of Texas Health Science Center and the Houston Neurological Society which was supported by the Social and Rehabilitation Service of the Department of Health, Education, and Welfare and the Committee on Prosthetics Research and Development of the National Academy of Sciences in the U.S.A.

Its subtitle might mislead some into thinking it is another publication on myoelectric or other controls of powered limb prostheses, with which in fact it has no connection. The purpose of this meeting in Houston was to study the use of electrical stimuli to give substitute, or prosthetic,

function through physiological pathways. It was multidisciplinary, the participants being physicians, physiologists, and bioengineers making contributions to the fundamental studies and their application in many clinical areas.

The papers presented at the meeting covered a wide field but make no claim to be complete. The majority of participants were from those centers in North America which have been active in research in the use of electrical stimulation. There were also members from the University of Ljubljana, Yugoslavia, and from Köhn-Merheim, West Germany.

It would be invidious to select any specific paper for comment for the quality of all is high. The subjects discussed were the Fundamentals of Neuro-muscular Stimulation, Stimulation for the Control of Extremities, Sensory Feed-Back Systems, Alleviation of Pain, Auditory and Visual Prosthetics, Control of the Urinary Bladder, and New Applications, such as its use in epilepsy.

The papers on each aspect are of particular importance and cannot be ignored by those with interests in that specific subject. This book, by gathering together in one volume varied applications of electrical stimulation for many disabilities, gives an opportunity for cross fertilization for the mutual benefit of all since the nature of the stimulus and many of the problems arising from its use are common to all, whatever function is being sought.

*Neural Organization* is an important addition to the growing literature on the subject.

E.E. Harris, F.R.C.S.