

*Spring 1957*

# Artificial Limbs

*A Review of  
Current Developments*

PROSTHETICS RESEARCH BOARD

National Academy of Sciences  
National Research Council

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# Artificial Limbs

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# CONTENTS

## *No. 1, Spring 1956*

	Page
LESSON IN LESIONS	
C. Leslie Mitchell .....	1
SKIN HEALTH AND STUMP HYGIENE	
Gilbert H. Barnes .....	4
THE SKIN PROBLEMS OF THE LOWER-EXTREMITY AMPUTEE	
S. William Levy .....	20

## *No. 2, Autumn 1956*

ARTIFICIAL LIMBS—THEIR HUMAN OWNERS	
David Shakow .....	1
ADJUSTMENT TO MISFORTUNE—A PROBLEM OF SOCIAL-PSYCHOLOGICAL REHABILITATION	
Tamara Dembo, Gloria Ladieu Leviton, and Beatrice A. Wright .....	4

. . .

TECHNICAL NOTES FROM THE ARTIFICIAL LIMB PROGRAM  
Spring, p. 36; Autumn, p. 63.

ABSTRACTS OF CURRENT LITERATURE  
Autumn, p. 66.

DIGEST OF MAJOR ACTIVITIES OF THE ARTIFICIAL LIMB PROGRAM  
Spring, p. 39; Autumn, p. 68.



# Artificial Limbs

VOL. 4

SPRING 1957

NO. 1

## CONTENTS

### GETTING DOWN TO CASES

Charles O. Bechtol . . . . . 1

### SOME EXPERIENCE WITH PROSTHETIC PROBLEMS OF UPPER-EXTREMITY AMPUTEES

Marvin S. Gottlieb, Robert L. Mazet, Jr.,  
Craig L. Taylor, and Marian P. Winston 4

### SOME EXPERIENCE WITH PROSTHETIC PROBLEMS OF ABOVE-KNEE AMPUTEES

Charles W. Radcliffe, Norman C. Johnson, and  
James Foort 41

### THE MANAGEMENT OF THE NONFUNCTIONAL HAND—RECONSTRUCTION VS. PROSTHESIS

Sterling Bunnell . . . . . 76

TECHNICAL NOTES FROM THE ARTIFICIAL LIMB PROGRAM . . . . . 103

ABSTRACTS OF CURRENT LITERATURE . . . . . 105

DIGEST OF MAJOR ACTIVITIES OF THE ARTIFICIAL LIMB PROGRAM . . . . . 108

While this issue of ARTIFICIAL LIMBS, unavoidably much delayed, was still in press, word was received of the death of Dr. Sterling Bunnell, of a heart attack, at his home in San Francisco, on August 20, 1957. On behalf of the Prosthetics Research Board, ARTIFICIAL LIMBS expresses deepest regret at the passing of its distinguished contributor.

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# Getting Down to Cases

CHARLES O. BECHTOL, M.D.<sup>1</sup>

IT is the common teaching of all experience that even the most carefully planned activities seldom follow the course originally laid out for them. Man tends to play himself through life by ear, as it were, in a series of false starts and fortunate recoveries. In all fields of endeavor, therefore, hindsight is more often than not the quality which, in the long run, keeps people going in the general direction of progress. That such is the way things are is perhaps nowhere more patent than in the evolution of the Artificial Limb Program.

When, for example, in 1945, the Committee on Prosthetic Devices (now the Prosthetics Research Board) set out to improve the lot of the amputee population, it chose for itself the seemingly obvious, if also apparently simple, goal—the design and development of new and improved artificial-limb components. Because of the more or less widely held misconception, even among amputees themselves, that improved devices alone might well raise the level of the art of limb prosthetics to that existing in other fields of science and invention, the Committee established, through arrangements for contract research, a far-flung program with principal emphasis on the fundamental investigation of human locomotion, on time-and-motion studies of the human arm and hand, and on what might by some be called professional gadgeteering.

After a few years of organized effort on the part of engineers and prosthetists, with the consequent development of new and supposedly improved models and techniques, and after the application of experimental prostheses to amputees for initial tests of the new equipment, it became perfectly clear that, if genuine improvement in amputee service were to be had, something more would be needed. In retrospect came realization of the circumstance that no single design of prosthesis is ever apt to be superior for all amputees of a given type and, conversely, that every amputee presents in one way or another a special problem not amenable to mass treatment. Put in engineering language, the difficulty was seen to lie in the fact that dealing with the rehabilitation of

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