

MARCH, 1953

*The journal of the Limb and Brace profession*

Orthopedic

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and

Prosthetic

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Appliance

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Journal

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***Metal Footplates***

***Training Device for Cineplasty***

***Geriatric Amputations***

published jointly by  
Orthopedic Appliance & Limb Mfrs. Association  
American Board for Certification

# DATES TO REMEMBER — 1953

*What • When • Where*

## APRIL

- 16-17-18 NEW YORK METROPOLITAN COUNCIL AND REGION II (OALMA) *Medical and Technical Assembly at St. Vincent's Hospital (Dinner and Reception April 17 at Hotel Astor)* *New York, N. Y.*
- 20 UCLA PROSTHETICS SCHOOL—THIRD SECTION *Los Angeles, Calif.*
- 24-25 SEVENTH ANNUAL AMPUTEE CONFERENCE—of the Kessler Institute for Rehabilitation: Theme: *Congenital Amputees.* *West Orange, N. J.*

## MAY

- 1 CHILD HEALTH DAY, 1953. *Proclaimed by President Eisenhower; Purpose: To focus attention on the child health programs.*
- 9-10 MEETING OF REGION V of OALMA. (*Ohio, Western Pennsylvania, West Virginia, and Michigan.*) *Columbus, Ohio  
Deshler-Wallick Hotel*
- 30 CERTIFICATION EXAMINATION. *Conducted by the American Board for Certification, for prosthetists and orthotists who wish to become certified.* *Chicago, Ill.*

## JUNE

- 6 CERTIFICATION EXAMINATION. *Conducted by the American Board for Certification, for prosthetists and orthotists who wish to become certified.* *San Francisco, Calif.*
- 8 UCLA PROSTHETICS SCHOOL—FOURTH SECTION *Los Angeles, Calif.*

## SEPTEMBER

- 27-30 NATIONAL ASSEMBLY OF THE LIMB AND BRACE PROFESSION CONDUCTED BY OALMA AND THE AMERICAN BOARD FOR CERTIFICATION *Chicago, Ill.  
Drake Hotel*

## OCTOBER

- 1 FINAL DAY OF NATIONAL ASSEMBLY OF LIMB AND BRACE PROFESSION *Drake Hotel*

# THE ORTHOPEDIC AND PROSTHETIC APPLIANCE JOURNAL

(Founded in 1946 as The Journal of OALMA)

VOLUME 7

MARCH, 1953

NUMBER 1

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## PUBLISHED QUARTERLY

By the Orthopedic Appliance & Limb Manufacturers Association, and The American Board for Certification of the Prosthetic and Orthopedic Appliance Industry, Inc.

GLENN E. JACKSON, Executive Director.

LESTER A. SMITH, Editor.

Office: 336 Washington Building,  
Washington 5, D. C.

## SUBSCRIPTIONS

The Journal is sent to all certified fitters and to members of the Association. A special subscription rate of \$4.00 a year is available to (1) Physicians (2) Fitters who are not certified (3) Societies and Government Agencies, and (4) Persons and firms which are not eligible for membership in the Association.

Reprints of articles in this issue will be available at reasonable cost.

# Greetings from Our Presidents

OALMA

As the new year begins to gather momentum, it's very encouraging to note what has been done in the six months since our last Assembly. For one thing, I'm very much impressed by the regional conferences which



Lee J. Fawver

our OALMA members have held.

My visit to the Southeast — Region IV — Conference held at Warm Springs Foundation will never be forgotten. There under the tutelage of Dr. Robert Bennett, a score of polio patients were presented to our members in a three-hour session held in the Foundation's Theater. The program is a credit to Wilmore Bremer and his committee. We are grateful to Dr. C. E. Irwin and Dr. Bennett and Horace Maddox for the privilege of meeting at the Foundation.

As I write this, I'm looking forward to the meeting of Region VII in Minneapolis and the opportunity of going over OALMA business with Director Glenn Jackson. After that comes the New York City meeting April 17 and 18, when the Big Town invites us all to its Medical and Technical Assembly.

Another encouraging sign is the growth in membership. The National Office is now receiving, for the first time in several years, a considerable number of new applications. While OALMA has already enrolled most of the important firms throughout the country, there have been some excellent firms not enrolled on our list, who can both give and receive benefits from OALMA membership. It is

(See OALMA, Page 3)

AMERICAN BOARD  
FOR CERTIFICATION

During the last 60 days I have talked to individual fitters and to leaders in our industry, to key people in the Government service, to members of the medical profession and to others that I thought could help us to improve Certification.



D. A. McKeever

These talks have been a revelation to me. I had no idea our Certification had made such progress.

I have found many Government agencies that make Certification their basis for giving business. Many others are seriously considering this for the near future.

I have found that many members of the medical profession require certified fitters to handle their orthopedic work.

I found most firms today expect their key people to be certified and the smaller firms, the new members of our industry are striving to warrant Certification.

This is a real challenge. We must be sure that our presently certified facilities and fitters are adequate, competent and satisfactory. We must be sure that those who become certified in the future have earned this reward.

The Certification Board is making every effort to give examinations often and in convenient locations. We expect to make the examinations more difficult. We shall also encourage those already certified to take refresher courses to improve their own knowledge.

(See American Board, Page 3)

## OALMA—(Cont'd.)

pleasant to greet these new allies, whose names are recorded below.

Yet another development is the growing professional status of our National Assemblies. While at Warm Springs, I was privileged to sit in on a planning session conducted by Howard Thranhardt, who has agreed to serve as Program Chairman of the 1953 Assembly. While the big news of what he's planning for you at Chicago this September must come from him, I can't resist saying that I was impressed by the scope and value of his plans. From all appearances, this 1953 Assembly will be one of major events, with emphasis on action, not talk.

*Lee J. Fawcett*

## AMERICAN BOARD—(Cont'd.)

It is to be expected that at some future date a review of the facilities that are now certified will be instituted so that we can be sure they are a credit to our movement.

All this leads me to say that we have great expectations for the new Advisory Council. These men will represent you in your district and should be a great help to our program.

We know that final acceptance of Certification in all areas will take time. We know that we have many limitations and that much remains to be done before we reach our final goal.

As the year goes forward I hope to keep you informed of the steps we are taking and then at the National meeting next Fall to give you a full report of our accomplishments.

*Dan McKeever*

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# Welcome

Cordial greetings are extended to these new members of OALMA:

*Batson Brace Co.*, Vivian C. Batson, Mgr., 854 Pearl St., Beaumont, Texas.

*Blair's Associate*, Robert C. Blair, Jr., Owner, 913 Kuhl Avenue, Orlando, Florida.

*S. H. Camp & Company (Associate Member)*, F. I. Yeakey, President, 109 W. Washington Street, Jackson, Michigan.

*John R. Cocco, Inc.*, John R. Cocco, President, 27-29 N. Stockton Street, Trenton, New Jersey.

*Gillespie Brace & Limb Company*, R. C. Williams, Manager, 319 E. Gaines Street, Tallahassee, Florida.

*Harvey's, Inc.*, Wm. H. Harvey, President, 1306 Broadway, Columbus, Georgia.

*Orthopedic Service Company*, Alfred G. Latimer, Partner, 100 Adams Street, Montgomery, Alabama.

*Orthopedic Service Company*, John I. Kennedy, Owner, 1960 Hardeman Avenue, Macon, Georgia.

*Scheck & Siress, Prosthetics*, William Scheck, President, 505 Madison, Oak Park, Illinois.

*W. T. Orthopedic Appliance Co.*, E. C. Wellenkamp, Owner, 5886A Delmar, St. Louis, Missouri.

*Wagenseil Surgical Appliance Co., Inc.*, Patrick Morgan, Vice President, 1914-16 Market Street, Wilmington, Delaware.

# THE NEW YORK ASSEMBLY

Bigger and better than ever, New York City's Medical and Technical Assembly opens the evening of April 16 and runs through Saturday evening, April 18. The technical sessions are held at St. Vincents Hospital Nursing School at 7th Avenue and 12th Street. Region II of OALMA and MOALMA are again joint hosts at this important get-together.

This is what Fred Eschen and his fellow committee members Milton Tenenbaum and Mary Dorsch have planned for you (At \$12.00 per ticket, it is surely the bargain of the year!)

## Thursday, 7:30 p.m., April 16

The use of plastics is demonstrated, with Dr. John L. Young of Mellon Institute handling Orthopedic Appliances and Milton Tenenbaum Plastics in prostheses.

## Friday, April 17

You are greeted by Regional Director David E. Stolpe, Dr. Louis Russelot, Director of Surgery, and Sister Loretto Benard, Director of the Hospital. Throughout the day there will be 5 surgical procedures to be observed in the operating rooms. Anatomy of the lower extremity with reference to the requirements of the lower extremity device, is discussed by Dr. Samuel S. Sverdlik. A. A. Margoe reviews the fitting and construction of orthopedic materials. Herbert B. Hanger has a report on alignment, fitting and construction of prosthetic appliances, which is followed by a discussion period. Then a break for luncheon.

You see amputee clinic teams in actual operation, with Dr. Jerome Lawrence in charge of the Upper Extremity team and Dr. Sverdlik, the lower extremity. Among the participants will be Karl Kaffenberger, supervisor and Michael Mulligan, counselor for the New York State Division of Vocational Rehabilitation, and Joseph C. Aveni of the Liberty Mutual Insurance project as insurance prosthetist.

Friday evening brings relaxation and entertainment: a gay cocktail party at the Hotel Astor Roof Garden where you'll meet old friends. Then the banquet at which Glenn E. Jackson is toastmaster and Dr. William Sims, guest speaker.

## Saturday, April 18

You begin with a review of anatomy (normal and abnormal) of the back, pelvis and neck, by Dr. Anthony Pisani. Walter R. Sievers continues the survey of orthopedic appliances. We hear from an old friend, Dr. Howard Boyland of Truform Surgical Appliances, about orthopedic corsets and belts.

That afternoon, another look at anatomy — this time that of the shoulder, elbow joint, forearm, wrist and hand presented by Dr. Jerome Lawrence. At 2:00 p.m., Konrad Hoehler and Cosmo Invidiato make up a team to review orthopedic appliances for the upper extremity. They are followed by Charles Goldstine speaking on prosthetic appliances for the upper extremity.

Final event that evening is an historic one for our profession! Our educational program in conjunction with the City of New York school system receives due recognition. This is a reception ceremony which will live in your memory — the perfect curtain-ringer to this professional reunion.

Adele Tenenbaum is in charge, and McCarthy Hanger, Jr., chairman of OALMA's Committee on Education is coming east for the event.

# National Advisory Council Elected

## New Group to Aid Certification

The New National Advisory Council, which was authorized by the American Board for Certification, has been elected by a mail ballot, in which over two-thirds of the certified fitters voted. This is a higher percentage than the vote cast in the Presidential election last November.

Two certified fitters were chosen from each of the thirty-five districts in which the United States and Canada have been divided (*A list of the districts with their boundaries and names of the councilors, is given at the end of this article*).

The group of seventy includes names famous in the history of the artificial limb and brace profession. Two are ex-presidents of the Orthopedic Appliance and Limb Manufacturers Association (Joseph Spievak from District 17 and A. P. Gruman from District 27). Two women were chosen: Mrs. Catherine Renner of Milwaukee and Miss Alberta May Rule of Montreal.

Although a majority of the councilors are proprietors of establishments, there are a considerable number of outstanding fitters who are not owners. With members of the caliber of Chester Nelson of Min-

neapolis, Lawrence Jones of Denver, Ivan Dillee of Kansas City and others, the new group is a well-balanced council.

Many members are nationally known authorities in the field of braces. A quick glance at the official returns, shows leaders such as Karl Buschenfeldt in District 1, Frank Harmon in District 11, Carlton E. Fillauer in District 15, and Erich Hanicke of District 25.

Among the leading prosthetists chosen were Herbert Hanger for District 3, Ernest A. Warnick for Eastern Pennsylvania, Lawrence Porten of District 8, and Vernon Murka of District 16.

The Council will meet as a body for the first time at the National Assembly in Chicago in September. Individual members of the Council will be available for special assignments in their District, as soon as they receive official notification of their election from the Board. One of the first tasks, which it is expected will be assigned Council members is to make up lists of physicians, agencies and others in their District, who should receive the Annual Registry and other literature of the Certification movement.

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## Official Directory of the National Advisory Council

### *District No.*

1. Maine, Massachusetts, New Hampshire and Vermont  
Joseph C. Aveni, 31 Lynn Fells Parkway, Melrose, Mass.  
Karl W. Buschenfeldt, 1522 Turnpike St., Stoughton, Mass.
2. Connecticut and Rhode Island  
Addison H. Starkey, 250 Grandview Terrace, Hartford, Conn.  
J. A. Ganzke, 805 Congress Ave., New Haven, Conn.
3. New York City Metropolitan Area and Long Island  
Herbert B. Hanger, 2 Peter Cooper Rd., New York City, N. Y.  
Adolph A. Margoe, 168 East 82nd St., Bronx, New York.

4. New York State excluding Metropolitan N. Y. and L. I.  
Benedict G. Pecorella, 31 Hoyt St., Buffalo, New York.  
Albert J. Amsterdam, Coakley Manor, Fayetteville, N. Y.
5. New Jersey  
Felix Kaufmann, 60 Branford Place, Newark, N. J.  
Calvin Yardley, 48 Broad St., Newark, N. J.
6. Pennsylvania East of 79° Longitude but excluding Philadelphia.  
Ernest A. Warnick, 281 Carey Ave., Wilkes-Barre, Pa.  
Alfons R. Glaubitz, 27 Arch St., Elizabethtown, Pa.
7. Philadelphia Metropolitan Area.  
Edward J. Sulima, 900 Longshore Ave., Philadelphia, Pa.  
George S. Anderssen, 612 Concord Ave., Wilmington, Del.
8. Pennsylvania West of 79th° Longitude.  
Lawrence Porten, 111 Smithfield St., Pittsburgh, Pa.  
K. B. Nelson, Box 318, RD 1, Turtle Creek, Pa.
9. Delaware, Maryland, and District of Columbia.  
Charles H. Dankmeyer, 3905 Annapolis Rd., Baltimore, Md.  
Charles Ross, 2218 Richland St., Silver Spring, Md.
10. Virginia and West Virginia.  
Oscar J. Bruce, P.O. Box 2542, Roanoke, Va.  
John G. Cranford, 412 E. Main St., Richmond, Va.
11. North and South Carolina and Georgia.  
Andrew Hancock, 416 Betton St., Charlotte, N. C.  
W. Frank Harmon, 807 Lullwater Rd., N.E., Atlanta, Ga.
12. Florida North of 27th Latitude  
D. W. Bremer, 1107 Margaret St., Jacksonville, Fla.  
William C. McCall, 2410 15th Ave., N., St. Petersburg, Fla.
13. Florida South of 27th Latitude.  
A. L. Godbey, 6366 S.W. 37th St., Miami, Fla.  
N. M. Treuhaft, 1100 Cordova St., Coral Gables, Fla.
14. Mississippi, Alabama & Louisiana lying east of Mississippi River (includes Baton Rouge)  
George H. Lambert, 2545 Florida St., Baton Rouge, La.  
M. L. Smitherman, 518 South 80th St., Birmingham, Ala.
15. Tennessee and Kentucky.  
Carlton E. Fillauer, 4405 Anderson Ave., Chattanooga, Tenn.  
Ralph D. Snell, 1916 West End Ave., Nashville, Tenn.
16. Ohio South of 41st Latitude (includes Cincinnati, Columbus, Dayton and Zanesville)  
Vernon Murka, 124 Glenbeck Ave., Dayton, Ohio.  
L. B. Barghausen, Route No. 1, Gahanna, Ohio.
17. Ohio North of 41st Latitude (includes Akron, Cleveland, Toledo and Youngstown)  
Joseph A. Spievak, 512 W. Delason Ave., Youngstown, Ohio.  
James S. Campbell, 12014 Ashbury Ave., Cleveland, Ohio.
18. Indiana.  
Joseph G. Best, R.R. 1, Box 36, Camby, Ind.  
Charles R. Grindle, R.R. 1, Bourbon, Ind.
19. Michigan.  
Charles Wright, 3561 Dorothy Lane, Drayton Plains, Mich.  
N. C. Connelly, 411 Crane St., Eaton Rapids, Mich.
20. Wisconsin.  
Richard G. Bidwell, 604 N. Water St., Milwaukee, Wis.  
Catherine Renner, 1029 A N. 17th St., Milwaukee, Wis.

21. Illinois.  
Emil G. Houk, 2909 Montclare Ave., Chicago, Ill.  
Waldemar Schoene, 1929 N. Spaulding, Chicago, Ill.
22. Louisiana excluding that part East of Mississippi River.  
James D. Snell, 2761 Barrett St., Shreveport, La.  
James D. Shope, 1525½ Stephens, Shreveport, La.
23. Arkansas.  
William T. Adams, 5216 Highway 5, N. Little Rock, Ark.  
Cooper C. Collins, 5908-A St., Little Rock, Ark.
24. Missouri East of 93° Long. (includes St. Louis and Columbia)  
Lester L. Fulton, 21 Grant Road, St. Louis, Mo.  
Myron T. Vail, 926 Academy, St. Louis, Mo.
25. Missouri West of 93° Long. and Kansas.  
Ivan A. Dillee, 413 N. River Blvd., Independence, Mo.  
Erich Hanicke, 4840 Paseo, 3 N., Kansas City, Mo.
26. Iowa and Nebraska.  
Everett F. Haines, 112 N. Thornwood, Davenport, Iowa.  
John H. Miller, 935 E. Jefferson St., Iowa City, Iowa.
27. Minnesota, North Dakota and South Dakota.  
Chester C. Nelson, 6728 Grand Ave., S., Minneapolis, Minn.  
Adelbert P. Gruman, 1330 Washington Ave., N., Minneapolis, Minn.
28. Oklahoma and Texas North of 31° Lat. (includes Amarillo, Dallas, Fort Worth, El Paso, and Texarkana)  
Alvin E. Rupley, 2016 N. St. Paul St., Dallas, Texas.  
Fred D. Norton, Jr., 1002 Olive St., Texarkana, Texas.
29. Texas South of 31° Lat. (includes Beaumont, Corpus Christi, Gonzales, Houston and San Antonio.)  
A. A. Muilenberg, 3900 La Branch, Houston, Texas.  
R. M. Williams, 1311 S. St. Mary's, San Antonio, Texas.
30. Arizona, New Mexico, Utah, Colorado, Wyoming, Montana.  
Lawrence A. Jones, 2010 S. Irving, Denver, Colorado.  
George R. Thornton, 936 E. 18th Ave., Denver, Colorado.
31. California, South of 36° Lat. (includes Long Beach, Los Angeles, Pasadena, San Diego and Santa Monica.)  
Kenneth L. Dodd, 3671 W. 108th St., Inglewood, Calif.  
Bob Angelich, 467 N. Normandie, Los Angeles, Calif.
32. California North of 36° Lat. (includes Fresno, Oakland, Sacramento, San Francisco, Nevada and Hawaii.)  
Matthew G. Laurence, 491 Boulevard Way, Oakland, Calif.  
Edward W. Snygg, 210 Church St., San Francisco, Calif.
33. Oregon and Idaho.  
Wayne E. Brooks, 2404 S.E. 89th Ave., Portland, Ore.  
Earl W. Odell, 2708 N.E. Halsey, Portland, Ore.
34. Washington.  
Lenart C. Ceder, 746 Market St., Tacoma, Wash.  
Vernon W. Allen, E. 702 Bridgeport, Spokane, Wash.
35. Canada.  
George I. Kinman, 46 Rawlinson Ave., Toronto, Ont., Canada.  
Alberta May Rule, 3657 Park Ave., Montreal, Que., Canada.



## TO THE LADIES: from OALMA's Woman's Auxiliary

As many of you are, I, too, am associated actively in my husband's business. And, now that I have been in it for quite a number of years, I would not trade this profession for any other. I am sure most of you will agree.

While it is true, we, as a profession working closely with human beings, have our share of the headaches and worry, it is a very gratifying one. How many people in other lines of work realize the fruits of their labor as we do — seeing someone walk again; making someone's life worthwhile by making a certain appliance to aid them; watching a complete personality change.

This past Christmas was one of the most thrilling. And, it was the result of weeks and weeks of experimentation and the manufacture of a pair of above-knee artificial limbs for a young twenty year old college girl who was born with the absence of both lower legs, the feet being attached to the femurs. Just a few days before Christmas she, with her boy friend, came in for the finished products. She was 3'8" when she walked in and 5'6" when she walked out — a complete personality change. I don't believe anything has ever given me a greater thrill than to see the radiance beaming on her face. Very likely many of you have had this same experience.

We, as wives, are quite a necessary part of this profession, whether actively or inactively in the business. It is up to us to serve as an inspiration to our men folks so they may be on the alert constantly for the improvement and the upholding of the standards of our industry. We should encourage them to go to our meetings and conventions to become acquainted with their fellow artists (at least that's what I think our husbands are), to see the new materials and developments of the industry. After all, they are for our benefit.

It is only true in America that we can have such an organization as ours — that we enjoy the freedoms that we have — that men can come from the four corners of this continent and be fortunate enough to speak the same language so they may freely understand and exchange each others ideas. Why, then, shouldn't we be interested in this great organization that does so much to help others to help themselves?

A handwritten signature in cursive script that reads "Betty Hanicke".

BETTY HANICKE

# Current Research—Summary of Reports by the Technical Advisory Committee

In the first week of February, the members of the ACAL Technical Committees for Lower Extremity and Upper Extremity, met in California to review the progress of the research in prosthetics. The artificial limb and brace profession was represented by: Chester C. Haddan, Howard Thranhardt and Lucius Trautman. Mr. Glenn E. Jackson, OALMA Executive Director, was also present by invitation of the ACAL.

The Committee for the Lower Extremity was in session at Berkeley on February 2, 3, 4. The Committee for the Upper Extremity then had its sessions at Los Angeles on February 5, 6, and 7. Members of OALMA from Northern California attended the Berkeley meetings while others from Southern California were present when the Upper Extremity Committee met at Los Angeles.

The following notes on the Committee session summarize the results of the long committee meetings, for the information of *Journal* readers. They have been condensed for quick reading, but additional information will be provided on any specific point if requests for such information are addressed either to OALMA, 336 Washington Bldg., or to the Executive Director, Advisory Committee on Artificial Limbs, 2101 Constitution Ave., Washington, D. C.

## Lower Extremities

### 1. Placing of side joints on B/K Prostheses.

Research on this is continuing at the University of Denver, and a final report is expected to be available shortly after June 30.

### 2. Adjustable Knee.

Because of the great value that the adjustable knee has been in the fitting of above-knee prostheses, it was agreed that a similar adjustable fit-

ting device for below-knee prostheses should be developed. 10 such knees are to be made on an experimental basis and tested in the shops of OALMA members.

### 3. Polycentric B/K joint.

No conclusions were reached as to the value of this joint, but further studies will be made. Many amputees have reported satisfaction with the below-knee soft socket as constructed by the Navy at Oak Knoll. The Committee therefore asked that further testing of this so-called Navy soft Socket be carried out in the coming year. The Committee feels that at least another year will be needed to determine fully whether or not the below-knee soft socket is an acceptable item to a major portion of amputees.

### 4. Above-knee leg Hydraulic Units.

At least two hydraulic units offer considerable promise. These will be tested at University of California and New York University during the coming year. It is hoped that one or more of them will be ready for a nationwide field test in 1954. Committee members agreed that some sort of hydraulic knee is desired by amputees throughout the country, and that therefore work in this field should be continued.

### 5. Navy A/K Leg.

This Navy above-knee leg was approved by the committee and blue prints of it will be available — it is hoped — within 60 days. It is hoped that several manufacturers will make the integral parts for it and offer them commercially to the industry. Field reports on the leg were exceptionally good and there was no unfavorable comment of any consequence from the amputees who have worn it now for several months.

6. Suction Socket Brochure — Revised edition.

The original brochure and the OALMA reprint are now out of print and unobtainable. A committee consisting of Chester C. Haddan, Dr. Charles O. Bechtol and C. W. Radcliffe is preparing a revised edition which should be ready by May 15. This will outline the latest techniques now being used in the United States and Europe in the fitting of the A/K suction socket prosthesis.

7. New Devices by Industry members.

The Committee recognizes that in the last year or two, industry members have worked out a great many new devices. Effort will be made during the coming year to seek out these new improvements and to have the industry members offer them for evaluation to New York University.

#### Upper Extremities

1. The UCLA School.

Members visited the School and talked to faculty and to the students in the first class. They report that the School is very much a "going concern" and that they were getting value from it and were glad they were enrolled.

2. The Electric Arm.

It was agreed that the electric arm as a complete unit was not suitable and further investigation into the *full* electric arm was discontinued. However, many component parts of the electric arm may be of use in high A/E amputations or in shoulder disarticulations. While the extensive research carried on in the past did not actually develop a complete electric arm, it has led to the use of an *electronic arm* which is being widely used in the handling of radio-active materials.

3. Cineplasty.

Biceps cineplasty for the below-elbow amputee was approved as an accepted and useful procedure when carried out under the supervision of a qualified prosthetic team.

It was agreed that Biceps cineplasty for above-elbow cases, is generally less satisfactory than for those below. When it is used, the stump should be at least six inches long or longer from the anterior axillary fold to the end of the stump.

The Committee felt that the combination of an additional source of power plus a relatively stable socket offers considerable advantage to the shoulder disarticulation amputee. Both the surgery and fitting require considerable skill. It should be attempted only by an experienced team of surgeon and limb fitter.

*Cineplasty for the Below-Elbow Case* which is a supplement to the *Manual of Upper Extremity Prosthetics*, is now ready.

4. Development Items.

*Shop Layout* has been prepared by Lester Carlyle and will be published as a supplement to the *Manual*. It will contain a generalized set of plans for setting up a small limb shop, suitable for all the molding, lamination, machine work and amputee care involved in modern management of upper extremity prosthetics.

*Braces* — Captain T. J. Canty presented a patient with partial arm paralysis involving the forearm flexors, to whom functional braces had been applied. This application was of particular interest to the committee because of the adaptation of conventional prosthetic components to another field of handicap. Dr. Eugene Murphy showed photographs of an arm brace — a plastic laminate cock up splint with an APRL hook mounted by a ball and socket joint on the volar surface of the wrist. The patient, a quadriplegic, lacks sensation so that a hook was necessary to prevent accidental cuts or burns. He retained shoulder movements and biceps, but had difficulty with pronation except by weight of the device. With the brace he is able to do a dozen activities otherwise impossible.

# FABRICATING METAL FOOTPLATES

JOHN L. YOUNG, Ph.D., Senior Fellow

The Sarah Mellon Scaife Foundation's  
Multiple Fellowship on Orthopedic Appliances  
Mellon Institute, Pittsburgh 13, Pennsylvania

## I. The Lost Wax Process

### Introduction

The "lost wax" process for making metal castings has been used for the production of art works for centuries. Benvenuto Cellini sculptured his masterpieces in wax and then cast them in bronze by this process. Decades ago, the dental profession adopted the method as a means of making inlays. Soft wax was pressed into the tooth cavity and assumed the true contours which the inlay was to have. The wax pattern thus obtained was then invested and evacuated, and a true inlay was cast. In the early 1930's there was developed the practice of making duplicate dispensable patterns in wax, so that many parts which were exactly alike could be cast. In this process an accurate steel mold was used to form the wax pattern. This was the beginning of "lost wax" as a real industrial process.

The adaptation of this process for making corrective footplates came about because the Fellowship could not properly fit a test case of congenital flaccid feet by the well-known method of hammering a footplate to shape on a lead block. It was also found that the normal physical properties of the metal had been greatly reduced by the excessive cold working necessary to produce the deep draws required to fit the foot.



Fig. 1. (1) Replica Cast with outlines for footplate drawn on it. (2) Wax pattern.

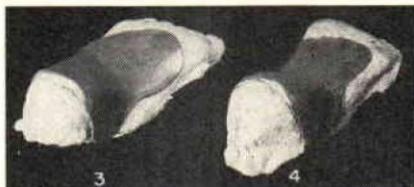


Fig. 2. Completed footplates before coating or final finishing.

It seems at first that stainless steel, vitallium or titanium footplates might be more acceptable than aluminum footplates. Equipment for melting these metals is available at Mellon Institute. It was felt, however, that a process could be developed and equipment designed which would be more readily available to the orthotists.

Aluminum appeared to be most readily adaptable for work in the average brace shop. The 355 aluminum casting alloy was deemed to be more suitable than other casting alloy, as it has: (1) high strength, (2) it can be heat-treated to give additional strength, (3) it has some



Fig. 3. Attaching web to wax pattern for footplate.

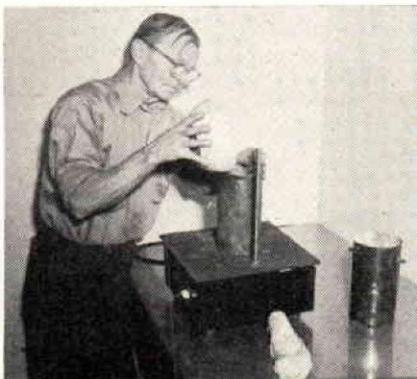


Fig. 4. Investing wax pattern in plaster paris-sand mixture.

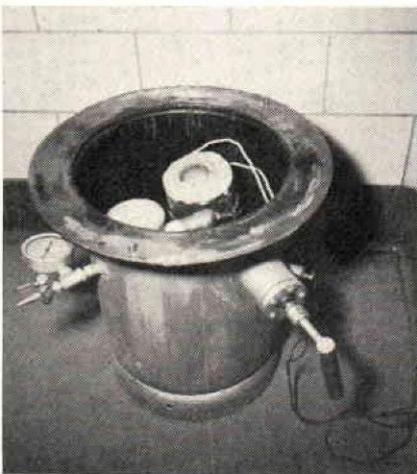


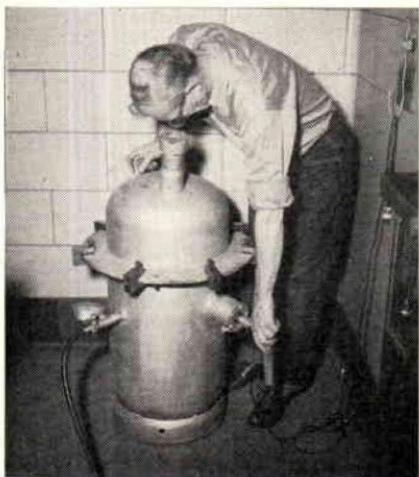
Fig. 5. Furnace, mold, and container for pouring aluminum in vacuum.

ductility when hot and can be bent a small amount to correct small defects, and (4) it melts at a relatively low temperature. Finally a number of methods of heat-treating this alloy produce typical yield strengths of over 30,000 pounds per square inch.

Because only the orthopedic specialist knows the nature of the correction that is needed to give the patient comfort in these very serious cases, corrective footplates require a prescription which preferably is in the form of a negative cast of the patient's foot *in the corrected position*. The orthotist should be present in making the cast, and the doctor should actually hold the foot in the corrected position while the cast is being applied. *The preparation of this type of footplate should not be attempted unless the assistance of the physician can be obtained.*

The steps in preparing the aluminum footplate by the lost wax process are as follows: The negative cast of the foot, with the edges of the footplate outlined on it, is waxed and filled with plaster-of-paris. A sheet of wax of the required thickness is softened in warm water and wrapped around the foot. The edges are cut with a knife to the desired shape. A wax sprue is attached, and the wax replica of the desired footplate is then removed from the cast and placed in cold water so that it will maintain its shape.

A mixture of sand, plaster-of-paris, and water is then prepared, and the wax cast is embedded in this mixture in a metal can. When the plaster has set, the can and contents are inverted and placed in a hot oven so that the water and wax will be re-



moved, leaving a cavity in the sand-plaster mixture into which the molten aluminum can be poured. The can and contents are next placed in a furnace where they are held overnight at a dull red heat. The can is then removed from the furnace, allowed to cool, and molten aluminum is poured into the cavity. The plaster-of-paris is then soaked in water to soften it and the cast footplate extracted.

The most reliable method of filling the cavity with aluminum is to place the can and aluminum in a container which is air-tight. And then to evacuate the air from the container before pouring the molten aluminum into the cavity. One man can prepare and pour about ten footplates a day by this method.

The process is illustrated in the accompanying photographs: Figure 1 shows the replica cast with the outlines for the footplate drawn on it, on the left side; the wax pattern is shown on the right. Figure 2 illustrates the completed footplates before coating or final finishing. Figure 3

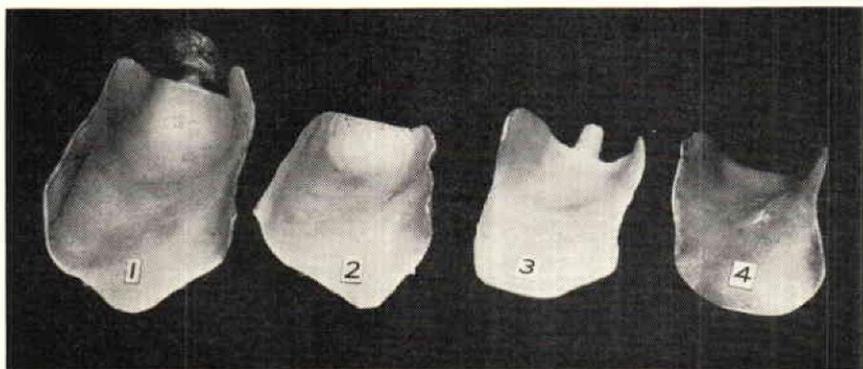


Above: Fig. 7. Metal footplates covered with plastisol. Footplate on left is covered with flesh-colored plastisol; footplate on right is covered with brown plastisol.

At left: Fig. 6. Pouring footplate.

shows the addition of web and sprue to the wax pattern (the web is used for footplates made for heavy persons). In Fig. 4 the plaster-of-paris, sand, and water investment is being poured into the can around the wax pattern. The vibrating platform is of assistance in removing air bubbles, but is not absolutely necessary to obtain satisfactory results. Figure 5 shows a small electric melting pot in the center of the vacuum container. The melted aluminum is poured into the mold in the left hand corner by turning the handle on the outside of the furnace. This container for maintaining vacuum was constructed from a hot-water boiler. This was cut in two and flanges added in the welding shop. Figure 6 shows a window in the top of the container which permits the pouring operation to be observed. Figure 7 presents two finished footplates prepared by this method.

Note: This shop equipment has been used for making many types of castings suitable for orthopedic devices; it seems probable that the process may have considerable utility for orthopedic work.



## II. The Incasement Method



Fig. 5

With the adaptation of the lost wax method for producing footplates the Fellowship has been able to make any shape footplate desired by the physician without an appreciable increase in the difficulty of construction. Any arch desired can be readily obtained. The entire heel can be enclosed and the footplate can extend as high on

the sides as desired. It does not require any more skill to make these complicated footplates than would be required to cast a flat plate. Because flaccid feet have a tendency to extend over the side of the footplate and irritate the skin, it has been found that there is less chance of troublesome footplates resulting if the plate is constructed as shown in Figure 1.

In this method the wax sheet is extended around the heel and considerably higher around the sides of the foot than is required. When the casting is completed the patient steps into the incasement for the foot and the parts of the footplate which are not needed are then cut off.

Figures 2, 3, and 4 show footplates that were failures because the patient's foot over-rode the footplate at some point. Figure 5 gives the method of fitting the incasement footplate to the foot after casting. (The foot shown in the photograph is not that of the patient in this case.)

The incasement footplate has been known for many years. It is seldom seen in use, however, because it is so difficult to construct by hammering a plate on a lead block, that only the most skilled workers can make it. It has been found here that this type of plate is very comfortable and well liked by the patients. As it is so easily constructed by the lost wax process its wider use should perhaps be encouraged.

### III. An Improved Method of Making Negative Casts

with the cooperation of Mr. Karl Buschenfeldt,  
Buschenfeldt Orthopedic Appliances, Stoughton, Mass.

There are many methods of making a negative cast of a patient's foot when footplates are to be prepared. It is felt that the following method requires considerably less effort to control the position of the foot and enables the technician and the patient to be in reasonably comfortable positions while the cast is being prepared. The method was first demonstrated here by Karl Buschenfeldt, of Stoughton, Mass., and it has been found to be most satisfactory. The procedure has the advantage that the muscles of the foot and leg are relaxed when the cast is taken, and it is therefore very easy to correct the position of the foot if necessary.

Another advantage arises when the assistance of the physician is necessary to make the required correction. Using this technique he can hold the foot in the correct position without interfering with the application of the plaster bandage. It has also been observed that when metatarsal pads are indicated the foot will be found to have assumed that shape and it will be unnecessary to carve the positive cast to form the pad. Warts and spurs can be outlined on the skin with a grease pencil and these marks will transfer to the negative cast where they will, if reinforced, transfer to the positive.

The patient is placed on a table face down and the knee is bent to a right angle. In this position the plantar surface is upright and the alignment of the ankle and the foot can be observed and corrected if necessary. It has been demonstrated that a patient with flat feet will appear to have a normal foot when placed in this position and that, if the cast is made accordingly, the patient will be well satisfied with the results. The accompanying photographs demonstrate the method.



Fig. 1. Showing position of patient while making cast.



Fig. 2. Physician can correct position of foot with ease and accuracy at this step.



Fig. 3. Finished cast.

# GERIATRIC AMPUTATIONS\*

By C. A. BELL

Director of Prosthetic Services Department of Veterans Affairs,  
Dominion of Canada

A study has been completed of all primary amputations carried out on veteran cases, 50 years of age or over, in Department of Veterans Affairs Hospitals during the last five years to determine the results of fitting artificial legs to the elderly amputee. Some 110 cases are reported, the majority of whom were treated for non-service related conditions.

The following results (see tables) have been related to age, cause of amputation and site of amputation and the criteria used in the review of limb fitting was based on the under-mentioned definitions:

## *Successful*

—where significant use of the prosthesis was maintained for a six months' period after completion of limb fitting.

## *Failure*

—where significant use of the prosthesis was not maintained for a six months' period after completion of limb fitting.

## *Not attempted*

—patients considered too debilitated to attempt limb fitting.

It would appear that 80 years of age is about the limit for successful fitting, but age alone is not the determining factor. The necessity of carefully assessing physical conditions and fortitude of the patient before referral for limb fitting cannot be over-emphasized. Time elements of fitting and walking training are increased 50 to 100% in this group. The oldest patient was 78 years, amputation as a result of arterio-sclerosis. He wore his R.A.K. limb for over two years before taking to a wheel chair in his 81st year.

The trauma cases, including accident, frost-bite and old injuries, presented few failures in limb-fitting. This is undoubtedly due to better physical condition of the patient and very little complications arising from progressive degeneration or cardiac conditions.

The disease case failures were due to debility, progressive degeneration and cardiac conditions, and in one case of tumor, painful stump. The age group of these failures was mostly from 58 years upwards.

It is significant that the higher site of amputation presents more of a problem than the lower site. The double amputation fitting failures are naturally high because of increased physical effort required.

In this statistical study, it is evident that no definite basis is possible as a guide to successfully fitting the elderly amputee, but on the other hand, the need for careful individual case study along the lines of scientific amputee rehabilitation is of paramount importance. While the trauma cases presented no particular problem, the peripheral vascular cases required a close study of reaction to the physical demands imposed.

The surgeon is often in a dilemma at making a decision as to limb-fitting such cases, because of the desire to maintain patient morale and the uncertainty of predicting results in any given case. Every amputee's first thought is "How soon may I be fitted and become ambulant?" Only those who are directly connected with the prosthetic picture have a realization of the tremendous efforts, both physical and mental, that have to be exerted

\* This report originally appeared in the Canadian Government publication "Treatment Services Bulletin." It is reprinted here by permission.

TABLE I — AGE

	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85 Plus	Total
Successful .....	22	11	16	16	8	4	0	0	77
Failure .....	2	2	4	7	7	3	0	1	26
Not attempted .....	0	2	0	1	3	1	0	0	7
	24	15	20	24	18	8	0	1	110

TABLE II — CAUSE OF AMPUTATION

	Successful	Failure	Not Attempted	Total
Trauma .....	28	1	1	30
Arterio-sclerosis .....	32	15	5	52
Diabetes .....	8	5	1	14
Buerger's .....	5	3	0	8
Cancer, Tumor, T.B. ....	4	2	0	6
	77	26	7	110

TABLE III — SITE OF AMPUTATION

	Symes	B.K.	Through Knee	A.K.	Double B.K.	One A.K. One B.K.	Double A.K.	Total
Successful .....	2	22	9	37	2	2	3	77
Failure .....	0	1	4	11	1	1	8	26
Not attempted .....	0	0	0	4	0	1	2	7
	2	23	13	52	3	4	13	110

to successful accommodation to an artificial limb. Therefore, care must be exercised as to the psychological approach to limb-fitting of the elderly amputee by all those concerned with the treatment of the case.

The response to physical build-up will materially assist in arriving at a conclusion before prescribing a limb. Graduated remedial exercises with observance to cardiac reaction should be a routine procedure. The progressive degeneration of the disease in the remaining limb may be a contra-indication or delay the decision. During such treatment, a practical assessment should be made of the fortitude

and determination of the patient.

The use of pylons or peg legs as a temporary measure will serve as a practical test to limb tolerance in single amputees. In the bilateral above-knee case, the use of short rocker legs is strongly recommended in the initial fitting stage. Such rockers may often provide a means of ambulation around the home where the extreme efforts required for full length legs may not be subsequently tolerated.

Our limb-fitters can make a socket to fit any stump, but they cannot make the patient walk on the limb, unless favorable physical and psychological

conditions are present. The careful observance of pre-limb treatment will save much time and wasted effort on the part of all facilities concerned with the treatment of the case and may ease the disappointment that follows to the patient who finds the efforts impossible.

In the detail of this review, one is impressed with the amount of time and effort put in on some of these cases. The 65% success in fitting the disease cases was accomplished only by the closest co-operation between treatment and prosthetic services. A cautious approach must be made to the provision of an artificial limb to the vascular disease amputee and periodic check-ups should be made on all such cases fitted.

Reprints of articles are available. Inquire of OALMA, 336 Washington Bldg., Washington 5, D. C.

## SIEVERS NAMED TO ACADEMY FACULTY

Walter R. Sievers of New York City, Secretary-Treasurer of the Certification Board, was a faculty member of the Instructional Courses of the American Academy of Orthopedic Surgeons at their annual meeting in Chicago, January of this year. With Dr. Atha Thomas, he gave a two-hour course on *Orthopaedic Braces and Appliances for the Spine and Trunk*. The course included fundamental principles of brace design and prescription, in addition to demonstration of types of spinal braces and corsets.

Mr. Sievers thus became the *first* member of the artificial limb and brace profession to serve on the faculty and have faculty status for the courses at the Academy sessions. These courses have become an outstanding feature of the meetings of orthopedic surgeons, and have been expanded in recent years.

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## FIRST UCLA CLASS HONORED

The first class of prosthetists, therapists and physicians to complete the UCLA Training Course received their diplomas at graduation exercises in Los Angeles, February 19, following a dinner in their honor. L. M. K. Boelter, Dean of the College of Engineering of UCLA, presented the diplomas to the pioneer group as their names were called by Dr. Miles H. Anderson, Director of the UCLA Prosthetics School.

Distinguished guests on hand to cheer the graduates included Dr. Craig L. Taylor, Director of the UCLA Artificial Limbs Research Project, Dr. Eugene Murphy, Assistant Director of the VA's Prosthetic and Sensory Aids Service, and members of the Prosthetics Industry Advisory Committee.

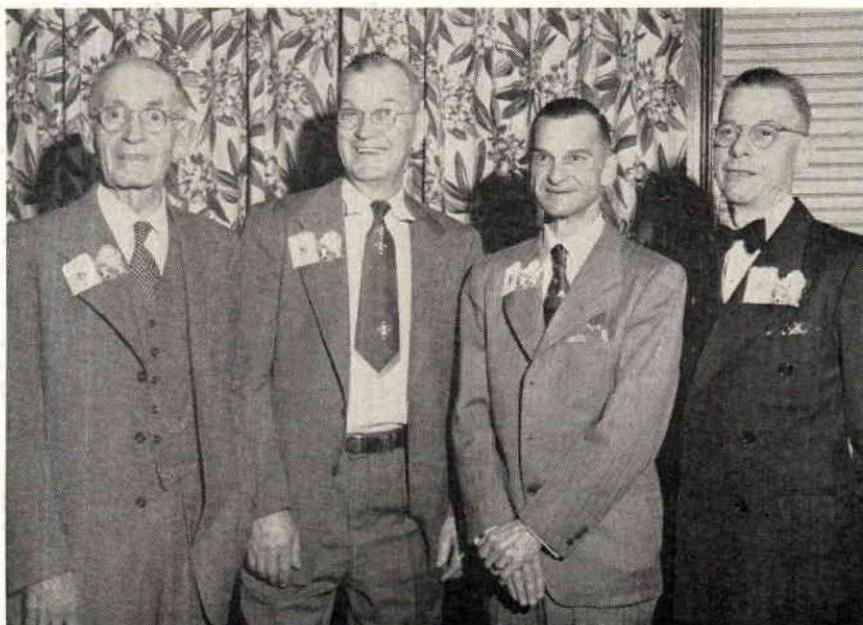
Two class members, Herbert B. Hanger and William J. Ferris, Jr.,

received "Oscars" in tribute to their star performances while appearing on television programs sponsored by the Prosthetics Center.

The graduating class includes eight prosthetists: William E. Hitchcock, Theodore G. Williams and William J. Ferris from the Boston area; Herbert B. Hanger, Charles R. Goldstine, William A. Tosberg and Walter S. Pavelchek from New York, and Sanford Kessler from Orange, N. J.

The second class enrolled March 2 includes Daniel Ahern from Newark, N. J., Geoffrey Hall from Toronto, Canada; Edward Latimer from Dallas, Texas, Alvin Muilenberg from Houston, Texas, W. Andrews and C. Talbert from San Antonio, Texas; George W. Berryman from New Orleans; Michael Amrich from Chicago, and Hector Kay from New York City.

## TRIBUTE TO LONG SERVICE AWARDS FOR HANGER PERSONNEL



Over 100 years with The Hanger organization is represented in this quartet. Left to right: A. C. Wise, Greenwood, S. C.; C. B. Williams, Birmingham; C. T. Walters and C. F. Bender of Atlanta.

The J. E. Hanger Co., Inc., Georgia, paid tribute to its senior employees at an Awards Dinner in Atlanta Dec. 19. This was part of a national program in which 77 employees of Hanger companies were honored.

At the Atlanta ceremonies, each employee with a decade of service received a gold pin in the shape of an initial "H." Persons with twenty-five years' record received a similar pin with a diamond set in the centerpiece.

Ten of the Atlanta group have been with the organization for periods ranging upwards from twenty-five to forty-six years. This group received their emblems from D. A. McKeever, treasurer of the company: J. G. Coleman, C. T. Walters, C. F. Bender, J. E. McGuire, Sr., all of Atlanta; H. D. Robinson, Jacksonville, Fla.;

C. B. Williams, Mr. and Mrs. A. P. O'Berry, Birmingham, Ala.; E. W. Beck, New Orleans, and A. C. Wise, Greenwood, S. C.

Those with service records ranging from 11 to 21 years were: D. A. McKeever, J. D. Rosser, P. A. Peacock, Fred Digby, all of Atlanta; Joe Seals, Buron Hubbard and Judge Powell, Birmingham; Oscar Fann and J. B. Haygood, Columbia, S. C., and Mrs. Mary Sue McLain, Miami, Fla. The latter group received their awards from Howard Thranhardt, secretary of the company.

We note with regret the serious illness of Dr. George H. Young, chairman of the Advisory Committee on Education of the Certification Board. Late reports are that he is recovering after surgery.

## APPRENTICESHIP STANDARDS

The U. S. Department of Labor has placed its stamp of approval on the new *Apprenticeship Standards for Prosthetists and Orthotists*. The Standards were cited by the Director of the Labor Department's Bureau of Apprenticeship in a hearing with the Budget Bureau as an outstanding example of what industry is doing in training men for critical occupations.

The Standards which make up a booklet of 21 pages, have been given the code number OALMA-nj-#1, by the government. This is for convenience in writing to State agencies and vocational schools about apprentice training.

Two committees, one of OALMA, and one from the Certification Board, worked together to draw up the standards. The schedules of work processes were developed by Lee J. Fawver and Herman C. Hittenberger of OALMA's Education Committee. The Certification Board's Advisory Committee on Educational Standards, of which Dr. George H. Young of Mellon Institute is chairman, selected the related courses and drew up the general principles.

McCarthy Hanger, Jr., chairman of OALMA's Education Committee enlisted the help of the Department of Labor, and secured government approval of the project. In a letter to Mr. Hanger, the Department of Labor declared that "The pattern of standards developed by your committee should prove valuable in the establishment of local apprenticeship systems which meet the requirements of your industry and recommendations of the Federal Committee on Apprenticeship."

Copies of the Standards may be obtained by writing to National Headquarters, OALMA, 336 Washington Bldg., Washington 5, D. C.

## "What's New(s)"

• WILLIAM H. TALLEY, Assistant Director of the VA's Prosthetic and Sensory Aids Service, has been honored by the VA and received a one-step promotion. This is based on his development of an overall operations policy for the Service. This led to a special commendation for the Prosthetic and Sensory Aids Service in the Dr. Howard Rusk report to the President on the VA medical program. MRS. NATALIE L. NEVIASER, assistant in the Service, also received a one-step salary promotion for her "superior work, her loyalty and devotion to duty, and her diplomatic and pleasant attitude toward others."

Mr. Talley's plan for a record of prosthetic services, officials say "has made it possible for the first time in the history of the VA to have a complete record of prosthetic service for each disabled veteran requiring a prosthesis." This achievement not only made it possible to provide better service, but in addition has enabled VA to save funds by eliminating duplication in procuring prosthetic appliances.

• Randall Henry Hale is now Technical Adviser to the S. H. Camp Company of Jackson, Michigan. Mr. Hale's work includes developing orthopedic appliances and other research work, and involves considerable travel throughout the United States.

• "They *Were* Disabled" is the title of a sound motion picture which has been filmed by S. M. Mazzy, President of the Keystone Artificial Limb and Orthopedic Company. It describes the physio-therapy and training which his company provides for its patients.

• R & G Orthopedic Appliances of Washington, D. C., Charles Ross, owner, has re-built and redecorated its building. Beautiful water colors add to the charm of an attractive waiting room. Air-conditioning is being added throughout to temper the sting of a Washington summer.

# An Assistive Device to Develop the Pectoralis Major and Biceps Brachii Muscles in Post-Operative Cineplasty

By MAJOR JOHN J. KEYS

Medical Service Corps, Army of the United States; Chief of Physical Reconditioning, Physical Medicine Service, Letterman Army Hospital, San Francisco, Calif.

The isolated development of the pectoralis major and the biceps brachii muscles following the formation of "muscle motors" in these areas by the surgical procedure of cineplasty presents a problem to the therapist. Exercises performed pre-operatively in order to hypertrophy these muscles are rather easily administered since the muscle insertions to the arm or forearm are intact. However, after cineplastic procedures these muscle insertions are liberated from their bony attachments and so do not present levers to which resistance can be applied.

The Prosthetic Devices Research Project, University of California, prepared a paper in April, 1950, for the Advisory Committee on Artificial Limbs, National Research Council, which states that:

"The dressings are removed between ten and twelve days after operating and the sutures are removed. With the removal of the dressings and the initial insertion of the muscle pin the patient should start the post-operative exercise program. Initial exercises should consist of passive stretching of the tunnel performed by the patient himself. He merely grasps the "muscle pin" with his normal hand and gently pulls downward. The first stretches should be carefully done and only through a pain free range; however, as the patient's tolerance to the stretch improves,

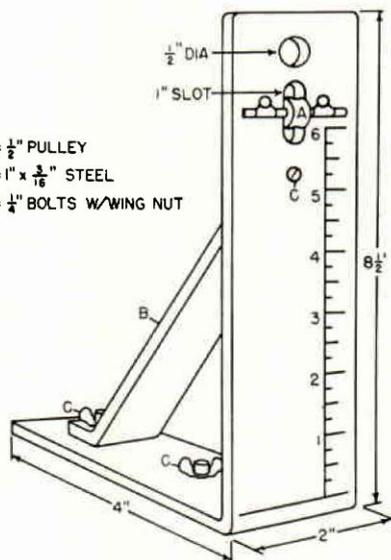


Fig. 1. Stretching and Resistance Unit.

he should stretch his muscle to the limit of its range, then stretch just a bit more and hold it briefly in this position . . .

At the time the initial stretching is instituted the patient should also start active contractions, using no resistance. These should be done with the muscle pin in the tunnel. He should contract and hold it, then relax and repeat . . .

When healing has taken place and the tunnel has attained some degree of flexibility, exercises against resistance and stretching should be started . . .

These exercises should consist of two types; (a) exercise performed with loads, during which the patient lifts the load through the full contraction range and then attempts to "pull up" even more; (b) exercises performed against heavy loads with the subject lifting the load as high as possible. If, before each contraction, the load is allowed to hang on the passive muscle, additional stretching is achieved. (From Prosthetic Devices Research Project, University of California, April 1950. *Biceps Cineplasty and Prosthesis for Below-Elbow Amputation*, pp. 8-9.)

The device herein presented was designed and produced to fulfill the requirements set forth in the quotation above. It will be seen that this device can be used during the very early training of the patient in the use of various types of terminal devices for the arm prosthesis as well as for stretching and hypertrophying the "muscle motors."

In addition, the designing of this device was to produce a simple, easily adjusted and safe piece of apparatus that could be readily adapted for use by all patients having cineplastic procedures. The final product consists of four parts: (1) a heavy resistance and stretching unit; (2) a muscle pin and cable linkage; (3) a spacer bar; (4) a unit which when combined with (1) and (3) enables the patient to use various terminal devices.

### Description

*The resistance and stretching unit.* The hypertrophy of the muscle containing the "muscle motor" and the increase of the excursion of the "muscle pin" are obtained by using the unit shown in Figure 1. The unit is depicted in use by a patient in Figures 3 and 4.

The unit was made of  $\frac{1}{8}$  by two inch aluminum braced by a piece of  $\frac{3}{16}$  inch by one inch steel. This steel brace was used after braces made of various strengths of aluminum failed when patients lifted heavy

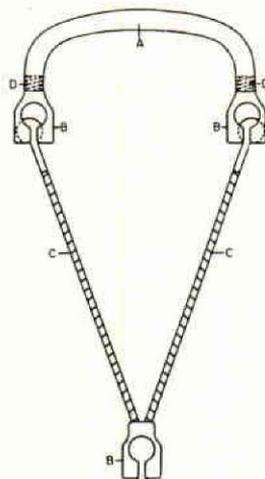


Fig. 2. Muscle Pin and Linkage Unit. A- $\frac{1}{4}$ " Stainless steel rod 4" long. B-Ball and Socket Fittings. C-Northrup Arm Cables 4" long. D-Note that ball and socket fittings are internally threaded to "A".

weights. The axle for the pulley was fastened to the face upright by means of two cable clips. The  $\frac{1}{2}$  inch hole in the top of the upright is for placing the terminal devices.

This part of the device is fastened to the plinth by means of a  $\frac{1}{4}$  inch by  $1\frac{1}{4}$  inch bolt with a wing nut. (It will be noted that this type of bolt and wing nut is used throughout the device. It was found that "thumb tight" would suffice in all operations of the apparatus.)

*The muscle pin and linkage unit.* Originally a "question mark" shaped pin (see Figure 4) was used through the "muscle motor." This was connected through the pulley of the device by means of a twenty-four inch Northrup Cable. Later, however, as the "muscle motor" became stronger this pin had a tendency to slide out. This necessitated the development of the pin and linkage shown in Figure 2. A Northrup Cable, eighteen inches long was used with this unit. The pin was made of  $\frac{1}{4}$  inch stainless steel internally threaded on both ends. The internal threads were used to prevent scratching of the inside of the muscle tunnel. (In addition to this, one half

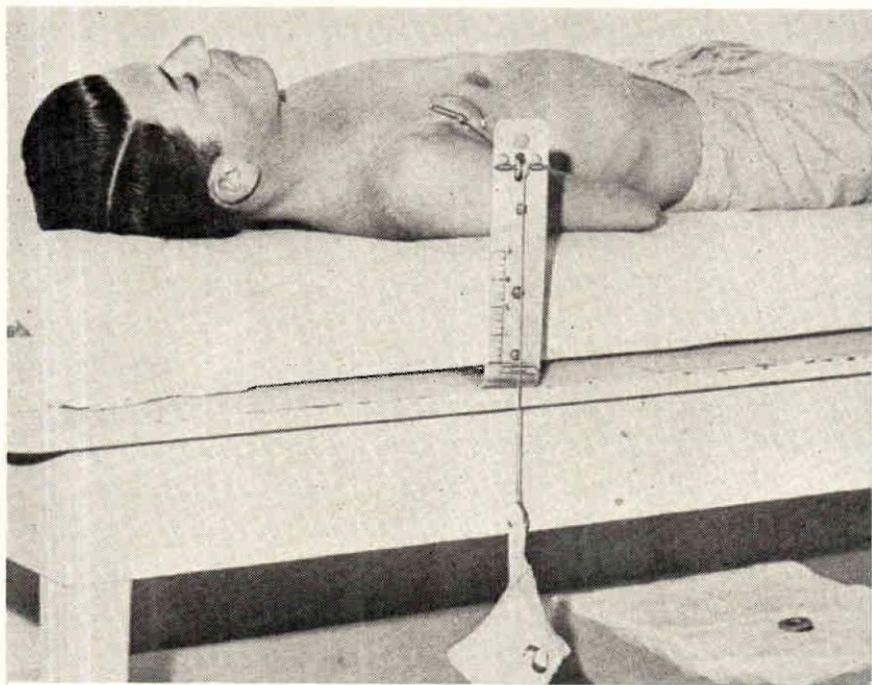


Fig. 3. Patient Using Stretching and Resistance Unit. (Beginning of Muscle Contraction.)

of a gelatinous capsule was put on the end before passing the pin through the tunnel). The ball and socket fittings are of the type usually found in artificial limb shops of United States Army hospitals. This pin and linkage was found to be equally effective in use for both pectoralis major and biceps brachii cinoplasties.

*The spacer bar and horizontal pulley support.* The spacer bar was a piece of steel two inches by 3/16 inch. Here again the use of a steel bar was arrived at through trial and error in the use of aluminum.

The horizontal pulley support was made of two inch by 1/8 inch aluminum with right angle bends at both ends. A 1/2 inch pulley in a housing was used and this was fastened to the support with the wing nut and bolt axle. The wing nut and bolt axle afforded adjustments of the pulley housing for various angles of pull of the connecting cable.

The apparatus assembled for use with one or the other of the various terminal devices is shown in Figure 5. It will be noted that the device is fastened to the plinth by the use of two bolts with wing nuts. By having two holes on each side of the plinth the device can be used by either right or left arm amputees.

Figure 6 shows a patient using the apparatus with a terminal device, which in this case happens to be an APRL hook (Army Prosthetic Research Laboratory). One can readily see that both the hook and the "muscle motor" are in full view of the patient as he practices the operation of the hook. Here also the terminal device need only be "thumb tight." The Dorrance hook was also used with this apparatus. By using increasing numbers of rubber bands on the hook, increasing resistances were presented to the "muscle motor" thus aiding in the hypertrophy of the muscle.

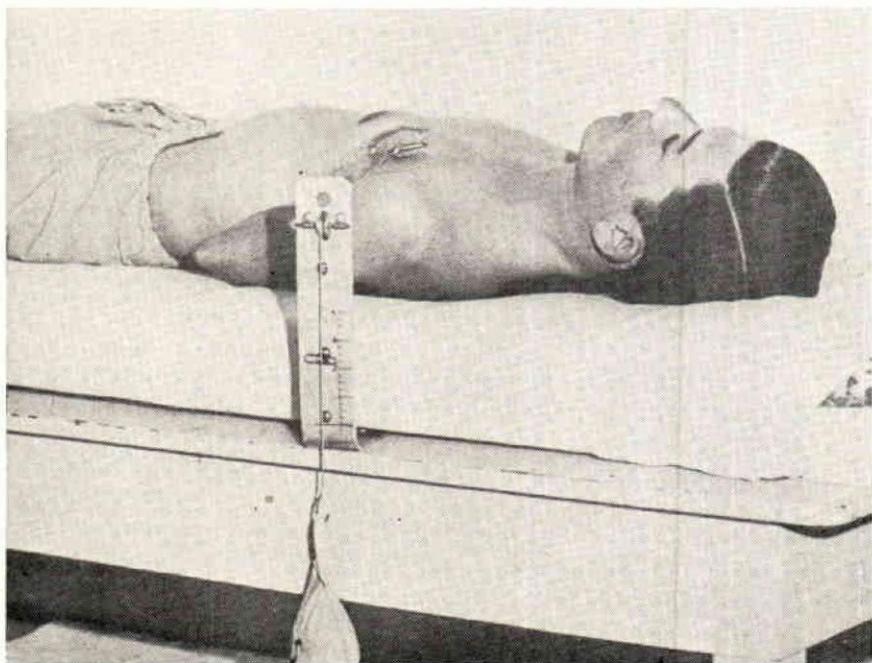


Fig. 4. Patient Using Stretching and Resistance Unit. (End of Muscle Contraction.)

#### Use of Apparatus and Results

One of the most important factors in selecting cineplasty is the mental adaptation of the patient. The surgery is relatively simple but the patient must be intelligent and cooperative because cineplastic procedure is not something automatic. The patient must learn the true use of the "muscle motor" himself.

The apparatus described in the foregoing was used in several of the cineplastic procedures performed at Letterman Army Hospital. The patient was started on progressive resistive exercises as set forth by DeLorme and Watkins as soon as the physiatrist determined that the muscle tunnel was healed sufficiently to permit resistance. (DeLorme, T. L. and Watkins, A. L., *Progressive Resistance Exercise*, Appleton-Century-Crofts, Inc., New York, New York, 1951.)

Treatment periods were scheduled

twice daily and each lasted from twenty to thirty minutes. The treatment period was divided into two phases: (1) stretching and resistance, (2) practice with both the APRL and Dorrance hooks. By using a paper clip attached to the cable of the linkage unit, an accurate measurement could be made of the distance each weight was lifted. A constant check was thus maintained on the patient's effort to secure full contractile range. The shot bags usually found in physical therapy clinics were used as the resistance. The paper clip was positioned after the weight was allowed to stretch the muscle.

After the progressive resistance exercises, the patient rested while the apparatus was assembled for the second phase of the treatment. This rest period usually amounted to three minutes. The APRL hook was used first and the patient concentrated on excursion of the "muscle pin." Since

one position of this hook requires little strength and excursion the patient met with instant success. (This was a real "morale shot"). The Dorrance hook was used next and afforded exercises in both excursion and resistance.

The following cases present an indication of what has been accomplished with this apparatus:

Case 1. A biceps cineplasty for a below elbow amputee. On 3 August 1951 this patient could lift five pounds through a one inch range. On 9 August 1951 he lifted fifteen pounds through a range of two inches.

Case 2. A biceps cineplasty for a below elbow amputee. On 29 June 1951 this patient lifted two pounds with an excursion of  $\frac{3}{4}$  of an inch. On 23 July he could lift thirty-five pounds through an excursion of three and one-half inches. Following a seven day furlough, the patient lifted thirty-five pounds through a two and one-half inch range.

Case 3. A pectoralis major cineplasty for an above elbow emputee. On 18 May 1951 this patient lifted twelve pounds through a five and seven-eighths inch range. On 19 June 1951 he raised thirty pounds a distance of four inches.

Case 4. A pectoralis major cineplasty for an above elbow amputee. On 4 May this amputee could lift ten pounds through a distance of three and one-half inches and on 18 June 1951 he lifted thirty-three pounds through an excursion of four inches. An interval of confinement to bed interrupted PRE treatments. (PRE: Progressive resistance exercise). Upon return to PRE treatments on 9 August 1951 the patient lifted forty-five pounds a distance of five inches. On 15 August 1951 the patient lifted fifty pounds with a five inch excursion.

Case 5. A pectoralis major cineplasty for a shoulder disarticulation.

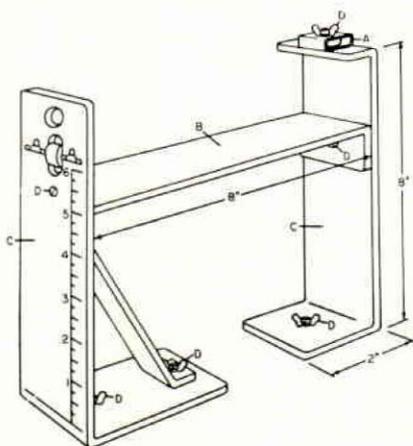


Fig. 5. The Assembled Device. A— $\frac{1}{2}$ " Pulley in housing. B— $2'' \times 3/16''$  steel. C— $2'' \times 1/8''$  aluminum. D— $1/4''$  bolt W/Wing nut.

On 22 May 1951 this patient lifted two pounds with an excursion of one inch. On 11 June 1951 he could lift nine pounds a distance of two and one-half inches.

### Summary

This piece of apparatus offers a means of developing a specific muscle under the careful supervision of a therapist. It can be used under clinical conditions. One piece of apparatus can be used for many patients and eliminates the necessity for making a separate temporary device for each patient. A steel pin covered with soft acrylic or a pin made of lucite may be substituted for the pin hereintofore described. In any case the pin should lend itself to sterilization after use by each patient. The patient can follow his progress by objective measurements. This device presents no mechanical problem to the therapist because of its simplicity and because it can be assembled and used without the use of tools. Finally, the device presents an opportunity for the amputee with a cineplastic procedure to develop ability in the operation of the various terminal hooks many

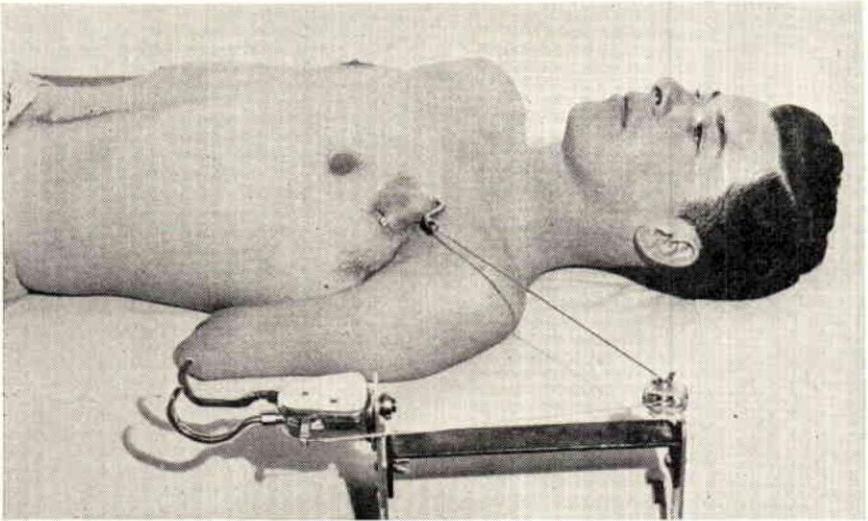


Fig. 6. Patient Using Assembled Device with Army Prosthetic Research Laboratory Terminal Hook.

weeks before he receives his artificial arm.

#### Bibliography

DeLorme, T. L. and Watkins, A. L., *Progressive Resistance Exercise*, Appleton-Century-Crofts, Inc., New York, New York, 1951.

Prosthetic Devices Research Project, University of California, April 1950. *Biceps Cineplasty and Prosthesis for Below-Elbow Amputations*.

#### START PLANNING NOW

Now is the time to start making plans for attendance at the 1953 National Assembly of the Limb and Brace Profession, which will be held at the Drake Hotel in Chicago, September 27, 28, 29, 30 and October 1.

Howard Thranhardt, program chairman, reports that plans for this annual meeting of OALMA and the Certification Board are well-advanced. Many members are arranging vacation schedules to fit in with the Assembly dates.

JOHN J. KEYS, *Major, M.S.C., U.S.A.*

John J. Keys graduated from the University of Illinois, B.S. degree, and from Pennsylvania State College, M.S. degree. He was Chief of the Orthopedic Brace and Limb Shop, McCloskey General Hospital, Chief Philippine Amputation and Prosthetic Unit, during World War II. Major Keys served as Chief of the Physical Reconditioning Section of the Percy Jones Army Hospital at Battle Creek, Michigan, and is now Chief of the Physical Reconditioning Section at Letterman Army Hospital in San Francisco, California. He is a member of the Association of Military Surgeons of the United States, and the Association for Physical and Mental Rehabilitation. Major Keys is the recipient of the Certificate of Merit of the American Congress of Physical Medicine.

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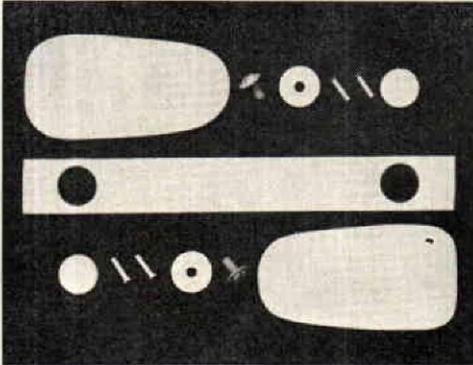
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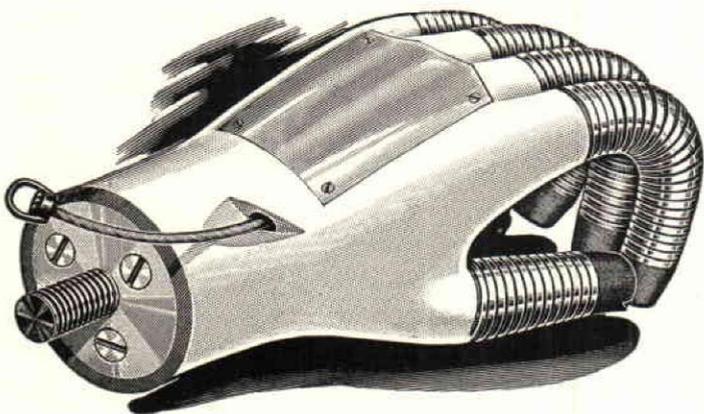
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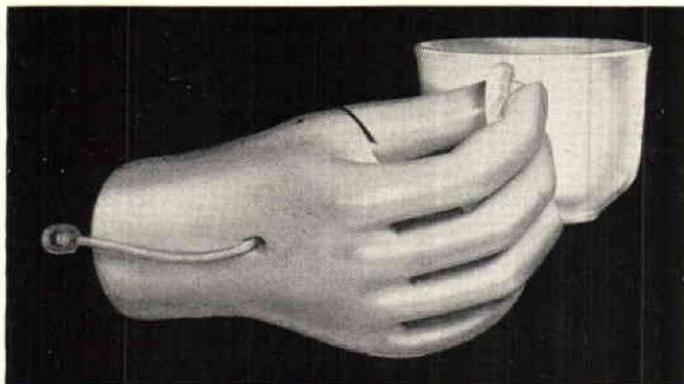
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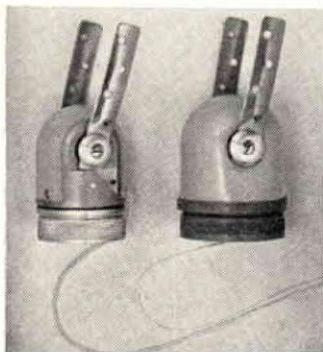
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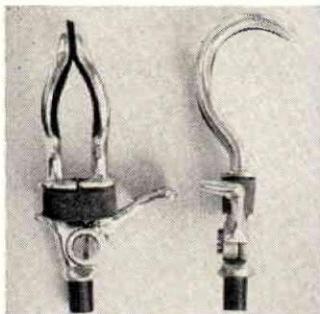
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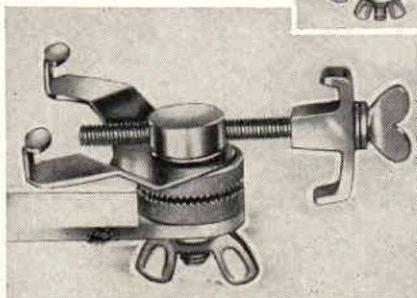
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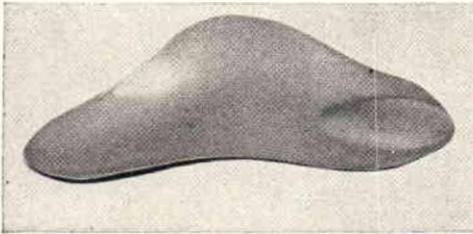


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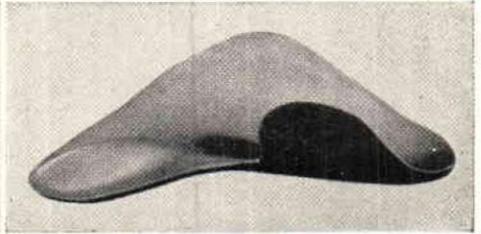
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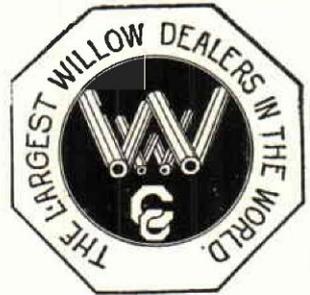
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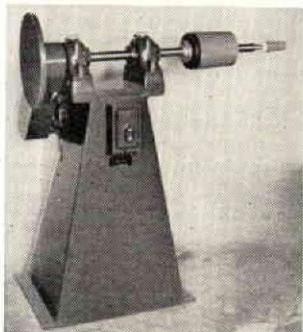
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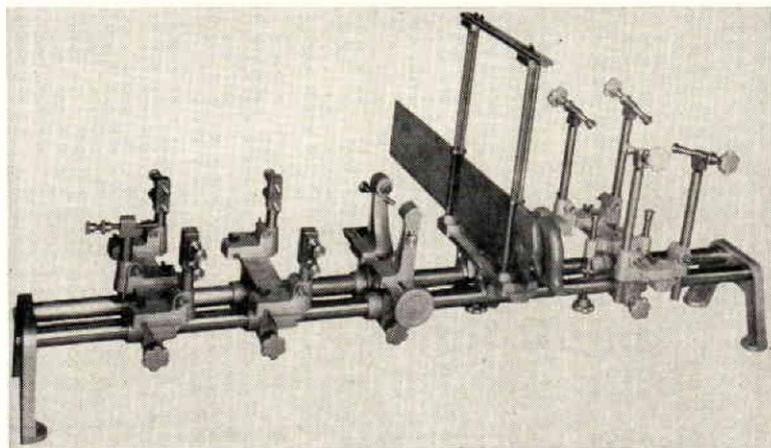
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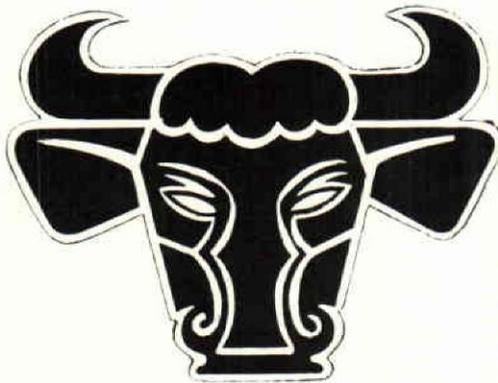
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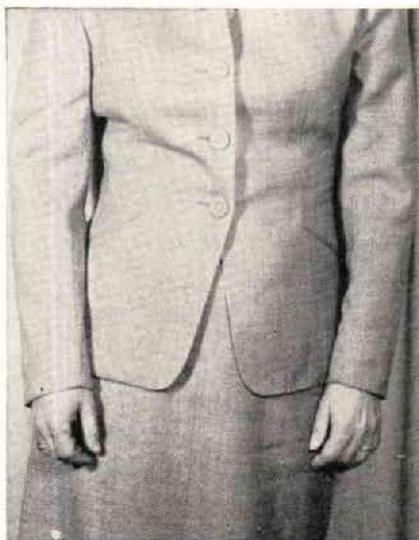
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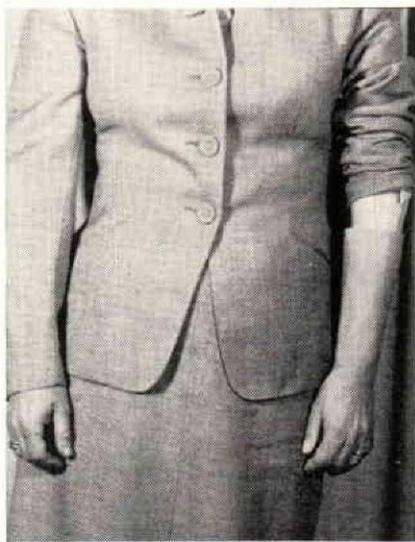
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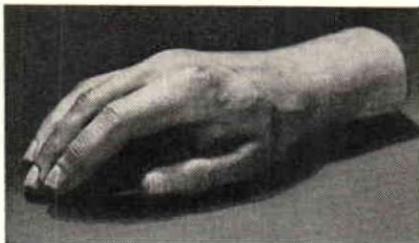


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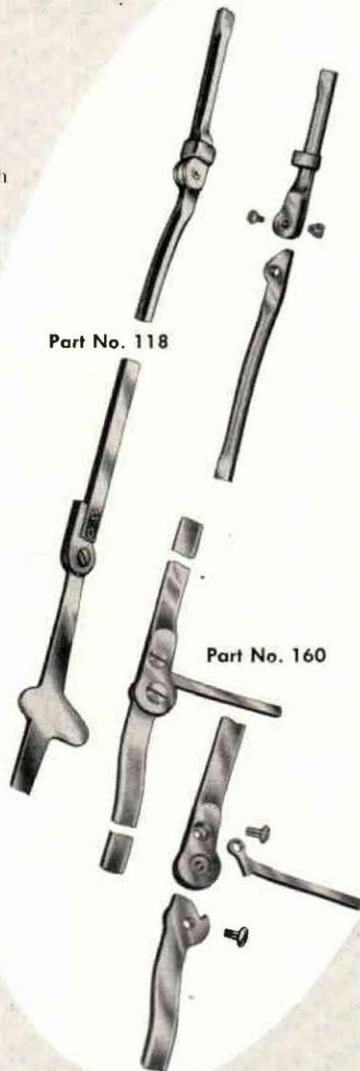
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# PLANNING REGIONAL MEETINGS

By **FRED J. ESCHEN**

**President, Metropolitan Orthopedic Appliance and  
Limb Manufacturers Association**

*(Editor's Note: Because good regional meetings are both valuable and popular, we asked Fred Eschen to describe the hard work and careful planning which preceded one such meeting last year.)*

Regional meetings are used: to facilitate thought and judgment — to provide a means of giving to a group — to make it possible to get something from a group — to serve as a relief for group feelings — to provide an opportunity for propagandizing and as a means of planning for the future — to provide entertainment — for business contacts among the members and as a medium of good public relations with non-members.

Last April 18-19th, Region II of the OALMA held a Medical and Technical Assembly on Orthopedic and Prosthetic Devices in New York City. A small but efficient committee was appointed eight months previously to investigate the possibilities of having such a meeting. The first decision to be made was the time and place. The time was chosen to follow that of another meeting of national importance not too far from this region; in this way, a large number of those attending that meeting could attend this one.

The next decision was how large an attendance to anticipate and of course where to find adequate accommodations, of the right type. The Committee chose the Hospital for the Ruptured and Crippled, which is now the Hospital for Special Surgery. The reason for this choice was twofold. It was the first orthopedic center in the United States and it has maintained very successfully a complete amputee clinical team for civilians in addition to usual orthopedic clinics. It was in connection with this amputee clinical team that the seminar was arranged.

The program was for two complete

days, Friday and Saturday, with a dinner and dance Friday evening. This was a package deal, two for the price of one. Tickets were on sale in advance with a request that reservations with names be made by mail. Tickets were to be paid for in advance to avoid having to collect outstanding tickets after the affair, to give the Committee a drawing fund and to avoid a last minute rush.

The Committee made its preliminary arrangements with the Director of the hospital, Orthopedic Department Chief and Amputee Clinic Chief, Social Service and Division of Vocational Rehabilitation representatives. After they were assured of their cooperation, the program was arranged bearing in mind the need to vary the program to keep the interest of the mixed attendance.

Formal dress was planned for the Friday evening event thus making it the outstanding event of the year. Members were proud to bring their guests and thereby boost the attendance and prestige.

It was the opinion of the Committee, that if at all possible, the evening event should be preceded by a cocktail hour for all. This provides an opportunity for people to get acquainted before assembling in the banquet hall. It has the added advantage of reducing the number of late comers for the dinner hour.

The formal part of the evening event was planned to be brief. Therefore, a small head table was set up for the toastmaster, a guest speaker and only a few high officials. A name orchestra is a better drawing card

than an unknown orchestra plus entertainment. Then, as much dancing time as possible should be utilized. This plan in itself makes a short formal presentation desirable.

The head table should be furnished with a lectern of the right type and should be situated for proper lighting if there is to be a guest speaker. It is up to the Committee to provide the toastmaster with a time schedule and agenda and with a list of names and titles of those at the head table. A public address system should be provided. Observe protocol in the seating arrangement of the head table. Prepare place cards for the head table and a seating arrangement for the entire banquet room. People with common interests should be placed together.

The toastmaster or presiding officer is in charge of the program and is completely and solely responsible for bringing it through to a successful conclusion. He should strive to be pleasantly relaxed, informal and friendly so that everyone is put at ease. For our affair, the Committee was very fortunate in securing the services of our genial Executive Director of our National Association.

The introduction of any speaker at either the evening event or the seminar is a most important function. An introduction should be short, consistent with being interesting, appropriate and adequate. Nothing so distresses an audience as a long-winded introduction. The Chairman's function is to establish contact between the speaker and the audience and to give the speaker every possible aid. A good introduction would always include the answer to this question: Why this speaker; on this subject; at this time; to this audience.

Sessions should be closed with a punch. From a graphical point of view, never let the line of the meeting descend at the end, but have it ascending. The main objective is to end each session with a good substantial

punch, so that the guests will want to return to the following sessions promptly.

There is much to be said about advertising. The Committee should strive to receive as much publicity as possible. Region II received theirs through the cooperation of our National Association, Allied Trade Publications, Medical Journals and Physio and Occupational Therapist Publications. Every hospital and institution director and all Orthopedic Department Chiefs in this area, received personal invitations with a request to post the program on their bulletin boards and spread the word among their staff.

Good meetings seldom happen. They are the result of careful planning and infinite attention to the many details. A program planner should ask himself, "Has anything been overlooked?" The answer will usually be "Yes." There is always something that can be done to make the meeting just a little bit better.

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## CERTIFICATION SCHEDULE

Examinations for certification will be conducted in Chicago on May 30; at San Francisco, California, on June 5. Application to take the examinations should be made immediately to Board Headquarters, 336 Washington Bldg., Washington, D. C., on Form TRS.

An additional examination will be held in Atlanta, Georgia this summer if a sufficient number of candidates apply.

Examinations were held earlier this year at New York City, February 14 and at Minneapolis, March 13. As this is written, students are assembling for the tests at Dallas, Texas (March 29).

# CROSS-COUNTRY REPORT

## What the Regions are Doing

### THE NEW ENGLAND STATES

New England was represented by three men in the historic first class to complete the UCLA course: Theodore Williams, William Hitchcock and the writer of this report.

The New England Region holds regular monthly meetings to which all visiting members of the limb and brace profession are cordially invited. The November meeting featured a discussion on how to hold a joint regional meeting of New York and New England, with Mr. Breed of the Boston Convention Bureau and Mr. Leo Waller of Hersco Products Corporation as guests.

New officers of the Regional Council are: Howard Mooney, president; Karl W. Buschenfeldt, vice-president; Joseph Martino, secretary, and John Buckley, treasurer.

—WM. J. FERRIS  
*Director, Region I*

### REGION II—NEW YORK AND NEW JERSEY —DAVID E. STOLPE, DIRECTOR

Region II is joint sponsor with the Metropolitan MOALMA, of the Medical and Technical Assembly on Prosthetic and Orthopedic Devices April 16, 17 and 18. The program is described on page 4 of this Journal. This New York Assembly attracts a larger attendance every year; this year's Assembly is going to be a credit to the fine committee in charge: Fred J. Eschen, Milton Tenenbaum, and Mary Dorsch.

Congratulations to the new officers of the New York Metropolitan Association: Fred J. Eschen, president; John A. McCann, vice president; Charles Goldstine, secretary, and Milton Tenenbaum, treasurer.

David E. Stolpe, Director of Region II, has appointed the following committee to coordinate OALMA's activities in New York and New Jersey: Edwin P. Anderson, Jamestown, New York; Benedict G. Pecorella, Buffalo, New York; Albert J. Amsterdam, Syracuse, New York; John N. Eschen, New York, N. Y.; Cosmo L. Invidiato, Paterson, New Jersey.

### REGION III—EASTERN PENNSYLVANIA, MARYLAND, DELAWARE, VIRGINIA AND WASHINGTON, D. C.

A "What's on Your Mind" round table discussion was a feature of the one-day meeting of Region III at the Drake Hotel in Philadelphia February 21. The thirty members present joined the discussion of brace and limb shop problems. Dr. Sidney Fishman described the opportunities open to members who enrolled for the U.C.L.A. training course. Our Executive Director, Glenn Jackson, brought us up to date on "the Washington scene." Assistant Director, Lester A. Smith, attending his first Regional meeting, discussed "Good Reading for the Orthotist and Prosthetist." We were glad to have with us our national treasurer, M. P. Cestaro, and a visiting delegation from Pittsburgh. Special thanks are due to Mr. and Mrs. Basil Peters for the hard work which resulted in the smooth arrangements of this meeting.

An All-Pennsylvania Association was organized at a two-day meeting in Harrisburg, March 7 and 8. This new group plans to hold its future meetings in conjunction with the Regional Meeting. The officers of the Pennsylvania State Orthopedic and Prosthetic Manufacturers are: Walter

B. McCarty, of the G. Emil Kefvert Co., of Philadelphia, president; R. L. Blackwell, Williamsport, vice-president, and S. M. Mazzy of Harrisburg, secretary-treasurer.

—E. A. WARNICK  
*Director, Region III*

**REGION IV HOLDS BRACE SESSION—AS  
REPORTED BY CARLTON FILLAUER**

The best attended and most informative meeting ever held in Region IV of OALMA, was concluded Sunday noon, March 1st, at the Warm Springs Foundation, in Warm Springs, Georgia. Especially gratifying to those who worked hard for this success was the fact that since Warm Springs is a very small isolated town, the dissemination of information was the sole drawing card.

Of over 100 registrations, 90 per cent arrived Friday afternoon and evening. Many from the far corners of the region and visitors from Boston, Kankakee, Chicago, and Erie spent Friday evening fraternizing. All enjoyed the fine entertainment furnished by patients and personnel of the Foundation organized as the "Wheel Chair Review."

Saturday was the highlight of the meeting. Dr. C. E. Irwin, Medical Director and Dr. R. L. Bennett, Director of Physical Medicine and Assistant Medical Director of the Warm Springs Foundation gave a comprehensive picture of their post-polio treatment.

Never before has any group of Orthotists had the opportunity that was presented at this meeting. Since polio has become such an acute brace problem during recent years, the value of this seminar to those who attended and hence to the patients will be extensive.

There has been a tendency in many brace shops to think of a post-polio patient's brace in the same light as those for fractures and C. P. Patients. Unfortunately, this problem also exists with a more disastrous effect among the prescribing surgeons.

Dr. Irwin pointed out in his discourse on Lower Extremity Bracing that many of the requisites for these braces did not necessarily apply to other fields of bracing. Elements of brace design and intelligent brace prescribing were covered. The following high lights summarize his remarks:

1. Braces are to be supportive and prevent deformity.
2. Long leg braces should extend, proximally, to the ischial tuberosity.
3. Weight and cosmetic appearance of the brace are not to be considered incidental.
4. Tibial torsion in an extremity must be compensated for in locating the ankle joint or caliper tubing.
5. Pelvic belts and hip joints are not to be used on day braces to control external rotation.
6. Generally, spinal curvatures or weaknesses are best supported by reinforced corsets rather than by rigid braces.
7. Deformities cannot be corrected with braces.

Dr. R. L. Bennett, in his usual masterful delivery covered upper extremity splinting. His talk began with a basic hand appliance, a dorsal opponens splint, and showed step by step its development into a splint adaptable for:

1. Cock-up splint extending to the forearm.
2. Out-rigger for abduction of first finger.
3. Finger extensor units with or without Lumbricales bar.
4. Platform splint.
5. Adaptive gadgets for eating, typing, dressing, etc.

All of these and other appliances as overhead slings on wheel chairs, feeders and lapboards were demonstrated by an array of patients who graciously appeared for us.

Later that evening following a hospitable Southern Style reception at the home of Dr. Irwin, there was shown the finale on Polio — a motion picture on the Functional Apparatus for the Severely Involved Upper Extremities.

Sunday, the leaders of our industry, Mr. Glenn Jackson, our exemplary executive director, Presidents Lee Fawver and D. A. McKeever, and Howard Thranhardt acquainted everyone with the current national events relating to our industry. Special thanks are in order to Mr. Jackson for his visit to our meeting and bringing with his message, the V. A. color film on Upper Extremity Prosthesis, and to President Fawver for his extended trip to be with us.

A Plastic Material demonstration and gadget hour preceded the concluding business meeting.

A Board of Governors for the ensuing year was elected as follows: Bert Titus, Duke Hospital; Jim Bonds, Knoxville; Buck Hancock, Charlotte; Moody Smitherman, Birmingham; and Carlton Fillauer, Chattanooga. Locale for the next meeting, thanks to the efforts of Bert Titus is to be Duke University, spring 1954.

Credit is due for this excellent and successful meeting to the untiring efforts of Mr. Horace Maddox, his staff and co-workers at the Foundation. And for our best program to date, thanks to Frank Harmon and the advertisers.

#### REGION V—OHIO, WESTERN PENNSYLVANIA, WEST VIRGINIA AND MICHIGAN

All brace and limb establishments are cordially invited to attend the Spring Conference of Region V, May 9 and 10 at the Deshler-Wallick Hotel in Columbus, Ohio. Open discussion of mutual problems will be featured. Joseph Spievak will discuss *Medical Contacts*. We will have a report from our National Headquarters, and Dr. Sidney Fishman will explain our Re-

gion's part in the UCLA training course. The new film on Upper Extremity Prosthetics will be shown, and there will be entertainment features. The ladies are especially invited.

—PAUL LEIMKUEHLER  
*Director, Region V*

#### REGION VII—THE NORTH CENTRAL STATES: (MINNESOTA, THE DAKOTAS, WYOMING, COLORADO, KANSAS, NEBRASKA, WESTERN MISSOURI AND IOWA)

The third annual meeting of OALMA's largest district (in area if not in population) was held at the Leamington Hotel in Minneapolis, March 14. President Daniel B. Becker of the Regional Council had scheduled it for the day after the Certification examination and was gratified to have many of the students who had taken the tests, stay over for the meeting.



President Fawver, D. B. Becker and Lucius Trautman at Region VII Meeting.

A record turnout of 135 registered. We were pleased to have with us Lee J. Fawver, our national president, who gave a review of the '52 Assembly, and an exciting preview of "What's Ahead in '53 and '54." Glenn Jackson spoke on the "Latest in Certification and Education Programs" and introduced those who had taken the certification tests. The presence of these national leaders added dignity and importance to our convention.

"Down-to-earth" practical use was stressed in these reports: Anatomy as Used by the Orthotist-Prosthetist, by Dr. John S. Burleigh; Physical Therapy's Importance to Limb and Brace Fitting, by Jordan G. Plorin, B.S., R.P.T.; Efficient Brace Making, by C. E. Medcalf; Medical Demonstration and Discussion, Dr. Frank Kottke; Small Business Accounting, Joseph Gitlin; The Clinic Approach in Rehabilitation, Dr. Richard H. Jones; The Veterans Administration, Voight Baker. The day's session ended with the evening banquet at which the Rev. George A. Butters spoke on, "The Forgotten Facets of Democracy."

We enjoy these Regional gatherings more and more each year, and see that they have a very definite place in the over-all improvement taking place in our industry today.

—BOB GRUMAN, *President,*  
1953 - 54, of *The North*  
*Central Regional Council*

## "What's New(s)"

• Due to the many requests for a small leather sanding, buffing and brushing machine, with dust collector, for use in orthopedic work, the CHAMPION SHOE MACHINERY COMPANY is now manufacturing these special machines, along with their regular line of shoe sole stitching machines, finishing machines, leather cutters, leather splitters, jack and last sets, etc. They find a decided need for a properly constructed machine for orthopedic use. Information on these machines and other special machines may be obtained by writing to J. K. Gribble, General Sales Manager, Champion Shoe Machinery Co., 3723 Forest Park Ave., St. Louis 8, Mo.

This company was established in 1903 and is well known for its shoe machines, stitchers, jacks and lasts.

## Los Angeles School

Six years ago, members of OALMA in Southern California took united action to set up a school which would help their apprentices receive formal instruction as a supplement to *on-the-job* training. The Regional Council of OALMA, now operating as the Western Orthopedic and Prosthetic Industry, was able to secure the cooperation of the Los Angeles Board of Education and the State Division of Apprenticeship Standards.

A class meeting three hours a week was formed by the committee in charge and J. J. Vollmer became the first instructor. Apprenticeship Training Standards were given a thoroughgoing over; the knotty problems of what to teach and *how* were reviewed by the committee, which now included four OALMA members, and representatives of the VA, the Board of Education and the state government.

The success of the first class led to the forming of a Permanent Education Committee in 1951 and Harvey G. Lanham became chairman. Since then the committee has taken over the development and operation of the school program.

The faculty now consists of Charles G. Hutter, M.D., and Edward S. Taylor. Their students number over fifty with an average attendance of thirty-three. Classes are held every Wednesday from 7:00 to 10:00 p.m.

For the past two years, classes have been given on an eighteen week basis, with a special summer session of six weeks. A certificate award is made to those who qualify on the basis of attendance and written examinations.

All trainees within the industry are indentured to the State of California and are required to attend the class. They are processed through the Trade Advisory Committee, which conducts periodic interviews and evaluates their progress.

## Reviews of Books and Films

### U/E PROSTHETICS FILM

A 16 mm. training film, in color and sound. Running time: 23 minutes. Produced by the U. S. Veterans Administration, assisted by the Artificial Limbs Project, U.C.L.A.

This film was produced during the summer of 1952 and has its premiere showing in Chicago at the American Academy of Orthopedic Surgeons meeting in January 1953.

It presents the highlights of the prescription, fabrication, fitting, harnessing and check-out of artificial arms. Teamwork between the limb fitter, the physician, the therapist and the patient is strongly emphasized. Modern devices and techniques are described. Both pre-prosthetic and prosthetic training activities are shown.

The film will have unusual interest to orthopedic surgeons, prosthetists, therapists, other members of the rehabilitation team, and of course to amputees.

Color and sound are excellent. The Prosthetic and Sensory Aids Service of the VA is to be congratulated on a remarkably good and useful training film.

### TABER'S CYCLOPEDIA MEDICAL DICTIONARY

By Clarence W. Taber

Published by F. A. Davis Co., Philadelphia, 1953. 6th Edition, 1312 pages, 298 illustrations, thumb-indexed. \$4.75.

A good medical dictionary should be owned and used by every fitter. Among those now on the market, Taber's Dictionary is especially recommended and is on the official reading list of the American Board for Certification.

Now in its sixth edition, Taber's has useful tables on Muscles of the Body, Principal Joints, and Nerves, in addition to complete definitions. Ninety-nine percent of all the words are respelled for pronunciation.

### PHYSICAL REHABILITATION FOR DAILY LIVING

By Edith Buchwald, in collaboration with Howard A. Rusk, M.D., George G. Deaver, M.D. and Donald A. Covalt, M.D.

Published by McGraw-Hill Book Co., Inc., 1952. 183 pages, 475 photographs. \$7.50. (May be ordered through Everest and Jennings, 761 N. Highland Ave., Los Angeles 38, California).

The book is recommended to all who deal with handicapped persons because of the emphasis on the activities of daily living. Special attention is given to daily programs and activities for patients with disabilities of the lower extremities. Such topics as wheel-chair exercises, bed and mat exercises, elevation and travel on crutches are treated clearly and concisely.

### THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY

By W. A. Newman Dorland, A.M., M.D., F.A.C.S. 22nd Edition, 1736 pages, 720 illustrations. Philadelphia and London, W. B. Saunders Co. 1951. \$11.50.

This is the "prince" among medical dictionaries and for those who want the best, "Dorland's" as it is commonly and affectionately known, can be recommended.

The author is a former member of the AMA's Committee on Nomenclature and Classification of Diseases. The editorial board includes Richard M. Hewitt of the Mayo Clinic, E. C. L. Miller, librarian emeritus of the Medical College of Virginia, and Arthur H. Sanford of the Mayo Foundation.

An example of its detail, the table of amputations defines 97 terms. The table of muscles covers 22 pages. For each muscle, it gives origin, insertion, nerve supply and action.

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# Our Code of Fair Trade Practices

Below is a digest of the rules governing fair trade practices as promulgated by the Federal Trade Commission, April 1946 and adopted by the American Board for Certification in August 1948.

It is an unfair trade practice:

- (1) To deceive purchasers or prospective purchasers as to any of the qualities of a prosthetic or orthopedic appliance, or to mislead purchasers or prospective purchasers in respect to the service of such appliances.
- (2) To infer that an artificial limb is equivalent or nearly equivalent to the human limb, complies with any government specifications, or has the approval of a government agency unless such be wholly true or non-deceptive.
- (3) To fail to disclose to a purchaser, prior to his purchase, of a prosthetic appliance, that the degree of usefulness and benefit will be substantially dependent upon many factors, such as the character of the amputation, condition of the stump, state of health, and diligence in accustoming oneself to its use.
- (4) To promise that any industry product will be made to fit unless such promise is made in good faith and the industry member is possessed of the requisite competence to assure his ability to fulfill such guarantee. A prosthetic device is not to be considered as fitting unless properly shaped for the body member to which it is applied, and in proper alignment and conformity with the physique of the person to wear such a product, and affords the optimum of comfort and use on the part of the wearer.
- (5) To deceive anyone as to his authority to represent and make commitments in behalf of an industry member unless such be fully true.
- (6) To use any testimonial or use any picture which is misleading or deceptive in any respect.
- (7) To demonstrate any appliance in a manner having the tendency or effect of creating a false impression as to the actual benefits that may be reasonably expected from it.
- (8) To use any guarantee which is false or misleading.
- (9) To represent that any appliance conforms to a standard when such is not the fact.
- (10) To publish any false statements as to financial conditions relative to contracts for purchase of appliances.
- (11) To engage in any defamation of competitors or in any way to disparage competitors' products, prices, or services.
- (12) To use the term "free" to describe or refer to any industry product which is not actually given to the purchaser without cost.
- (13) To wilfully entice away employees of competitors.
- (14) To take part in any concerted action with other members of the industry to wilfully fix prices.
- (15) To promote the sale of any appliance to any person who can not be expected to obtain reasonable benefit from such appliance.
- (16) To refrain from giving every assistance to doctors before and after amputation or crippling condition, or to fail to do everything possible to promote mutual trust and confidence between the industry and the members of the medical profession.
- (17) To undertake to supply an artificial limb by mail-order specifications without personal fitting thereof unless conditions are such which make an exception desirable, and in any case, no misrepresentation shall be made as to fit.
- (18) To unduly exploit features of appliances less important than proper fit and alignment.
- (19) To fail to recognize that the interest of the amputee and the handicapped is the first concern of this craft and therefore any failure to make available to all of its members and the general public any improved technique that may be used as to making, fitting, aligning or servicing of industry products shall be an unfair trade practice.

Further, the industry desires to be an active and cooperative factor in all progressive developments of improved techniques that will contribute to the welfare and comfort of all who wear its products.